



CORROSION

Conference & Expo **2020**
March 15-19 • Houston, Texas

FINAL PROGRAM



OFFICIAL MEDIA PARTNERS

MP MATERIALS
PERFORMANCE
CORROSION PREVENTION AND CONTROL WORLDWIDE

CoatingsPro[™]
MAGAZINE

CORROSION[®]
The Journal of Science & Engineering

See what you've been missing!

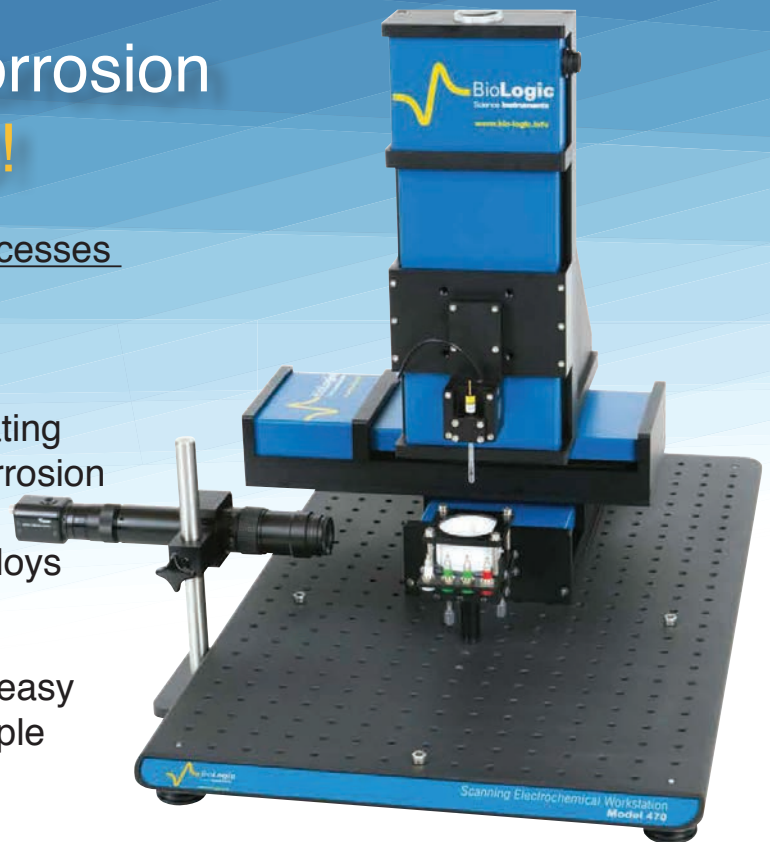
Visualize localized corrosion with the **ic-SECM470!**

Probe microscopic electrochemical processes that include:

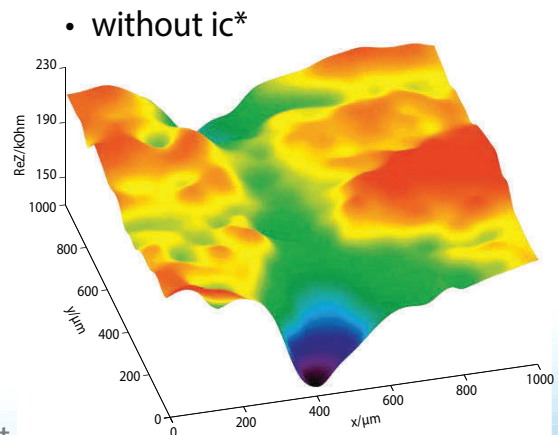
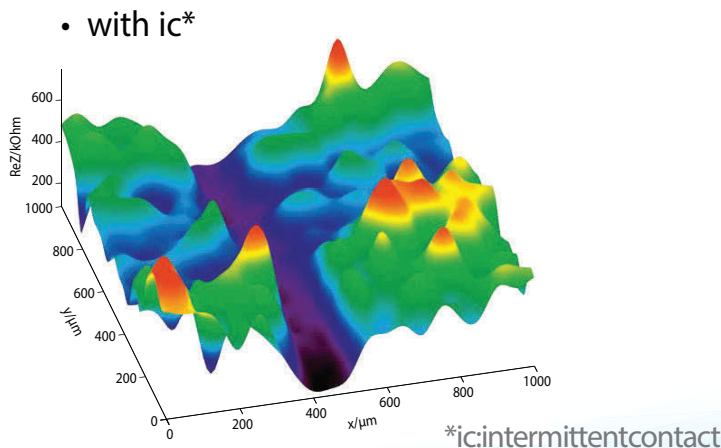
- Corrosion pits and their growth
- Localized anodic and cathodic sites
- Early stages of blistering under a coating
- Inhibitor films on active metals for corrosion protection
- Electrochemical heterogeneities in alloys

Advantages of ic-SECM470:

- Makes the approach automated and easy
- Removes the contribution of the sample topography
- Maximizes the signal at the probe
- Increases the definition of the imaged features
- Allows scan of large and uneven samples
- Can be combined with ac-SECM (ac: alternating current)



ac-SECM pictures of a cross scratch on 7075 Al alloy:



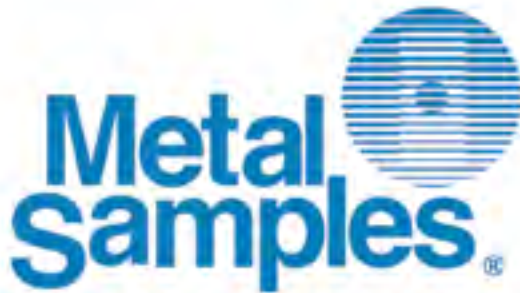
Full range of Electrochemical products at:
www.BioLogic.net

 **BioLogic USA**

Instruments



Probes



CORROSION MONITORING PRODUCTS

**Access
Systems**



**Injection
Systems**



**Corrosion
Coupons**



Contact Us: 256-358-4202 | mssc@alspi.com | www.metalsamples.com

CORROSION 2020 - Booth # 1519



Get Social with Carboline
Share your photos & stories with us!
Use #carboline when posting.



App & Podcast



Carboline App

Need to get to our product info quickly? The latest versions of SDS and PDS files are at your fingertips with our app!



Carboline Podcasts

Carboline Tech Service Podcast is available on Android, Apple, Spotify and Microsoft. Just search for the Carboline Tech Service Podcast in your favorite search engine or podcast player.
<http://carboline.com/news-events/>



**Visit us at
booth #1513**



Table of Contents

General Information

Shuttle Service.....	4
Assistance for Registrants with Disabilities.....	4
Registration Hours.....	5
Exhibit Hours.....	5
Right to Deny or Remove	5
Meeting Rooms.....	5
Official Conference Language	5
Dress Code.....	5
WiFi-Wireless Internet	5
Social Media.....	5
Mobile App.....	5
Professional Development Hours (PDHs) Station	5
CORROSION 2020 Information Kiosk	5
New at the CORROSION 2020 Info Kiosk	6
NACE Institute Booth	6
PAC Kiosk.....	6
NACE Sales Office	6
NACE Business Center	6
Speaker Ready Room	6
NACE Booth	6
The NACE Store.....	6
Conference Papers	7
Corporate Lounge	7
Headshot Station.....	7
Rockwool Networking Zone	7
Publication Bins	7
Shuttle Transportation Desk.....	7
Baggage Check	7
First Aid Office.....	7
Mother's Room.....	8
Prayer Room.....	8
On-site Press Room	8
Convention Center Accessibility.....	8
NACE Board of Directors.....	8
Code of Ethics.....	10
Anti-Harassment Policy.....	10
Alcohol Consumption Policy.....	10
Minor Policy for NACE International Conferences.....	11
What's New at CORROSION 2020	12
Conference Terminology.....	14
Annual Conference Program Committee.....	14

Lectures & Awards

Keynote Session	17
Plenary Lecture.....	18
Featured Lectures	18
W.R. Whitney Award Lecture.....	19
F.N. Speller Award Lecture.....	19
2020 NACE Association Awards	20
R.A. Brannon Award.....	20
A.B. Campbell Award.....	20
Corrosion Best Paper Award	20
T.J. Hull Award	21
F.N. Speller Award	21
H.H. Uhlig Award	21
W.R. Whitney Award	22
Distinguished Organization Award	22

Distinguished Service Award	23
Technical Achievement Award	23
NACE Fellow Honor	24
NACE Foundation Founders Award.....	25
NACE 50-Year Members	25

Technical Program

Symposia	29
Monday	29
Tuesday.....	44
Wednesday.....	59
Thursday.....	75
Forums	78
Corrosive Chronicles and <i>MP</i> Innovation Theater.....	82
Workshops and Other Learning Opportunities	84
Student Poster Session.....	88
Symposia Index	93

Committee Meetings

Technical Committee Information	97
Technical Committee Meetings.....	98
Administrative Committee Meetings.....	110
ISO Meetings	111
Other Meetings.....	112

Networking Activities

Guest Program	116
Guest Tours	116
CORROSION Crew Social Brew	118
NACEcares Volunteer Day	118
25th Annual NACE Race	118
Darrel D. Byerley Memorial Golf Tournament.....	118
Opening Reception	119
15th Annual Silent Auction.....	119
NACE U Student Meeting.....	119
Career Fair	119
GenNEXT Bash	119
CORROSION: Opportunities Realized	120
Section Officer Meeting	120
cKit™ Training for Sections.....	120
NACE Honoree Night	120

The Exhibition

Expo Events	123
Student Poster Display	123
Corrosive Chronicles and <i>MP</i> Innovation Theater.....	123
2020 Expo Hall	124
2020 Exhibitors.....	126
Exhibitors by Industry.....	188

Index

Author Index.....	202
Subject Index.....	205
Advertisers Index	228

Maps

Convention Center	229
Expo Floorplan	234

Day At A Glance

Day at a Glance	236
-----------------------	-----

Shuttle Service

Complimentary shuttle service is provided between the George R. Brown Convention Center and the following hotels:

SHUTTLE ROUTES		
HOTEL	ROUTE	SHUTTLE BOARDING LOCATION AT HOTEL
Courtyard Houston Downtown Convention Center	2	Walk to Residence Inn - Curbside Front Entrance on Dallas Street
DoubleTree by Hilton Hotel Houston Downtown	1	Curbside Front Entrance on Dallas Street
Embassy Suites Houston - Downtown	Walk	Walk to the George R. Brown Convention Center
Four Seasons Hotel Houston	Walk	Walk to the George R. Brown Convention Center
Hampton Inn Houston Downtown	Walk	Walk to the George R. Brown Convention Center
Hilton Americas Houston	Walk	Special Events Only, Side Entrance on Avenida De Las Americas
Holiday Inn Express & Suites Houston	Walk	Walk to the George R. Brown Convention Center
Homewood Suites Houston	Walk	Walk to the George R. Brown Convention Center
Hyatt Regency Houston	1	Curbside Side Entrance on Dallas Street
JW Marriott Houston Downtown	2	On Walker Street at Main Street
Marriott Marquis	Walk	Special Events Only, Side Entrance on Crawford
Residence Inn Houston Downtown/Convention Center	2	Curbside Front Entrance on Dallas Street
SpringHill Suites Houston Downtown	2	Walk to Residence Inn - Curbside Front Entrance on Dallas Street

HOURS OF SERVICE		
DATE	HOURS	FREQUENCY
Sunday, March 15	7 – 11 a.m.	Service every 30 minutes*
	11 a.m. – 5 p.m.	Service every 15-20 minutes
Monday, March 16	6:15 – 9:30 a.m.	Service every 15-20 minutes
	9:30 a.m. – 3 p.m.	Service every 30 minutes*
	3 – 8 p.m.	Service every 15-20 minutes
Tuesday, March 17	6:15 – 9:30 a.m.	Service every 15-20 minutes
	9:30 a.m. – 3:30 p.m.	Service every 30 minutes*
	3:30 – 7 p.m.	Service every 15-20 minutes
Wednesday, March 18	6:15 – 9:30 a.m.	Service every 15-20 minutes
	9:30 a.m. – 3 p.m.	Service every 30 minutes*
	3 – 7 p.m.	Service every 15-20 minutes
Thursday, March 19	6:15 a.m. – 1 p.m.	Service every 15-20 minutes
	1 – 5:30 p.m.	Service every 30 minutes*

* **Departs convention center every 30 minutes on the hour and half-hour.**
 Schedule may vary due to traffic & weather conditions.
 Last bus leaves from hotels 60 minutes prior to end time with no return service.



For Shuttle Information & Special Assistance:

+1 424-452-7971

Please call at least 60 minutes prior to desired pick-up time.

Transportation Managed By: Production Transport

NACE Race

Memorial Park

Sunday, March 15

Departs Convention Center at 7 a.m.
 Return to Convention Center at noon

Opening Reception

Hilton Americas

Sunday, March 15 | 5 – 8 p.m.

Continuous shuttle between select official NACE hotels and the Hilton Americas

GenNEXT Bash

House of Blues

Tuesday, March 17 | 4:30 – 11:30 p.m.*

30 minute shuttle service between select official NACE hotels and the House of Blues

*Last shuttle departs from the House of Blues at 11:30 p.m.

NACE Honoree Night

Minute Maid Park

Wednesday, March 18 | 5:45 – 10:30 p.m.*

Continuous shuttle between select official NACE hotels and Minute Maid Park

*Last shuttle departs from Minute Maid Park at 10:30 p.m.

General Information

Registration Hours

Express Pass and On-Site Registration Hours:

Sunday, March 15	7:30 a.m. to 6:30 p.m.
Monday, March 16	7:30 a.m. to 6:30 p.m.
Tuesday, March 17	7:30 a.m. to 5 p.m.
Wednesday, March 18.....	7:30 a.m. to 5 p.m.
Thursday, March 19	7:30 a.m. to noon

Sponsored by:



We protect and beautify the world™

Exhibit Hours

Monday, March 16	5 to 7 p.m.
Tuesday, March 17	10 a.m. to 5 p.m.
Wednesday, March 18.....	10 a.m. to 5 p.m.
Thursday, March 19	9 a.m. to noon

Right to Deny or Remove

We reserve the right to deny registration or admission to or remove any party from the conferences and expo, at our sole discretion.

Meeting Rooms

All CORROSION 2020 activities will be held in the George R. Brown Convention Center or the Hilton Americas - Houston. See individual meeting room assignments for specific locations.

Sponsored by:



Official Conference Language

The official conference language is English.

Dress Code

The dress code for all official conference activities, excluding the NACE Honoree Night, is business casual. NACE Honoree Night is business or cocktail dress.

WiFi-Wireless Internet

Complimentary WiFi is available to all attendees in the exhibit hall and most common areas of the convention center. Please use the following to login:

WiFi Name: **NACE_2020**

Password (case sensitive): **iupat-fti**

Sponsored by:



Social Media

Follow NACE on Twitter, Facebook, LinkedIn, and Instagram for updates and important reminders. Use **#CORROSION2020** to join the conversation.

Mobile App

Experience the interactive CORROSION 2020 mobile app and receive live updates on all conference activities during the week. Available in the iTunes and Google Play app stores, the 2020 mobile application allows you to view the full technical program, search and save notable CORROSION speaker events, browse the Exhibit Hall map, access directions and locations to networking events, and much more. To download the free CORROSION 2020 mobile app, search "NACE International Conferences" in the iTunes and Google Play stores. Then, search for the CORROSION 2020 event within the app to locate the conference specifics.

Sponsored by:



**INTEGRATED
CORROSION
COMPANIES**

Professional Development Hours (PDHs) Station

George R. Brown Convention Center,
Exhibit Hall D near Registration

Earn PDHs in technical meetings, forums, and symposia you attend. Print out your personalized PDH certificates at the PDH Station located in Registration in Hall D.

For certificates, it is necessary to:

Log on to the website at www.nace.org/pdh

Search for or browse to select the sessions you attended. Email or print your certificate!

This system will be available online for six months after the conclusion of the conference, accessible from your NACE profile.

Certificates are based solely on the information provided to NACE at the time of printing.

Sponsored by:



CORROSION 2020 Information Kiosk

George R. Brown Convention Center,
Level 3, Near Skybridge to Hilton Americas

Need directions to your next meeting or have a question about CORROSION 2020? Knowledgeable NACE staff will be available to help you navigate the George R. Brown Convention Center or answer general conference questions at the CORROSION 2020 Information Kiosk.

General Information

New at the CORROSION 2020 Info Kiosk

FirstService "How To" Mini-Sessions
George R. Brown Convention Center,
Level 3 by the skybridge to the Hilton Americas Hotel

Have questions about how to log in to your profile, access your grades, renew your certification, schedule your CBT exam, or just navigate your NACE profile? The FirstService team will be hosting an array of short tutorials throughout the show to help answer some of the most frequently asked questions. Stop by the information kiosk for one of the sessions below:

Monday, March 16 10 a.m. and 2 p.m.
Login and Update Profile.

Tuesday, March 17 10 a.m. and 2 p.m.
Certification Renewal and New Certification Application.

Wednesday, March 18 10 a.m. and 2 p.m.
Course Search and Registration Process.

Thursday, March 19 10 a.m. and 2 p.m.
New and Renewal of NACE membership.

The Info Kiosk will be open during the following times:

Sunday, March 15 8 a.m. to 6 p.m.

Monday, March 16 8 a.m. to 5:30 p.m.

Tuesday, March 17 8 a.m. to 5 p.m.

Wednesday, March 18 8 a.m. to 5 p.m.

Thursday, March 19 8 a.m. to 2:30 p.m.

NACE Institute Booth

Located across from Registration outside of Hall D

Visit the NACE Institute Booth for information on NACE Institute certifications, our NIICAP program, IMPACT PLUS, and learn more about Master Painters Institute (MPI). NACE Institute staff will be there to assist with any questions you might have. Learn about the latest developments and how you can further your career. Don't forget to grab your certification ribbon when you stop by for special recognition!

PAC Kiosk

Located across from Registration outside of Hall D

CORROSION PAC (Political Action Committee) is the nation's only PAC dedicated to corrosion professionals and businesses by building corrosion champions throughout Congress.

NACE Sales Office—Marketing Solutions: Advertising, Exhibits, CORROSION 2021 sign up!

George R. Brown Convention Center,
Exhibit Hall D Near NACE Booth 2729

Looking to reach the decision makers in the global corrosion and protective coatings industries? One stop to the NACE Sales Office will provide you with marketing solutions. Get information on all of NACE's upcoming events as well as media options, including *Materials Performance*, *CORROSION*, *CoatingsPro*, digital issues, and digital offerings.

Plus, this is where you'll get a jump on your 2021 marketing efforts, as here is where you'll sign up for space at next year's CORROSION Conference & Expo. NACE staff and media representatives will be there to work with you in developing a strategic marketing partnership and multi-channel plan for unparalleled access to the entire corrosion control and protective coatings communities.

NACE Business Center

George R. Brown Convention Center,
Level 3, outside of Room 330A

Questions related to the conference may be directed to NACE staff in the office. Office hours are open 7:30 a.m. to 5 p.m., Sunday, March 15 through Thursday, March 19.

Speaker Ready Room

George R. Brown Convention Center, Room 330 B

This room, set up with monitors, can be used by speakers to rehearse or preview their pre-submitted PowerPoint presentations (technical and research symposium authors only). There will be an audio-visual company representative on hand to help upload chair-approved PowerPoints and address speakers' concerns.

Speaker Ready Room Hours:

Sunday, March 15 2 to 5 p.m.

Monday, March 16 through

Wednesday, March 18 7 a.m. to 5 p.m.

Thursday, March 19 7 a.m. to noon

NACE Booth

George R. Brown Convention Center,
Exhibit Hall D (Booth 2729)

The NACE Booth offers information on all things NACE, including education and certification programs, publications, public affairs, conferences, standards, and the NACE Foundation. Visit the NACE booth to receive your 2020 event glass and get your NACE questions answered.

The NACE Store

George R. Brown Convention Center,
Level 1 Lobby Outside of Exhibit Hall C

Looking for a certain book on corrosion? Visit the NACE Store where you can browse through corrosion-related books, standards, reports, and software. Hundreds of products will be available with many at special sale prices. The NACE Store will be located in the lobby outside Exhibit Hall C of the George R. Brown Convention Center.

The NACE Store Hours of Operation:

Sunday, March 15 8 a.m. to 5:30 p.m.

Monday, March 16 8 a.m. to 5:30 p.m.

Tuesday, March 17 8 a.m. to 5:30 p.m.

Wednesday, March 18 8 a.m. to 5:30 p.m.

Thursday, March 19 8 a.m. to 12:30 p.m.

NACE Store Bags Sponsored by:



#CORROSION2020

General Information

Conference Papers

You can access, search, and download all conference proceedings both online and via USB flash drive if you purchased access as part of your Advance Registration. If you purchased a Full-Conference Advance Registration or Advance Student Registration, your complimentary USB flash drive will be provided to you at the registration desk, upon check-in. For those who did not purchase an Advance Registration Full-Conference pass, USBs will be available for purchase at the rate of \$149 USD at the NACE Store. Access to the papers online will be available starting May 15, 2020, at www.nace.org, click 'My Account' at the top of the webpage and select 'Downloadable Products' from the left menu.

Sponsored by:



Corporate Lounge

George R. Brown Convention Center,
Level 2 Avenida Balcony

The Corporate Lounge offers qualifying Corporate Member representatives specialized service and an oasis for conducting business while at conference. Reserve meeting rooms, check email on our computers with Internet access, or just relax between meetings.

Lounge hours are as follows:

Sunday, March 158 a.m. to 5 p.m.

Monday, March 16 through
Wednesday, March 18 8 a.m. to 6 p.m.

Thursday, March 19 8 a.m. to noon

To learn how you can become a Corporate Member of NACE International today, please contact our Corporate Member Coordinator at **1 800-797-6282 U.S./Canada** or **+1 281-584-6693** worldwide, or visit www.nace.org/corporate-membership.

Headshot Station

George R. Brown Convention Center,
Level 3, Across from 350 D and 360 A

Tuesday, March 18 • 8 a.m. to 5 p.m.

Need to upgrade your professional headshot? Stop by the Headshot Station to update your look and professional profile.

Sponsored by:



Publication Bins

Come by and pick up complimentary issues from the following publications (as of January 1, 2020):

- *BIC Alliance Magazine*
- *Coatings Pro Magazine*
- *Corrosion & Materials (Australian Corrosion Association)*
- *Gas Processing & LNG*
- *Hydrocarbon Engineering Magazine*
- *Hydrocarbon Processing Magazine*
- *Inspect This*
- *Inspectioneering*
- *Insulation Outlook*
- *JPCL*
- *Marine Log*
- *Maritime Reporter*
- *Marine News*
- *Materials Performance Magazine*
- *MP Buyers Guide*
- *Naval Engineers Journal (American Society of Naval Engineers)*
- *North American Oil and Gas Pipeline Magazine*
- *Offshore*
- *Oil and Gas Journal*
- *Stay Current*
- *World Pipeline Magazines*
- *World Pipelines Coatings & Corrosion Supplement*

Shuttle Transportation Desk

George R. Brown Convention Center,
Avenida South Transit Center

A shuttle transportation desk will be located at the shuttle drop off point, at the George R. Brown Convention Center. Attendees can find information on shuttle routes. Also, those with shuttle delays or concerns can call **+1 424-452-7971**.

Baggage Check

George R. Brown Convention Center,
Level 3, prefunction outside of 360 A

Baggage check will be available on Level 3 next to the CORROSION 2020 Info Kiosk.

Hours of Operation:

Wednesday, March 18..... 7:30 a.m. to 5 p.m.

Thursday, March 19 7:30 a.m. to 4 p.m.

First Aid Office

George R. Brown Convention Center, Level 1,
Outside of Hall E

The first aid room contains essential first aid supplies, is staffed by first aid representatives, and will be available to all conference attendees during regular conference hours. To contact First Aid please call **+1 615-401-1300**. There will also be "Emergency" black phones throughout the building that can be utilized to call First Aid as well.

General Information

Mother's Room

George R. Brown Convention Center, Room 380 B

Nursing mothers may also access this room to pump breast milk or nurse their child in a private and comfortable setting.

Prayer Room

George R. Brown Convention Center, Room 380 D

A prayer room is a place for people to pray, whether individually or in groups. It is the place where individuals may break away from routine and the busy conference schedule for divine time to themselves. It is not intended for one faith or religion, any person with the will to pray may use the Prayer Room during CORROSION 2020.

On-Site Press Room

George R. Brown Convention Center, Room 380 C

Registered press may use the room as a work space during the hours listed below.

Any photographs or recording for radio, television and online broadcasting is allowed unless a particular exhibitor, speaker or presenter expressly prohibits it.

Any crew member(s) accompanying a reporter for these purposes will also require a press badge.

Press Room Hours of Operation:

Monday, March 168 a.m. to 5 p.m.
 Tuesday, March 17.....8 a.m. to 5 p.m.
 Wednesday, March 188 a.m. to 5 p.m.
 Thursday, March 198 a.m. to noon

Convention Center Accessibility

The George R. Brown Convention center is an ADA compliant facility and welcomes all guest with disabilities and their assistive animals. Please contact the George R. Brown ADA Coordinator at +1 713-853-8000 with any questions.

Guest Program

The Guest Program is a social program designed for the enjoyment of the guests of conference registrants. Guest program registration does not give attendees access to any technical symposia or committee meetings. Program details and locations are listed on pages 116-117.

NACE Board of Directors

PRESIDENT
Terry Greenfield*
 Consulex
 Fairhope, AL, USA

TREASURER
Russell Norris*
 Sherwin-Williams Co.
 Porter, TX USA

VICE PRESIDENT
Tim Bieri*
 BP America, Inc.
 Houston, TX, USA

PAST PRESIDENT
Jeffrey L. Didas*
 Matcor, Inc.
 Tucson, AZ, USA

CHIEF EXECUTIVE OFFICER
Robert H. Chalker*
 NACE International
 Houston, TX, USA

AREA DIRECTORS

CENTRAL AREA
Michael Ames
 2019-2020
 Chapman Engineering
 Humble, TX, USA

LATIN AMERICA AREA
Leonardo Uller
 2019-2022
 SURPLUS BR
 Rio de Janeiro, BRAZIL

EAST ASIA & PACIFIC AREA
Toyoji Takeuchi
 2017-2020
 Sumitomo Heavy Industries
 Marine Engineering Co., Ltd.
 Yokosuka, JAPAN

NORTHERN AREA
Doug Kellow
 2019-2022
 Brenntag Canada, Inc.
 Calgary, AB, CANADA

EASTERN AREA
Emer Flounders
 2019-2022
 Consultant
 Dresher, PA, USA

WEST ASIA & AFRICA AREA
Mohammed Al-Subaie
 2016-2020
 Saudi Aramco
 Dhahran, SAUDI ARABIA

EUROPEAN AREA
Amir Eliezer
 2018-2021
 SCE Trymer, Ltd.
 Beer Sheva, ISRAEL

WESTERN AREA
Ryan Tinnea
 2018-2021
 Tinnea & Associates
 Seattle, WA, USA

ACTIVITY DIRECTORS

CONFERENCES & EXPOSITIONS ACTIVITIES
C. Lindsay Enloe
 2017-2020
 Utility Safety & Design
 Swansea, IL, USA

PUBLICATIONS ACTIVITIES
Bernardo Duran
 2018-2021
 International Zinc Association
 Fort Worth, TX, USA

EDUCATION ACTIVITIES
Michael S. O'Brien
 2017-2020
 MARK 10 Resource Group, Inc.
 Richmond, VA, USA

TECHNICAL & RESEARCH ACTIVITIES
Brian Saldanha
 2019-2022
 Chemours Company, LLC
 Wilmington, DE, USA

EX OFFICIO DIRECTORS

Daniel P. Adley
 Director, Strategic Planning

Keith Perkins
 President, NACE International Foundation

Kevin Garrity
 President, NACE International Institute

*Executive Committee members



**FROM
SAILOR
TO
SHIPYARD.**

IMPROVING FLEET READINESS.

FMMS



FLEET MAINTENANCE & MODERNIZATION SYMPOSIUM 2020

September 14-17, 2020

Virginia Beach Convention Center, Virginia Beach, VA

www.navalengineers.org/FMMS

General Information

Code of Ethics

THE FUNDAMENTAL PRINCIPLES

Members uphold and advance the integrity, honor, and dignity of the members' profession by using their knowledge and skill for the enhancement of human welfare; being honest and impartial, and serving with fidelity the public, their employers, and clients; and striving to increase the competence and prestige of the corrosion engineering profession.

THE FUNDAMENTAL CANONS

- A. Members shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties.
- B. Members shall perform services only in the areas of their competence.
- C. Members shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those members under their supervision.
- D. Members shall act in professional matters for each employer or client as faithful agents or trustees and shall avoid conflicts of interest.
- E. Members shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
- F. Members shall associate only with reputable persons or organizations.
- G. Members shall issue public statements only in an objective and truthful manner.
- H. Members shall not maliciously injure the reputation, prospects, or business of others, but this does not remove the moral obligation to expose unethical conduct.

NACE International specifically prohibits sexual harassment by or against any employee, member, officer, director, or other volunteer, vendor, or customer; and such conduct will not be permitted or condoned.

Anti-Harassment Policy

NACE is committed to providing an environment free of sexual harassment (which includes harassment based on gender, pregnancy, childbirth, or related medical conditions), as well as harassment based on such factors as race, color, religion, national origin, ancestry, age, physical disability, mental disability, medical condition, marital status, sexual orientation, gender identity, gender expression, workers' compensation leave, veteran status, or any other condition or characteristic protected by law.

We expect all participants at CORROSION to abide by this Anti-Harassment Policy in all venues at CORROSION, including ancillary events and official and unofficial social gatherings.

- Exercise consideration and respect in your speech and actions.
- Refrain from demeaning, discriminatory, or harassing behavior and speech.
- Be mindful of your surroundings and of your fellow participants.
- Alert NACE staff if you notice harassment.

If you are being harassed, notice that someone else is being harassed, or have any other concerns, please contact Lesley Martinez, Conferences Manager, at +1 832-651-7229 on site immediately.

Alcohol Consumption Policy

NACE International is committed to the health and well-being of its staff, members, customers, event participants, and vendors. The Association expects individuals who choose to consume alcohol at NACE-affiliated events to do so legally and in moderation. The use of alcoholic beverages by any participant at a NACE-affiliated event shall be in compliance with federal, state and local laws. Persons who infringe upon the rights of others, who conduct themselves in a disorderly manner, or who damage or destroy property shall be subject to disciplinary and/or criminal action. All CORROSION participants are expected to abide by this alcohol policy in all venues at CORROSION, including ancillary events and official and unofficial social gatherings. Participants shall conform to the requirements of this Policy and all other applicable NACE International policies, including but not limited to the NACE Code of Ethics and anti-harassment policies.

Minor Policy for NACE International Conferences

Children under the age of 15 are not permitted in the Expo, meetings, and symposia. Children over the age of 15 must be registered as guests and wear a badge at all times while in the convention center. To accommodate nursing mothers, the following will apply:

1. Expo attendance: Nursing infants will be allowed in the exhibit hall during show hours only and must always be carried in arms or front baby carrier (NO STROLLERS PERMITTED) by a registered NACE attendee. Everyone who attends the exhibition must be registered and have a badge. Badges for minors 15 and older are free and available on site at the registration desk. Minors between 15 and 18 years of age must be accompanied by an adult at all times. Guardians are asked to help maintain a professional, disturbance-free exhibition environment.
2. Meetings and symposia: To provide all NACE attendees an optimal learning environment, minors and guests are not permitted in technical meetings or the symposia. Those attending these sessions must be registered for the conference and show the appropriate badge.
3. Exhibitors: Exhibitor booth staff must be registered as such and be 15 years of age or older. The nursing infant rule does not apply to exhibitors. No child under the age of 15 may be in an exhibit booth during set-up, tear-down, or show hours. Anyone in violation of these rules will have their booth closed and will not be provided a refund.
4. Strollers and rolling carts are not allowed in the exhibit hall at any time.
5. Child care is not available at the convention center; however, your hotel concierge may be able to assist you. Please note that NACE has no affiliation with these services.

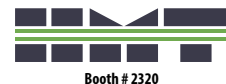
HIGH ROLLIN' FOR A HARLEY



How the contest works:

1. Attendees will have to visit your booth and all other High Rollin' for a Harley sponsors.
2. Once they have collected all of the cards from all of the sponsors, they will submit the entry form to the location of the Harley on the show floor.
3. The drawing will be held on Thursday at 10:30 a.m.

Sponsored by:



Interested in sponsoring?
sales@nace.org

What's New at CORROSION 2020

FirstService "How To" Mini-Sessions

George R. Brown Convention Center, Level 3 near Skybridge
Monday – Thursday

Have questions about how to log in to your profile, access your grades, renew your certification, schedule your computer-based training exam, or just navigate your NACE profile? NACE's FirstService team will be hosting an array of short tutorials throughout conference week to help answer some of the most frequently asked questions. Stop by the information kiosk located on Level 3 to learn the "how to's" and get your specific questions answered.

Featured Speaker

George R. Brown Convention Center,
Room 310 ABC
Monday, March 16, 8 to 9:30 a.m.

Presented by Ryan Sitton,
Texas Railroad Commissioner

New this year is the addition of a featured speaker for CORROSION 2020. We are pleased to announce Texas Railroad Commissioner (RRC) Ryan Sitton as a featured speaker at CORROSION 2020. This will be Commissioner Sitton's first presentation to NACE members, and he will provide an update on the future of the oil and gas industry in the State of Texas and provide different perspectives on regulatory elements.



NACE International Water Forum: Sharing Owner/Operations Best Practices and Contrasting New and Old Technologies.

George R. Brown Convention Center, Room 362 D
Monday, March 16, 8:30 a.m. to noon

Presented by Jessica Torrey, Materials and Corrosion Lab,
Bureau of Reclamation

The forum will consist of two primary topics: Industry experts will share best practices and lessons learned from their work with owners and operators in the water and wastewater industries. The presenters will also compare and contrast new and old technologies while discussing new and emerging trends.

NACE-SSPC Discussions Town Hall

George R. Brown Convention Center, Room 350 DE
Monday, March 16, 9 to 10:30 a.m.

Executive leadership and the Presidents from both organizations will provide an update on recent discussions with SSPC, The Society for Protective Coatings, related to a possible combined organization. Each town hall meeting is intended to provide members with information about the proposal, solicit feedback, and answer questions.

Selecting the Right Surface Preparation for Performance

George R. Brown Convention Center, Room 361 EF
Monday, March 16, 1 to 2:30 p.m.

Presented by David Hunter, Pond and Company

This forum discusses one of the least understood problems in the coatings industry: Properly specifying surface preparation for the environment that will give the performance desired. The forum will detail how surface preparation and desired performance are linked and the environment is critical in being included or understood so the materials can give the lifecycle desired. Case histories will be from various industries, highlighting production impact and solutions provided.

The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation

George R. Brown Convention Center, Room 362 D
Monday, March 16, 1 to 3 p.m.

Presented by Christina Lomasney, Modumetal

Corrosion affects everything around us—our infrastructure, transportation, manufacturing, and environment. We know it is a costly and challenging problem. As industry insiders, how can we better understand the business risks brought forth by corrosion, and bridge the gap between those risks and solutions that will address this critical issue in a meaningful way?

What's New at CORROSION 2020

New Symposia

Corrosion in Sweet and Slightly Sour Production Conditions

*George R. Brown Convention Center, Room 361 EF
Wednesday - Thursday*

This symposium features technical papers on laboratory and/or field experience of CO₂/H₂S corrosion and mitigation in a hydrocarbon-containing environment.

Sponsoring Committee: TEG 059X

Chair: Ziru Zhang Vice Chair: Sudhakar Mahajanam

Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation

*George R. Brown Convention Center, Room 340 B
Wednesday, March 18, 8 a.m. to 1:30 p.m.*

This symposium features technical papers that provide fundamental insight into new and up-and-coming innovations in the field of chemical and mechanical cleaning. Innovations in this field include new chemistries, methods, applications or techniques, emerging equipment, and innovative partnerships. Case studies involving the use of the innovative technologies or chemistries at the field level, or laboratory scale initial testing methods may be included, as well as new ideas, which have yet to emerge on the scene.

Sponsoring Committee: TEG 188X

Chair: Roxanne Shank Vice Chair: Christopher Wiggins

New Meeting

National Shipbuilding Research Program (NSRP) Surface Preparation and Coatings (SP&C) Panel Meeting

Hilton Americas, Room 335 A

Tuesday, March 17, 8 a.m. to 5 p.m.

Wednesday March 18, 8 a.m. to 5 p.m.

The SP&C Panel Meeting is a great forum for diverse groups to come together and inspire the research, evaluation, development, and sustainment of current and emerging technologies. The desired outcomes of these efforts are reduced costs in construction, maintenance, and repairs and/or enhanced quality of coatings and corrosion control of Naval and commercial vessels. These meetings offer the participants an opportunity for engagement; from suppliers to shipbuilders, to improve processes, streamline production, enhance schedule performance, and reduce cost.

NIICAP Forum

What Does a Facility Owner Look for in a Quality Coating Contractor?

*George R. Brown Convention Center, Room 350 C
Wednesday, March 18, 2 to 4 p.m.*

Panel Discussion Featuring: Connor McManus, TC Energy, Canada; Harry Tsapraillis, Enbridge, Canada; Brooke A. Divan, Director of Field Relations Paint Technology Center, US Army Corps of Engineers; Samir Degan, NIICAP representative to India/India Oil, India; Jeremy Day, Blastco, USA (contractor representative)

Join this panel discussion organized by NIICAP (NACE International Institute Contractor Accreditation Program) to hear what facility owners look for in a quality coating job and in a contractor. The importance of quality work and correct specifications are directly tied to ROI on any asset, given their impact on the life of structures, facilities, pipeline, etc. Use of proper surface preparation, application, and inspection techniques lead to the highest quality work and extends the life of the asset, while reducing project costs by avoiding rework and other job non-conformances.

cKit™ Training for Sections

*George R. Brown Convention Center, Room 381 AB
Wednesday, March 18, 2020, 3:30 to 5 p.m.*

The NACE Foundation would like to invite you to join us for a drop-in event at CORROSION 2020 to introduce you to the NACE Foundation's cKit™ (Corrosion Toolkit) and the experiments included in it. We will have the experiments from the cKit on display along with two of our master instructors to help guide you through the kits, how they can be used locally in your community, and how to help conduct the experiments. Please reserve some time on your CORROSION calendar for the afternoon of Wednesday, March 18th. For more information, please contact Brandy Adams at brandy.adams@nace.org or +1 281-228-6478.

NACE-SSPC Discussions Town Hall

*George R. Brown Convention Center, Room 332 E
Thursday, March 19, 9 to 10:30 a.m.*

Executive leadership and the Presidents from both organizations will provide an update on recent discussions with SSPC, The Society for Protective Coatings, related to a possible combined organization. Each town hall meeting is intended to provide members with information about the proposal, solicit feedback, and answer questions.

Conference Terminology

Conference Terminology Key

The following guide is included to help CORROSION 2020 attendees identify the different types of meetings and events held at this conference.

Technical Symposia

These are formal technical sessions in which authors of the technical conference papers present their work.

Forums

These are generally panel discussions made up of industry leaders that focus on a subject. They are typically two hours in length and consist of informal presentations as well as opportunities for questions and answers.

Training Sessions and Workshops

These are sessions that impact specific, practical knowledge on a single subject.

Meetings

Technical Committee Meetings

These are meetings that are required by individual technical committee chairs to carry out the specific goals and work of the committee. They are classified into the following:

- Specific Technology Groups (STGs): Administrative committees in charge of a number of Task Groups and Technology Exchange Groups; these are the voting groups for NACE International standards and technical committee reports.
- Task Groups (TGs): Small committees that develop standards and technical committee reports. They may be working on drafts or discussing votes received on a draft standard or report.
- Technology Exchange Groups (TEGs): Committees that host Technical Information Exchanges (TIEs) and sponsor symposia. TIEs consist of either formal or informal presentations or discussions of new technologies and solutions to corrosion problems.

These meetings are open to all attendees. Being a member of NACE or a member of the committee is not required.

Administrative Meetings

Members of administrative committees meet to discuss and plan for various functions of NACE. These committees are made up of NACE members, with a headquarters staff liaison and other staff members.

ISO Meetings

NACE administers six ANSI-accredited U.S. Technical Advisory Groups (TAGs) to International Organization for Standardization (ISO) technical committees. The TAGs review drafts of ISO standards and submit the U.S. vote. There is also a Maintenance Panel for NACE MR0175/ISO 15156, a NACE/ISO standard, and sometimes ISO technical committees meet at the conference.

Other Meetings

These are meetings that do not fall under any of the meeting types listed above, or under any broad heading.

ANNUAL CONFERENCE PROGRAM COMMITTEE

ACPC CHAIR

Dharma Abayarathna
Pipeline Integrity Resources

ACPC VICE CHAIR

A.J. Gerbino
OLI Systems, Inc.

ACPC PAST CHAIR

Kimberly-Joy Harris
Enbridge

PROGRAM COORDINATORS

Chris Aldrich
Marathon Pipeline LLC

Dawn Eden
Deepwater Corrosion Services

Krista Heidersbach
Phillips 66

Leandro Etcheverry
3E Plus

Sridhar Srinivasan
Honeywell Process Solutions

ASSOCIATE PROGRAM COORDINATORS

Kurt Lawson
Mears Group

Javier Balma
Walter P Moore

Brian Chambers
Shell Global Solutions

Elizabeth Trillo
Southwest Research Institute

TCC CHAIR

Roy Fultineer
Roberts Corrosion Services

TCC VICE CHAIR

Kat Coronado
International Paint

RESEARCH COMMITTEE VICE CHAIR

Mike Hurley
Boise State University

EX-OFFICIO MEMBER

Lindsay Enloe

Nominate Yourself to Lead the Section!

The NACE Section Elections process has changed.

This process is completely online for the 2020-2021 Section Elections!

Nominate yourself for any Section Officer position in just three easy steps:

1. Log into the NACE website at www.nace.org/volunteer between March 15-31, 2020.
2. Search for the Section Officer volunteer opportunities for your Section.
3. Select an Opportunity and click "Apply Now"—it's THAT easy!

If you have ever wanted to volunteer to help create connections among your Section members while helping to advance the corrosion industry—now is the time to do it!

Find out more information at
www.nace.org/volunteer
or contact your Section Officers
with any questions.



Give your career an advantage

with the **Protective Coatings Specialist Certification**
from the NACE Institute!

The NACE Institute Protective Coatings Specialist Certification shows employers and specifiers that you have attained the highest coating certification offered by the NACE Institute.

Testing for this certification is now computer based and can be taken at one of 5,000 Pearson Vue testing centers around the world

Visit naceinstitute.org/pcs to get started.





CORROSION

Conference & Expo **2020**
March 15-19 • Houston, Texas

Today's Students Tomorrow's Solutions

CORROSION 2020 Student Activities

Monday, March 16

Student Poster Orientation

9 to 10:30 a.m. • Room 320 A-C

The Orientation is mandatory for those students participating in the Student Poster Session (SPS).

Travel Assistance Certificate pick-up is available during orientation.

NACE U Student Meeting

1 to 2 p.m. • Room 350 D-E

Travel Assistance Certificate pick-up is available during the student meeting.

Student Poster Session (SPS)

5 to 7 p.m.

Exhibit Hall - Student Lounge Area

Tuesday, March 17

Headshot Station

8 a.m. to 5 p.m.

Student Poster Session (SPS)

Noon to 1:30 p.m. • Exhibit Hall - Student Lounge Area

Career Fair

1 to 5 p.m. • Room 381B

NACE Foundation Scholarship Awards & GenNext Bash

7 to 8 p.m. • 8 to 11 p.m. • House of Blues

Wednesday, March 18

Student Poster Session Award Winners Announced

12:30 p.m. • Exhibit Hall - Student Lounge Area

NACE Foundation Travel Assistance Distribution/Redemption

9 a.m. to 2 p.m. at Registration

For more information, visit

www.nacecorrosion.org





KEYNOTE SESSION

Jill Ellis | Monday, March 16 | 3:30 to 4:30 p.m. | General Assembly B

World Cup Success Strategies—What Risks Will You Take to Make a Winning Team?

NACE International is pleased to announce Jill Ellis, former head coach of the 2019 championship United States Women's National Soccer Team (USWNT), as keynote speaker for CORROSION 2020. Before 2015, the USWNT had already won more than five World Cup Championships or Olympic Gold Medals; some coaches may have thought "I have the greatest team—what must I do to sustain our greatness the next World Cup?" Coach Ellis took a different approach.

She took steps to reach an even higher potential, including making changes to a championship roster. These changes were often criticized by media and former players. New players didn't always appear to be a great fit with the existing players and weren't seen as collaborative. Hear firsthand how Coach Ellis used decisive strategies to heighten team excellence by selecting players with the greatest impact—not fit, not collaboration, but impact—and then coached the diverse group to work as a team. It was risky, and it delivered.

In 2015 and 2019, the USWNT won the World Cup Championship under the leadership of Ellis, making her the first female coach to win back-to-back World Cup Championships, and only the second coach to do so. After being named head coach of the USWNT on May 16, 2014, Ellis largely rebuilt the team and transformed its approach to the sport. In less than 13 months, she led the team to its 2015 World Championship victory.

At the end of 2015, along with other honors, Ellis was named the FIFA Women's World Coach of the Year for Women's Soccer, marking the first time an American had been bestowed with that honor. She was also named the Confederation of North, Central American and Caribbean Association Football (CONCACAF) Female Coach of the Year, and the USA team won the ESPY for Team of the Year, 2015.

Ellis took on the position as head coach of the USWNT after serving as director of development for the U.S. Women's National Youth Teams since January of 2011. Prior to that, she was head coach of the UCLA Women's Soccer team and led the Bruins to eight NCAA Final Four competitions, including seven in a row from 2003-2009, and won six straight conference titles from 2003-2008. She finished her time at UCLA with a record of 229-45-14. Ellis, who was also head coach at the University of Illinois, has an all-time collegiate coaching record of 248-63-14 and is currently the only female to hold the United States Soccer Federation Professional License for coaching.

Publish your research at the world's largest corrosion conference & expo

The 2021 Technical Symposium Call for Papers is **Now Open**
Closes: **May 11th, 2020**

Today's Research, Tomorrow's Technology

CORROSION
Conference & Expo **2021**
April 18-22 • Salt Lake City, UT
Salt Palace Convention Center

Submit your paper today:
nacecorrosion.org/call-for-abstracts



Special Lectures



FEATURED SPEAKER

Ryan Sitton | Monday, March 16 | 8 to 9:30 a.m. | Room 310 ABC

NACE International is pleased to announce Texas Railroad Commissioner (RRC) Ryan Sitton as a featured speaker at CORROSION 2020. This will be Commissioner Sitton's first presentation to NACE members, and he'll update us on the future of the oil and gas industry in the State of Texas and provide different perspectives on regulatory elements of the industry.

Sitton was elected Texas Railroad Commissioner in 2014. The RRC has nothing to do with trains—it regulates the strong and vital energy development sector in the Lone Star State. Sitton is an energy expert and is the first engineer elected to the commission in over 50 years. He brings his real-world leadership and expertise to every aspect of the agency's operations. He is the youngest-ever

Distinguished Graduate of Texas A&M University and was named to the *Houston Business Journal's* 40 under 40 list.

During this moderated discussion, Commissioner Sitton will discuss the latest trends, policy proposals, and ways that NACE can work with the RRC to ensure the highest levels of public safety in the oil and gas industry. The forum will also include discussion on NACE standards that are critical to key RRC policies.

Sitton is an inventor, engineer, entrepreneur, and public servant. He and his wife Jennifer built their business, PinnacleART, from the ground up in 2006 and have grown it to more than 900 employees and revenues of over \$100 million. PinnacleART designs, implements, and maintains comprehensive asset reliability and integrity programs.



PLENARY LECTURE

William H. Hartt, Ph.D. | Tuesday, March 17 | 8 to 9 a.m. | General Assembly B

William H. Hartt, Ph.D., PE, FNACE, Professor Emeritus, Department of Ocean Engineering, Florida Atlantic University-SeaTech Campus, Dania Beach, Florida 33004 USA

Dr. Hartt received a Bachelor of Science degree from Virginia Tech in 1961 and a Ph.D. from the University of Florida in 1966, both in metallurgical engineering. Subsequent to two years at the Army Materials and Mechanics Research Center, he joined the Department of Ocean Engineering at Florida Atlantic University, where he served as director of the Center for Marine Materials and is now Professor Emeritus. Dr. Hartt has been a member of NACE International for 51 years and has chaired what was the Cathodic Protection in Sea Water and Corrosion in Concrete Materials Committees.

He has published more than 200 papers in either journals or conference proceedings and has been designated a NACE International Fellow and recipient of the Frank Speller Award. Dr. Hartt continues to serve as a consultant to government and private sector entities.

Corrosion, Fracture, and Failure Issues for Post-Tensioned Concrete Bridge Structures

The inception of post-tensioned (PT) concrete dates to less than one century ago, and the technology has subsequently evolved in response to integrity issues as these have been identified. While individual high-strength steel wires or threaded bars are sometimes employed, spiral wound seven wire strand conforming to ASTM A416 in plastic duct is more common. The focus here is upon PT in concrete bridge structures where there is an array of ducts within concrete segments, each with multiple strands that, subsequent to stressing, are grouted. This results in compressive stresses in the concrete at locations that otherwise would be in tension and subject to cracking. Particular attention is given to causes and occurrences of wire and strand corrosion and resultant tendon failure. Such corrosion most commonly occurs from bleed water, water entry through grouting ports or deck drains, or the presence of what has been termed "soft grout;" that is, grout that is segregated and moist with the presence of free water and relatively high sulfate concentrations. Tendon failures in the latter case have been reported as soon as two years post-construction. In response to this, a modeling approach that projects the onset and subsequent rate of wire and strand fractures and tendon failures, given statistics for individual wire/strand corrosion rate, is described along with the role of influential factors. A foremost challenge moving forward is the development of technologies for, first, identifying and quantifying corrosion damage and, second, controlling any ongoing corrosion. Approaches for accomplishing this are described.



WILLIS RODNEY WHITNEY AWARD LECTURE

Prof. Dr. Günter Schmitt | Tuesday, March 17 | 11:15 to 11:45 a.m. | Room 310 ABC

The Whitney Award recognizes public contributions to the science of corrosion.

2020 Recipient:

Prof. Dr. Günter Schmitt, IFINKOR-Institute for Maintenance and Corrosion Protection Technologies nfp-Ltd.

Abstract: Flow-Induced Localized Corrosion – Mechanistic Aspects and Mitigation

In corrosion systems which form protective films or scales, flow-induced localized corrosion (FILC) can be initiated above critical flow intensities which provide near-wall turbulence elements with hydrodynamic energies in the order of Megapascals, high enough to crack and spall protective films or scales. The quantification of critical flow intensities in terms of wall shear stresses, i.e. friction forces in flow direction parallel to the solid wall, is inappropriate, because wall shear stresses, encountered in technical flow systems range in the order of some 10 Pa and, hence, are several orders of magnitude too small. This prompted our development of the "Freak Energy" approach. It assumes that high-energy near-wall turbulence elements create singular "freak" events in which volume elements of the fluid impinge (like freak waves) the surface vertically with energy densities in the MPa- to GPa-range, i.e. higher than the fracture stresses of protective scales. A methodology was developed to quantify the energy density of turbulence elements electrochemically with microelectrodes. It was proved then that corrosion inhibitors can reduce the impact energy of such freak events below the fracture stress of scales thus preventing initiation of FILC. Mechanistically this is explained by flow-induced enrichment of inhibitor molecules in or near the viscous sublayer of the turbulent boundary layer causing a damping effect for impinging near-wall turbulence elements. The critical flow intensity to initiate FILC can be significantly increased with appropriate inhibitors and appropriate inhibitor concentrations. Thus, corrosion inhibitors can function as drag reducers.



FRANK NEWMAN SPELLER AWARD LECTURE

Prof. Roy Johnsen | Wednesday, March 18 | 11:15 to 11:45 a.m. | Room 310 ABC

The Speller Award Lecture recognizes contributions to the practice of corrosion engineering.

2020 Recipient:

Prof. Roy Johnsen, Norwegian University of Science and Technology

Abstract: Hydrogen Stress Cracking of Corrosion Resistant Alloys – experiences and challenges

The use of Corrosion Resistant Alloys (CRA) in the oil & gas industry have increased dramatically during the last 20 years due to the development of subsea production systems and connecting in-field flowlines. When exposed subsea, all units are cathodically protected through connection to sacrificial anodes – often combined with a coating system - to prevent external corrosion. Since part of the cathodic reaction is hydrogen reduction, hydrogen will develop on the protected surface. A portion of hydrogen will be absorbed in the material to be protected and contribute to increased probability of initiation of hydrogen stress cracking (HSC). In 1996, a forged subsea HUB made from 25Cr duplex stainless steel suffered from HSC during hydrotesting after six months exposure subsea on the Foinaven field on the UK sector of the North Sea. This was prior to production startup. Shortly after, several other HSC failures on subsea flowlines and components made from 13% Cr supermartensitic stainless steel and 22Cr/25Cr duplex stainless steels were reported from the UK- and Norwegian sector of the North Sea. These failures initiated several R&D projects to create a more fundamental understanding of the phenomena and to establish engineering guidelines to reduce the probability of HSC to occur. The recommended practice DNV GL-RP-F112 is one important engineering guideline established through one research project. Despite all these R&D projects, HSC failures are still reported from the industry. This presentation will i) discuss some field failures with corresponding failure investigations, ii) describe important output from published R&D projects, and iii) give a status of what we know today and what is still unknown. The presentation will have a main focus on 22Cr/25Cr duplex stainless steel but will also include experiences with Ni-alloys like Alloy 625, Alloy 718 and Alloy 725. Originally, it was assumed that these Ni-alloys were immune to HSC, however, field experiences and laboratory testing have shown that these alloys also can suffer from HSC when exposed to cathodic protection.

2020 NACE Association Awards

R.A. BRANNON AWARD

The R.A. Brannon Award is the signature award of the association. It recognizes a current member of NACE International whose outstanding service has contributed to the development and improvement of the association that resulted in promotion of the objectives of NACE.

The 2020 R.A. Brannon Award recipient is Bruce Cookingham.

For nearly four decades, Bruce Cookingham has been contributing to NACE International as a member, technical contributor, leader and advocate. His contributions have been significant, sustained, and have improved corrosion practices and education across the industries served by the association. As a dedicated member, Cookingham has served the association through technical committees, educational committees and on the boards for both NACE International and the NACE Foundation. During his 39-year NACE membership, he has co-authored and presented numerous technical papers at various NACE conferences and symposia in areas of pipeline integrity, internal corrosion, microbiologically influenced corrosion, monitoring techniques, and integrated corrosion management strategies. Cookingham has given his time, energy, leadership and passion to NACE.

Cookingham is with DNV GL in Canadian Lakes, Michigan, USA.



A.B. CAMPBELL AWARD

The A.B. Campbell Award is given in recognition of the most outstanding paper by a young author published in *Materials Performance* or *CORROSION* each year.

The 2020 A.B. Campbell Award recipient is Raymond J. Santucci Jr., for his paper: "Electrochemical Diagnostic Cycle Testing of Magnesium and Magnesium Oxide-Pigmented Primers on AA2024-T351," *Corrosion*, 74, 1 (2018): p. 96-111.

Santucci is with United States Naval Academy in Annapolis, Maryland, USA.



CORROSION BEST PAPER AWARD

The *CORROSION* Best Paper Award is given in recognition of the most outstanding manuscript published in *CORROSION* for the preceding calendar year.

The 2020 *CORROSION* Best Paper recipients are Siavash Jafarzadeh, Ziguang Chen, and Florin Bobaru for their paper, "Peridynamic Modeling of Repassivation in Pitting Corrosion of Stainless Steel," *Corrosion*, 74, 4 (2018): p. 393-414.

Jafarzadeh is with University of Nebraska-Lincoln, Lincoln, Nebraska, USA.

Chen is with Huazhong University of Science and Technology, Wuhan, Hubei, China.

Bobaru is with University of Nebraska- Lincoln, Lincoln, Nebraska, USA.



2020 NACE Association Awards

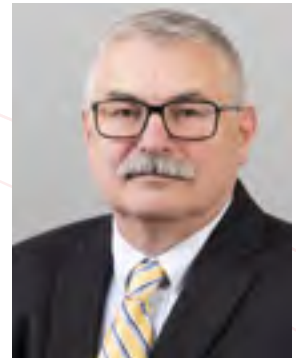
T.J. HULL AWARD

The T.J. Hull Award is given in recognition of the outstanding contribution to NACE in the field of publications.

The 2020 T.J. Hull award recipient is Raul B. Rebak.

For almost 30 years, Rebak has contributed to over 130 publications during his tenure with NACE International. With a diverse industry knowledge that goes from Materials, Metallurgy to Scanning Electron Microscopy, among other areas. Raul Rebak has provided highly cited publications in a wide variety of disciplines from chemical process industry to upstream oil and gas and more extensively on nuclear materials, both in the fields of power generation and waste management. Rebak has contributed his time extensively as a symposium organizer, committee chair and especially in the Reference Publication Committee where he chaired for three years and edited more than fifty technical reports.

Rebak is with GE Research, Schenectady, New York, USA.



F.N. SPELLER AWARD

The F.N. Speller Award is given in recognition of significant contributions in the field of corrosion engineering.

The 2020 F.N. Speller Award recipient is Roy Johnsen.

Roy Johnsen has made outstanding and continual scientific contributions in the fields of cathodic protection and seawater corrosion science and engineering. Johnsen is also recognized for developing alloys for seawater and hydrocarbon applications to supply the oil and gas industry with materials that are more robust and corrosion resistant than before. Johnsen's work is devoted to the development of reliable test methods to document corrosion properties under field conditions. Johnsen has published thirty-six works in peer-reviewed journals and more than 160 papers for international conference proceedings. Johnsen has contributed to the development of high impact industrial technologies, advanced scientific researches, and carried out unrelenting educational activities. His leadership and commitment to the corrosion community is proven by his record of sustained performance in the industry.

Johnsen is with Norwegian University of Science and Technology (NTNU), Trondheim, Norway.



H.H. UHLIG AWARD

The H.H. Uhlig Award is given in recognition of outstanding effectiveness in post-secondary corrosion education as exhibited by an educator who excites their students through outstanding and innovative teaching in corrosion.

The 2020 H.H. Uhlig Award recipient is Marc Singer.

Professor Marc Singer is a highly accomplished academic researcher, dedicated to corrosion education through conducting cutting-edge research related to the upstream oil and gas industry. Dr. Singer rebuilt the materials analysis laboratory for the Chemical Engineering Department and developed a "hands-on" elective course for undergraduate students. The course he developed involves determining physical, chemical, mechanical, and microstructural properties of materials after different heat treatment methods and then includes testing corrosion behavior of the materials. Since the Fall of 2013, Dr. Singer has mentored nineteen undergraduate, five Masters, and eleven Doctoral researchers on projects related to corrosion in shale gas production, top-of-the-line corrosion in gas transport systems, corrosion inhibition, and degradation of "3D-printed" metals.

Singer is with Ohio University, Athens, Ohio, USA.



2020 NACE Association Awards

W.R. WHITNEY AWARD

The W.R. Whitney Award is given in recognition of significant contributions to corrosion science.

The 2020 W.R. Whitney Award recipient is Prof. Dr. Günter Schmitt.

Over the past 40 years, Dr. Günter Schmitt has made outstanding contributions to corrosion science in a variety of fields. His inventions and innovations are based on sound scientific knowledge and fundamental understanding of corrosion and corrosion control phenomena that resulted in several time-tested and proven field techniques to control corrosion in challenging operating conditions. Dr. Schmitt has published more than 300 papers and educated more than 500 students, many of which are now in key leadership positions within the industry.

Schmitt is with IFINKOR-Institute for Maintenance and Corrosion Protection Technologies nfp-Ltd., Iserlohn, Northrhine-Westfalia, Germany.



DISTINGUISHED ORGANIZATION AWARD

The Distinguished Organization Award is given in recognition of outstanding contributions by an organization to the field of corrosion science or engineering.

The 2020 Distinguished Organization Award recipients are the Chinese National Marine Corrosion Protection Engineering Research Center, Petroleum Development Oman, and Sandvik Materials Technology.



The Chinese National Marine Corrosion Protection Engineering Research Center (NMCPERC),

Institute of Oceanology, Chinese Academy of Sciences, is a nonprofit research organization and has been working on marine corrosion and bio-fouling, as well as its control with significant research achievements made and innovative techniques developed since the 1960s. Currently, it is the well-recognized hub of marine corrosion and bio-fouling research in China, and persists as an international research center in establishing long-term partnerships with well-known research institutes and companies worldwide.



Petroleum Development Oman (PDO) is the leading exploration and production company in the Sultanate of Oman. PDO delivers the majority of the country's crude oil production and natural gas supply, but above all we focus on delivering excellence, growth and sustainable value creation within and well beyond our industry. PDO operates in some of the most complex and challenging oil and gas fields – and is among the world leaders in Enhanced Oil Recovery (EOR) techniques, pioneering the use of polymer, steam and miscible gas injection on a full-field scale.



Sandvik Materials Technology is a business area within Sandvik Group, a world-leading developer and manufacturer of products in advanced stainless steels and special alloys for the most demanding environments. Sandvik Materials Technology's products and services contribute to their customers' productivity, reliability, and cost efficiency while often reducing the environmental impact in a wide variety of industry segments. In partnership with customers, they jointly develop products and materials that meet the challenges of the future.

Sandvik Materials Technology's Corrosion Resistant Alloys (CRA) contribute to longer service life and reduced maintenance. Sandvik SAF 2707 HD- a hyper duplex material; a high-alloy duplex steel with a PRE value of min. 48*. It is developed for critical applications in oil refineries and other process industries and has very high strength and excellent corrosion resistance in severe applications, such as chloride containing environments, tropical seawater and corrosive environments in chemical, petrochemical, and processing industries.

2020 NACE Association Awards

DISTINGUISHED SERVICE AWARD

The Distinguished Service Award is given in recognition of distinguished service to NACE by an elected or appointed member, or by a group.

The 2020 Distinguished Service Award recipients are:

George Waid – *Corrosion Testing Services, Taft, Tennessee, USA*

Recognized for leadership and dedication demonstrated in organizing, developing test methodology and chairing NACE TG085 (NACE Standard Method TM0177) for more than 35 years.

Hasan Sabri – *Kuwait Oil Company, Ahmadi, Kuwait*

Recognized for his leadership and commitment in the growth of NACE International in Kuwait.

Manohar Narayana – *Self Employed, Bengaluru, India*

Recognized for his efforts within the NACE Gateway India Section, supporting CORCON and his service to the oil and gas industry.

Michelle Saucedo – *ACCI, Gainesville, Virginia, USA*

Recognized as a dedicated Section officer who devotes her personal time for Section activities and organizational tools for the NACE San Francisco Section.

Dr. Narendra Kumar – *M/S Torrent Gas PVT Limited, Lucknow, India*

Recognized for his leadership and commitment in the growth of NACE International in North India.

Richard T. Hill – *Consultant, Houston, Texas, USA*

Recognized for his leadership and dedication demonstrated in organizing, developing HIC test methodology and chairing NACE TG082 (NACE Standard Test Method TM0284) for over 40 years.

Richard Norsworthy – *Polyguard Products Inc., Ennis, Texas, USA*

In recognition for training thousands of corrosion personnel and new instructors for NACE as well as serving as an expert witness for corrosion issues.

Thomas L. Ladwein – *Steinbeis Transferzentrum Korrosion und Werkstoff, Augsburg, Germany*

In recognition of his professional achievements, specifically his outstanding contributions in academia to the understanding of corrosion and materials performance in the chemical and petroleum industry and his commitment to the success of NACE International.

TECHNICAL ACHIEVEMENT AWARD

The Technical Achievement Award is given in recognition of technical achievement in corrosion engineering that had significant impact on the practice of corrosion control, or on the enhancement of the profession of corrosion engineering. Recognized achievements can be in the areas of research, engineering, or education.

The 2020 Technical Achievement Award recipients are:

Dr. Hisashi Amaya – *Nippon Steel Corp., Wakayama, Japan*

Recognized for his many contributions to corrosion engineering including application of high-performance materials for oil and gas applications.

Dr. Sunder Ramachandran – *Baker Hughes, Sugar Land, Texas, USA*

Recognized for outstanding contributions to development of corrosion inhibitors for deepwater systems, foamers for unloading liquid from gas wells and pipelines, and new H₂S scavengers.

Dr. Torben Lund Skovhus – *VIA University College, Horsens, Denmark*

Recognized for advancing the understanding and control of microbiologically influenced corrosion (MIC) through education, publication, research, conferences, standards, and his work in technical societies.

Dr. Ulf Kivisakk – *AB Sandvik Materials Technology, Sandviken, Sweden*

Recognized for his professional achievements, specifically his contributions to the understanding of nickel and stainless-steel performance in marine application, in the pulp & paper and petroleum industry, and his commitment in the organization of NACE International.

2020 NACE Association Awards

NACE FELLOW HONOR

The honor of NACE Fellow is given in recognition of distinguished contributions in the fields of corrosion and its prevention. It was also established to develop a broadly-based forum for technical and professional leaders to serve as advisors to the association.

The 2020 NACE Fellow honorees are:

Abdelmounam Sherik – Saudi Aramco, Dhahran, Saudi Arabia

For his contribution in understanding the origin of black powder, in developing science of its formation, and in implementing strategies in controlling black powder in gas pipelines.

Behzad Bavarian – California State University, Northridge, California, USA

For outstanding contributions to the understanding of corrosion and material performance in infrastructure, power plants, and oil and gas, his significant role in mentoring people and his superlative professionalism to developing innovative solutions and standards to mitigating corrosion. He has also had a continued and influential role at NACE International in aiding corrosion education.

John Peter Nicholson – Cathodic Technology Limited, Ontario, Canada

For outstanding innovative instrumentation for field corrosion assessment of pipelines and concrete structures, and pioneering contributions to advancement of cathodic protection for reinforced concrete.

Michael P. Brady – UT-Battelle/Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

For leading the development of the alumina-forming austenitic family of heat-resistant stainless steels.

Moavin Islam – Corrosion Forensics LLC, Ashburn, Virginia, USA

In recognition of a lifetime of accomplishments in developing corrosion control technology, leadership of numerous symposia, and initiatives to train the next generation.

Paul Su – FM Global, Norwood, Massachusetts, USA

Recognized for significant contributions in the development of novel techniques, testing standards, and products mitigating corrosion of fire sprinkler systems, and in corrosion control for equipment loss prevention.

Dr. Pedro Castro Borges – Cinvestav del IPN, Unidad Mérida, Mérida, México

Recognized for outstanding contributions to advanced understanding of corrosion in concrete in tropical environments, conceptual service life models, prevention of corrosion in concrete and development of durable infrastructure.

Sandra E. Hernandez – Chevron, Houston, Texas, USA

In honor of her 25+ years of work to define, predict, and prevent corrosion in oil and gas production environments which has helped protect the environment by preventing corrosion incidents on several continents.

Sannakaisa Virtanen – University of Erlangen-Nürnberg, Erlangen, Germany

For sustained excellence in the study of corrosion fundamentals, in particular passivity and biocompatibility, and for leadership in the field.

Steven C. Kung, Ph.D. – Electric Power Research Institute, Charlotte, North Carolina, USA

Recognized for seminal contributions to addressing corrosion issues in the power generation industry, particularly by understanding and modeling fireside corrosion in coal-fired boilers.

Thodla Ramgopal – DNV GL, Dublin, Ohio, USA

Recognized for development of advanced test techniques for the selection, and qualification of corrosion resistant alloys and steels in high pressure, high temperature, oil and gas systems.

Thomas L. Ladwein – Steinbeis Transferzentrum Korrosion und Werkstoff, Augsburg, Germany

Recognized for his outstanding and sustained research of microstructure and surface effects on stainless steels, which has facilitated significant extension of safe materials use in the oil and gas and chemical industries, and for his innovative, holistic approach to education.

Venkatesan Ramasamy – National Institute of Ocean Technology, Chennai, India

Recognized for significant and sustained contributions to marine corrosion engineering and biocorrosion mitigation on marine structures for the coastal, deep ocean and polar waters.

Prof. Dr.ir. Walter F. Bogaerts – KU Leuven, Leuven, Belgium

Recognized for his outstanding academic work on corrosion engineering, his pioneering role in developing computerized corrosion information systems and his contributions to NACE in Europe.

Xiaogang Li – University of Science and Technology Beijing, Beijing, China

Recognized for his significant contribution to the fundamental understanding of corrosion of steels, the design of corrosion resistant steels, and the development of corrosion big-data approaches.

2020 NACE Association Awards

NACE FOUNDATION FOUNDERS AWARD

The Founders Award recognizes exceptional contributions and meritorious work by an individual on behalf of the NACE Foundation. To be meritorious, the work chosen must significantly influence the education of students and educators in corrosion science and engineering.

The 2020 Founders Award recipient is Doug Moore.

During his 39-year tenure with NACE, Doug has held several leadership positions, including Chair of the Finance Committee, Chair of the Certification Committee, and Vice-Chair of the Policy Committee, in addition to various other technical and administrative committees.

Doug was elected to the NACE Foundation Board of Directors in 2012 and served until 2019. During his service, Doug accepted the challenging role as Chair of the Program Committee, continuously working with staff to evaluate and update programs to ensure successful execution and growth. In addition, he served as Vice-Chair of the Governance Committee, spending innumerable hours reviewing policies and making recommendations for improvement, as well as ensuring expectations outlined in the bylaws were being met by the board.

Leading by example, Doug was a champion in seeking fundraising support for the NACE Foundation, including fostering the partnership with his own company, Carboline, who generously donated \$40,000 annually in support of the Foundation's cKit™ (Corrosion Toolkit).

Doug was an active and well-respected member of the Foundation board, providing thoughtful and constructive insight that helped shape the direction of the Foundation over the years. Through his leadership, he set an example for other board members to follow. Doug remains an active supporter of the NACE Foundation through personal giving and has maintained his status on the Foundation's Honor Roll of Donors. On behalf of the NACE Foundation Board of Directors, we are humbled and honored to present Doug Moore with the 2020 Founders Award.

Doug Moore currently serves as Director – Global Product Line for Carboline Company. He has over 35 years' experience in corrosion and corrosion control, with a focus in the area of protective coatings, and is a NACE Institute Certified Corrosion Specialist and Coating Inspector.



NACE 50-YEAR MEMBERS

NACE honors its members who will celebrate their 50th year of membership in 2020:

Arturo Bronson
Harold L. Gordon
John G. Chase
Lyman A. Scribner Jr.
Robert J. Maynard
Stephen A. Jones
Steve Nikolakakos
Stuart H. Groom
Thomas J. Keys
Travis McKenzie
William C. Robinson

**NOMINATE A
NACE LEADER
TODAY!**

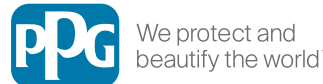
The deadline for 2021
award nominations is
June 30, 2020.

www.nace.org/awards

Thank You to Our Diamond Corporate Members



PETRONAS



Research Institute of Lanzhou PetroChemical Company



A Sempra Energy utility



STREET DART®

GROUND LEVEL TEST STATION RMU



You'll never need
to stop traffic again

BORIN
MANUFACTURING, INC.

www.borin.com

Patent pending .

RD-6[®]

Coating System

Visit our **BOOTH #1841**
at **NACE 2020** in **Houston**
MARCH 15-19 2020

Non-Shielding Corrosion Control Coatings for the Pipeline Industry



Polyguard's RD-6 has been used in the North American rehab and girth weld market since 1988. RD-6 differentiates itself through its speed, simplicity and proven performance record.

For more information visit our website www.Polyguard.com/pipeline



Polyguard[®]

Innovation based. Employee owned. Expect more.

281-580-5700
www.Polyguard.com

FOLLOW US ON OUR SOCIAL NETWORK



MONDAY, MARCH 16			
ADVANCED ELECTROCHEMICAL METHODS - RESEARCH IN PROGRESS			
CHAIR: SEBASTIAN THOMAS / VICE CHAIR: REBECCA SCHALLER			
8 A.M. TO 3:30 P.M. - ROOM 342 D			
SPONSORING COMMITTEE: RAC			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15619	The Reactivity of Aluminum Alloys During Pre-Treatment Processes by Atomic Emission Spectroelectrochemistry (AESEC)	Jeanette Torrescano Alvarez (Institut de Recherche Technologique Matériaux, Métallurgie et Procédés (IRT M2P)), Kevin Ogle (Chimie-ParisTech, Université PSL), Rémi Viroulaud (Institut de Recherche Technologique Matériaux, Métallurgie et Procédés (IRT M2P))
8:35 a.m.	C2020-15624	How do Alloy Components Interact? Measuring In Situ the Kinetics of Passive Film Formation and Dissolution with Elemental Resolution	Kevin Ogle (Dr. Kevin Ogle Professor), Xuejie Li (Chimie ParisTech)
9:00 a.m.	C2020-15669	Delineation of Partial Anodic and Cathodic Reactions in Corrosion Processes Using Electrochemical Impedance Spectroscopy	Digby Macdonald (University of California at Berkeley), Elmira Ghanbari (University of California at Berkeley), Jie Qiu (University of California at Berkeley)
9:25 a.m.	C2020-15686	Chemical Imaging of Reactive Surfaces Using Microsensors as Tips in Scanning Electrochemical Microscopy: Applications in Corrosion Research and Protection	Ricardo Souto (Universidad de La Laguna), Javier Izquierdo (Universidad de La Laguna), Juan Santana (Universidad de Las Palmas de Gran Canaria)
BREAK			
10:10 a.m.	C2020-15671	A Combinatorial Study into the Role of Magnesium in Preventing Organic Coating Cathodic Delamination from Zinc Galvanized Steel	Natalie Wint (College Of Engineering), Geraint Williams (Swansea University), Neil McMurray (Swansea University)
10:35 a.m.	C2020-15685	Local Electrochemical Methods to Study the Correlation Between Microstructure and the Corrosion of Metals	Yaiza Gonzalez-Garcia (Technical University of Delft)
11:00 a.m.	C2020-15640	Mg-Sn Primer Coatings for the Protection of AA2024 Aerospace Alloys	Carol Glover (University of Virginia), John Scully (University of Virginia), Taylor Cain (Wilsdorf Hall)
11:25 a.m.	C2020-15695	Novel In-Situ Methods for Real-Time Monitoring of Corrosion Processes	Sannakaisa Virtanen (University Erlangen Nuremburg)
LUNCH			
1:00 p.m.	C2020-15679	Application of Localized Electrochemical Techniques to Study the Effect of Crystallographic Orientation on Passive Layer and Corrosion Behavior of α Ferritic Steels	Aytac Yilmaz (Delft University of Technology), Arjan Mol (Delft University of Technology), Cem Ornek (KTH Royal Institute of Technology), Jilt Siestma (Delft University of Technology), Konstantina Traka (Delft University of Technology), Sven Plentincx (Vrije Universiteit Brussel), Tom Hauffman (Vrije Universiteit Brussel), Yaiza Gonzalez-Garcia (Technical University of Delft), Ziyu Li (Delft University of Technology)
1:25 p.m.	C2020-15681	In-situ Time-lapse Scanning Kelvin Probe Force Microscopy – A Novel Approach towards Understanding Localized Corrosion of Aluminum Alloys	Yan Han Liew (NUS Graduate School of Integrative Sciences and Engineering (NGS)), Cem Ornek (KTH Royal Institute of Technology), D Blackwood (National University of Singapore), Dominique Thierry (French Corrosion Institute), Jinshan Pan (KTH Royal Institute of Technology), Sudesh Wijesinghe (Singapore Institute of Manufacturing Technology)
1:50 p.m.	C2020-15763	Utilising a Bespoke In situ X-ray Tomography Cell to Characterise In Real Time the Formation, Evolution and Breakdown of Corrosion Scales on X-65 Pipeline Steel in CO ₂ Saturated Environments	Rafa Leiva-Garcia (University of Manchester), Adam Anders (University of Manchester), Brian Connolly (University of Manchester), Christoph Rau (Diamond Light Source), Christopher Muryn (University of Manchester), Grace Burke (University of Manchester), Malte Storm (Diamond Light Source), Philip Withers (University of Manchester), Sheetal Handa (BP Exploration - Sunbury), Silvia Vargas, Tristan Manchester (University of Manchester), William Pearson (University of Manchester)
BREAK			

2:35 p.m.	C2020-15771	Development of a Calibration Electrode to Facilitate Non-Destructive Coating Evaluation using a Scanning Kelvin Probe	Ronald Zeszut (University of Dayton Research Institute), Douglas Hansen (Univ of Dayton Research Inst)
3:00 p.m.	C2020-15840	Spectroelectrochemical Evaluation of Carbon Steel in Slightly Sour Environments Under the Presence of Triazine-Based H ₂ S Scavenger Byproducts utilizing In-Situ Confocal Surface Enhanced Raman Spectroscopy.	Vinicio Ynciarde (The University of Texas at San Antonio), Michael Miller (Southwest Research Institute), James Dante (Southwest Research Institute), Brendy Rincon Troconis (University of Texas at San Antonio)
ADVANCES IN MATERIALS FOR OIL AND GAS PRODUCTION - DAY 1			
CHAIR: HERNAN RINCON / VICE CHAIR: FILIPPO CAPPUCCINI			
8 A.M. TO 3:30 P.M. - ROOM 370 ABC			
SPONSORING COMMITTEE: STG 32			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14579	Surface Hard Zone Phenomenon in TMCP Line Pipe for Sour Service: A State of the Art Review	Ali Smith (Rina Consulting-Centro Sviluppo Materiali), Carlo Spinelli (ENI)
8:35 a.m.	C2020-14446	An Investigation on the Sulfide Stress Cracking of TMCP Pipeline Steels	Xin Yue (ExxonMobil Upstream Integrated Solutions), Andrew Wasson (ExxonMobil Upstream Integrated Solutions), Brian Newbury (ExxonMobil Upstream Integrated Solutions), Doug Fairchild (ExxonMobil Upstream Integrated Solutions), Jamey Fenske (ExxonMobil Upstream Integrated Solutions), Timothy Anderson (ExxonMobil Upstream Integrated Solutions), Weiji Huang (ExxonMobil Upstream Integrated Solutions)
9:00 a.m.	C2020-14506	SSC limits of TMCP line pipes	Herve Marchebois (Total E&P), Ali Smith (ALI), Carlo Spinelli (ENI), Christoph Bosch (Salzgitter Mannesman Forschung GmbH)
9:25 a.m.	C2020-14378	The Tmcp Process of C-Steel Grades and the Control of Key Parameters to Avoid Local Hard Surface Areas	Christian Stachelberger (Voestalpine Grobblech GmbH)
BREAK			
10:10 a.m.	C2020-14585	Qualification Of Seamless X60QOS And X65QOS Linepipe Grades For Extreme Sour Service Conditions With Partial Pressure Of H ₂ s Beyond 1 Bar	Florian Thebault (Vallourec), Laurent Ladeuille (Vallourec Project Line Pipe), Laurent Lamps (Serimax)
10:35 a.m.	C2020-14514	Sour Environmental Severity based on Equal Hydrogen Content and HIC/SSC susceptibilities	Taishi Fujishiro (Nippon Steel Corporation), Daisuke Mizuno (JFE Steel Corporation), Eiji Tada (Tokyo Institute of Technology), Kyono Yasuda (JFE Steel Corporation), Mitsuo Kimura (The University of Tokyo), Nobuyuki Ishikawa (JFE Steel Corporation), Takuya Hara (Nippon Steel Corporation)
11:00 a.m.	C2020-14845	Micrographic Acceptance Criteria for SSC Testing	Timothy Anderson (ExxonMobil Upstream Integrated Solutions), Adnan Ozekcin (ExxonMobil Research & Engineering), Doug Fairchild (ExxonMobil Upstream Integrated Solutions), Garrett Wadsworth (ExxonMobil Research & Engineering), Hyun Jo Jun (ExxonMobil Research & Engineering), Neeraj Thirumalai (ExxonMobil Research & Engineering), Weiji Huang (ExxonMobil Upstream Integrated Solutions)
11:25 a.m.	C2020-14410	The Effect of Mill Scale on OCTG Sour Cracking Resistance	Brian Chambers (Shell Global Solutions US Inc.), Manuel Gonzalez (Shell Global Solutions US Inc.), Xin Long (Shell International E&P)
LUNCH			
1:00 p.m.	C2020-14566	Effect of Test Conditions on the Discrepancies in SSC Test Results and Groove Formation on Low-Alloyed Steel	Christophe Mendibide (Institut de la Corrosion), Claude Duret-Thual (Institut de la Corrosion)
1:25 p.m.	C2020-14411	A Review of Fit-for-Purpose Sour Tests of Low Alloy Steels: Effects of Buffer Chemistry and Purge Gas Composition	Brian Chambers (Shell Global Solutions US Inc.), Manuel Gonzalez (Shell Global Solutions US Inc.)
1:50 p.m.	C2020-14512	Crack Propagation Behavior and K ₁ sscc During DCB Test with a Proposed U-Type Side Groove Specimen Geometry	Yuji Arai (Nippon Steel & Sumitomo Metal Corporation), Hiroki Kamitani (Nippon Steel Corporation, Wakayama Works), Hisashi Amaya (Nippon Steel Corporation, Wakayama Works), Jun Nakamura (Nippon Steel Corporation), Keiichi Kondo (Nippon Steel Corporation), Taishi Fujishiro (Nippon Steel Corporation)

BREAK			
2:35 p.m.	C2020-14428	The Implications and Practicality of Adopting the Dissolved H ₂ S Concentration in Brine as the Sour Service Severity Scalable Parameter	Brent Sherar (Honeywell Process Solutions), Jing Ning (Honeywell Process Solutions), Peter Ellis (Honeywell Process Solutions), Sridhar Srinivasan (Honeywell Process Solutions)
3:00 p.m.	C2020-14835	Case Study on the Downhole Materials Selection and Sour Service Qualification for a High Pressure, High Temperature Gas Field	Roberto Morana (BP Exploration & Production Operating Co. Ltd), Elizabeth Trillo (SwRI), Lee Smith (BP Exploration & Production Operating Co. Ltd), Luciana Intiso (Centro Sviluppo Materiali S.p.A), Sai Prasanth Venkateswaran (BP Exploration & Production Operating Co. Ltd)
BIOMEDICAL MATERIALS- RESEARCH IN PROGRESS			
CHAIR: SRINIDHI NAGARAJA / VICE CHAIR: SHIRIL SIVAN			
8 A.M. TO 3 P.M. ■ ROOM 342 E			
SPONSORING COMMITTEE: RAC			
Start	Document #	Title	Author(s)
8:05 a.m.	C2020-15709	Cathodic Voltage Controlled Electrical Stimulation for Orthopedic Implant Infection Control	Mark Ehrensberger (University at Buffalo Orthopaedic Research Laboratory)
8:50 a.m.	C2020-15642	Selective Dissolution of β-Phase in Ti-6Al-4V in Presence of Inflammatory Species	Michael Kurtz (Clemson University), Jeremy Gilbert (Clemson University - Bioengineering), Piyush Khullar (University of Virginia)
9:15 a.m.	C2020-15782	Demonstration of a Tribo-corrosion Model by Using Single Asperity Tribo-corrosion test on CoCrMo Alloy	DongKai Zhu (Clemson University), Jeremy Gilbert (Clemson University)
9:40 a.m.	C2020-15770	The Effect of Decontamination Solution on Implant Grade Ti6Al4V and CoCrMo	Stacey Sullivan (US Food and Drug Administration), Katie Geary (FDA), Stephen Weber (FDA), Turner Paul (FDA)
BREAK			
10:20 a.m.	C2020-15568	Corrosion and Repassivation Behavior of Freshly Exposed Nitinol Surfaces in Simulated Body Fluids	Noah Budiansky (Exponent), Lawrence Eiselstein (Exponent)
10:45 a.m.	C2020-15687	The Effects of Purity and Surface Finish on Corrosion and Oxide Layer Composition of Nitinol	Danyal Siddiqui (The University of Texas at Dallas), Danieli C. Rodrigues (The University of Texas at Dallas), Graziela Sena, Matthew Di Prima (FDA), Philip Stafford (Food and Drug Administration - Winchester Engineering and Analytic Center), Srinidhi Nagaraja (G. Rau Inc.), Vilupanur Ravi (California State Polytech Univ)
11:10 a.m.	C2020-15706	Performance of an Anti-Microbial Copper-Base Alloy for High-touch Surfaces	Carol Glover (University of Virginia), John Scully (University of Virginia), Michael Hutchison (University of South Florida)
11:35 a.m.	C2020-15621	Development of New Biodegradable Metal Alloys That Can Be Used as a Fixation Element in Patients Who Have Suffered Bone Fractures	Virginia Paredes Méndez (Universidad del Norte), Ana Fonseca (Universidad del Norte), Yaneth Pineda (Universidad Pedagógica Tecnológica de Colombia)
LUNCH			
1:25 p.m.	C2020-15740	Electrochemical Characterization of Titanium Alloys for Dental Implants	Jaewan Bae (Cal Poly Pomona), Jacob Benoun, Vilupanur Ravi (California State Polytech Univ)
1:50 p.m.	C2020-15626	Corrosion of Dental Implants Made of Titanium Alloy Connected to Stainless Steel	Isolda Costa (Instituto de Pesquisas Energéticas e Nucleares), Ana Micelli (Instituto de Pesquisas Energéticas e Nucleares), Bárbara Victoria de Viveiros (Instituto de Pesquisas Energéticas e Nucleares), Frederico Nigri (Instituto de Pesquisas Energéticas e Nucleares), Jesualdo Rossi (Instituto de Pesquisas Energéticas e Nucleares), Larissa Berbel (Instituto de Pesquisas Energéticas e Nucleares)
2:15 p.m.	C2020-15583	Synergistic Effects of Bacterial Contamination and Citric Acid Detoxification on Titanium Surface Oxide	Bhuvana Lakkasetter Chandrashekar (University of Texas at Dallas), Danieli C. Rodrigues (The University of Texas at Dallas), Danyal Siddiqui (University of Texas at Dallas)
2:40 p.m.	C2020-15632	Characterization of the Passive Film Formed on Selective Laser Melting 316L SS in the Phosphate-Buffered Saline Solution	Yong Hua (University of Leeds), Anne Neville (University of Leeds), Lei Zhang (University of Science & Technology-Beijing), Xiaoqi Yue (University of Science & Technology-Beijing), Xue Li (China University of Petroleum)

COMBINED-EFFECTS MATERIAL DEGRADATION UNDER ATMOSPHERIC CONDITIONS

CHAIR: KRISTEN WILLIAMS / VICE CHAIR: SARAH GALYON-DORMAN

8 A.M. TO 3 P.M. - ROOM 332 E

SPONSORING COMMITTEE: TEG 189X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14271	A Review of Combined Effects Testing in Corrosion Science: The Contribution of Mechanical and Environmental Stress Factors	Christine Sanders (US Naval Research Laboratory)
8:35 a.m.	C2020-14259	Simultaneous Fatigue and Corrosion of Joined Materials for Automotive Applications	Dominique Thierry (French Corrosion Institute)
9:00 a.m.	C2020-14881	Continuous Measurement of Aerospace Coating Degradation due to Environmental and Mechanical Stressors	Jacob Wright (Luna Innovations, Inc), Brandi Clark (Luna), Fritz Friedersdorf (Luna Inc.), Liam Agnew (Luna Innovations, Inc)
9:25 a.m.	C2020-14898	Methods to Evaluate Atmospheric Coating Degradation to Wet-Dry Cycles using Real-Time Monitoring	James Ellor (Elzly Technology Corp)
BREAK			
10:10 a.m.	C2020-14646	Using a Computational Galvanic Model in a Fracture Mechanics Framework to Improve Material Degradation Prediction	Andres Peratta (BEASY), Robert Adey (BEASY), John Baynham (BEASY), Thomas Curtin (Computational Mechanics International, Inc.)
10:35 a.m.	C2020-14569	Atmospheric Corrosion Through the Eyes of a Computer Simulation	Agnieszka Franczak (Elsyca NV)
11:00 a.m.	C2020-14598	Acidification of the electrolyte in the Carbon Steel/ Aluminum Alloys galvanic couple: Modeling and experimental study	Juan Genesca Llongueras (Universidad Nacional Autonoma Mexico, UNAM), Allan Ruiz (Universidad Nacional Autonoma Mexico, UNAM), Alma Ortiz (Universidad Nacional Autonoma Mexico, UNAM), Rodrigo Montoya (UNAM-PUNTA)
11:25 a.m.	C2020-15183	Corrosion Resistance by Design	Vineeth Kumar Gattu (Argonne National Laboratory), J Indacochea (University of Illinois), William Ebert (Argonne National Laboratory)
LUNCH			
1:00 p.m.	C2020-14976	Corrosivity Study of De-Icing Salts	Carl Reed (Greenman-Pedersen, Inc), Andrew Dalglish (Greenman-Pedersen Inc), Sarah Olthof (Greenman-Pedersen, Inc), Timothy Coyle (Parsons)
1:25 p.m.	C2020-14687	Physico-Chemical Characterization of Corrosion Scales in Braking Systems	Alessandro Mancini (Brembo S.p.a.), Andrea Bonfanti (Brembo S.p.a), Federico Bertasi (Brembo S.p.a.), Marco Bandiera (Brembo S.p.a), Sonia Pin (Brembo S.p.a.)
1:50 p.m.	C2020-14641	Mitigation of Flange Face Corrosion during Plant Construction	Takahiro Tsuda (JGC Corporation)
BREAK			
2:35 p.m.	C2020-14425	Atmospheric Corrosion: GIS Corrosion Mapping and Materials Selection for Electrical Transmission Lines and Solar Systems	Mehrooz Zamanzadeh (Matergenics)

CORROSION IN NUCLEAR SYSTEMS - DAY 1

CHAIR: ZIQING ZHAI / VICE CHAIR: VINEETH KUMAR GATTU

8 A.M. TO 4 P.M. - ROOM 351 AB

SPONSORING COMMITTEE: TEG 224X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14607	Laboratory Studies Related to External Corrosion of Hanford's Double-Shell Tanks	Kenneth Evans (DNV GL), Brandon Rollins (DNV GL), Crystal Girardot (WRPS), John Beavers (DNV GL), Katie Sherer (DNV GL), Narasi Sridhar (DNV GL), Natalie Young (Washington River Protection Solutions), Sandeep Chawla (DNV GL), Ted Venetz (Washington River Protection Solutions)

8:35 a.m.	C2020-14846	Performance of Vapor Corrosion Inhibitors on Mitigating Corrosion of Secondary Liner in Double Shell Storage Tanks at Hanford	Pavan Shukla (Savannah River National Laboratory), Bruce Wiersma, Roderick Fuentes (Savannah River National Laboratory)
9:00 a.m.	C2020-14841	Effects of Surface Conditions and Chemistry on Evolution of Open-Circuit Potential of Carbon Steel in Nuclear Waste Stimulants	Pavan Shukla (Savannah River National Laboratory), Bruce Wiersma, Roderick Fuentes (Savannah River National Laboratory)
9:25 a.m.	C2020-15048	Electrochemical Studies of Stainless Steels in Hanford Effluent Treatment Facility Environments	Katie Sherer (DNV GL), Brandon Rollins (DNV GL), John Beavers (DNV GL), Kenneth Evans (DNV GL), Narasi Sridhar (DNV GL), Sandeep Chawla (DNV GL), Shawn Campbell (Washington River Protection Solutions), Ted Venetz (Washington River Protection Solutions)
BREAK			
10:10 a.m.	C2020-14905	Reference-Electrode Evaluations and Potential-Distribution Modelling in Nuclear Waste Environments	Sandeep Chawla (DNV GL), Brandon Rollins (DNV GL), Crystal Girardot (Washington River Protection Solutions), John Beavers (DNV GL), Katie Sherer (DNV GL), Kenneth Evans (DNV GL), Narasi Sridhar (DNV GL), Natalie Young (Washington River Protection Solutions), Ted Venetz (Washington River Protection Solutions)
10:35 a.m.	C2020-15052	Electrochemical Corrosion Behaviors of Waste Package Materials	Vineeth Kumar Gattu (Argonne National Laboratory), Eric Lee (University of Illinois at Chicago), J Indacochea (University of Illinois), James Jerden (Argonne National Laboratory), William Ebert (Argonne National Laboratory)
11:00 a.m.	C2020-15047	Evaluation of SCC Susceptibility of Steels Used in Nuclear Waste Storage Tanks in Caustic Simulants	Brandon Rollins (DNV GL), Crystal Girardot (WRPS), Joe Gerst (DNV GL), John Beavers (DNV GL), Katie Sherer (DNV GL), Kenneth Evans (DNV GL), Narasi Sridhar (DNV GL), Sandeep Chawla (DNV GL), Ted Venetz (Washington River Protection Solutions)
11:25 a.m.	C2020-14440	Effect of Chloride on the SCC Behavior of Carbon Steel Welds Exposed to Concrete Pore Water Under Anoxic Conditions	Bruno Kursten (SCK-CEN, The Belgian Nuclear Research Institute), Roberto Gaggiano (ONDRAF/NIRAS, The Belgian Agency for Radioactive Waste and Enriched Fissile Materials)
LUNCH			
1:00 p.m.	C2020-15139	Analysis of the Pitting Factor for Predicting Localized Corrosion of Liquid Radioactive Waste at Elevated Temperatures	Roderick Fuentes (Savannah River National Laboratory), Bruce Wiersma (Savannah River National Laboratory), Crystal Girardot (Washington River Protection Solutions), Ted Venetz (Washington River Protection Solutions)
1:25 p.m.	C2020-15144	Electrochemical Corrosion Evaluation of Boral® Panels from the Decommissioned Zion Nuclear Power Plant Spent Fuel Pool	Roderick Fuentes (Savannah River National Laboratory), Christopher Verst (Savannah River National Laboratory), Eric Focht (US Nuclear Regulatory Commission), Robert Sindelar (Savannah River National Laboratory), Ronald Kesterson (Savannah River National Laboratory)
1:50 p.m.	C2020-15025	An Overview of Recent Progresses in Monitoring, Understanding and Protecting Localized Corrosion on Buried Pipelines	YongJun Tan (Deakin University, School of Engineering)
BREAK			
2:35 p.m.	C2020-15217	Localized Weld Repairs Increase Corrosion Rates at Nuclear Plants	Graig Cilluffo (Exelon Nuclear), Eric Houston (Structural Integrity Associates, Inc.)
3:00 p.m.	C2020-15140	Field Metallography and Replication on Natural Gas Processing Facility: Non-Destructive Metallurgical Testing to Complement other Regular NDT	Anil Chikkam (Matergenics), Dhandabani Dhasaradhan (Exova [Qatar] LLC), Ganesh Maruthamuthu (Element Materials Technology), Jeevanandam Shanmugam (RasGas Company Limited), Mehrooz Zamanzadeh (Matergenics), Murali Bangaru, Sunil Pulagam (Element Materials Technology)

CORROSION MANAGEMENT - IMPLEMENTATION & PROGRESS - DAY 1

CHAIR: HENDRIK DEBRUYN / VICE CHAIR: ROBIN TEMS

8 A.M. TO 3:30 P.M. - ROOM 360 EF

SPONSORING COMMITTEE: STG 08

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14605	The Role of the Corrosion Engineer in Contributing Towards the United Nations Sustainable Development Goals	Alexander Williamson (Williamson Integrity Services Ltd.), Carlos Arroyave (University of Antioquia), Monica Hernandez (Infinity Growth)
8:35 a.m.	C2020-15039	Corrosion and Protection Challenges and Opportunities in the Frame of a Circular Economy	Monica Hernandez (Infinity Growth), Carlos Arroyave (Arroyave Consulting)
9:00 a.m.	C2020-14539	Corrosion Management as Part of an Integrated Management System	Gerhardus Koch (DNV GL), Richard Eckert (DNV GL), Steven Weichel (DNV GL)
9:25 a.m.	C2020-14756	Three-Step Corrosion Management Model	Faisal Al-Mutahhar (Saudi Aramco), Lay Seong Teh (Saudi Aramco), Sami Al-Ghamdi (Saudi Aramco)
BREAK			
10:10 a.m.	C2020-14743	Corrosion Management - The Smartest Tool in the Box	Mushaid Nauman (Penspen)
10:35 a.m.	C2020-14862	Neighborhood Watch - Right Step Towards Asset Integrity	Ahmad Raza Khan Rana (Dalhousie University, Integrity Products & Supplies Inc.), George Jarjoura (Dalhousie University), Zoheir Farhat (Materials Engineering Program, Department of Process Engineering and Applied Sciences, Dalhousie University)
11:00 a.m.	C2020-14404	Chemical & Enhanced Preservation Methodologies – Endeavors to Maintain The Integrity of Joint Operation (JO) Surface Facilities	Bakheet Alyami (Saudi Arabian Chevron Inc.), AbdulRahman Al-Ghamdi (Saudi Arabia Chevron), Hamad Al-Ajmi (Kuwait Gulf Oil Co.), Hossam Mesbah (Weatherford Kuwait for Petroleum Services), Mohamud Farah, Tariq Kamshad (Kuwait Gulf Oil Co - Asset Integrity Division)
11:25 a.m.	C2020-14886	Corrosion Effects of Municipal Anti-Icing and De-Icing Programs	Kristen Duncan (Corrpro Canada, Inc.), Stephen Gibson (Corrpro Canada, Inc.), Wanda Goulden (City of Edmonton)
LUNCH			
1:00 p.m.	C2020-14996	Corrosion Management Framework (CMF) and Challenges for Implementation in High Sour and High Pressure Pipelines	Monica Fernandez (Petroleum Development Oman LLC), Dawood Al Sharyani (Petroleum Development Oman), Fadi Masri Zada (Petroleum Development Oman), Mohamed Al-Ghafri (Petroleum Development Oman), Nasser Al-Behlani (Petroleum Development Oman), Zaher Al Hajri (Petroleum Development Oman)
1:25 p.m.	C2020-15133	Corrosion Management Implementation in a New Subsea Development Based on Innovative Subsea Corrosion Monitoring in the Caspian Region	Daley Lasebikan (BP Exploration & Production Operating Co. Ltd), David Hamilton (BP Exploration & Production Operating Co. Ltd), Hanne Martinussen (Sensorlink AS), Harald Sleire (Sensorlink AS)
1:50 p.m.	C2020-14842	Fit-for-Purpose Hydrogen Sulfide Management for Mixed-Production	Scott Lehrer (Baker Hughes), Jagrut Jani (Baker Hughes), Soma Chakraborty (Baker Hughes, a GE company), Sunder Ramachandran (Baker Hughes)
BREAK			
2:35 p.m.	C2020-14281	O&G Asset Integrity Assessment with Increase in Water Cut	Hamza Amir Ajmerwala (International Inspection Centre), Abdul Wahab Al-Ahmad (Kuwait Oil Company), Adel Almutairi (Kuwait Oil Company), Brajesh Jha (Kuwait Oil Company), Sayed Mohamed (Kuwait Oil Company), Surya Prakash (Kuwait Oil Company)
3:00 p.m.	C2020-14674	Corrosion Risk Assessment of Aging Plant in the Down Stream Petroleum Sector	Muazu Mohammed (Saudi Petrochemical Company SADAF A SABIC Affiliate), Hazza Al-Owaji (Petrokemya A SABIC Affiliate)

ENVIRONMENTALLY ASSISTED CRACKING - DAY 1			
CHAIR: KASRA SOTOUDEH / VICE CHAIR: ARSHAD BAJVANI GAVANLUEI			
8 A.M. TO 3:30 P.M. - ROOM 361 AB			
SPONSORING COMMITTEE: TEG 186X			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14577	Fast Screening of Sulfide Stress Corrosion Resistance of Supermartensitic Stainless Steel Thought Alternative Test Methods	Martien Deffo (Vallourec Research Center France), Cécile Millet (Vallourec), Daniela Garcia (Vallourec), Guillaume Néel (Vallourec), Harold Evin (Vallourec)
8:35 a.m.	C2020-14590	Domain Diagrams for the Sulfide Stress Cracking Resistance of High Strength Low Alloy Steel 41xx Bar Stocks	Manuel Marya (Schlumberger), Vipul Shinde (Schlumberger)
9:00 a.m.	C2020-14637	Theoretical and Experimental justification for a Novel Approach for the Evaluation of Sulfide Stress Cracking Susceptibility in High Strength Low Allo	Raymundo Case (Texas A&M Engineering Experiment Station [TEES])
9:25 a.m.	C2020-14728	The Influence of Stress Concentration and Plastic Strain on the Resistance of Precipitation-Hardened Nickel Alloys to Hydrogen Embrittlement	David Griffiths (TWI), Kasra Sotoudeh (TWI Ltd.), Michael Dodge (TWI Ltd.), Michael Gittos (TWI)
BREAK			
10:10 a.m.	C2020-15008	Hydrogen Embrittlement Study of Two Heats of UNS N07725 in Sea Water Under Cathodic Polarization Conditions	Xiaoji Li (DNV GL), Gopal Viswanathan (The Ohio State University), Ramgopal Thodla (DNV GL)
10:35 a.m.	C2020-14581	Hydrogen Induced Stress Cracking Of Ni-Alloy 625 (UNS N06625)	Jim Stian Olsen (Aker Solutions), Bård Nyhus (SINTEF Industry), Roy Johnsen (Norwegian Univ of Sci & Tech), Vigdis Olden (SINTEF Industry)
11:00 a.m.	C2020-14582	Correlation of Hydrogen Diffusion and Trapping Behaviour with Hydrogen Embrittlement Resistance in Line Pipe Steels	Ali Smith (Rina Consulting-Centro Sviluppo Materiali), Emanuele Paravicini Bagliani (Tenaris Dalmine), Philippe Darcis (Tenaris)
11:25 a.m.	C2020-14949	Hydrogen Effect on Plastic Deformation and Fracture in Austenitic Stainless Steel	Eugene Ogosi (University of Aberdeen & Apache North Sea), Dr Muhammad Siddiq (University of Aberdeen), Dr Umair Asim (University of Aberdeen), Mehmet Kartal (University of Aberdeen)
LUNCH			
1:00 p.m.	C2020-14717	Role of Precipitation on the Hydrogen Embrittlement Behavior of Inconel 718	V S Raja (Indian Institute of Technology), Ajay Krishnan (IIT Bombay), BIDYUT DUTTA
1:25 p.m.	C2020-14776	Hydrogen Charging of Armco Iron and L80 Steel in Various Electrolytes	Mathias Truschner (Montanuniversitaet Leoben), Anton Trautmann (Montanuniversitaet Leoben), Gregor Mori (Montanuniversitaet Leoben), Wolfgang Siegl (Montanuniversitaet Leoben)
1:50 p.m.	C2020-14470	Experimental Corrosion-Fatigue Assessment of Different OCTG Grades Exposed to Contaminated Drilling Mud	Miguel Nicolino (Tenaris)
BREAK			
2:35 p.m.	C2020-15124	Fatigue and Static Crack Growth Rate Study of X-65 Line Pipe Steel in Gas Transmission Pipeline Applications	Ashwini Chandra (DNV GL), Joseph Tylczak (National Energy Technology Lab), Margaret Ziomek-Moroz (Department of Energy), Ramgopal Thodla (DNV GL)
3:00 p.m.	C2020-14782	Constant Load Tests and Hydrogen Uptake of Various Steel Grades in High Pressure H ₂ Gas and Acidified H ₂ S-saturated Aqueous Brine Solution	Anton Trautmann (Montanuniversitaet Leoben), Andreas Keplinger (voestalpine BOEHLER Edelstahl GmbH & Co KG), Christoph Dittmann (voestalpine Tubulars GmbH & Co KG), Gregor Mori (Montanuniversitaet Leoben), Josefine Pfeiffer (Montanuniversitaet Leoben), Marianne Kapp (voestalpine BOEHLER Edelstahl GmbH & Co KG), Markus Oberndorfer (RAG Austria AG), Mathias Truschner (Montanuniversitaet Leoben), Stephan Bauer (RAG Austria AG), Wolfgang Siegl (Montanuniversitaet Leoben)

FLOW ASSURANCE IN OIL AND GAS FROM INLAND TO SUBSEA

CHAIR: WEI SHI / VICE CHAIR: AYMAN GAZAWI

8 A.M. TO 2 P.M. - ROOM 332 F

SPONSORING COMMITTEE: TEG 202X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14443	The Development of Novel Laboratory Test Method for Scale Inhibitor Evaluation in the Presence of Ferrous Iron	Haiping Lu (Baker Hughes), Daniel Bestgen (Baker Hughes, a GE company), Dong Lee (Baker Hughes, a GE company), Gina Beans (Baker Hughes, a GE company), Johnathon Brooks (Baker Hughes Incorporated), Joseph Penkala (Baker Hughes, a GE company), Stephen Heath (Baker Hughes), Zhenning Gu (Baker Hughes, a GE company)
8:35 a.m.	C2020-14686	An Intelligent Flushing System For Oil or Gas Gathering Systems	Yuri Fairuzov (Multiphase Energy Corporation), Victor Fairuzov (Multiphase Energy Corporation)
9:00 a.m.	C2020-15070	Deposition and Corrosion Mitigation using Surface Treatments	Erika Brown (Oceanit Laboratories, Inc.), Carolyn Koh (Colorado School of Mines), Jose Delgado (Colorado School of Mines), Marshall Pickarts (Colorado School of Mines), Vinod Veedu (Oceanit Laboratories, Inc.)
9:25 a.m.	C2020-14677	Experimental Investigation and Numerical Modeling of Barium Sulfate Scaling in Porous Media	Mai Chen (University of Tulsa), Jianxin Wang (Chevron Corporation), Jun Lu (The University of Tulsa), Kishore Mohanty (The University of Texas at Austin), Randy Hazlett (Nazarbayev University), Tongsong Yang (The University of Texas at Austin), Wei Shi (Chevron Corporation), Xiang Li (University of Tulsa)
BREAK			
10:10 a.m.	C2020-14664	Impact of Surface Conditions on Calcium Carbonate (CaCO₃) Scaling Kinetics in a Once-Through Capillary Flow Rig	Kabir Raheem (University of Leeds), Anne Neville (University of Leeds), Olujide Sanni (University of Leeds), Thibaut Charpentier (University of Leeds)
10:35 a.m.	C2020-14532	New Approach on Iron Sulfide Scale Modeling and Prediction at pH 4-7	Xin Wang (Rice University), Alex Yi-Tsung Lu (Rice University), Amy Kan (Rice University), Chong Dai (Rice University), Guannan Deng (Rice University), Mason Tomson (Rice University), Saebom Ko (Rice University), Samridhdi Paudyal (Rice University), Sana Mateen (Rice University), Yue Zhao (Rice University)
11:00 a.m.	C2020-14913	Nanotechnology Based Detection Method for Speciation and Differentiation of Phosphonate Scale Inhibitors	Sankaran Murugesan (Baker Hughes Incorporated), Haiping Lu (Baker Hughes), Stephen Heath, Zhengwei Liu (Baker Hughes)
11:25 a.m.	C2020-15148	Removal of Iron Carbide in Turbulent Conditions and Influence on Iron Carbonate Formation	Maria Di Bonaventura (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), Marc Singer (Ohio University), Srdjan Nestic (Ohio University)
LUNCH			
1:00 p.m.	C2020-14608	Strontium Effect on Sulfate Scale Precipitation: Kinetics and Inhibition	Yue Zhao (Rice University), Alex Yi-Tsung Lu (Rice University), Amy Kan (Rice University), Chong Dai (Rice University), Guannan Deng (Rice University), Mason Tomson (Rice Univ), Saebom Ko (Rice University), Samridhdi Paudyal (Rice University), Sana Mateen (Rice University), Xin Wang (Rice University)
1:25 p.m.	C2020-14928	High Temperature Stable Corrosion Inhibitor Development for Deepwater Applications	Larry Chen (Clariant Oil Services), Jonathan Wylde (Clariant Oil Services), Nihal Obeyesekere (Clariant Oil Services), Thusitha Wickramarachchi (Clariant Oil services)

LOCALIZED CORROSION - MECHANISMS, RESEARCH METHODS, MODELLING AND CONTROL

CHAIR: HELMUTH SARMIENTO KLAPPER / VICE CHAIR: MARIANO KAPPES

8 A.M. TO 3 P.M. - ROOM 362 C

SPONSORING COMMITTEE: TEG 407X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14492	Effect of H ₂ S in the Passivity Breakdown of Austenitic Stainless-Steel, Point Defect Model Perspective	Raymundo Case (Texas A&M Engineering Experiment Station [TEES])
8:35 a.m.	C2020-15176	Development of Unified & Methodology Examining the Critical Pitting/Repassivation Potential and Temperature	Richard Woollam (R C Woollam and Associates, LLC), Daniel Betancourt (Intertek)
9:00 a.m.	C2020-14830	Alternative Sensitization Test Method for Austenitic Stainless Steels used as Non-Magnetic Drill Collars	Andrea Ricci (Carpenter Technology), Anthony Collins (Carpenter Technology), Thomas Williams (Carpenter Technology), William McDonnell (Carpenter Technology)
9:25 a.m.	C2020-14778	Influence of Buffer Solution on Supermartensitic Stainless Steel Localized Corrosion and Oxide Layer Formation	Luciana Lima (Vallourec), Arthur Gonçalves (Instituto Nacional de Tecnologia), Bruno Diehl (Petrobras), Cécile Millet (Vallourec), Ilson Palmieri Baptista (Petrobras), Javier Alejandro Carreno (Instituto Nacional de Tecnologia), Marilia Mendonca de Lima (Vallourec), Vinicius Ribeiro (Vallourec), Walter Souza (Instituto Nacional de Tecnologia)
BREAK			
10:10 a.m.	C2020-14692	Dynamic Crevice Tribocorrosion Behavior of Surgical Grade 316L Stainless Steel in Ringer's solution	Edgar Hornus (Curtin University), Alan Kop (Royal Perth Hospital), Garry Leadbeater (Curtin University), Mariano Iannuzzi (Curtin University of Technology), Mobin Salasi, Moreica Pabbruwe (Royal Perth Hospital), Zakaria Quadir (Curtin University)
10:35 a.m.	C2020-14746	Investigation of Pitting Corrosion of Carbon Steel in CO ₂ Saturated Corrosion Environment Using Artificial Pits Designs	Frederick Pessu (University of Leeds), Anne Neville (University of Leeds), Cayetano Conesa (University of Leeds), Eiman Saleem (Kuwait Oil Company), Richard Barker (University of Leeds), Wassim Taleb (Wassim Taleb)
11:00 a.m.	C2020-14578	Statistical Analysis on the Spatial Distribution of Localized Corrosion on Corroded Steel Bars	Fujian Tang (Dalian University of Technology), Chao Li (Dalian University of Technology), Francisco Presuel-Moreno, Hong Pan (North Dakota State University), Hong-Nan Li (Dalian University of Technology), Lizhi Zhao (Dalian University of Technology), Zhibin Lin
11:25 a.m.	C2020-14596	Investigating the Interaction of Brine Solutions and Diluted Inhibited HCl Acid Corrosion on Coiled Tubing Steel	Nikita Chkolny (STEP Energy Services), Chris Wiggins (STEP Energy Services), Darren Maley (STEP Energy Services), Joseph Burns (STEP Energy Services)
LUNCH			
1:00 p.m.	C2020-14564	Localized Corrosion Resistance of Ferritic FeCrAl ATF Cladding in Cooling Pools	Raul Rebak (General Electric Global Research Center)
1:25 p.m.	C2020-14636	Pitting Corrosion of a Ni-Cr-Fe Alloys in Chloride and Thiosulfate Solutions: One-Dimensional Artificial Pit Electrode Studies	Mariano Kappes (National Atomic Energy Commission, Argentina), Abraham Becerra Araneda (National Atomic Energy Commission, Argentina), Martin Rodriguez, Ricardo Carranza (Comision Nacional de Energia Atomica)
1:50 p.m.	C2020-14620	Electrochemical Behavior Under Artificial Seawater and Intergranular Corrosion Performance of 6XXX Aluminum Alloys Series	Mariana Carvalho (TechnipFMC), Daniela Cavalcante (TechnipFMC), Fabio Alves (TechnipFMC), Flávio de Sousa (LNDC), Gustavo Brandolin (TechnipFMC), Vanessa Dreilich (TechnipFMC)
BREAK			
2:35 p.m.	C2020-15044	Evaluation of Corrosion of Copper Drinking Water Pipes Exposed to Sulfurous Well Water and Ozone Treatment	Kimberly Steiner (Wiss, Janney, Elstner Associates, Inc)

MARINE CORROSION - RESEARCH IN PROGRESS

CHAIR: DEREK HORTON / VICE CHAIR: SABA NAVABZADEH ESMAEELY

8 A.M. TO 3 P.M. - ROOM 342 F

SPONSORING COMMITTEE: RAC

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15656	Corrosion Behavior and Galvanic Compatibility of Selected Materials in Natural Seawater	Mary Parker (Excet Inc.), Derek Horton (Naval Research Laboratory), Edward Lemieux (Naval Research Lab), Laura Erickson (Rampart LLC), Robert Kogler (Rampart LLC), Theresa Newbauer (EXCET Inc.)
BREAK			
9:00 a.m.	C2020-15645	Galvanic Corrosion of AZ31B Ultrasonically-Welded with Bare And Zn-Coated Steels	Jiheon Jun (Oak Ridge National Laboratory), Donovan Leonard (Oak Ridge National Laboratory), Jian Chen (Oak Ridge National Laboratory), Michael Brady (Oak Ridge National Laboratory), Yong Chae Lim (Oak Ridge National Laboratory), Zhili Feng (Oak Ridge National Laboratory)
9:25 a.m.	C2020-15724	Oxygen Reduction Catalysis on Stainless Steel Oxides	Rachel Anderson (U.S. Naval Research Laboratory), Carlos Hangarter (U.S. Naval Research Laboratory), Steve Policastro (U.S. Naval Research Laboratory)
BREAK			
10:10 a.m.	C2020-15651	A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions	Utibe Eno Charles Granville (University of Virginia), John Scully (University of Virginia), Robert Kelly (University of Virginia)
10:35 a.m.	C2020-15804	Modeling of MgRP Protection Considering Chemical Inhibition, Electrochemistry, and Mass Transport	Carolina Vicente Moraes (University of Virginia), John Scully (University of Virginia), Raymond Santucci, Robert Kelly (University of Virginia)
11:00 a.m.	C2020-15805	Effect of V Content on Corrosion Behavior and Hardness of High-Energy Ball Milled AA5083	Luiza Esteves (The University of Akron), Chaturanga Witharamage (The University of Akron), Ganesh Walunj (Cleveland State University), Jijo Christudasjustus, Rajeev Gupta (University of Akron), Sean O'Brien (University of Akron), Tushar Borkar (Cleveland State University)
11:25 a.m.	C2020-15730	Comparison of a Novel Cerium-based Corrosion Inhibitor with Commercially Available Inhibition Additives	Joshua James (Battelle)
LUNCH			
1:00 p.m.	C2020-15758	Hydration Testing of Developed Corrosion Resistant Topcoats for U.S. Marine Corps Ground Vehicles	Matthew Strom (Naval Research Laboratory), Caelen Clark (University of Buffalo, SUNY), Easterday Jacy (Naval Research Laboratory), Erick Iezzi (Naval Research Laboratory)
1:25 p.m.	C2020-15817	Sea Spray Aerosol Assessment of Atmospheric Corrosion in a Marine Environment	Raymond Santucci (US Naval Academy), Christine Sanders (US Naval Research Laboratory)
1:50 p.m.	C2020-15717	Cyclic vs. Non-Cyclic Accelerated Corrosion Methods – a Comparative Study	Theresa Hoffard (NAVFAC EXWC)
BREAK			
2:35 p.m.	C2020-15556	Sustainable High-Performance Protective Coatings for Aggressive Corrosion Conditions	Sachin Joshi (SK Formulations India Pvt. Ltd.)

OFFSHORE CATHODIC PROTECTION - CASE STUDIES OF NEW OR NOVEL DESIGNS OR SUBSEA INSPECTION TECHNIQUES

CHAIR: ALEX DELWICHE / VICE CHAIR: KEHINDE OGUN

8 TO 10:40 A.M. - ROOM 340 A

SPONSORING COMMITTEE: STG 30

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15060	Can Anodes Interfere when they are Mounted on Electrically Separate Structures?	Tim Froome (BEASY), John Baynham (BEASY)
8:35 a.m.	C2020-14750	Cathodic Protection Within Narrow Gaps of Offshore Wind Turbine Foundations	David Buxton (Intertek CAPCIS), Gareth John (Intertek plc), Petra Ernst (Midland Corrosion Services Ltd), Thomas Wewer (Innogy)
9:00 a.m.	C2020-15173	If Sacrificial Cathodic Protection Works Inside a Tank, Why Won't it Work in a Pipe?	Oludare Abiodun Jeremiah (FEDDO Pty Ltd), Chiamaka Ezeh (FEDDO Integrated Service Ltd)
9:25 a.m.	C2020-14775	Modelling and Analysis of Electrical Field Gradients Over Offshore Pipelines with Cathodic Protection – Impact of Drain to Wells	Jonas Okstad (FORCE Technology Norway), Gro Lauvstad (FORCE Technology Norway), Harald Osvoll, Magnus Myhr (Force Technology Norway), Roy Johnsen (Norwegian Univ of Sci & Tech), Sverre Magne Wigen (FORCE Technology)
BREAK			
10:10 a.m.	C2020-15088	Retrofit Cathodic Protection for a Norwegian FPU: New Challenges and Solutions	Andy Smerdon (Aquatec Group Limited), Eric Tan (Wood Group Kenny Norge AS)

PROGRESS IN LABORATORY TESTING OF CORROSION INHIBITORS FOR OIL FIELD APPLICATIONS

CHAIR: ALLA CRABTREE / VICE CHAIR: BRUCE BROWN

8 A.M. TO 1:30 P.M. - ROOM 362 EF

SPONSORING COMMITTEE: TEG 253X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14584	Impact of CO ₂ Partial Pressure on Electrochemical Measurements at High Temperatures	Peng Jin (Baker Hughes), Carlos Menendez (Baker Hughes), Sunder Ramachandran (Baker Hughes), Zhengwei Liu (Baker Hughes)
8:35 a.m.	C2020-14903	High Pressure Corrosion Testing: A Distressing Case History with a Successful Resolution	Rudolf Hausler (Blade Energy Partners LLP), Ravi Krishnamurthy (Blade Energy), Shaikh Rahman (Blade Energy Partners)
9:00 a.m.	C2020-14844	Surface Preparation of Test Specimens and Its Impact on Localized Corrosion	Milan Bartos (SET Laboratories, Inc.), Jorge Pacheco (SET Laboratories, Inc.), Saadedine Tebbal (SET Laboratories, Inc.)
9:25 a.m.	C2020-14984	An Improved Methodology Used to Assess the Performance of Organic Corrosion Inhibitors	Juan Dominguez Olivo (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), Srdjan Netic (Ohio University)
BREAK			
10:10 a.m.	C2020-14825	Nanotechnology Based Field Method for Detection and Monitoring Corrosion Inhibitors	Sankaran Murugesan (Baker Hughes Incorporated), Prasad Dhulipala (Baker Hughes), Sunder Ramachandran (Baker Hughes), Zhengwei Liu (Baker Hughes)
10:35 a.m.	C2020-14792	Investigation of an Organic Inhibitor on Mild Steel by In Situ Atomic Force Microscopy Coupled with Electrochemical Measurements	Huiru Wang (Ohio University), Alain Pailletet (Sorbonne Université), Bruce Brown (Institute for Corrosion and Multiphase Technology), Srdjan Netic (Ohio University)
11:00 a.m.	C2020-14824	Can Micelles be Used to Expedite and Enhance Lab Qualification Testing?	Scott Rankin (Anpera Technologies), Andy Osnowski (LUX Assure), Emma Perfect (LUX Assure), Fiona Mackay (LUX Assure Ltd), Gillian Macdonald (LUX Assure Ltd), Harry Grover (LUX Assure)
11:25 a.m.	C2020-14941	Under Deposit Corrosion Testing under Inhibited and pH Stabilized Conditions	Iozsef Attila Palencsar (IFE), Conchita Mendez (ExxonMobil Production Company)
LUNCH			
1:00 p.m.	C2020-15225	Evaluation of N-Furfuryl Nitrona Molecule as a Corrosion Inhibitor for Carbon Steel Using EIS	Ana Fonseca (Universidad del Norte), Enrique Vera (INCITEMA), Wilson Rozo (Universidad Pedagógica y Tecnológica de Colombia)

RECENT DEVELOPMENTS IN MINERAL SCALES AND DEPOSITS CONTROL TECHNOLOGIES - DAY 1

CHAIR: ZAHID AMJAD / VICE CHAIR: MIRIAM BARBER

8 A.M. TO 3:30 P.M. - ROOM 382 A

SPONSORING COMMITTEE: STG 11

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14753	Calcium Carbonate Biofouling in the Presence of Heavy Metals	Petros Koutsoukos (University of Patras and FORTH-ICEHT), Panagiota Natsi (University of Patras and FORTH-ICEHT)
8:35 a.m.	C2020-14348	Calcium Carbonate Scale Deposition and Inhibition: Effects of Corrosion Inhibitors	Qiwei Wang (Senior Scientist)
9:00 a.m.	C2020-14547	Non-Phosphorus Treatment Technology for Cooling Water Systems	Ikuko Nishida (Kurita Water Industries Ltd.), Kazuhisa Fujita (Kurita Water Industries Ltd.), Takaaki Togo (Kurita Water Industries Ltd.), Takanori Yoshino (Kurita Water Industries Ltd.), Tetsuro Sakamura (Kurita Water Industries (DALIAN) Co.,Ltd)
9:25 a.m.	C2020-14850	Application of Aluminum Alloy and its Corrosion Control Challenges in Water Treatment Industry	Bingzhi Chen (Nalco Water), Paul Desch (Nalco Company), Xuejun Wang (Nalco Water, An Ecolab Company), Zhangzhang Yin (Nalco Water)
BREAK			
10:10 a.m.	C2020-14731	Critical Review on Sulphide Scale Formation, Removal and Inhibition	Bader Alharbi (Saudi Aramco), Graham Alexander (Heriot-Watt University), Ken Sorbie (Heriot-Watt University), Norah Aljeaban (Saudi Aramco)
10:35 a.m.	C2020-15159	Scale Formation and Wetting of Surfaces: A Microfluidics Investigation	Petros Koutsoukos (University of Patras and FORTH-ICEHT), Andreas Tzachristas (University of Patras), Christakis Paraskeva (University of Patras and FORTH-ICEHT), Dimitra Kanellopoulou (University of Patras), John Parthenios (Foundation of Research and Technology Hellas- Institute of Chemical Engineering Sciences), R Malamoudis (University of Patras), Varvara Sygouni (University of Patras and FORTH-ICEHT)
11:00 a.m.	C2020-15082	A New Look on the Scale Inhibition Mechanisms and Some Refinement of the Scale Inhibition Theory	Konstantin Popov (JSC "Fine Chemicals R&D Centre"), Maxim Oshchepkov (JSC "Fine Chemicals R&D Centre")
11:25 a.m.	C2020-15092	Carbonate and Sulfide Scale Formation in Multiphase Conditions	Olujide Sanni (University of Leeds), Anne Neville (University of Leeds), Thibaut Charpentier (Leeds University)
LUNCH			
1:00 p.m.	C2020-14289	Corrosion Control Using Inhibitor Systems Based on Phosphonates and Metal Phosphonate Materials	Kostas Demadis (University of Crete), Andrew Thomas (University of Manchester), Argyri Moschona (University of Crete), Nicoleta Plesu ("Coriolan Drăgulescu" Institute of Chemistry)
1:25 p.m.	C2020-14840	Gypsum Scale Inhibitors Performance in the Presence of Impurities	Dr. Tao Chen, Zahid Amjad (Walsh University)
1:50 p.m.	C2020-14559	Designing Laboratory Test Protocols for Asphaltenes Deposition	Hunter Thomson (Scaled Solutions), Andrew Farrell (Scaled Solutions Ltd.), Benjamin Martin (Scaled Solutions Ltd.), Dario Frigo (Scaledsolutions Ltd.), Gordon Graham (Scaled Solutions Ltd.)
BREAK			
2:35 p.m.	C2020-14934	Deposition Prevention of Complex Mineral Scales Such As Iron Sulfide on Pipelines Using Water Soluble Polymers	Saebom Ko (Rice University), Amy Kan (Rice University), Chong Dai (Rice University), Mason Tomson (Rice University), Xin Wang (Rice University), Yi-Tsung Lu (Rice University)
3:00 p.m.	C2020-14665	Iron carbonate (FeCO ₃) SLIPS (Slippery Liquid Infused Porous Surfaces) for enhanced scale resistance	Alexander Saul (University of Leeds), Anne Neville (University of Leeds), Thibaut Charpentier (University of Leeds)

RECENT EXPERIENCES WITH AUSTENITIC AND DUPLEX STAINLESS STEELS - DAY 1

CHAIR: LENA WEGRELIUS / VICE CHAIR: NICOLE KINSMAN

8 A.M. TO 3:30 P.M. - ROOM 370 DEF

SPONSORING COMMITTEE: TEG 114X, TEG 116X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15130	Lessons Learned from New Stainless Steel Fabrication	Krista Heidersbach (Stress Engineering Services), Bill Valerioti (Chevron Phillips Chemical LLC)
8:35 a.m.	C2020-14402	Bolts and Nuts (Fasteners) Failure of In-Service Stainless Steel Chemical Storage Tanks at Wafra Joint Operation- A Case Study	Tariq Kamshad (Kuwait Gulf Oil Company), AbdulRahman AL-Ghamdi (Saudi Arabia Chevron), Bakheet Alyami (MS Joint Operation), Hamad Al-Ajmi (Kuwait Gulf Oil Co.), Manickavasagan Sabesan (Kuwait Gulf Oil Co & Saudi Arabian Chevron), Salem Al-Qahtani (Kuwait Gulf Oil Company, Asset Integrity Division), Yousif Bahbahani (KGOC)
9:00 a.m.	C2020-14887	Development of an Advanced Carburizing and Nitriding Stainless Steel	Robert Buck (Carpenter Technology), Thomas Williams (Carpenter Technology Corporation)
9:25 a.m.	C2020-14387	In Situ Electrochemical Testing Of Stainless Steel Surfaces	James Fritz (JDF Metal Consulting)
BREAK			
10:10 a.m.	C2020-15033	After 30 Years of Duplex Stainless Steel Experience In Oil & Gas - Do we still face challenges?	Janardhan Saithala (Petroleum Development Oman LLC), Amjad Al Kharusi (Petroleum Development Oman LLC), Antonio Ojeda Macedo (Petroleum Development Oman), Manoj Gonuguntla Suryanarayana (Petroleum Development Oman), Talal Al Nabhani (Petroleum Development Oman [PDO])
10:35 a.m.	C2020-14499	Materials Selection for Seawater Injection Service – Crevice Corrosion Evaluation of Stainless Steels Under Controlled Oxygen Conditions	Kenneth Evans (DNV GL), Sandeep Chawla (DNV GL), Weiji Huang (ExxonMobil Development Company)
11:00 a.m.	C2020-14432	On Comparing and Predicting the Crevice Corrosion Resistance of Austenitic Drilling Alloys with Typical Downhole Production Alloys	Manuel Marya (Schlumberger), Dean Lauppe (Schlumberger)
11:25 a.m.	C2020-14406	Stress Corrosion Cracking of Austenitic Grade 347 and Duplex Grade 2205 Stainless Steels in Refinery Simulated Media Containing Hydrogen Sulfide and C	K Ravindranath (Kuwait Institute for Scientific Research), B Al-Wakaa (Kuwait Institute for Scientific Research), N Tanoli (Kuwait Institute for Scientific Research), Rashed Alazemi (Kuwait Institute for Scientific Research)
LUNCH			
1:00 p.m.	C2020-14678	Polythionic Acid Stress Corrosion Cracking on Proprietary UNS S34751 Similar Welded Joint	Takahiro Osuki (Nippon Steel Corporation), Akira Seki (Nippon Steel Technology), Kazuhiro Ogawa (Nippon Steel Corporation), Masaki Ueyama (Nippon Steel & Sumitomo Metal U.S.A.), Shinnosuke Kurihara (Nippon Steel Corporation), Yuhei Suzuki (Nippon Steel Corporation)
1:25 p.m.	C2020-14819	Analysis of Corrosion Pitting in a 317L-Stainless Steel Surface Condenser Tube Bundle	Mel Esmacher (SUEZ Water Technologies & Solutions), Derrick Swarr (SUEZ Water Technologies & Solutions), Edward Blessman (Plymouth Tube Co), Kumar Kembaiyan (SUEZ Water Technologies & Solutions)
1:50 p.m.	C2020-15069	Optimization of FGD Operating Conditions by Electrochemical Laboratory Testing Applied to Alloy UNS S32205	Daniel Betancourt (Intertek), Craig Birkenfeld (Luminant), Jie Wen (Intertek), Steven Kung (EPRI)
BREAK			
2:35 p.m.	C2020-15095	Evaluating the Flaw Tolerance and Ductile Tearing Resistance of Austenitic Stainless-Steel Welds	Phillip Prueter (The Equity Engineering Group, Inc.), Nathaniel Sutton (The Equity Engineering Group), Paul Kowalski (Equity Engineering Group, Inc./The)
3:00 p.m.	C2020-14570	Alloy 35Mo- A New Alloy for Seawater Applications	Josefin Eidhagen (AB Sandvik Materials Technology), Robert Mattsson (Sandvik Materials Technology), Ulf Kivisakk (AB Sandvik Materials Technology)

SOLID PARTICLE EROSION AND EROSION-CORROSION

CHAIR: MAZDAK PARSİ / VICE CHAIR: HADI ARABNEJAD KHANOUKI

8 TO 11:30 A.M. ROOM 340 B

SPONSORING COMMITTEE: TEG 077X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14986	Adhesion of Corrosion Product Layers Formed in Dewing Conditions	Claudia Prieto (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (Ohio University), Marc Singer (Ohio University)
8:35 a.m.	C2020-15202	Corrosion and Erosion Studies of Ceramic and Metal Matrix Composites	Joshua Diaz (Cal Poly Pomona), John Kasraei (Cal Poly Pomona), Spencer Swartzbaugh (Cal Poly Pomona), Vilupanur Ravi (California State Polytech Univ)
9:00 a.m.	C2020-14801	Computational Study on the Erosive Surface Degradation in Generic Pipe Conduits Used in Internal Combustion Engine Cooling Systems	Sebastian Wegt (TU Darmstadt), Artur Klink (TU Darmstadt MPA-IfW)
9:25 a.m.	C2020-14854	A Discussion on Modeling Abrasive Wear in Slurry Systems	Kofi Freeman Adane (InnoTech Alberta), Aaron Fuhr (InnoTech Alberta), Hadrian D'Souza (InnoTech Alberta), Martin Huard (InnoTech Alberta)
BREAK			
10:10 a.m.	C2020-15074	The Effects of Particle Size on Solid Particle Erosion of Elbows in Low Liquid and Annular Multiphase Flows	Ghulam Haider (University of Tulsa), Jun Zhang, Siamack Shirazi (University of Tulsa)
10:35 a.m.	C2020-15096	The Effects of Distance Between Two Elbows in Series on Erosion of the Second Elbow	Alireza Asgharpour (University of Tulsa), Siamack Shirazi (University of Tulsa), Soroor Karimi (University of Tulsa)
11:00 a.m.	C2020-15105	A Review of Various Guidelines for Predicting Solid Particle Erosion with Computational Fluid Dynamics Codes	Gocha Chochua (Schlumberger), Alireza Asgharpour (University of Tulsa), Emad Gharaibah (Baker Hughes, a GE company), Farzin Darihaki (University of Tulsa), Hadi Arabnejad Khanouki (Halliburton), Jeremy Edwards, Jun Zhang, Madhusuden Agrawal (BP), Mazdak Parsi (DNV GL), Peyman Zahedi, Ronald Vieira, Siamack Shirazi (University of Tulsa), Soroor Karimi, Thiana Sedrez (University of Tulsa), Yongli Zhang (BHGE)

SOUR CORROSION

CHAIR: MOHSEN ACHOUR / VICE CHAIR: FREDERICK PESSU

8 A.M. TO 2:30 P.M. ROOM 352 DE

SPONSORING COMMITTEE: TEG 282X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15169	The Role of Acid Gas Partial Pressure on Corrosion Processes in Oil and Gas Production Systems	Richard Woollam (RCW and Associates, LLC)
8:35 a.m.	C2020-14822	Sour Under-Deposit Corrosion with Different Iron Sulfides	Jon Kvarekval (IFE), Morten Tjelta (Institute for Energy Technology [IFE])
9:00 a.m.	C2020-14872	Effect of Cr and Mo on Corrosion Behavior of High Strength Steel in CO ₂ /H ₂ S Environments	Keiichi Kondo (Nippon Steel Corporation), Hiroki Kamitani (Nippon Steel Corporation), Hisashi Amaya (Nippon Steel Corporation, Wakayama Works), Jun Nakamura (Nippon Steel Corporation), Srdjan Nestic (Ohio University), Taro Ohe (Nippon Steel Corporation), Yoon-Seok Choi (Inst. for Corr. and Multiphase Tech., Ohio University), Yuji Arai (Nippon Steel Corporation)
9:25 a.m.	C2020-14627	Corrosion Behaviour of 316L Stainless Steel in Highly Sour Environment	Mazlan Shah (Universiti Kebangsaan Malaysia), Mazlan Shah (DNVGL Malaysia Sdn Bhd / National University of Malaysia), Najmiddin Yaakob (UITM), Norinsan Kamil Othman (Universiti Kebangsaan Malaysia)

BREAK

10:10 a.m.	C2020-14727	Corrosion and Scale Formation at Carbon Steel in Sour Aqueous Solution at Elevated Temperature	Morten Tjelta (Institute for Energy Technology (IFE)), Jon Kvarekval
10:35 a.m.	C2020-15158	Effect of Iron Carbide on Iron Sulfide Layer Protectiveness	Ezechukwu Anyanwu (Institute of Corrosion and Multiphase Technology), Bruce Brown (Institute for Corrosion and Multiphase Technology), Marc Singer (Ohio University)
11:00 a.m.	C2020-14413	Fe ₃ O ₄ , FeCO ₃ , or FeS - Which One Will Prevail at High Temperature in CO ₂ /H ₂ S Environments?	Shujun Gao (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (Ohio University), Marc Singer (Ohio University), Srdjan Nescic (Ohio University)
11:25 a.m.	C2020-14618	New, Non-corrosive, Non-Nitrogen containing H ₂ S Scavenger For Use in Predominately Oil and Gas Systems	Sunder Ramachandran (Baker Hughes, a GE company), Danika Ahoor (Baker Hughes), Jeremy Leidensdorf (Baker Hughes, a GE company), Scott Lehrer (Baker Hughes), Soma Chakraborty (Baker Hughes, a GE company), Vaithilingam Panchalingam (Baker Hughes)
LUNCH			
1:00 p.m.	C2020-14593	Fluid Governing Mechanics and its effect on H ₂ S Scavenger Tower Design	Willem-Louis Marais (Schlumberger)
1:25 p.m.	C2020-14363	Study On Elemental Sulfur Formation From Black Powder Deposits	Yousef Khuraibut (Kuwait Oil Company), Amer Jaragh (Kuwait Oil Company), Farah Altabbakh, Hassan Butaleb (Kuwait Oil Company), Saleh Al-Sulaiman (Kuwait Oil Company)
1:50 p.m.	C2020-14238	Improved Protocols to Test Corrosion Inhibition Efficiency and Scavenging Performance in Sour Petroleum Systems	Fares AlOtaibi (Saudi Aramco), Mohammed Alkhalidi (Saudi Aramco), Norah Aljeaban (Saudi Aramco), Oduro Harry (Saudi Aramco)

THERMAL AND COLD SPRAY COATINGS

CHAIR: SHILADITYA PAUL / VICE CHAIR: JAMES WEBER

8 A.M. TO NOON ROOM 351 EF

SPONSORING COMMITTEE: TEG 255X

Start	Document #	Title	Author(s)
8:10AM	C2020-14650	Determination of the Corrosion Rate of Thermally Spayed Aluminum (TSA) in Simulated Marine Service	Shiladitya Paul (TWI), Dave Harvey (TWI Limited)
8:35AM	C2020-15040	Protecting Steel Structures from Corrosion with Thermal Sprayed Zinc Duplex Coatings	Martin Gagne (Zelixir Inc), Ole Knudsen (SINTEF Materials and Chemistry)
9:00AM	C2020-14786	The Influence of Temperature on the Performance of Sacrificial Metallic Coatings Operating in Seawater	Berenika Syrek-Gerstenkorn (University of Birmingham), Alison Davenport (University of Birmingham), Shiladitya Paul (TWI)
9:25AM	C2020-14574	Prediction of Thermal Spray Aluminium Coatings Performance in Marine Environments by Combination of Laboratory and Field Tests	Rosa Grinon-Echaniz (University of Leicester), Rob Thornton (University of Leicester), Shiladitya Paul (TWI)
BREAK			
10:10AM	C2020-14315	Corrosion Resistance and Deterioration Behavior of Overlapping Layer Between Thermal Spray Coating and Heavy Duty Coating	Muye Yang (Kyushu University), Shigenobu Kainuma (Kyushu University), Yang Haoxuan (Kyushu University)
10:35AM	C2020-14676	Development of Novel Coating Systems for Mitigating Corrosion of Offshore Wind Turbines	Adamantini Loukodimou (PhD student, University of Leicester and TWI Ltd), David Weston (University of Leicester), Idalina Vieira Aoki (University of São Paulo), Shiladitya Paul (TWI), Vikas Kumar (University of Leicester)
11:00AM	C2020-14558	Hot Corrosion Behavior of Suspension Plasma Sprayed Yttria Stabilized Zirconia Thermal Barrier Coating	V.S. Raja, Monika Nidhi (Tata Steel Ltd), Ashish Ganvir (GKN Aerospace Sweden AB), Shrikant Joshi (University West), V S Raja (Indian Institute of Technology)
11:25AM	C2020-14554	Interlayer Coatings on Graphite for Improving the Durability of Plasma Sprayed Yttria Coating for High-Temperature Applications	Madhura B (Indira Gandhi Centre for Atomic Research [IGCAR]), Dr S Ningshen (IGCAR), E Vetrivendan (IGCAR), Jagadeeswara Rao Chowdari (IGCAR)

TUESDAY, MARCH 17

ADVANCES IN MATERIALS FOR OIL AND GAS PRODUCTION - DAY 2

CHAIR: HERNAN RINCON / VICE CHAIR: FILIPPO CAPPUCCINI

9 A.M. TO 5:30 P.M. ROOM 370 ABC

SPONSORING COMMITTEE: STG 32

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14878	Effect of Nb Addition and Processing Path on the Kissc of a Low Alloyed OCTG Steel	Marc-Antoine Thual (Arcelor Mittal Global R&D), Koen Bracke (OCAS NV ArcelorMittal Global R&D Gent), Nuria Sanchez (OCAS NV ArcelorMittal Global R&D Gent), Steven G. Jansto (Research and Development Resources)
9:35 a.m.	C2020-14521	Reduction of Conservatism in SSC Testing for Well Tubulars	Marc Wilms (Shell Global Solutions INT BV), Daniela Garcia (VALLOUREC), Edmund Dickinson (NPL), Gareth Hinds (National Physical Laboratory), Harold Evin (VALLOUREC), Herve Marchebois (TOTAL E&P), Johan Smit (Shell Global Solutions International BV), Michel Bonis (TOTAL), Sytze Huizinga (Sytze Corrosion Consultancy), Willem Maarten van Haaften (Shell)
10:00 a.m.	C2020-14694	Application of Super 13Cr Steel in Oil and Gas Wells with High Temperature and Small Amounts of H ₂ S	Ruijing Jiang (China University of Petroleum (Beijing)), Shujie Liu (CNOOC China Limited, Beijing Research Center), Xijin Xing (CNOOC China Limited, Beijing Research Center)
BREAK			
10:45 a.m.	C2020-14809	Environmentally-Assisted Cracking (SSC and SCC) of Martensitic Stainless Steel OCTG Material in Sour Environment in 5%NaCl and 20%NaCl Solution	Yuichi Kamo (JFE Steel Corporation), Masao Yuga (JFE Steel Corporation), Yasuhide Ishiguro (JFE Steel Corporation), Yusuke Mizuno (JFE Steel corporation)
11:10 a.m.	C2020-14715	Development of High Strength Grade and Cost Effective Super Martensitic Stainless Steel Solution for high CO ₂ /H ₂ S Environment	Cécile Millet (Vallourec), Guillaume Néel (Vallourec), Harold Evin (Vallourec), Martien Deffo (Vallourec Research Center France), Seungmin Song (Vallourec)
11:35 a.m.	C2020-14716	Sour Service Limit of 17% Cr Stainless Steels Grades for OCTG	Toshiyuki Sunaba (Inpex Corporation), Herve Marchebois (TOTAL E&P), Susumu Hirano (INPEX), Thiago Mesquita (Total SA), Thierry Cassagne (TOTAL)
LUNCH			
1:25 p.m.	C2020-14549	Implications of Failure of Alloy 718 (UNS N07718) Tubing Hanger in Sour Well	Janardhan Saithala (Petroleum Development Oman LLC), Amjad Al Kharusi (Petroleum Development Oman LLC), Antonio Ojeda Macedo (Petroleum Development Oman), Manoj Gonuguntla Suryanarayana (Petroleum Development Oman), Talal Al Nabhani (Petroleum Development Oman (PDO))
1:50 p.m.	C2020-14623	The Effect of Low Temperature Diffusional Heat Treatments on the Corrosion Resistance of Nickel Alloys	Mariana Carvalho (TechnipFMC), Daniela Cavalcante (TechnipFMC), Fabio Alves (TechnipFMC), Kioshy Assis, Marcella Iage (LND/COPPE/UFRJ), Oscar Mattos (LND/COPPE/UFRJ)
BREAK			
2:35 p.m.	C2020-14826	Evaluation of SCC, SSC, GHSC and HE Resistance of Aged UNS N06625 Forged Bars	Andrea Febbrari (Italfond S.p.A.), Annalisa Pola (Università degli Studi di Brescia), Chiara Veronesi (Italfond S.p.A.), Elena Brognoli (Italfond S.p.A.), Marcello Gelfi (Università degli Studi di Brescia), Matteo Cavagnola (Italfond S.p.A.), Raimondo Montani (Italfond S.p.A.)
3:00 p.m.	C2020-14814	Alloy 975 (UNS N09975) Resistant to Severe Sour Environments	Ernst Plesiutchnig (voestalpine Bohler Edelstahl GmbH & Co KG), Greg Chitwood (voestalpine Bohler Edelstahl GmbH & Co KG), Marianne Kapp (voestalpine Bohler Edelstahl GmbH & Co KG), Martin Woels (voestalpine Bohler Edelstahl GmbH & Co KG), Rainer Fluch (voestalpine Bohler Edelstahl GmbH & Co KG)
3:25 p.m.	C2020-14576	UNS N08935 – a New Versatile Grade for O&G	Ulf Kivisakk (AB Sandvik Materials Technology), Daniel Gullberg (AB Sandvik Materials Technology), Katarina Persson (AB Sandvik Materials Technology)

BREAK			
4:00 p.m.	C2020-14552	Development of a New High Interstitial Non-Magnetic Stainless Steel for Oil and Gas Applications	Clara Herrera (Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG), Merlin Seifert (Deutsche Edelstahlwerke Speciality Steel GmbH & Co. KG), Philipp Niederhofer (Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG)
4:25 p.m.	C2020-14856	Flow Forming as a Manufacturing Technique for Building Critical Pressure Housings: Considerations and Case Study	Anthony Collins (Carpenter Technology), Adam Well (Carpenter Technology), Thomas Williams (Carpenter Technology Corporation)
4:50 p.m.	C2020-14509	Corrosion Resistance of Stainless Steels and Nickel Alloys in Seawater	Sandra Le Manchet (Industeel)
ANODIC AND CATHODIC PROTECTION			
CHAIR: DANIEL WAGNER / VICE CHAIR: STEPHEN BALL			
9 A.M. TO 5:30 P.M. ROOM 371 DEF			
SPONSORING COMMITTEE: STG 05			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14940	Cathodic Polarization Characteristics of Carbon Steel in Alberta Soils	Jeffrey Delorme (Corrpro)
9:35 a.m.	C2020-14291	The Grid System for AST Bottom Protection: 30 Years Later	David Kroon (Corrpro), Dirk van Oostendorp (Corrpro)
10:00 a.m.	C2020-14933	Stray Current Interference Simulation and Mitigation Associated with Light Rail Transit (LRT) Systems and Adjacent Metallic Pipelines – A Case Study	Boshra Momen Nejad (Corrpro Canada Inc.), Brandon Miller (Corrpro Canada Inc), Jeffrey Delorme, Levi Blumhagen (CorrPro), Yousef Abbasi Asl (Corrpro Canada)
BREAK			
10:45 a.m.	C2020-14261	Circuit Resistance Determination in Impressed Current Cathodic Protection System for Above Grade Storage Tank Bottoms Using A Grid System	Hongbo Ding (Aegion / Corrpro), Casey Sprayberry (Corrpro), Dirk van Oostendorp (Corrpro Companies Inc), Jared Pannell (Aegion), Yuxi Duan (Corrpro)
11:10 a.m.	C2020-14619	Coupon Interpretation in Multi-Line Corridors	Daniel Fingas (Corrosion Service Company Limited), Len Krissa (Enbridge Pipelines Inc.)
11:35 a.m.	C2020-15115	Design and Operation of Cathodic Protection System for Duplex Stainless-Steel Pipeline: Protection Criteria and Stray Current Management	Ashraf Alaasmi (BP Exploration [Epsilon] Limited), Kathy Buckingham, Timothy Bieri (BP Exploration & Production Operating Co. Ltd), Ziru Zhang (BP America Inc)
LUNCH			
1:00 p.m.	C2020-14729	FEM Simulation of New Generation of Buried Vessels Cathodic Protection	Marco Ormellesse (Politecnico di Milano), Andrea Brenna (Politecnico di Milano), Mehdi Attarchi (Politecnico di Milano)
1:25 p.m.	C2020-14629	Intelligent Remote Monitoring and Control System of Cathodic Protection for Long-distance Pipelines	Youwen Jiang (Peerochina Pipeline R&D Center)
1:50 p.m.	C2020-14681	Mass Transit Track-To-Earth Resistance Measurements	Marian Stec (Corrpro)
BREAK			
2:35 p.m.	C2020-14883	Metallurgical Testing of Drawn Arc Silver Brazed (DASB) and Thermite Welded Connections for Cathodic Protection	David Jungert (Aegion Corporation), Len Krissa (Enbridge Pipelines Inc.), Sean Lepine (Enbridge), Stephen Gibson (Corrpro Canada, Inc.)
3:00 p.m.	C2020-14927	Oxygen Evolution from the MMO Anode Cathodic Protection System and its Effect on the Corrosion of the Soil-Side Bottom Plate of an Aboveground Storage Tank	Sujay Math (Northern Technologies Intl), Pavan Shukla (Savannah River Nuclear Solutions), Terry Natale (Northern Technologies Intl)
3:25 p.m.	C2020-14462	Challenging the European Standard NF EN 50162 Regarding the Evaluation of Corrosion Risk by DC Stray Currents	Elisabeth Fleury (GRTgaz RICE), Aymeric Lopitiaux (GRTgaz), Laura Sanders (GRTgaz), Laurent Henry (GRDF), Romuald Bouaffre (GRTgaz), Sylvain Fontaine (GRTGAZ-CTE)
BREAK			
4:00 p.m.	C2020-14621	The Effect of Inductive Loading on Rectifier Interruption	Michael Dockery (Corrpro Canada), Stephen Gibson (Corrpro Canada, Inc.)
4:25 p.m.	C2020-14260	Cathodic Protection of Structures in a Confined Area Using Remote Anodes	Hongbo Ding (Aegion / Corrpro), Jared Pannell (Aegion), Raihan Khondker (STP Nuclear Operating Company), Sokunthea Ou (Aegion)
4:50 p.m.	C2020-15031	Use of Solid State Decouplers to Eliminate Stray Current Corrosion in Isolation Joints	Monica Fernandez (Petroleum Development Oman LLC), Fatih Boluk (Petroleum Development Oman [PDO]), Osvaldo Mejia (Petroleum Development Oman [PDO])

CONCRETE AND ARCHITECTURE - RESEARCH IN PROGRESS - DAY 1

CHAIR: DAVID BASTIDAS / VICE CHAIR: CHRISTOPHER ALEXANDER

9 A.M. TO 5:40 P.M. - ROOM 342 F

SPONSORING COMMITTEE: RAC

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15667	Pitting of Carbon Steel in Synthetic Concrete Pore Solution	Digby Macdonald (516 Mirabay Blvd), Alireza Saatchi (University of California, Berkeley), Aoni Xu (Argonne National Laboratory), Bruno Kursten (SCK-CEN, EHS Institute, RDW Unit), Elmira Ghanbari (University of California, Berkeley), George Engelhardt (OLI Systems Inc)
9:35 a.m.	C2020-15700	Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides	David Bastidas (University of Akron), Jacob Ress (The University of Akron), Juan Bosch Giner (The University of Akron), Ulises Martin (The University of Akron)
10:00 a.m.	C2020-15715	Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown	Shayan Gholami (Texas A&M University), Mahmoud Shakouri (University of Nebraska-Kearney), Mohammad Rahmani (Texas A&M University), Yong-Rak Kim (Texas A&M University)
BREAK			
10:45 a.m.	C2020-15617	Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	Jose Ramon Zamora (Instituto de Ciencias de la Construcción Eduardo Torroja), Isabel Martinez (Instituto Eduardo Torroja), Jose Manuel Gandía-Romero (Department of Architectural Construction, Universitat Politècnica de València), Juan Soto (Interuniversity Research Institute for Molecular Recognition and Technological Development, Universitat Politècnica de València - Universitat de València), Manuel Valcuende (Department of Architectural Construction, Universitat Politècnica de València), Román Bataller (Interuniversity Research Institute for Molecular Recognition and Technological Development, Universitat Politècnica de València - Universitat de València)
WHITNEY LECTURE			
LUNCH			
1:00 p.m.	C2020-15831	Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	Margareth Dugarte (Margareth Dugarte)
1:25 p.m.	C2020-15629	Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	Deepak Kamde (IIT Madras), Radhakrishna Pillai (Indian Institute of Technology Madras)
1:50 p.m.	C2020-15534	Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	Arpit Goyal (Coventry University), Eshmaiel Ganjian (Coventry University), Homayoon Sadeghi Pouya (Atkins)
BREAK			
2:35 p.m.	C2020-15555	Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion	Eddisson Hernandez (Universidad Nacional de Ingeniería)
3:00 p.m.	C2020-15637	Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	Zheng Dong (Clemson University), Amir Poursaee (Clemson University), Seyedhamidreza Torbatarraf (Clemson University)
3:25 p.m.	C2020-15764	Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete	Changkyu Kim (Texas A&M University), Homero Castaneda-Lopez (Texas A&M University)
BREAK			

4:00 p.m.	C2020-15618	Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	Jose Ramon Zamora (Instituto de Ciencias de la Construcción Eduardo Torroja), Angel Castillo (IETcc), Isabel Martinez (Instituto Eduardo Torroja), Jose Manuel Gandía-Romero (Department of Architectural Construction, Universitat Politècnica de València), Manuel Portillo-Llamas (Instituto de Ciencias de la Construcción Eduardo Torroja, CSIC), Román Bataller (Interuniversity Research Institute for Molecular Recognition and Technological Development, Universitat Politècnica de València - Universitat de València)
4:25 p.m.	C2020-15497	Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode	Ahmad (Benjamin) Soraghi (University of Akron), Qindan Huang (The University of Akron)
4:50 p.m.	C2020-15635	Training of Non-Destructive Detection of Reinforcement Corrosion	Sylvia Kessler (Helmut-Schmidt-University / University of the Federal Armed Forces Hamburg, Germany)
5:15 p.m.	C2020-15649	Towards a Physically Significant Model of the Impedance of Steel in Concrete	Christopher Alexander (University of South Florida), Alberto Sagues (University of South Florida)

CONTROL OF PROBLEMATIC MICROORGANISMS IN OIL AND GAS FIELD OPERATIONS

CHAIR: TORBEN LUND SKOVHUS / VICE CHAIR: JASON LEE

9 A.M. TO 5 P.M. ROOM 332 F

SPONSORING COMMITTEE: TEG 286X

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15086	An Evaluation of Cessation of Nitrate Treatment of High-Volume Seawater Injection Systems.	Anthony Mitchell (Equinor ASA), Ingun Skjevraak (Equinor), Martin Iding (Equinor)
9:35 a.m.	C2020-14412	A Novel Method for the Enhanced Kill of Sulfate Reducing Microorganisms	Gary Jenneman (GJ Microbial Consulting, LLC)
10:00 a.m.	C2020-15003	SourMit, a novel Thermal-Hydraulic-bioChemical (THbC) Model for Prediction of Reservoir souring	Moein Jahanbani Veshareh (The Danish Hydrocarbon Research and Technology Center), Hamidreza Nick (The Danish Hydrocarbon Research and Technology Center)
BREAK			
10:45 a.m.	C2020-14904	The 1000's Microbial Genus Belonging to the O&G Fields from Argentina	Maria Clara Pagliaricci (YPF Tecnología), Albert Saavedra (YPF Tecnología), Juliana Soler Arango (YPF Tecnología), Walter Morris (YPF Tecnología), Walter Vargas (YPF Tecnología)
11:10 a.m.	C2020-14592	Development of an Efficient Mic Mitigation and Control Strategy in Pipeline Pigging Operations	Charles Armstrong (Solvay), Dr Patrick Powell (Home), Hejian Sun, Yuxiu Liu
11:35 a.m.	C2020-14622	A Field Study into the Mitigation of Severe Downhole Microbiologically Influenced Corrosion of Oxygen Contaminated Hydro-Fracked Shale Oil Reservoirs	Patrick Teevens (Broadword Corrosion Engineering Ltd.), Tijan Pinnock (Broadword Corrosion Engineering Ltd.), Carl Miiller (Tourmaline Oil Corporation), Carlos Palacios, Perry O'Hearn
LUNCH			
1:00 p.m.	C2020-15090	Synergistic Effect of Biocide and Biodispersant to Mitigate Microbiologically Influenced Corrosion in Crude Oil Transmission Pipelines	Lisa Gieg (University of Calgary), Danielle Kiesman (InnoTech Alberta), Hitesh Bagaria (Suez - Water Technologies & Solutions), Jennifer Sargent (Suez Water Technologies & Solutions), Mohita Sharma (University of Calgary), Trevor Place (Enbridge Pipelines Inc.), Yin Shen (University of Calgary)
1:25 p.m.	C2020-14912	Novel Screening Method to Optimize Biocide Strategies Under Model Field Conditions	Ethan Solomon (DuPont Microbial Control), Ella Massie-Schuh (DuPont Microbial Control), Joseph Moore (DuPont Microbial Control), Kenneth Wunch (DuPont Microbial Control), Makensie Moore (DuPont Microbial Control)
1:50 p.m.	C2020-15084	Managing the Internal Corrosion of Oil Producing Well Flowlines	Sandip Kuthe (Kuwait Oil Company), Akhil Jaithlya (Kuwait Oil Company), Amer Jaragh (Kuwait Oil Company), Farah Altabbakh
BREAK			
2:35 p.m.	C2020-14875	A New High Performance Biguanide Polyammonium-Based Blend for Control of Microbiological Fouling in Oil and Gas Stimulation	Christy Wentworth (BWA Water Additives), Jeffrey Kramer (BWA Water Additives)

3:00 p.m.	C2020-14704	Biocide Evaluation and Optimization For PW Pipelines by Testing on System-Specific High-Risk Microorganism	Michael Jensen (Hess Denmark), Laura Tiano, Lone Tang (Teknologisk Institut), Rikke Markfoged (Danish Technological Institute), Tinna Roesen (Danish Technological Institute)
3:25 p.m.	C2020-14527	Enhanced Biocide Treatment Using D-Tyrosine Against Desulfovibrio Vulgaris Corrosion of Carbon Steel	Tuba Unsal (Ohio University), Di Wang, Sith Kumseranee (PTT Exploration & Production Public Company Limited), Suchada Punpruk (PTT Exploration & Production), Tingyue Gu (Ohio University)
BREAK			
4:00 p.m.	C2020-14992	Remediation of Microbially Contaminated Horizontal Wells with Acrolein	Jodi Wrangham (Baker Hughes)
4:25 p.m.	C2020-14365	Microbiologically Influenced Corrosion by General Aerobic and Anaerobic Bacteria in Oil & Gas Separators	Yousef Khuraibut (Kuwait Oil Company), Ali Moosavi (ADCO), Amer Jaragh (Kuwait Oil Company), Hassan Butaleb (Kuwait Oil Company), Saleh Al-Sulaiman (Kuwait Oil Company)
CORROSION IN NUCLEAR SYSTEMS - DAY 2			
CHAIR: ZIQING ZHAI / VICE CHAIR: VINEETH KUMAR GATTU			
9 A.M. TO 2 P.M. - ROOM 351 AB			
SPONSORING COMMITTEE: TEG 224X			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14536	Role of Material Condition on Precursor Corrosion Damage and Stress Corrosion Crack Initiation Behavior of Alloy 600 in PWR Primary Water	Ziqing Zhai (Pacific Northwest National Laboratory), Mychailo Toloczko (Pacific Northwest National Laboratory), Stephen Bruemmer (Pacific Northwest Natl Lab)
9:35 a.m.	C2020-15235	SCC Growth Behavior of Stainless Steels and Nickel Base Alloys during Chemical Transients in BWR Environments	Xiaoyuan Lou (Auburn University), Rajeshwar Pathania (EPRI), Robert Carter (EPRI)
10:00 a.m.	C2020-14474	FAC Assessment for 2 Inch Diameter SA106 Pipe With Elbow and Weld	Dong-Jin Kim (KAERI)
BREAK			
10:45 a.m.	C2020-15114	Contribution of Cathodic Reaction Inside Crevice on Propagation of Crevice Corrosion of 304L SS in Sodium Chloride Solution	Kazuki Yakata (Tohoku University), Yuichi Fukaya (Tokyo Electric Power Company Holdings, Inc.), Yutaka Watanabe (Tohoku University)
11:10 a.m.	C2020-15046	Deployment of Laser Peening to Prevent SCC of Nuclear Fuel Dry Storage Canisters	Lloyd Hackel (Curtiss-Wright, Metal Improvement Co), C Dane (Curtiss Wright Surface Technologies), Fred Bidrawn (Holtec International), Gareth Thomas (Holtec International), Jon Rankin (Curtiss-Wright Surface Technologies), Matt Walter (Curtiss Wright Surface Technologies), Pierre Oneid (Holtec International), William Neuman (Intellifos)
11:35 a.m.	C2020-14567	Corrosion Resistance in Water and Steam of Monolithic FeCrAl Alloys and Zirconium Alloy Coatings	Raul Rebak (General Electric Global Research Center)
LUNCH			
1:00 p.m.	C2020-14473	Corrosion Behavior of 12%Cr-6%Al Oxide Dispersion Strengthened Steels for New Fuel Cladding in Nitric Acid Solutions Containing V and Ru	Hiromu Ambai (Japan Atomic Energy Agency), Kan Sakamoto (Nippon Nuclear Fuel Development Co., LTD), Masayuki Takeuchi (Japan Atomic Energy Agency), Masayuki Watanabe (Japan Atomic Energy Agency), Shinichiro Yamashita (Japan Atomic Energy Agency), Yoko Takahatake (Japan Atomic Energy Agency), Yuichi Sano (Japan Atomic Energy Agency)
1:25 p.m.	C2020-14713	An Electrochemical Corrosion Study into 20Cr-25Ni-Nb Advanced Gas-cooled Reactor Fuel Cladding	Ronald Clark (National Nuclear Laboratory), Geraint Williams (Swansea University), William Walters (NNL)
1:50 p.m.	C2020-14556	Influence of Dissolved Hydrogen on the Internal and Intergranular Oxidation of Ni-Base Alloys in Simulated PWR Primary Water	Yun Soo Lim (Korea Atomic Energy Research Institute), Dong-Jin Kim (KAERI), Hong Pyo Kim (KAERI), Jong Yeon Lee (KAERI), Sung Woo Kim (KAERI)

CORROSION IN SUPERCRITICAL SYSTEMS

CHAIR: YONG XIANG / VICE CHAIR: SHILADITYA PAUL

9 A.M. TO 1:30 P.M. ROOM 340 A

SPONSORING COMMITTEE: TEG 121X

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14572	Corrosion Reactions in Simulated CO ₂ Ship Transport Conditions	Gaute Svenningsen (Institute for Energy Technology), Arne Dugstad (Inst for Energy Technology), Bjorn Morland (Institute for Energy Technology), Morten Tjelta (Institute for Energy Technology (IFE))
9:35 a.m.	C2020-14874	Pitfalls and Artefacts in Corrosion Experiments with Dense Phase CO ₂	Bjorn Morland (Institute for Energy Technology), Gaute Svenningsen
10:00 a.m.	C2020-14861	Corrosion Testing in Supercritical CO ₂	Shiladitya Paul (TWI), David Smyth-Boyle (TWI)
BREAK			
10:45 a.m.	C2020-14615	Effect of H ₂ S on the Corrosion of Mild Steel at HPHT Condition	Yoon-Seok Choi (Ohio University), Ahmad Zaki Abas (Petronas Research & Scientific), Azmi Mohammed Nor (Petronas Research & Scientific), Fernando Farelal-Valencia (Ohio University), Luciano Paolinelli (Institute for Corrosion and Multiphase Technology), Muhammad Suhor (Petronas Research SDN BHD), Srdjan Nestic (Ohio University)
BREAK			
11:35 a.m.	C2020-14433	Impact of O ₂ Content on Corrosion Behavior of X65 Mild Steel in Gaseous, Liquid and Supercritical CO ₂ Environments	Xiu Jiang (SINOPEC)
LUNCH			
1:00 p.m.	C2020-15199	Oxidation of Welded Materials in High Temperature Supercritical Carbon Dioxide	Florent Bocher (Southwest Research Institute)
CORROSION IN THE REFINING INDUSTRY			
CHAIR: IVAN MORALES / VICE CHAIR: HUANG LIN			
9 A.M. TO 5:15 P.M. ROOM 372 DEF			
SPONSORING COMMITTEE: STG 34			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14760	317 Piping Stress Corrosion Cracking After Unit Unexpected Shutdown Recovery	Xavier Roumeau (Total Antwerp refinery), Matthieu Devallee (Total Refinery Port Arthur)
9:35 a.m.	C2020-15197	Air Coolers In Wet Sour Services - Plug Gaskets Leakage During Startup	Cathleen Shargay (Fluor Corp.), Jigneshkumar Desai (Fluor India), Kuntak Daru (Fluor Corp), Sarah Radovcich (Fluor)
10:00 a.m.	C2020-14252	Case Study: Weld Repair of Aged Hydrogen Reformer Bull Tee	François Gilbert (Suncor)
BREAK			
10:45 a.m.	C2020-14981	Qualification of a Single Pass Weld Overlay using NiCrMo-14 as an Alternative to Multi-pass NiCrMo-4 to Mitigate Crude Tower OVHD Corrosion	Ivan Morales (ExxonMobil Research and Engineering), Daniel Shields (ExxonMobil), Jorge Perdomo (ExxonMobil Research & Eng)
11:10 a.m.	C2020-15112	Fitness for Purpose Evaluation of Hydrogen Production Unit Centrifugally Cast Tubes: "Post Exposure" Metallographic and Mechanical Test	Marco De Marco (Istituto Italiano della Saldatura - IIS), Gianluigi Cosso (Istituto Italiano della Saldatura - IIS), Marco Palombo (Istituto Italiano della Saldatura - IIS)
11:35 a.m.	C2020-14357	Hydrogen Embrittlement of SS 316L Instrument Tubing in Hydroprocessing Unit	Rajaram Chidambaram (Exxon Co USA Accounts Payable), John Richert (ExxonMobil), Jorge Perdomo (ExxonMobil Research & Eng), Leong Wai Siew (Exxon Chemical Co Accts Payabl)
LUNCH			
1:00 p.m.	C2020-14543	Review and Recommendations on PWHT Exemptions for 2014 Edition of ASME B31.3	Deepak Mankar (Fluor Daniel Corporation)

1:25 p.m.	C2020-14628	Polythionic Acid Stress Corrosion Cracking of Type 347LN Containing Higher Cu for Improvement of Creep Strength	Yuhei Suzuki (Nippon Steel Corporation), Etsuo Dan (Nippon Steel Corporation), Hirokazu Okada (Nippon Steel Corporation), Masaki Ueyama (Nippon Steel U.S.A), Nao Otaki (Nippon Steel Corporation), Takahiro Osuki (Nippon Steel Corporation)
1:50 p.m.	C2020-15062	HTHA in Low-Carbon Steel Occurring at Temperatures Recently Thought to be Not Possible	Jorge Hau (Jorge Hau)
BREAK			
2:35 p.m.	C2020-14626	Low H₂S High Temperature Sulfur Attack in Refining Hydrotreating Processes	Brittany Oliva-Chatelain (Pinnacle Asset Integrity Services), Fred Addington (Pinnacle Asset Integrity Services), John Pugh (BP), Sudhakar Mahajanam (Stress Engineering Services)
3:00 p.m.	C2020-14444	Naphthenic Acid Corrosion and Sulfidic Corrosion in Crude Oil Fractions	Yuhchae Yoon (Honeywell Process Solutions), Sridhar Srinivasan (Honeywell Process Solutions)
3:25 p.m.	C2020-15108	Effect of Corrosion Inhibitors in the Refining Process of Crude Oil Contaminated with Organic Chlorides	Irene Carrillo Salgado (Corrosion y Proteccion), Jorge Canto Ibanez (Corrosion y Proteccion Sa de Cv), Lorenzo Martinez Gomez
BREAK			
4:00 p.m.	C2020-14245	Electrochemical Corrosion Behavior of Carbon Steel With and Without Residual Elements	Suresh Divi (Stress Engineering Services), Sri Krishna Chimbli (Stress Engineering Services)
4:25 p.m.	C2020-15188	Double Jeopardy in a Refinery Setting: How to Successfully Inspect an Insulated Pipeline for Corrosion Under Insulation (CUI)	Bernardo Cuervo (G2 Integrated Solutions), Mark McQueen (G2-Integrated Solutions)
4:50 p.m.	C2020-15002	Permasense Wireless Non-Intrusive Corrosion Monitoring System Case Studies at Equinor Refining Denmark	Attila Gajdacs (Emerson), Jake Davies (Emerson)
CORROSION MANAGEMENT - IMPLEMENTATION & PROGRESS - DAY 2			
CHAIR: HENDRIK DEBRUYN / VICE CHAIR: ROBIN TEMS			
9 A.M. TO 1:30 P.M. - ROOM 360 EF			
SPONSORING COMMITTEE: STG 08			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15083	Importance of Corrosion Monitoring to Ensure Effective Corrosion Management of Carbon Steel Pipelines	Monica Fernandez (Petroleum Development Oman LLC), Ashraf Al Hinai (Petroleum Development Oman LLC), Fadi Masri Zada (Petroleum Development Oman), Mohammed Ibrahim Al Mawali (Petroleum Development Oman LLC), Nasser Al-Behlani (Petroleum Development Oman)
9:35 a.m.	C2020-14815	On-site Corrosion Inhibitor Detection for Improved Corrosion Management	Andy Osnowski (Anpera Technologies), Fiona Mackay (LUX Assure Ltd), Gillian Macdonald (LUX Assure Ltd), Harry Grover (LUX Assure), Jenni Howe (LUX Assure), Scott Rankin (Anpera Technologies)
10:00 a.m.	C2020-14546	Estimating the Financial Risk Reductions Associated with Cathodic Protection Programs	Parth Iyer (Dynamic Risk), Han Wu (Dynamic Risk), Len Krissa (Enbridge Pipelines Inc.), Millan Sen (Enbridge Pipelines Inc), Yoko Nakazato (Dynamic Risk)
BREAK			
10:45 a.m.	C2020-15227	Managing a Full Life Cycle Digital Coating/FM Program	Randy Ormiston (PK Technology)
11:10 a.m.	C2020-14630	Update for Expected Service Life and Cost Considerations for Maintenance and New Construction Protective Coating Work	Jayson Helsel (KTA-Tator, Inc.), Robert Lanterman (KTA-Tator Inc)
11:35 a.m.	C2020-15146	The Everglades as Host to Zinc Coated Iron Pipe	Maury Gaston (American Cast Iron Pipe)
LUNCH			
1:00 p.m.	C2020-14764	Holding Water — A Corrosion Management Program in a Vast Seawater Injection System	Ridha Abbas (Saudi Aramco), Faisal Al-Abbas (Saudi Aramco), Juan Hernandez Montiel (Saudi Aramco)

CORROSION OF ADDITIVELY MANUFACTURED MATERIALS

CHAIR: ROBERT BADRAK / VICE CHAIR: LIU CAO

9 A.M. TO 3 P.M. ROOM 332 E

SPONSORING COMMITTEE: TEG 569X

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14784	Three-Body Tribocorrosion Behaviour of Additively Manufactured 316L Stainless Steel	Mobin Salasi (Curtin University), John Sanders (Curtin Corrosion Centre), Mariano Iannuzzi (Curtin University), Thunyaluk Pojtanabuntoeng (Curtin University), William Rickard (Curtin University), Zakaria Quadir (Curtin University)
9:35 a.m.	C2020-14988	Pitting and Crevice Corrosion Resistance of a Direct Metal Laser Sintered (DMLS) 316L Stainless Steel in Artificial Seawater	Claudia Prieto (Ohio University), David Young (Ohio University), Marc Singer (Ohio University), Timothy Cyders (Ohio University)
10:00 a.m.	C2020-15223	Corrosion Behavior of 304L Stainless Steel Produced by Laser Powder Bed Fusion	Ho Lun Chan (Cal Poly Pomona), Christopher Faraj (California State Polytech University), Jacob Benoun, Joseph Newkirk (Missouri University of Science and Technology), Vilupanur Ravi (California State Polytech Univ), Zachary Hilton (Missouri University of Science and Technology)
BREAK			
10:45 a.m.	C2020-14895	Correlation Between Microstructure and Corrosion Resistance for AM Products in Stainless Steel and Light Metals	Johan Nielsen (Force Technology), Kirsten Sørensen (Force Technology)
11:10 a.m.	C2020-14749	Optimization of Filler Metals and Process Parameters for the Waam Fabrication Components from Corrosion Resistant Ni-Base Alloys	Knut Bauer-Partenheimer, Fabian Stahl (Deutsche Nickel GmbH)
11:35 a.m.	C2020-14560	Influence of the Surface Condition on the Pitting and SCC Resistance of Alloy UNS N07718 Produced via Selective Laser Melting	Madison Burns (Baker Hughes, a GE Company), Christoph Wangenheim (Baker Hughes), Helmuth Sarmiento-Klapper (Baker Hughes)
LUNCH			
1:00 p.m.	C2020-14787	Corrosion and Mechanical Properties of Additively Manufactured Cocrfenti-Based Multi-Principal Element Alloy	Kosuke Kuwabara (Hitachi Metals Ltd.), Kazuya Shinagawa (Hitachi, Ltd), Seiichi Watanabe (Hokkaido University), Tadashi Fujieda (Hitachi Metals Ltd.), Yuzo Daigo (Hitachi Metals, Ltd)
1:25 p.m.	C2020-14960	Corrosion Studies of Additive Manufactured Alpha-Beta Ti Alloys	Kishore Venkatesan (CSIRO Australia), Darren Fraser (CSIRO), David Ritchie (CSIRO), Dimitri Conjan (Sigma Clermont), Sri Lathabai (CSIRO Australia)
1:50 p.m.	C2020-14823	Electrochemical Testing of Additive Manufactured Ti6Al4V and NiTi Materials in a Biological Fluid Environment	Elizabeth Trillo (SwRI), Carl Popelar (Southwest Research Company)
BREAK			
2:35 p.m.	C2020-15138	Corrosion Behavior of Ti6Al4V Alloy Produced by LPBF for Biomedical Applications	Sergio Lorenzi (University of Bergamo, DISA), Cristian Testa (University of Bergamo, DISA), Diego Manfredi (IIT), Flaviana Calignano (Politecnico di Torino), Francesco Carugo (University of Bergamo, DISA), Mariangela Lombardi (Politecnico di Torino), Marina Cabrini (University of Bergamo, DISA), Massimo Lorusso (CSFT@PoliTo Torino), Tommaso Pastore (University of Bergamo, DISA)

DIRECT ASSESSMENT

CHAIR: JORGE VASQUEZ / VICE CHAIR: AUSTINA MATTHIAS

9 A.M. TO 1:30 P.M. ROOM 371 ABC

SPONSORING COMMITTEE: STG 35

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14911	Application of ICDA Methodologies to Twenty-Two (22) Oil & Gas Production and Transport Pipelines - A Case Study	Sridhar Arumugam (Broadword Corrosion Engineering Limited), Adebola Kasumu (Broadword Corrosion Engineering Ltd.), Ashish Khera (Allied Engineers), Bidyut Baniah (Allied Engineers), Patrick Teevens (Broadword Corrosion Engineering Ltd.), Shubha Vincent (Broadword Corrosion Engineering Ltd.)
9:35 a.m.	C2020-14817	Process Improvements in Direct Assessment Programs	Chukwuma Onuoha (PureHM), Eric Pozniak (PureHM), Lloyd Oscar de Guzman (PureHM), Mill Jawed (PureHM), Shamus McDonnell (PureHM), Vignesh Shankar (PureHM)
10:00 a.m.	C2020-14414	Application of NACE Multi-phase Internal Corrosion Direct Assessment Standard SP0116	Xihua He (Southwest Research Institute), Jinwu Li (WTI Technology)
BREAK			
10:45 a.m.	C2020-14651	Application of Direct Assessment Methods in Arid and "Sabkha" Environments	Abdullah M. Hammoud (Corrpro), Dirk Van Oostendorp (Aegion/Corrpro), Naim Dakwar (Saudi Aramco)
11:10 a.m.	C2020-14983	The Use of MP-ICDA ICPM to Evaluate Design Implications for a New Kuwait Crude Oil Pipeline	Patrick Teevens (Broadword Corrosion Engineering Ltd.), Adebola Kasumu (Broadword Corrosion Engineering Ltd.), Amer Jarragh (Kuwait Oil CO), Shabbir Safri (Kuwait Oil Company)
11:35 a.m.	C2020-15078	Implantation of Probability Modeling to Stress Corrosion Cracking Direct Assessment (SCCDA) Methodology	Meng Lopez-Garrity (Mears Group Inc.), Aida Lopez-Garrity (Mears Group, Inc.)
LUNCH			
1:00 p.m.	C2020-14586	Material Selection Methodology Using Halite Tendency Indicators for Gas Wells: A Case Study	Valdir Araujo De Souza (Lloyd's Register), David Roberts (Lloyd's Register), Eugenia Marinou (Lloyd's Register), Qi Zhao (Lloyd's register)

ENVIRONMENTALLY ASSISTED CRACKING - DAY 2

CHAIR: KASRA SOTOUEH / VICE CHAIR: ARSHAD BAJVANI GAVANLUEI

9 A.M. TO 2 P.M. - ROOM 361 AB

SPONSORING COMMITTEE: TEG 186X

Start	Document #	Title	Author(s)
INTRODUCTION			
9:35 a.m.	C2020-14950	Stress-Assisted Corrosion of a Superheater Tube: The Role of Thermal Fatigue Cracking and Crevice Corrosion in the Failure Mechanism	Ewa Labuda (Sheppard T. Powell Associates, LLC), Sandy Sharp (SharpConsultant)
10:00 a.m.	C2020-14431	Practical Environmentally-Assisted Cracking Threshold Stresses for the Safe Use of Stainless Steels in Service Equipment	Manuel Marya (Schlumberger)
BREAK			
10:45 a.m.	C2020-14818	Influence of Pitting Susceptibility on the Nucleation of Stress Corrosion Cracking in High Strength Austenitic Stainless Steel at Elevated Temperature	Helmuth Sarmiento-Klapper (Baker Hughes), Andraz Legat (National Building Civil Engineering Institute), Bojan Zajec (Slovenian National Building and Civil Engineering Institute)
11:10 a.m.	C2020-14955	Sulfide Stress Cracking of Low Alloy Steels for Oil and Gas Production: Revisiting the Effect of Ni as an Alloying Element	Dannisa Chalfoun (Instituto Sabato - CONICET - YPF Tecnologia), Luis Aguirre (YPF Tecnología), Mariano Iannuzzi (Curtin University of Technology), Mariano Kappes (Comision Nacional de Energia Atomica), Ricardo Carranza (Comision Nacional de Energia Atomica), Teresa Perez (Teresa Perez)

11:35 a.m.	C2020-14873	Understanding of the Sour Resistance Improvement of an Industrial X52 Linepipe Through Ni Addition	Marc-Antoine Thual (Arcelor Mittal Global R&D), Bruno Michel (ArcelorMittal), Joachim Noens (OCAS NV ArcelorMittal Global R&D Gent), Martin Liebeherr (OCAS NV ArcelorMittal Global R&D Gent), Nuria Sanchez (OCAS NV ArcelorMittal Global R&D Gent), Zinedine Zermout (OCAS NV ArcelorMittal Global R&D Gent)
LUNCH			
1:00 p.m.	C2020-14588	Test Protocol for Assessing the Sulfide Stress Cracking Resistance of Low Alloyed Steels in High Temperature High Pressure Sour Environments	Florian Thebault (Vallourec), Jonathas Oliveira (Vallourec Oil & Gas France), Julien Millet (Vallourec Oil & Gas France)
1:25 p.m.	C2020-14548	Possibility of Zinc Embrittlement in Fire	Kazuki Nakao (Chiyoda Corporation), Akihisa Yamaguchi (Chiyoda Corporation), Hironori Ogiso (Chiyoda Corporation), Shinya Watanabe (Chiyoda Corporation), Shunji Watanabe (Chiyoda Corporation)
INHIBITORS - VAPOR TRANSPORTED (VCI) AND SURFACE COATED RUST PREVENTIVE (RP)			
CHAIR: CLIFF CRACAUER / VICE CHAIR: CHARLES PHILLIPS			
9 A.M. TO 2 P.M. - ROOM 340 B			
SPONSORING COMMITTEE: TEG 093X			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15004	Efficiency of Organic Compounds as Vcis for the Packaging of Carbon Steel Engine Elements in Automotive	Marco Ormellese (Politecnico di Milano), Andrea Brenna (Politecnico di Milano), Silvia Beretta (Politecnico di Milano)
9:35 a.m.	C2020-14849	Evaluating Corrosion Inhibitors for Hydrostatic Testing	John Wulterkens (Cortec Corporation), Casey Heurung (Cortec Corporation)
10:00 a.m.	C2020-14899	Four Year Exposure and Monitoring Data of VCI's for Corrosion Protection of AST Tank Bottoms; Effects of Salt Contamination	James Ellor (Elzly Technology Corp)
BREAK			
10:45 a.m.	C2020-15065	Comparison of VCI and CP Performance Using Floor Scan Data from Several 10-Year Old AST Floors	Tim Whited (MESA)
11:10 a.m.	C2020-14294	Improving the Durability of Packaging Materials Using Vapor Phase Corrosion Inhibitors	Behzad Bavarian (Cal State University Northridge), Aline Avanesian (CSUN-MSEM), Boris Miksic (Cortec Corporation), Lisa Reiner (California State Univ)
11:35 a.m.	C2020-14700	Evaluation of Mono-Layered Imidazole Based Adsorbed Material for Corrosion Control of Mild Steel in Acid Chloride Environment with Hypothetical Eviden	Nalini Dhanadapani (PSGR Krishnammal College)
LUNCH			
1:00 p.m.	C2020-14712	Screening and Studying Novel Corrosion Inhibitors in Solution by High-Throughput Techniques	Paul White (CSIRO Manufacturing), Gavin Collis (CSIRO Manufacturing), Kishore Venkatesan (CSIRO Manufacturing), Melissa Skidmore (CSIRO Manufacturing), Michael Breedon (CSIRO Manufacturing), Wayne Ganther (CSIRO Manufacturing)
1:25 p.m.	C2020-14855	Protect and Prolong- A New Multi-functional Diesel Fuel Additive	Pavlo Solntsev (Cortec Corporation), Brian Benduha (Cortec Corporation), Ming Shen (Cortec Corporation)

MATERIALS AND INTEGRITY IN OIL SANDS

CHAIR: DUANE SERATE / VICE CHAIR: MATTHEW KRANTZ

9 TO 11:40 A.M. ROOM 352 DE

SPONSORING COMMITTEE: TEG 341X

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14827	50 Years of Oilsands Operation: Comprehensive Review of Wear Materials	Duane Serate (Suncor)
9:35 a.m.	C2020-14973	Environmental Limits and Susceptibility of UNS S30403 to Environmentally Assisted Cracking in Thermal Oil Sands Operations.	Matthew Krantz (InnoTech Alberta), Jacalyn Goebel (InnoTech Alberta), Lisa Sopkow (InnoTech Alberta), Tamer Crosby (Alberta Innovates - Technology Futures)
10:00 a.m.	C2020-15234	Passive Fire Protection Considerations for Oil Sands Applications	Onder Akinci, Hyun-Su Kim (Atkins), Krishna Parvathaneni (Suncor), Michael Stahl (Atkins)
BREAK			
10:45 a.m.	C2020-14323	Slurry Pot Erosion-Corrosion Assessment of Cr White Cast Irons	Aminul Islam (National Research Council), Jiaren Jiang (National Research Council Canada), Yongsong Xie (National Research Council)
11:10 a.m.	C2020-14839	Validation of SlurryWearSim™ – A Dense Slurry Pipeline Erosion-Corrosion Model	Martin Huard (InnoTech Alberta), Kofi Freeman Adane (InnoTech Alberta)

NANOMATERIALS AND COATINGS TECHNOLOGIES

CHAIR: IGOR KOSACKI / VICE CHAIR: JOAO TEDIM

9 A.M. TO 2:30 P.M. ROOM 362 EF

SPONSORING COMMITTEE: TEG 474X

Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14828	Preparation & Tribological Characterization of Graphene Enriched Ni-P Coatings on X70 Pipeline Steel	Ahmad Raza Khan Rana (Dalhousie University), Zoheir Farhat (Materials Engineering Program, Department of Process Engineering and Applied Sciences, Dalhousie University)
9:35 a.m.	C2020-15228	High-Performance Anti-Corrosion Coatings Based on the Inclusion of Nanomaterials	Zhibin Lin (North Dakota State University), Dante Battocchi (North Dakota State University), Fujian Tang (Dalian University of Technology), Mingli Li (North Dakota State University), Xiaoning Qi (North Dakota State University), Xingyu Wang (North Dakota State University)
10:00 a.m.	C2020-14853	Range of Nanostructured Materials as a Toolbox for Incorporation of New Functionalities in Protective Coatings	Frederico Maia (Smallmatek, Lda), Cláudia Rocha (Smallmatek, Lda), Fabiana Vieira (Smallmatek, Lda)
BREAK			
10:45 a.m.	C2020-14565	Silica Nanocapsules Based on Gemini Surfactant as Environmentally Friendly Nanocontainers for Corrosion Protection in Seawater	Olga Kaczerewska (CICECO-Aveiro Institute of Materials and Department of Materials and Ceramic Engineering, University of Aveiro), Figueiredo Joana (Department of Biology and CESAM, University of Aveiro), Isabel Sousa (CICECO-Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro), Joao Tedim (University of Aveiro), Martins Roberto (Department of Biology and CESAM, University of Aveiro), Susana Loureiro (Department of Biology and CESAM, University of Aveiro)
11:10 a.m.	C2020-14498	Lithium Salts as Active Corrosion Inhibitors for Aluminum Substrates	Xiaoning Qi (North Dakota State University), Dante Battocchi (North Dakota State University), Vinod Upadhyay (North Dakota State University), Zachary Bergseth (North Dakota State University)
11:35 a.m.	C2020-14595	Hexacyanoferrate-Intercalated Layered Double Hydroxides as Nano-Additives for Detection of Early-Stage Corrosion of Steel	Joao Tedim (University of Aveiro)

LUNCH			
1:00 p.m.	C2020-14771	Differentiation of Coating Performance for Corrosion Protection by EIS	Andreas Loken (Jotun A/S), Anders W. B. Skilbred (Jotun AS)
1:25 p.m.	C2020-14658	Corrosion Properties of Anodized Mg Alloys by Micro-Arc Oxidation (MAO)	Talal Aljohani (KACST), Sami Aljadaan (KACST)
1:50 p.m.	C2020-14550	Corrosion Phenomena in Braking Systems	Federico Bertasi (Brembo S.p.a.), Alessandro Mancini (Brembo S.p.a.), Andrea Bonfanti (Brembo S.p.a.), Andrea Mauri (Brembo S.p.a.), Marco Bandiera (Brembo S.p.a.), Massimiliano Bestetti (Politecnico di Milano)
PITS, CRACKS AND CREVICES - RESEARCH IN PROGRESS - DAY 1			
CHAIR: JASON LEE / VICE CHAIR: JENNIFER LOCKE			
9 A.M. TO 5:15 P.M. - ROOM 342 E			
SPONSORING COMMITTEE: RAC			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15611	A Systematic Investigation on the Occurrence of Stress-Induced Pits and Grooves in Ssc Four-Point Bend Testing of Pipeline Steel	Thomas Haase (Salzgitter Mannesmann Forschung GmbH), Christian Schruff (EUROPIPE)
9:35 a.m.	C2020-15662	Effect of AC Interference on the Stress Corrosion Cracking Susceptibility and Pitting Behavior of Low Carbon Steels Under Cathodic Protection	Lizeth Sanchez (University of Akron), Hongbo Cong (University of Akron)
10:00 a.m.	C2020-15664	Atmospheric Corrosion and Cracking of 304 Stainless Steel in Controlled Marine Atmospheres	Jayendran Srinivasan (The Ohio State University), Alana Parey (The Ohio State University, Sandia National Laboratories), Eric Schindelholz, Gabriella Marino (The Ohio State University), Jenifer Locke (Materials Science and Engineering), Matthew Asmussen, Rebecca Schaller (Sandia National Laboratories), Tim Weirich
BREAK			
10:45 a.m.	C2020-15668	On the Deterministic Prediction of Crack Growth in Engineering Alloys	Digby Macdonald (University of California at Berkeley)
WHITNEY LECTURE			
LUNCH			
1:00 p.m.	C2020-15674	Towards Incorporations of H Embrittlement into a Grain Boundary Decohesion Model	Saba Navabzadeh Esmaeely (The Ohio State University), Christopher Taylor (DNV GL), Daniel Perea (Pacific Northwest National Laboratory), Daniel Schreiber (Pacific Northwest National Laboratory), Gerald Frankel (Ohio State University), James Saal (QuesTek Innovations, LLC), Jenifer Locke (Materials Science and Engineering), John Scully (University of Virginia), Pin Lu (QuesTek Innovations LLC), Wolfgang Windl (Ohio State University)
1:25 p.m.	C2020-15718	Prompt Gamma Activation Analysis Measurements of Hydrogen Absorption in Subsea Oil & Gas Materials under Cathodic Protection	Edward Artnak (The University of Texas at Austin), Herman Amaya (Schlumberger), Sheldon Landsberger (The University of Texas at Austin), William Charlton (The University of Texas at Austin)
1:50 p.m.	C2020-15722	The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on Corrosion Fatigue of AA5456-H116 in 3.5 wt.% NaCl	David Schrock (The Ohio State University, Fontana Corrosion Center), Jenifer Locke (Materials Science and Engineering)
BREAK			
2:35 p.m.	C2020-15742	On the Evaluation of Hydrogen-Induced Cracking Test Results in Sour Media Using H-Probes	Gaurav Joshi (IFP Energies Nouvelles), Alexandre Bonneau (IFP Energies Nouvelles), Jean Kittel (IFP Energies Nouvelles), Thomas Pejot (IFP Energies Nouvelles)

3:00 p.m.	C2020-15753	Peridynamic Modeling of Pits, Cracks, and Crevices	Siavash Jafarzadeh (University of Nebraska-Lincoln), Florin Bobaru (University of Nebraska-Lincoln), Jiangming Zhao (University of Nebraska-Lincoln), Ziguang Chen (Huazhong University of Science and Technology)
3:25 p.m.	C2020-15767	Measurement of the Effect of Complex Aerospace Environments on Corrosion Fatigue Crack Growth of AA7	Brandon Free (The Ohio State University - Fontana Corrosion Center), Jason Niebuhr (SAFE Inc.), Jenifer Locke (The Ohio State University - Fontana Corrosion Center), Sarah Galyon Dorman (SAFE Inc.)
BREAK			
4:00 p.m.	C2020-15769	The Effect of Laboratory Atmospheric Corrosion Conditions and Corrosion Inhibitors on Environmental Fatigue Damage	Sarah Galyon Dorman (SAFE Inc.), Jason Niebuhr (SAFE Inc.), Justin Rausch (SAFE Inc.)
4:25 p.m.	C2020-15837	Study of the Cracking Mechanism of Carbon Steel in presence of H ₂ S/CO ₂ and H ₂ S scavenger utilizing In-Situ Surface Enhanced Raman Spectroscopy.	Vinicio Ynciarde (The University of Texas at San Antonio), James Dante (Southwest Research Institute), Brendy Rincon Troconis (University of Texas at San Antonio)
4:50 p.m.	C2020-15689	Failure Analysis of Alloy C-276 Using Modern Characterization Techniques	Desmond Williams (Queen's University), Fei Long (Queen's University), Jared Smith (Canadian Nuclear Laboratories Limited), Kevin Daub (Queen's University), Suraj Persaud (Queen's University)
REAL TIME CORROSION MONITORING FOR PROCESS APPLICATIONS: TECHNOLOGY, EXPERIENCES, CASE STUDIES			
CHAIR: CLAY BRITAIN / VICE CHAIR: HUI LI			
9 A.M. TO 3:30 P.M. ROOM 382 B			
SPONSORING COMMITTEE: STG 62			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14812	High Resolution Ultrasound Alarm System for Subsea Corrosion Detection - Comparing Intrusive and Non-Intrusive Performance	Hanne Martinussen (Sensorlink AS), Andreas Jensen (Sensorlink), Daley Lasebikan (BP), Fredrik Sandquist (Sensorlink AS), Harald Sleire (Sensorlink AS), Øystein Baltzersen (Sensorlink AS)
9:35 a.m.	C2020-14638	Passive Magnetometry for Monitoring Integrity and Flow Diagnostics of Subsea Pipelines	Chetan Laddha (Sinclair Energy Partners), Nobuo Okabe (Yokogawa Electric Corporation), Ryo Yamada (Sumitomo Corporation)
10:00 a.m.	C2020-15196	Installed UT Sensors for Continuous Corrosion Monitoring: Understanding How Process Changes Influence Corrosion Rates	Mitch Gribi (Sensor Networks, Inc.)
BREAK			
10:45 a.m.	C2020-14496	A Novel Corrosion Probe Design that Provides Long Life and High Sensitivity	Miguel Gonzalez Nunez (MISTRAS Group, Inc.), Hossain Saboonchi (MISTRAS Group, Inc)
11:10 a.m.	C2020-14544	Monitoring Localized and General Corrosion using Advanced Electrochemical Sensors	Margaret Ziomek-Moroz (Department of Energy), Derek Hall (Penn State), Serguei Lvov (Pennsylvania State University), Timothy Duffy (Pennsylvania State University)
11:35 a.m.	C2020-15087	Detection of Biofilm Forming Microbes Using Electrochemical Methods	John Wolodko (University of Alberta), Peyman Derik Vand (University of Alberta), Tesfaalem Haile (InnoTech Alberta), Yongxu Chen (University of Alberta)
LUNCH			
1:00 p.m.	C2020-14434	Monitoring Spatial Variation of Localized Corrosion in Concrete Slab Based on OFDR Distributed Optical Fiber	Fujian Tang (Dalian University of Technology), Hong-Nan Li (Dalian University of Technology), Jialiang Hu (Dalian University of Technology), Liang Ren (Dalian University of Technology)
1:25 p.m.	C2020-15111	A Novel Corrosion Rate Monitoring Method for Steel in Soil Based on Tafel Extrapolation Method	Satoru Yamamoto (The Nippon Corrosion Engineering Co., Ltd), Masaru Abe (The Nippon Corrosion Engineering Co., Ltd)

1:50 p.m.	C2020-15051	Optical Fiber-based Sensor for Corrosion Monitoring at Elevated Temperatures	Ruishu Wright (National Energy Technology Laboratory/Leidos), Fei Lu (National Energy Technology Laboratory), John Baltrus (National Energy Technology Laboratory), Margaret Ziomek-Moroz (Department of Energy), Nathan Diemler (National Energy Technology Laboratory/Leidos), Paul Ohodnicki (National Energy Technology Laboratory), Ping Lu (National Energy Technology Laboratory/Leidos), Youngseok Jee (National Energy Technology Laboratory/Leidos)
BREAK			
2:35 p.m.	C2020-15116	Heat Recovery Steam Generation Corrosion Monitoring and Inspection Challenges	Amjad Al Kharusi (Petroleum Development Oman LLC), Mahmoud Nasif (Petroleum development Oman), Mohamed Al-Ghafri (PDO)
3:00 p.m.	C2020-14304	Anodization-Emission Spectroscopy of Metals by White Light Interferometry	Khaled Habib (Kuwait Institute For Scientific Research [KISR])
RECENT DEVELOPMENTS IN MINERAL SCALES AND DEPOSITS CONTROL TECHNOLOGIES - DAY 2			
CHAIR: ZAHID AMJAD / VICE CHAIR: MIRIAM BARBER			
9 A.M. TO 5:15 P.M. - ROOM 382 A			
SPONSORING COMMITTEE: STG 11			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14655	New Insight into the Mechanisms of Iron Carbonate Formation in Sweet Carbonate Reservoir during Acid Stimulation	Tao Chen (Saudi Aramco), Khalid Noaimi (Saudi Aramco), Qiwei Wang (Senior Scientist)
9:35 a.m.	C2020-14290	Distinct Mechanisms of Silica Scale Formation: Silicic Acid Polycondensation and Silica Particle Growth	Kostas Demadis (University of Crete), Georgia Skordalou (University of Crete), Giannis Aristodimou (University of Crete)
10:00 a.m.	C2020-14459	Metal Sulfide Scale Inhibitors	Kostas Demadis (University of Crete), Argyro Spinthaki (University of Crete), Duygu Disci-Zayed (Kurita Europe GmbH), Georgios Petratos (University of Crete), Juergen Matheis (Kurita Europe APW GmbH), Michaela Kamaratou (University of Crete), Wolfgang Hater (Kurita Europe APW GmbH)
BREAK			
10:45 a.m.	C2020-14561	Evaluation of Scale and Corrosion Inhibitors using a Jet Impingement Method	Hunter Thomson (Scaled Solutions), David Nichols (Scaled Solutions Ltd), Gordon Graham (Scaled Solutions Ltd.)
11:10 a.m.	C2020-14843	Inhibition of Formation of Magnesium Hydroxide by Polymers: The Role Molecular Architecture	Petros Koutsoukos, Zahid Amjad (Walsh University), Panagiota Natsi (University of Patras and FORTH-ICEHT)
11:35 a.m.	C2020-14902	Inhibition of Calcium Carbonate Scale Formation In Water-Mono Ethylene Glycol Solutions by Water Soluble Polymers	Petros Koutsoukos (University of Patras and FORTH-ICEHT), Panagiota Natsi (University of Patras and FORTH-ICEHT)
LUNCH			
1:00 p.m.	C2020-14491	The Development of Novel Laboratory Test Method on Evaluation of Scale Inhibition and Dispersancy for Cooling Water Applications	Haiping Lu (Baker Hughes), Bingbing Guo (Baker Hughes), Tim Underwood (Baker Huges), Zhenning Gu (Baker Hughes, a GE company)
1:25 p.m.	C2020-14944	Improving Scale Management – Combining Advanced Detection Techniques with Novel Tagged Polymeric Scale Inhibitors	Stephen Heath (BHGE), Jeff Russek (Baker Hughes), Rose Lehman (Baker Hughes), Salla Puupponen (Kemira), Susanna Toivonen (Kemira Oyj), Vesa Vouri (Kemira)
1:50 p.m.	C2020-14562	Pilot Rig Scale Testing: Hydrodynamics and Scale Deposition	Hunter Thomson (Scaled Solutions), Amarpreet Kaur (Scaled Solutions Ltd), Gordon Graham (Scaled Solutions Ltd.), Mark May (Scaled Solutions Ltd), Neil Goodwin (Scaled Solutions Ltd)
BREAK			

2:35 p.m.	C2020-15085	Synthesis and Applications of Novel Fluorescent-Tagged Scale Inhibitors in Water Treatment	Maxim Oshchepkov (JSC "Fine Chemicals R&D Centre"), Alexei Pervov (Moscow University of Civil Engineering), Konstantin Popov (JSC "Fine Chemicals R&D Centre"), Sergey Tkachenko (D. Mendeleev University of Chemical Technology of Russia), Vladimir Golovesov (Moscow University of Civil Engineering)
3:00 p.m.	C2020-14663	Surface Precipitation and Growth Kinetics of Calcium Carbonate (CaCO₃) Scale Using a Novel Capillary Flow Rig	Kabir Raheem (University of Leeds), Anne Neville (University of Leeds), Olujide Sanni (University of Leeds), Thibaut Charpentier (University of Leeds)
3:25 p.m.	C2020-14276	Erosion Corrosion of Oilfield Piping and Equipment due to Calcite Scales – Case Study	Asok Mathew (Kuwait Oil Company), Abdul Wahab Al-Ahmad (Kuwait Oil Co.), Adel Al-Mutairi (Kuwait Oil Company), Anoop Sudevan (Kuwait Oil Company), Israa Mohammad (KOC), Mohammed Al-Shayji (Kuwait Oil Company), Surya Prakash (Kuwait Oil Company)
BREAK			
4:00 p.m.	C2020-14754	Effective Laboratory Test Method for Quick Screening and Selection of Halite Inhibitors using Field Brine Composition	Sathees Kesavan (SUEZ WTS), Seethalakshmi Suresh (SUEZ WTS), M.N. Chaitra (SUEZ WTS), G. Yogitha (SUEZ WTS)
4:25 p.m.	C2020-14447	The Impact of Temperature Increases Upon Calcite Saturation and Rigorously Calculated Indices	Robert Ferguson (French Creek Software)
4:50 p.m.	C2020-14538	In Search of Synergy: Inhibitor Synergy and Antagonism in Scale Control	Robert Ferguson (French Creek Software), Chelsea Standish (Radical Polymers), Kaylie Young (The Dow Chemical Company), Willaim Glover (The Dow Chemical Company)
RECENT EXPERIENCES WITH AUSTENITIC AND DUPLEX STAINLESS STEELS - DAY 2			
CHAIR: LENA WEGRELIUS / VICE CHAIR: NICOLE KINSMAN			
9 A.M. TO 2 P.M. - ROOM 370 DEF			
SPONSORING COMMITTEE: TEG 114X, TEG 116X			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-14769	Corrosion Properties of Alloy 35Mo, New PREN 52 Alloy for Refinery and Chemical Industry	Daniel Gullberg (Sandvik AB), Andreas Rahm Yhr (Sandvik), Robert Mattsson (Sandvik Materials Technology)
9:35 a.m.	C2020-14418	Welding of CRA with Insufficient Purging Gas - Impact on Mechanical Properties and Corrosion Resistance	Roy Johnsen (Norwegian Univ of Sci & Tech), Kristian Eriksen (AkerBP), Stian Hauger (Kværner Verdal)
10:00 a.m.	C2020-15143	Negative Effects of Welding on Corrosion Resistance of Austenitic and Duplex Stainless Steel	Catherine Noble (M&M Engineering Associates), Karen Fuentes (M&M Engineering Associates,)
BREAK			
10:45 a.m.	C2020-14836	Corrosion of Stainless Steels: Effects of Finishing	Krista Heidersbach (Stress Engineering Services), Killian Efirid (Stress Engineering Services), Sudhakar Mahajanam (Stress Engineering Services)
11:10 a.m.	C2020-14610	Influence of Centerline Intermetallic Stringers on Pitting Corrosion Resistance of Superduplex Stainless Steels	Pauline Huguenin (Aperam Research), Amelie Fanica (Aperam), Clement Boissy, Florent Krajcarz (Aperam), Patrick Toussaint (Aperam), Paulina Erzamus-Vignal (Sayens), Saghi Saedlou (Aperam), Vincent Vignal (ICB UMR 6303 CNRS)
11:35 a.m.	C2020-15042	A Recent Case of Intermetallic Precipitations in Super Duplex	Henrik Bang (FORCE Technology), Jakob Mølholm (Force Technology)
LUNCH			
1:00 p.m.	C2020-14741	Study on Ferrite Measurement Methods for Duplex Stainless Steel Part 2: Focus on Measurement by Ferrite Scope	Nozomi Satake (JGC Corporation), Mikihiro Sakata (JGC)
1:25 p.m.	C2020-14551	Considerations Performing Ferrite Measurements with Focus on Point Counting According ASTM E562	Jan Y. Jonsson (Outokumpu Stainless AB)

ROLE OF SUSTAINABILITY - RESEARCH IN PROGRESS			
CHAIR: CHRISTOPHER TAYLOR / VICE CHAIR: ALP MANAVBASI			
9 A.M. TO 6 P.M. ROOM 342 D			
SPONSORING COMMITTEE: RAC			
Start	Document #	Title	Author(s)
9:10 a.m.	C2020-15571	Impact of System Design on Insulation Drying Time after Water Ingress	Natalia Maximova (Johns Manville), Ames Kulprathipanja (Johns Manville)
9:35 a.m.	C2020-15573	Innovative Routes for the Fabrication of Multifunctional Epoxy Coatings with Improved Barrier, pH Responsive Self-Healing and Antimicrobial Functionalities	Ying Li (Institute of Metal Research, Chinese Academy of Science.), Demian Njoku (Institute of Metal Research, Chinese Academy of Science)
10:00 a.m.	C2020-15576	Understanding the Impact of Insulation Chemistry on Surface Corrosion to Develop More Robust Insulation Systems that Promote Sustainability	Marybeth Jones (Johns Manville), Ames Kulprathipanja (Johns Manville)
10:25 a.m.	C2020-15745	Green inhibitors in Corrosion Control: Non-chromium Conversion coatings for Aluminium alloys	Makanjuola Oki (Landmark University, Omu-Aran, Nigeria.)
10:50 a.m.	C2020-15797	Corrosion Phenomena Associated with Different Common Food Chemicals Stored in Tinplate Cans with BPA-free Coating	Kuo-Hsiang Chang (The Ohio State University), Gerald Frankel (Ohio State University)
WHITNEY LECTURE			
LUNCH			
1:00 p.m.	C2020-15787	Longitudinal Modeling of Phase Behavior and Implications for Downhole Corrosion	Martin Colahan (Ohio University), David Young (Ohio University), Marc Singer (Ohio University)
1:25 p.m.	C2020-15792	Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System	Anwar Sadek (The University of Akron), Chelsea Monty (The University of Akron), John Senko (The University of Akron), Joshua Davis (The University of Akron), Robert Miller (The University Of Akron), Sai Prasanna Chinthala (The University of Akron)
1:50 p.m.	C2020-15826	Tracer and Electronic Tag Impregnated Solids with Tailored and Accelerated Corrosion for Sensing / Characterization and Sustainability	Indranil Roy (DAMORPHE / Rice University), Christian Wilkinson (DAMORPHE), Jing Zhou (DAMORPHE / Rice University), Ram Shenoy (DAMORPHE), Ting Roy (DAMORPHE)
2:15 p.m.	C2020-15833	Applying Machine Learning to Determine the Corrosion Resistance of Alloys	Szu-Chia Chien (The Ohio State University), Gerald Frankel (Ohio State University), Wolfgang Windl (Ohio State University)
2:35 p.m.	C2020-15676	Corrosion Studies of Ferrous Alloys in Pine-Derived Bio-Oil and Heavy Fuel Oil Blends	Gavin Warrington (Oak Ridge National Laboratory), James Keiser (Oak Ridge National Laboratory), Jiheon Jun (Oak Ridge National Laboratory), Raynella Connatser (Oak Ridge National Laboratory)
3:00 p.m.	C2020-15780	Corrosion and Fatigue of U.S. Offshore Wind Foundations	Daniel Kuchma (Tufts University)
3:25 p.m.	C2020-15703	Corrosion Product Analysis on the Surface of Bio-Oil-Exposed Alloys	Dino Sulejmanovic (Oak Ridge National Laboratory)
BREAK			
4:00 p.m.	C2020-15574	Corrosion Management and Materials Selection in "Green Building"	Florent Bocher (Southwest Research Institute), Christopher Taylor (DNV GL)
4:25 p.m.	C2020-15507	Investigating Climatic Influence on Degradation of Cartridge Brass	Sikiru Mohammed (Nigerian Army), Anne Neville (University of Leeds), Lawrence Onyeji, Yong Hua (University of Leeds)
4:50 p.m.	C2020-15625	Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel	Lindsay Braithwaite (University of Western Ontario), David Shoesmith (University of Western Ontario), James Noel (University of Western Ontario), Katarina Albrechtas (University of Western Ontario)
5:15 p.m.	C2020-15801	Climate Change Corrosion and Integrity Management	Binder Singh (Pragmatica GGS LLC)
5:45 p.m.	C2020-15698	Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys	Dadi Zhang (The Ohio State University), Jayendran Srinivasan (The Ohio State University), Jenifer Locke (Materials Science and Engineering)

WEDNESDAY, MARCH 18

AC INTERFERENCE, AC INDUCED CORROSION, AC RISK ASSESSMENT, MONITORING AND MITIGATION

CHAIR: SHANE FINNERAN / VICE CHAIR: KYLE PLATT

8 A.M. TO 4:30 P.M. GENERAL ASSEMBLY B

SPONSORING COMMITTEE: STG 05

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14464	A Non-Contact Remote Monitoring System for Measurement of AC Transmission Line Power Flows	Jonathan Marmillo (LineVision), Nathan Pinney (LineVision)
8:35 a.m.	C2020-14525	A Pipeline Operator's Experience with AC Induced Corrosion	Kyle Platt (Marathon Pipe Line LLC)
9:00 a.m.	C2020-14982	AC Corrosion at Other Frequencies Part A: Field Investigation and Mitigation	Wolfgang Fieltsch (Stantec), Andreas Junker Olesen (MetriCorr), Fation Shahinas (Stantec Consulting Ltd.), Lars Nielsen (MetriCorr Aps)
9:25 a.m.	C2020-14916	AC Corrosion at Other Frequencies Part B: Laboratory Investigations	Andreas Junker Olesen (MetriCorr), Fation Shahinas (Stantec Consulting Ltd.), Lars Nielsen (MetriCorr Aps), Wolfgang Fieltsch (Stantec)
BREAK			
10:35 a.m.	C2020-14270	AC Corrosion of Cathodically Protected Pipelines - Summary	Andreas Junker Olesen (MetriCorr)
11:00 a.m.	C2020-15113	Case Analysis of Electromagnetic Interference of AC Substation on Pipeline	Jin Su (Sino-Pipeline International Company Limited)
11:25 a.m.	C2020-14654	Case Study of AC-Induced Corrosion on Buried Pipeline: Field Test and Mitigation Design	Yi Liang (Corrosion And Protection Center, USTB), Le Chen (Corrosion And Protection Center, USTB), Xun Yuan (Corrosion And Protection Center, USTB), Yanxia Du (Corrosion And Protection Center, USTB)
LUNCH			
1:00 p.m.	C2020-14575	Challenges in Implementing SP21424-2018 AC Corrosion Criteria.	Sorin Segall (Corrosion Service Company Limited), Chad Khattar (TransCanada Pipelines), Ernesto Gudino (TransCanada Pipelines), Hycem Bahgat (Corrosion Service Company Limited), Jean-Patrick Boudreault (Corrosion Service Company Limited), Simon Chen (TransCanada Pipelines Limited)
1:25 p.m.	C2020-14964	Design Considerations for Induced AC Mitigation: Induced Voltage vs. Current Density	Juan Herrera (Corpro), Dirk Van Oostendorp (Aegion/Corpro)
1:50 p.m.	C2020-14643	Discussion on AC Corrosion Mechanism and Risk Assessment for Cathodically Protected Pipelines	Yanxia Du (Corrosion And Protection Center, USTB), Dezhi Tang (Petrochina Planning & Engineering Institute), Minxu Lu (University of Science & Technology Beijing), Yi Liang (USTB)
BREAK			
2:35 p.m.	C2020-14324	Excavation, Removal and Evaluation of Coupons Exposed to AC Interference While Connected to an Operating Product Transmission Pipeline	Philip Simon (Mears Group, Inc.), John McCaffery (Kinder Morgan, Inc.)
3:00 p.m.	C2020-14322	Laboratory and Field Testing for the AC Corrosion of Pipeline Steel	Andrew Moran (University of Akron), Robert Lillard (University of Akron)
3:25 p.m.	C2020-14939	Reflection of an AC Mitigation Project Modeled 12 Years Ago versus Today	Joseph Pikas (Technical Toolboxes), Ernest Klechka
4:00 p.m.	C2020-15015	Unmasking AC Threats on Petrochemical Pipelines	Gerald Haynes (Elsyca Inc), Christophe Baete (Elsyca NV), Jonathan Marmillo (LineVision), Micah Barr (Oneok Partners)

CATHODIC PROTECTION OF REINFORCED CONCRETE AND STEEL FRAME STRUCTURES: A RETROSPECTIVE ON TECHNOLOGY

CHAIR: GINA CREVELLO / VICE CHAIR: JAVIER BALMA

8 A.M. TO 2 P.M. ROOM 351 EF

SPONSORING COMMITTEE: TEG 043X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14485	Forensic Evaluation of Long-Term Galvanic Cathodic Protection of Bridge Pilings in a Marine Environment	Douglas Leng (Structural Technologies), Ivan Lasa (Florida Department of Transportation), Matthew Duncan (Florida Department of Transportation)
8:35 a.m.	C2020-14935	Burlington Skyway Electrochemical Chloride Extraction - 30 Years Later	David Whitmore (Vector Corrosion Technologies), J. Christopher Ball (Vector Corrosion Services, Inc.)
9:00 a.m.	C2020-14510	Long Term (20 Years) In-Service Performance of Concrete ICCP of Marine Wharf Structures in Australia	Warren Green (Vinsi Partners Consulting Engineers), Jack Katen (Vinsi Partners), Nathan Cambourn (Port of Newcastle), Shannen Masia (Port of Newcastle)
9:25 a.m.	C2020-15034	Field Application of Cathodic Prevention on a Marine Viaduct	Xavier Hallopeau (Freyssinet International & Cie), Arnaud Meillier (Freyssinet International & Cie), Lesieutre Olivier (Freyssinet International & Cie)
BREAK			
10:10 a.m.	C2020-14388	Hot-Dip Galvanized Rebar Performance in Bridge Decks	Philip Rahrig (American Galvanizers Association), Godfroy St-Pierre (Corbec, Inc.), Thomas Langill (American Galvanizers Assoc)
10:35 a.m.	C2020-15041	Protecting Reinforced Concrete Structures with Thermal Sprayed Zinc Anodes	Martin Gagne (Zelixir Inc), Chad Martin (Great Western JV)
11:00 a.m.	C2020-15184	Exploring Cathodic Protection of Strands In Post Tensioned Tendons	Alberto Sagues (University of South Florida), Ivan Lasa (Florida Department of Transportation), Jacob Bumgardner (Physical Sciences Inc.)
11:25 a.m.	C2020-14311	Projection of Onset and Subsequent Failure Rate of Bridge Post-Tensioned Tendons Considering Time Dependence of Stress	William Hartt (Florida Atlantic University)
LUNCH			
1:00 p.m.	C2020-14583	The Determination of the Chloride Threshold of Stainless Steel in Concrete – A Review	Sylvia Kessler (Helmut Schmidt University / University of the Federal Armed Forces)
1:25 p.m.	C2020-14820	Test Methods to Identify Robustness of Grout Materials to Resist Corrosion	Rutambara Sonawane (FIU), David Garber (Florida International University), Kingsley Lau (Florida International University), Matthew Duncan (Florida Department of Transportation), Samanbar Permeh (Florida International University)

CONCRETE AND ARCHITECTURE - RESEARCH IN PROGRESS - DAY 2

CHAIR: DAVID BASTIDAS / VICE CHAIR: CHRISTOPHER ALEXANDER

8 TO 11 A.M. - ROOM 342 F

SPONSORING COMMITTEE: RAC

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15541	Generic Relations Between Degree Of Saturation Of Concrete, Resistivity And Corrosion Rate	Carmen Andrade (Internacional de Métodos Numéricos en l'Enginyeria [CIMNE])
8:35 a.m.	C2020-15608	Next Generation Reinforced Concrete Corrosion Modeling with Interdependent Initiation and Propagation Stages	Alberto Sagues (University of South Florida), Christopher Alexander (University of South Florida)
9:00 a.m.	C2020-15834	Effect of Waste Clay from a Polyol Production Process as a partial Substitute for the Cement in Reinforced Concrete	Oladis de Rincon (Universidad del Zulia), Antonio De Turrís (Centro de Estudios de Corrosion), Luis Navarro (Universidad del Zulia), Roque Amesty (Universidad del Zulia), Valentina Millano Gonzalez (Luz CEC), Wilfredo Suarez (Jetco de Venezuela)
BREAK			

9:45 a.m.	C2020-15620	The Effect of Zinc Aluminum Layered Double Hydroxide Intercalated With NO₂- (ZnAl-NO₂-Ldh) on the Corrosion Protection of Reinforced Concrete	Mario Ferreira (Universidade de Aveiro), Alexandre C. Bastos (University of Aveiro), Cláudia Rocha (Smallmatek, Lda), Frederico Maia (Smallmatek, Lda), Joao Tedim (University of Aveiro), José Gomes (University of Aveiro), Rui Sampaio (University of Aveiro), Zhaid Mir (Helmholtz-Zentrum Geesthacht)
10:10 a.m.	C2020-15699	Smart Controlled Release Corrosion Inhibitors for Reinforced Concrete	David Bastidas (University of Akron), Jacob Ress (The University of Akron), Juan Bosch Giner (The University of Akron), Ulises Martin (The University of Akron)
10:35 a.m.	C2020-15666	General Corrosion of Carbon Steel in Synthetic Concrete Pore Solution	Digby Macdonald (516 Mirabay Blvd), Bruno Kursten (SCK-CEN, EHS Institute, RDW Unit), Jie Qiu (University of California at Berkeley)
CONTROL OF CORROSION IN OIL AND GAS WITH INHIBITORS - DAY 1			
CHAIR: FERNANDO FARELAS / VICE CHAIR: JEREMY MOLONEY			
8 A.M. TO 5:15 P.M. - ROOM 362 AB			
SPONSORING COMMITTEE: TEG 184X			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14516	Corrosion Inhibitors in O&G industry: A Review of Current Application Challenges and Research Gaps	Faisal Al-Mutahhar (Saudi Aramco), Hassan Al-Ajwad (P. O. Box), Rakan Alshebel (Saudi Aramcon Oil Company)
8:35 a.m.	C2020-15171	Analysis of Corrosion Inhibitor Performance Curves Using Langmuir Adsorption Kinetics	Richard Woollam (RCW and Associates, LLC), Daniel Betancourt (Intertek)
9:00 a.m.	C2020-14925	Effect of Corrosion Inhibitor Head Group on the Electrochemical Processes Governing CO₂ Corrosion	Juan Dominguez Olivo (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (Ohio University), Shuyun Cao, Srdjan Nestic (Ohio University)
9:25 a.m.	C2020-14793	The Effect of Temperature and Critical Micelle Concentrations (CMC) on the Inhibition Performance of a Quaternary Ammonium-Type Corrosion Inhibitor	Yuan Ding (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (ICMT), Marc Singer (Ohio University)
BREAK			
10:10 a.m.	C2020-15172	Utilization of Adsorption Kinetics Rate Constants to Better Define Corrosion Inhibitor Availability	Richard Woollam (RCW and Associates, LLC), Daniel Betancourt (Intertek)
10:35 a.m.	C2020-15174	On the Adsorption Properties of Non-Surfactant Corrosion Inhibitors: Pyridine, Quinoline and Acridine	Jose Vera (DNV GL), Ashwini Chandra (DNV GL), Kevin Ralston (DNV GL), Richard Woollam (Richard C Woollam and Associates LLC), William Durnie (BP Exploration & Production Operating Co. Ltd)
11:00 a.m.	C2020-14455	Electrochemical Investigation of a Commercial Corrosion Inhibitor: Mechanism, Efficiency and Influence of Mg²⁺ and Ca²⁺ Ions	Benjamin Bjørke (Technical University of Denmark [currently Danish Technological Institute]), Magdalena Rogowska (Technical University of Denmark), Rajan Ambat (Technical University of Denmark), Riccardo Rizzo (Technical University of Denmark)
11:25 a.m.	C2020-15075	Elucidating the influence of Calcium Ion Concentration on Corrosion Inhibitor Performance	Michal Ciolkowski (Multi-Chem), Neil Bretherton (Multi-Chem)
LUNCH			
1:00 p.m.	C2020-14284	Closed Cooling Loop Corrosion – a Laboratory Based Investigation of Possible Causes.	Ian Carpenter (Scaled Solutions Ltd)
1:25 p.m.	C2020-14998	Corrosion Inhibitor Deliverability – A Corrosion Inhibitor Residual Success Story	Tracey Jackson (Baker Hughes a GE Co.), Brian Andrews (Baker Hughes, a GE Co.), Derick Smith (Baker Hughes, a GE Co.), Jonathan Vargas (Baker Hughes, a GE Co.)
1:50 p.m.	C2020-14616	Corrosion Inhibition of C-Steel Pipeline Transporting Natural Gas at High Temperature	Hejian Sun (Solvay Novocare), Bassy Wong (Solvay), David Armstrong (Solvay - Novocare), Stanley Gunawan (Solvay), Sue Ann Lim (Solvay), Zhihua Zhang (Solvay)
BREAK			

2:35 p.m.	C2020-14606	Corrosion Inhibitors for Jet Pump Applications	David Orta (Schlumberger), Alyn Jenkins (M-I SWACO), Jody Hoshowski (M-I SWACO), Juan Picott (Schlumberger), Khoa Ky (Schlumberger), Ole Gilje Avaldsnes (Schlumberger)
3:00 p.m.	C2020-14421	Corrosion Mitigation of Deepwater, 143km Long Multi-phase Pipelines	Alyn Jenkins (Schlumberger), Brett Cardwell (Schlumberger), Brian Messenger (Cameron, a Schlumberger Company), Marcus Rossiter (Total E&P UK Limited), Mike Reid (Total E&P UK Limited)
3:25 p.m.	C2020-14668	Development of a Concentrated Corrosion Inhibitor Compatible with Produced Water Brine and Scale Inhibitor	Sathees Kesavan (Suez Water Technology and Solutions [SUEZ WTS]), Gessie Andrade (SUEZ WTS), John Samuel Selvaraj (SUEZ WTS), Nicolas Scanarotti (SUEZ WTS), Seethalakshmi Suresh (SUEZ WTS), Yure Queiros (SUEZ WTS)
BREAK			
4:00 p.m.	C2020-14985	High Temperature Corrosion Inhibition Performance and Thermal Stability of Nitrite	Thunyaluk Pojtanabuntoeng (Curtin University), Annamaria Greenwood (INPEX), Hoda Ehsani (Curtin University), Jean-Pierre Veder (Curtin University), Marc Lehmann (INPEX Australia), Mariano Iannuzzi (Curtin University), Yousuf Abdulwahhab (Curtin University)
4:25 p.m.	C2020-14999	Selective Loss of Bulk Corrosion Inhibitor Species when Exposed to Glass, Plastic, and Steel	Tracey Jackson (Baker Hughes a GE Co.), Jonathan Vargas (Baker Hughes, a GE Co.)
4:50 p.m.	C2020-15186	Monitoring Change of a Low-PPM Dosage Corrosion Inhibitor Over Time in a Long-Distance Pipeline Carrying Very Light Hydrocarbons	Trevor Place (Enbridge Pipelines Inc.), Jennifer Sargent, Hitesh Bagaria, David Wolfe, Moshood Adewale, Noah Weiss (Suez Water Technologies & Solutions)
CORROSION IN SWEET AND SLIGHTLY SOUR PRODUCTION CONDITIONS - DAY 1			
CHAIR: ZIRU ZHANG / VICE CHAIR: SUDHAKAR MAHAJANAM			
8 A.M. TO 5 P.M. - ROOM 361 EF			
SPONSORING COMMITTEE: TEG 059X			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14435	A New System of Corrosion Flow Loops and Some Experimental Results	Jinyang Zhu (University of Science and Technology Beijing), Hiroshi Honda (Marubeni Itochu Tubulars Asia), Lei Wen (University of Science and Technology Beijing), Yanpeng Xue (University of Science and Technology Beijing), Ying Jin (University of Science and Technology Beijing)
8:35 a.m.	C2020-14804	Corrosion of Mild Steel in Concentrated Monoethylene Glycol (MEG)	Marion Seiersten (Institute for Energy Technology)
9:00 a.m.	C2020-14971	Carbon Steel Corrosion on Production Environment, Evaluating the Impact of CO ₂ Partial Pressure, BSW and Oil Characteristics on Tubular Life Extend	Merlin Bandeira (LNDC/COPPE/UFRJ), Bruno Diehl (Petrobras), Gustavo Vaz (Petrobras), Ilson Palmieri Baptista (Petrobras), Jefferson Oliveira (Cenpes/Petrobras), Oscar Mattos (PEMM/COPPE/UFRJ), Rogaciano Moreira
9:25 a.m.	C2020-15012	Correlation Between Concentration of Maximum Adsorption on Platinum and CO ₂ Corrosion Inhibition Efficiency of Nitrogen Heterocyclic Aromatic Compound	Jose Vera (DNV GL), Xiaoji Li (DNV GL), Richard Woollam (BP Exploration & Production Operating Co. Ltd), Sandeep Chawla (DNV GL), William Durnie (BP Exploration & Production Operating Co. Ltd)
BREAK			
10:35 a.m.	C2020-14888	Effect of Salt Concentration on Corrosion Rate of Pipeline Steel at Low Temperature in Acidic Aqueous Environments	Fazlollah Madani Sani (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), Srdjan Nestic (Ohio University)
11:00 a.m.	C2020-14876	Corrosion of Steel Armour Wires in Flexible Pipes - Effect of Small Amounts of H ₂ S	Simona Palencsar (Institute for Energy Technology), Arne Dugstad (Institute for Energy Technology), Knut-Arill Farnes (Equinor ASA), Linda Børvik (Equinor ASA), Tonje Berntsen (Equinor ASA)

11:25 a.m.	C2020-14914	Effect of CaCO₃ Aqueous Saturation on CO₂ Corrosion of Mild Steel	Hamed Mansoori (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (Ohio University), Marc Singer (Ohio University), Srdjan Nestic (Ohio University)
LUNCH			
1:00 p.m.	C2020-15089	Electrochemical Investigation into the Influence of Monoethylene Glycol on CO₂ Corrosion in Presence of Acetic Acid	Md Mayeedul Islam (Rajshahi University of Engineering and Technology), Rolf Gubner, Thunyaluk Pojtanabuntoeng (Curtin University)
1:25 p.m.	C2020-14740	Exploring High Pressure CO₂ Annular Corrosion in Flexible Pipes	Maria Mitzithra (TWI, Ltd.), Fabricio Santos (CENPES/Petrobras), John Rothwell (TWI Ltd), Shiladitya Paul (TWI)
1:50 p.m.	C2020-14821	Exposure of Various Polymer-lined Pipe Sections to a Sour Liquid Hydrocarbon Fluid at a Maximum Service Temperature: Methodology and Observations	Maria Mitzithra (TWI, Ltd.), Abdulaziz Asiri (Saudi Aramco), Barnaby King (TWI, Ltd.), Bernadette Craster (TWI, Ltd.), James Taylor (Swagelining Ltd.), Md Anwar Parvez (Saudi Aramco)
BREAK			
2:35 p.m.	C2020-14611	Failure Studies of Pipe Fittings Retrieved from a Shale Production Field	Sudhakar Mahajanam (Stress Engineering Services Inc.), Sri Krishna Chimbli (Stress Engineering Services Inc.)
3:00 p.m.	C2020-14722	Flowline Material Performance and Challenges in Oil and Gas Sweet and Sour Environment	Amjad Al Kharusi (Petroleum Development Oman LLC), Antonio Ojeda Macedo, Janardhan Saithala (Petroleum Development Oman LLC), Manoj Gonuguntla Suryanarayana (Petroleum Development Oman), Talal Al Nabhani (Petroleum Development Oman (PDO))
3:25 p.m.	C2020-14303	Internal Corrosion in Tank Vapor Gas Piping – Case Study	Hamza Amir Ajmerwala (International Inspection Centre), Abdul Wahab Al-Ahmad (Kuwait Oil Co.), Adel Almutairi (Kuwait Oil Company), Anoop Sudevan (Kuwait Oil Company), Asok Mathew (Kuwait Oil Company), Mohammed Al-Shaiji (Kuwait Oil Company), Surya Prakash (Kuwait Oil Company)
BREAK			
4:00 p.m.	C2020-14987	Precipitation Kinetics of FeCO₃ in Non-Ideal Solutions	Zheng Ma (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), Marc Singer (Ohio University), Srdjan Nestic (Ohio University)
4:25 p.m.	C2020-14785	Role of Acetic Acid on the Kinetics and Mechanism of Carbon Steel Dissolution Under CO₂ Top of Line Corrosion	Mariana Folena (University of Leeds & UFRJ), Anne Neville (University of Leeds), Frederick Pessu (University of Leeds), Jose Gomes (Universidade Federal do Rio de Janeiro), Richard Barker (University of Leeds)
CORROSION ISSUES IN MILITARY EQUIPMENT AND FACILITIES			
CHAIR: WES BARFIELD / VICE CHAIR: ROBERT MASON			
8 A.M. TO 10 A.M. ROOM 340 A			
SPONSORING COMMITTEE: STG 40			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15023	Lifetime Enhancement of Propulsion Shafts Against Corrosion-Fatigue by Laser Peening*	Lloyd Hackel (Curtiss-Wright, Metal Improvement Co)
8:35 a.m.	C2020-14884	Measurement and Prediction of Aerospace Corrosion Rate Using Real Time Sensor Measurements and Machine Learning Approaches	Brandi Clark (Luna Innovations, Inc), Fritz Friedersdorf (Luna Inc.), Jacob Wright (Luna), Liam Agnew (Luna Innovations, Inc), Ryan Meekins (Luna Innovations, Inc)
9:00 a.m.	C2020-14255	Statistical Modeling of Weather Data for Representative Environmental Severity Testing	David Rusk (NAWCAD), Thomas Ross (NAWCAD)
9:25 a.m.	C2020-15226	Surface Treatment to Mitigate Exfoliation Corrosion of 5XXX Series Aluminum Alloys	Ganesh Kumar Arumugam (Oceanit Laboratories, Inc), Andrea Mansfeld (Oceanit Laboratories, Inc), Reza Shahbazian-Yassar (University of Illinois), Venkat Kamavaram (Oceanit Laboratories, Inc.), Vinod Veedu (Oceanit Laboratories, Inc.)

CORROSION ISSUES IN THE PULP, PAPER AND BIOMASS INDUSTRIES

CHAIR: MATTHEW TUNNICLIFFE / VICE CHAIR: CATHERINE NOBLE

10 A.M. TO 2 P.M. ROOM 340 A

SPONSORING COMMITTEE: STG 38

Start	Document #	Title	Author(s)
10:10 a.m.	C2020-14910	Corrosion and Chemical Characterization of Bio-Oils from Biomass with Varying Ash and Moisture Contents	James Keiser (Oak Ridge National Laboratory), Christopher Janke (Oak Ridge National Laboratory), Jiheon Jun (Oak Ridge National Laboratory), Jun Qu (Oak Ridge National Laboratory), Michael Brady (Oak Ridge National Laboratory), Michael Kass (Oak Ridge National Laboratory), Raynella Connatser (Oak Ridge National Laboratory), Samuel Lewis (Oak Ridge National Laboratory)
10:35 a.m.	C2020-14880	Evaluation of Corrosion Susceptibility of Structural Steels in Biomass Derived Pyrolysis Oils	Jiheon Jun (Oak Ridge National Laboratory), James Keiser (Oak Ridge National Laboratory), Michael Brady (Oak Ridge National Laboratory), Raynella Connatser (Oak Ridge National Laboratory), Samuel Lewis (Oak Ridge National Laboratory)
11:00 a.m.	C2020-15439	Corrosion Assessment of Candidate Constructional Alloys under Hydrothermal Liquefaction Biorefining Conditions	Minkang Liu (University of Alberta), Jingli Luo (University of Alberta), Yimin Zeng
11:25 a.m.	C2020-15484	Corrosion of Candidate Alloys for Hydrothermal Liquefaction (HTL) Reactor under Batch-mode Operation	Minkang Liu, Haoyu Wang (Western University Department of Chemical/Biochem. Engineering), Yimin Zeng
LUNCH			
1:00 p.m.	C2020-15438	Corrosion Assessment of Candidate Constructional Alloys under Hot Dilute Acidic Pre-hydrolysis Biorefining Conditions	Minkang Liu (University of Alberta), Jingli Luo (University of Alberta), Yimin Zeng
1:25 p.m.	C2020-15405	Corrosion in Sulfuric Acid in Pulp and Paper Mills	David Crowe (Corrosion Probe, Inc.), Douglas Sherman (Corrosion Probe Inc)

EMERGENT MATERIALS - RESEARCH TOPICAL SYMPOSIUM

CHAIR: ERIC SCHINDELHOLZ / VICE CHAIR: RAJEEV GUPTA

8 A.M. TO 5:30 P.M. ROOM 361 AB

SPONSORING COMMITTEE: RAC

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15658	Sensitization and Carbide Formation in the Complex Microstructure by Laser Additive Manufacturing	Xiaoyuan Lou (Auburn University), Jingfan Yang (Auburn University), Miao Song (University of Michigan), Xiang Liu (Idaho National Laboratory)
8:45 a.m.	C2020-15748	Corrosion Characteristics of 316L Manufactured by Selective Laser Melting	Sebastian Thomas (Monash University), Abhishek Pandey (Monash University), Nick Birbilis (Australian National University), Victor Cruz de Faria (Monash University), Yao Qiu (Monash University)
9:20 a.m.	C2020-15612	Localized Corrosion of Additively Manufactured Stainless Steels	Michael Melia (Sandia National Laboratories), Eric Schindelholz, Jeffrey Rodelas (Sandia National Laboratories), Jesse Duran (Sandia National Laboratories LLC), Rebecca Schaller (Sandia National Laboratories)
BREAK			
10:05 a.m.	C2020-15710	Hydrogen Trapping and Transport Behavior in Additively Manufactured Stainless Steels	Lauren Singer (University of Virginia), Charles Demarest (University of Virginia), John Scully (University of Virginia), Sebastian Thomas (Monash University)
10:40 a.m.	C2020-15606	Evaluating Corrosion Behavior of Additively Manufactured Al-10 wt. %Si-0.3 wt. %Mg Alloy for Automotive Applications	Javier Esquivel (Ford Motor Company), Mark Nichols (Ford Motor Company), Niamh Hosking (Ford Motor Company)
LUNCH			
1:00 p.m.	C2020-15579	Hot Salt Stress Corrosion Cracking and Electrochemical Corrosion Behaviour of Additively Manufactured Ti-6Al-4V	V S Raja (Indian Institute of Technology), Bharat Padekar (Kalyani Center for Technology and Innovation [Bharat Forge Ltd] Keshavnagar, Pune 411036, India), Mangesh D Pustode (Kalyani Center for Technology and Innovation [Bharat Forge Ltd] Keshavnagar, Pune 411036, India), Purnendu Chakraborty (Indian Institute of Technology)

1:40 p.m.	C2020-15773	Dissolvable Supports for 3D Printed Copper and GRCo Alloys	Meredith Heilig (Colorado School of Mines), Owen Hildreth (Colorado School of Mines), Robert Hoffman (Colorado School of Mines)
2:15 p.m.	C2020-15832	ICME Design of Corrosion Resistant HEA and AM Materials	Pin Lu (QuesTek Innovations LLC)
BREAK			
3:10 p.m.	C2020-15744	On the Dynamic Passivity of a Low Cost and Lightweight Compositionally Complex Alloy	Nick Birbilis (Nick Birbilis)
3:45 p.m.	C2020-15714	Design of Low Cost, Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance	Samuel Inman (Department of Material Science and Engineering, University of Virginia), Carol Glover (Department of Material Science and Engineering, University of Virginia), Jie Qi (Department of Physics, University of Virginia), John Scully (Department of Material Science and Engineering, University of Virginia), Joseph Poon (Department of Physics, University of Virginia), Mark Wischhusen (Department of Material Science and Engineering, University of Virginia), Sean Agnew (Department of Material Science and Engineering, University of Virginia)
4:20 p.m.	C2020-15705	Passivation Phenomena of Compositionally Complex Alloy Ni ₃₈ Fe ₂₀ Cr ₂₂ Mn ₁₀ Co ₁₀ and the Nature of its Electrochemical Oxide	Angela Gerard (University of Virginia), Daniel Schreiber (Pacific Northwest National Laboratory), Gerald Frankel (Ohio State University), James Saal (QuesTek Innovations, LLC), John Scully (University of Virginia), Pin Lu (QuesTek Innovations LLC), Stephen McDonnell (University of Virginia), Wolfgang Windl (Ohio State University)
4:55 p.m.	C2020-15682	Corrosion Resistant Nanostructured Eutectic High Entropy Alloy	Shuo Shuang (City University of Hong Kong), Yong Yang (City University of Hong Kong)
INNOVATIONS IN CHEMICAL AND MECHANICAL CLEANING AND FOULING/CORROSION MITIGATION			
CHAIR: ROXANNE SHANK / VICE CHAIR: CHRIS WIGGINS			
8 A.M. TO 1:30 P.M. ROOM 340 B			
SPONSORING COMMITTEE: TEG 188X			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14320	Smoke Corrosivity Evaluation for Data Center Components	Paul Su (FM Global), Jens Alkemper (FM Global), Rajni Madan (FM Global)
8:35 a.m.	C2020-15179	Buried Ultrasonic Corrosion Monitoring Sensors for Midstream Asset Integrity	Steve Strachan (Sensor Networks, Inc.)
9:00 a.m.	C2020-14293	Development of a New Vapor Corrosion Inhibitor for Corrosion Under Insulation at Elevated Temperatures	Behzad Bavarian (Cal State University Northridge), Aline Avanesian (CSUN-MSEM), Boris Miksic (Cortec Corporation), Lisa Reiner (California State Univ)
9:25 a.m.	C2020-14723	Investigation of Acid Corrosion Inhibition Using N,N'-(1,4-phenylenebis(methyl))bis(N,N-dimethylalkan-1-aminium) Chloride Corrosion Inhibitors	Norah Aljeaban (Saudi Aramco), Bader Alharbi (Saudi Aramco), Mohammad Jafar Mazumder (KFUPM), Nurudeen Odewunmi (KFUPM), Salem Balharth (Saudi Aramco)
BREAK			
10:10 a.m.	C2020-15204	Closed Loop Systems: Electrochemical Studies on Nitrite/Molybdate Corrosion Inhibitors	Mary Jane Felipe (Baker Hughes, A GE Company), Kristen Curry (Baker Hughes, A GE Company), Montgomery Pifer (Baker Hughes), Ramakrishna Ponnampati (Baker Hughes), Sankaran Murugesan (Baker Hughes Incorporated)
10:35 a.m.	C2020-14503	USDA-certified Biobased, Low VOC and Biodegradable Paint Stripper and Graffiti Remover	Ming Shen (Cortec Corporation), Casey Heurung (Cortec Corporation), Sen Kang (Cortec Corporation)
11:00 a.m.	C2020-14656	Non-acidic Iron Sulfide Scale Dissolver: from Lab Development to Field Application	Tao Chen (Saudi Aramco), Fouad AlSultan (Saudi Aramco), Frank Chang (Saudi Aramco), Qiwei Wang (Senior Scientist)
11:25 a.m.	C2020-14859	Chelating Agents for Iron Sulfide Scale Removal at 300°F	Raja Ramanathan (Texas A&M University), Hisham Nasr-El-Din (Texas A&M University)
LUNCH			

1:00 p.m.	C2020-14864	Ultrasonic Chemical Cleaning; Development of Chemical Blends for Industrial Applications	Roxanne Shank (Clean Harbors Energy and Industrial Services), Russell Phillion (Orange Cleantech Inc.), Tom McCartney (Clean Harbors Energy and Industrial Services)
MARINE CORROSION - SHIPS AND STRUCTURES			
CHAIR: ABDUL HAMEED AL-HASHEM / VICE CHAIR: MOAVIN ISLAM			
8 A.M. TO 5:45 P.M. ROOM 342 D			
SPONSORING COMMITTEE: STG 44			
Start	Document #	Title	Author(s)
INTRODUCTION			
8:35 a.m.	C2020-14534	Cathodic Protection at a Nuclear Facility	Erin Nelson (Corrpro), Clem Firlotte (Corrpro), Walter Young (Corrpro)
9:00 a.m.	C2020-14807	Characterization of Corrosion Resistance on Ni-Advanced Weathering Steel Exposed to Tropical Marine Atmosphere	Wei Liu (University of Science and Technology Beijing), Yueming Fan (University of Science and Technology Beijing), Zhentao Wang (University of Science and Technology Beijing), Zongteng Sun (University of Science and Technology Beijing)
9:25 a.m.	C2020-15155	Correlating Pitting Susceptibility to Local Microstructure in AA5083 Using Automated Image Analysis and Data Science Frameworks	Jordan Key (Georgia Institute of Technology), Josh Kacher (Georgia Institute of Technology)
BREAK			
10:10 a.m.	C2020-14511	Corrosion Sensors Led In-Service Performance Assessment of Steel Pile Wrapping/Jacketing Systems on Marine Structures in Australia	Warren Green (Vinsi Partners Consulting Engineers), Andrew Collison (Queensland University of Technology), Geoffrey Will (Queensland University of Technology), Jack Katzen (Vinsi Partners)
10:35 a.m.	C2020-14721	Biodegradable SPC Polyurethane Coating	Mohammad Mizanur Rahman (King Fahd University of Petroleum and Minerals)
11:00 a.m.	C2020-14978	Corrosion Evaluation and Mechanism Analysis of Welded Joints of Low Alloy and High Strength Structural Steel Under Tropical Marine Atmospheric Environment Exposure	Wei Liu (University of Science and Technology Beijing), Tianyi Zhang (University of Science and Technology Beijing), Xiaogang Li (University of Science and Technology Beijing), Yanliang Zhou (University of Science and Technology Beijing), Yongjun Wu (University of Science and Technology Beijing)
11:25 a.m.	C2020-15195	Corrosion of Open Cell Aluminum Foams in Simulated Marine Environments	Ho Lun Chan (Cal Poly Pomona), Kevin Guo (Cal Poly Pomona), Vilupanur Ravi (California State Polytech Univ)
LUNCH			
1:00 p.m.	C2020-14262	Effect of Blocking Compound on Electrochemical Corrosion Behavior of Wire Rope at Gulf of Mexico Surface and Subsea Temperatures	Suresh Divi (Stress Engineering Services), Dwight Janoff (BP Exploration & Production, Inc.)
1:25 p.m.	C2020-14738	Development of Corrosion Resistant Steel for Cargo Oil Tank of Crude Oil Tanker	Hiroshi Ikeda (JFE Steel Corporation), Eiji Mishima (JFE Steel Corporation), Itaru Samusawa (JFE Steel Corporation), Kazuhiko Shiotani (JFE Steel Corporation), Shunichi Tachibana (JFE Steel Corporation)
1:50 p.m.	C2020-15038	Duplex Zinc Corrosion Protection for Marine Structures	Martin Gagne (Zelixer Inc)
BREAK			
2:35 p.m.	C2020-14831	Effect of Fouling on Cathodic Protection Current on Steel Submerged in Natural Waters	Samanbar Perme (Florida International University), Berrin Tansel (Florida International University), Kingsley Lau (Florida International University), Matthew Duncan (Florida Department of Transportation), Mayrén Echeverría Boan,
3:00 p.m.	C2020-14524	Subsequent Mounting of Brackets to Coated Surfaces Using Adhesives	Tom Marquardt (Muehlhan AG)
3:25 p.m.	C2020-14405	Effectiveness of Epoxy and Moisture-Cure Polyurethane Coatings in Corrosion Mitigation of Embedded Rebar- an Experimental Study	Raghava Kumar Vanama (Indian Institute of Technology Bombay), Balaji Ramakrishnan (Indian Institute of Technology Bombay)
BREAK			

4:00 p.m.	C2020-14530	Galvanic Corrosion Investigation of Structural Transition Joints	Luke Wiering (North Dakota State University), Dante Battocchi (North Dakota State University), Vinod Upadhyay (North Dakota State University), Xiaoning Qi (North Dakota State University), Zachary Bergseth (North Dakota State University)
4:25 p.m.	C2020-14796	Improvements in Anti-Corrosion Performance through the Integration of Graphene Nano-Platelets (GNPs) into Coating Systems for C4/C5 Environments	William Weaver (Applied Graphene Materials), Lynn Chikosha (Applied Graphene Materials), Matthew Sharp (Applied Graphene Materials), Sam Whitehead (Applied Graphene Materials)
4:50 p.m.	C2020-14734	The Role of Alloy Microstructure on The Cavitation Erosion Behavior of Aluminum-Based, Iron-Based and Nickel-Based Alloys in Seawater	Abdul Hameed Al-Hashem (NACE Kuwait Section), N Tanoli (Kuwait Institute for Scientific Research)
5:15 p.m.	C2020-14980	Short-Term Corrosion Behavior of New Low Alloy Steel Bars in Tropical Marine Atmosphere of Thailand	Wei Liu (University of Science and Technology Beijing), Shimin Li (University of Science and Technology Beijing), Yueming Fan (University of Science and Technology Beijing), Yutao Wang (University of Science and Technology Beijing)
MICROBIOLOGICALLY INFLUENCED CORROSION			
CHAIR: NORA EIBERGEN / VICE CHAIR: TONY POULASSICHIDIS			
8 A.M. TO 1:50 P.M. ROOM 371 ABC			
SPONSORING COMMITTEE: TEG 187X			
Start	Document #	Title	Author(s)
INTRODUCTION			
8:35 a.m.	C2020-14889	Laboratory Investigation of Biocide Treated Waters to Inhibit Biofilm Growth and Reduce the Potential for MIC	Susmitha Purnima Kotu (DNV GL), Christopher Kagarise (DNV GL), Richard Eckert (DNV GL), Torben Lund Skovhus (VIA University College)
9:00 a.m.	C2020-14269	Nitrate Addition for Controlling Microbiological Souring Triggers Formation of Pitting Corrosion of Carbon Steel	Yasunori Tanji (Tokyo Institute of Technology)
9:25 a.m.	C2020-15193	Microbiologically Influenced Production Casing Corrosion	Noelle Easter Co (Blade Energy Partners), Elizabeth Summer (Ecolyse, Inc.), Ming Gao (Blade Energy Partners), Ravi Krishnamurthy (Blade Energy Partners), Rudolf Hausler (Blade Energy Partners), Ryan Milligan (Blade Energy Partners)
BREAK			
10:10 a.m.	C2020-14600	Rapid Microbial Detection, Quantification and Control	Mark Reed (Buckman), Justin Hutcherson (Buckman)
10:35 a.m.	C2020-15222	Novel Primer Sets for Field Based qPCR Testing Allows On-Site Detection of High-Risk Organisms Associated with MIC and H₂S Production	Zach Broussard (Nalco Champion, an Ecolab Co), Renato De Paula (Nalco Champion, an Ecolab company), Vic Keasler (Nalco Champion, an Ecolab Company)
BREAK			
11:25 a.m.	C2020-14523	Evaluation and Monitoring of the Biocorrosion of Metallic Pipes	Laura Didierjean (Saint-Gobain PAM), Christelle Despas (LCPME), Frédéric Jorand (LCPME), Maxime Vaufleury (Saint-Gobain PAM)
LUNCH			
1:00 p.m.	C2020-14537	Severe Microbiologically Influenced Corrosion (MIC) of Pure Zinc and Galvanized Steel in the Presence of Desulfovibrio Vulgaris	Di Wang (Ohio University), Sith Kumseranee (PTT Exploration & Production Public Company Limited), Suchada Punpruk (PTT Exploration & Production), Tingyue Gu (Ohio University), Tuba Unsal
1:25 p.m.	C2020-14719	Is it MIC or Pitting Corrosion? An Insight in a Common Overlapping	Mohammed Al-Muaisub (Saudi Aramco)

OIL & GAS COATING TECHNOLOGY - DAY 1

CHAIR: BENJAMIN CHANG / VICE CHAIR: ANDY BODINGTON

8 A.M. TO 3 P.M. - ROOM 362 EF

SPONSORING COMMITTEE: STG 02, STG 03, TG 260/263/264/312/313

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15194	Effect of Surface Roughness on Cathodic Delamination and Corrosion Creep	Russell Draper (Stantec), Michael Beamish (DeFelsko Corporation)
8:35 a.m.	C2020-14967	Comparison of Offshore Maintenance Coating Performance Using Two Industry Standards – NACE SP 0108 and ISO 12944-9	Andy Bodington (BP America Inc), Sai Prasanth Venkateswaran (BP America), Andy Bodington (BP America Inc), Benjamin Chang (PolyLab, LLC), Timothy Bieri (BP Exploration & Production Operating Co. Ltd)
9:00 a.m.	C2020-14725	The Influence of Corrosion Preventing Inhibitors on the Performance of Corrosion Protective Coatings	Anders W. B. Skilbred (Jotun AS), Andreas Løken (Jotun AS), Jeferson De Oliveira (Universidade Federal do Rio de Janeiro)
9:25 a.m.	C2020-14837	The Importance of Surface Preparation Method on the Corrosion Resistance and Mechanical Properties of Zinc Rich Primers	Antoni Prieto (Hempel), David Morton (Hempel A/S), Antoni Prieto (Hempel), Raquel Morales Roset (Hempel S.A.U)
BREAK			
10:10 a.m.	C2020-14805	Isocyanate Free Water Repellent Top Coat for Offshore Corrosion Protection	David Morton (Hempel A/S), Rifnur Latipov (Hempel A/S)
10:35 a.m.	C2020-14834	Durability of Fluoropolymer Top Coat Systems Related to Standards	Naoki Yabumi (Dai Nippon Toryo Co., Ltd.), Hiroyuki Tanabe (Dai Nippon Toryo Co., Ltd Technical Advisor), Kenichiro Yamauchi (Dai Nippon Toryo Co.,Ltd), Tsuyoshi Matsumoto (Dai Nippon Toryo Co Ltd)
11:00 a.m.	C2020-14634	Properties of Splash Zone and Immersion Coatings	Nicole Rakers (PPG), Arif Mubarak (PPG), James Begley (PPG), Matthew DiTucci (PPG Industries), Melinda Shearer (PPG Industries), Thu Doan (PPG Industries), XinZhu Gu (PPG)
11:25 a.m.	C2020-14957	Multi-Functional New Coating System for Extending the Life Time of Onshore and Offshore Infrastructure	Kaveh Sarikhani (Shawcor), Dinko Cudic (Lufisi d.o.o.), Somaieh Salehpour (Shawcor)
LUNCH			
1:00 p.m.	C2020-14314	Cut-Back Edge Cathodic Disbondment Susceptibility of Exposed Bare Field Joints in Offshore Pipelines	Mirnaly Saenz de Miera (McMaster University), Craig Stevenson (Apex Corrosion), Joseph Kish (McMaster University), Mark Brandon (ShawCor), Somaieh Salehpour (Shawcor)
1:25 p.m.	C2020-14313	Modified Cathodic Disbondment Test Methods for Comparing The Performance of HPPC and FBE Coatings	Min (Mina) Xu (The University of British Columbia), Catherine Lam (Shawcor Ltd.), Dennis Wong (Shaw Cor Ltd), Edouard Asselin (The University of British Columbia)
1:50 p.m.	C2020-14685	Overview of Latest Advances In Measuring and Understanding Cathodic Protection Current Permeability by Organic Coatings	Bob Varela (Deakin University, Institute for Frontier Materials), Maria Forsyth (Deakin University, Institute for Frontier Materials), Mauricio Latino (Deakin University, Institute for Frontier Materials), YongJun Tan (Deakin University, School of Engineering)
BREAK			
2:15 p.m.	C2020-15132	Corrosion Behavior of Weldment With and Without Coatings	Zhibin Lin (North Dakota State University), Dante Battocchi (North Dakota State University), Matthew Pearson (North Dakota State University), Xiaoning Qi (North Dakota State University), Xingyu Wang (North Dakota State University)

PIPELINE INTEGRITY SYMPOSIUM - DAY 1

CHAIR: MATTHEW ELLINGER / VICE CHAIR: ANDREW LUTZ

8 A.M. TO 5:30 P.M. - ROOM 370 ABC

SPONSORING COMMITTEE: TEG 267X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14308	In-line Inspection of Hydrogen Pipelines	Tod Barker (T.D. Williamson, Inc.)
8:35 a.m.	C2020-15073	Field Experience on Why Pipeline In-Line Inspection (ILI) Fails	Ito Akrasi (Saudi Aramco), Abdullah Almakini (Saudi Aramco), Brian Burgess (Saudi Aramco - Retired), Mohammed Al-Hamaqi (Saudi Aramco), Sameer Ayyar (Saudi Aramco), Tawfiq Hathloul (Saudi Aramco)
9:00 a.m.	C2020-14502	Development of a Low-Power Wireless Sensor Network of Conductivity Probes for the Detection of Corrosive Fluids in Pipelines	Raghu Srinivasan (University of Alaska Anchorage), Christina Forbes (University of Alaska Anchorage), Matt Cullin, Todd Petersen (University of Alaska Anchorage)
9:25 a.m.	C2020-14930	Use of Piezoelectric and MsS Guided Wave Ultrasonic Monitoring Technologies on Underground Piping	Xavier Ortiz Gonzalez (Stantec Consulting Ltd.), Hossein Jiryaei Sharahi (Stantec Consulting Ltd.)
BREAK			
10:10 a.m.	C2020-14445	Multi-Stage Commissioning and Concurrent Survey Work on a New Pipeline: A Case Study in Converging and Diverging Corrosion Interests	Colette Brogna (Corrpro Companies, Inc.)
10:35 a.m.	C2020-14806	Best Practices to Ensure Effective Pipeline Corrosion Management and Mistakes That Can be Avoided	Leo Richards (Intertek), James Stott (Intertek Production and Integrity Assurance), Michael Horne (Intertek plc), Simon Schapira (Intertek)
11:00 a.m.	C2020-14475	Use of Large Standoff Magnetometry in Pipeline Integrity Investigations	Chukwuma Onuoha (PureHM), Eric Pozniak (PureHM), Mill Jawed (PureHM), Shamus McDonnell (PureHM), Tyler Lich (PureHM), Vignesh Shankar (PureHM)
11:25 a.m.	C2020-14673	Detecting and Preventing Internal Corrosion Damage in Unpiggable, Intermittently-Operated, Crude-Oil Pipelines	Yuri Fairuzov (Multiphase Energy Corporation), Victor Fairuzov (Multiphase Energy Corporation)
LUNCH			
1:00 p.m.	C2020-14696	Detection and Location of Coating Delamination and Anomalies on Buried Pipelines by Using Electromagnetic Reflectometry	Tristan De Servins (Heuristech), Homero Castaneda-Lopez (National Corrosion and Materials Reliability Laboratory, Texas A&M University)
1:25 p.m.	C2020-14954	Failure Analysis of a Composite Polyester-Fiberglass Pipe Support Sleeve – A Case Study	George Bayer (Matergenics), Kristi Hoffmann (Kern River Gas Transmission), Mehrooz Zamanzadeh (Matergenics), Robert Johnson (Kern River Gas Transmission)
1:50 p.m.	C2020-14908	Using Failure Analysis to Optimize Corrosion Mitigation Costs	Richard Eckert (Home), Kathy Buckingham (DNV GL), Christopher Kagarise (DNV GL), Susmitha Purnima Kotu (DNV GL), Torben Lund Skovhus (Dr. Torben Lund Skovhus)
BREAK			
2:35 p.m.	C2020-14642	Extending the Life of an Ageing Forty Two Years Old Offshore Wet Crude Pipeline	Faisal Al-Abbas (Saudi Aramco), Qasim Saleem
3:00 p.m.	C2020-14540	Methodology for the Evaluation of Batch Corrosion Inhibitor Films and their Integrity	Winston Mosher (Innotech Alberta)
3:25 p.m.	C2020-14680	Advances in Coupon Analysis for Improved Corrosion Management	Christopher Kagarise (DNV GL), Nicole Moore (DNV GL), Richard Eckert (DNV GL), Susmitha Purnima Kotu (DNV GL)
BREAK			
4:00 p.m.	C2020-15000	Corrosion Control in Water Injection Pipelines	Jonathan Marsh (Dubai Petroleum)
4:25 p.m.	C2020-14310	Water Hammer and Fatigue Strength Reduction from Grit Blasting for Coatings	Robert Leishear (Leishear Engineering, LLC)
4:50 p.m.	C2020-14416	Datascience to Enhance Pipeline Maintenance	David Toschini (Grtgaz), Anthony Dequick (Grtgaz), Marketa Pichlova Lallementova (Grtgaz), Thomas Zamojski (Data Storm)

PITS, CRACKS AND CREVICES - RESEARCH IN PROGRESS - DAY 2			
CHAIR: JASON LEE / VICE CHAIR: JENIFER LOCKE			
8 A.M. TO 5:30 P.M. - ROOM 342 E			
SPONSORING COMMITTEE: RAC			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-15702	A One Dimensional Crevice Experiment for Determining the Critical Factors Contributing to Crevice Corrosion Repassivation	Robert Lillard (University of Akron), Shirin Mehrazi (University of Akron)
8:35 a.m.	C2020-15799	A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential Non-Iterative Approach	Xiangming Sun (Vanderbilt University), Jayendran Srinivasan (The Ohio State University), Ravindra Duddu (Vanderbilt University), Robert Kelly (University of Virginia)
9:00 a.m.	C2020-15761	Determination of Key Marine Environment Effects on Maximum Pit Size Predictions	Ryan Katona (University of Virginia), Eric Schindelholz, Jacob Carpenter (Sandia National Laboratories), Rebecca Schaller (Sandia National Laboratories), Robert Kelly (University of Virginia)
BREAK			
9:45 a.m.	C2020-15498	The Role of MnS Inclusions in Stainless Steel Pit Initiation and Propagation	Jennifer Lillard (The University of Akron)
10:10 a.m.	C2020-15778	Investigating Localized Corrosion Chemistry during Dissolution of Carbon Steel in CO₂-containing Environments via Synchrotron X-ray Methods and the Pencil-Electrode Technique	Anthony Cook (The University of Manchester), Ahmed Shamsou, Brian Connolly (University of Manchester), Mary Ryan (Imperial College London), Milla Puolamaa (Imperial College), Mohamed Koronfel (Imperial College), Philip Withers (University of Manchester), Sheetal Handa (BP Exploration - Sunbury), Silvia Vargas, Tristan Manchester (University of Manchester), William Pearson (University of Manchester)
10:35 a.m.	C2020-15506	Assessing the Influence of Calcium on X65 Carbon Steel Pitting Using an Artificial Pit	Sikuru Mohammed (Nigerian Army), Anne Neville (University of Leeds), Richard Barker (University of Leeds), Yong Hua (University of Leeds)
SPELLER LECTURE			
LUNCH			
1:00 p.m.	C2020-15661	The Susceptibility of Copper to Pitting Corrosion in the Chloride and Sulphide-Containing Environment Anticipated in a Deep Geologic Repository for the Permanent Disposal of Used Nuclear Fuel	Mengnan Guo (Proudfoot Lane), David Shoosmith (University of Western Ontario), James Noel (University of Western Ontario), Jian Chen (Western University), Taylor Martino (Natural Resource Canada)
1:25 p.m.	C2020-15692	Corrosion of Carbon Steel under Used Nuclear Fuel Container Condition	Youn Gyeong Shin (Western University), Clara Wren (Western University), Dan Guo (The University of Western Ontario), Jiju Joseph (Western University), Nicholas Payne (McGill University)
1:50 p.m.	C2020-15751	Identifying, Predicting and Preventing Localized Corrosion in Kr-85 Storage Canisters	Charles Demarest (uva), John Scully (University of Virginia)
BREAK			
2:35 p.m.	C2020-15796	Self-accelerated Corrosion of Nuclear Waste Forms at Material Interfaces	Xiaolei Guo (The Ohio State University), Daniel Schreiber (Pacific Northwest National Laboratory), Dien Ngo (Pennsylvania State University), Gerald Frankel (Ohio State University), Gopal Viswanathan (The Ohio State University), Hongshen Liu (Pennsylvania State University), Jie Lian (Rensselaer Polytechnic Institute), Jincheng Du (University of North Texas), John Vienna (Pacific Northwest National Laboratory), Joseph Ryan (Pacific Northwest National Laboratory), Penghui Lei (Rensselaer Polytechnic Institute), Seong Kim (Pennsylvania State University), Stephane Gin (CEA), Tiankai Yao (Rensselaer Polytechnic Institute), Tianshu Li (Ohio State University)

3:00 p.m.	C2020-15760	Evaluation of 304L Pit Chemistry in Methanol/Water Mixtures	Angeire Huggins (The Ohio State University), Jayendran Srinivasan (The Ohio State University), Narasi Sridhar (DNV GL)
3:25 p.m.	C2020-15791	Localized and Uniform Corrosion of UNS N06022 in Aprotic Solvents at Room Temperature	Pedro Atz Dick (University of Virginia), Robert Kelly (University of Virginia)
BREAK			
4:00 p.m.	C2020-15749	In-situ Electrochemical Examinations on UNS N07718 Exposed to Acidified Chloride Solution at High Temperature – Role of Intermetallic Particles on Pit Initiation	Luis Garfias (Environmental And Corrosion Testing LLC), Helena Alves (VDM Metals International GmbH), Helmuth Sarmiento Klapper (Baker Hughes INTEQ), Julia Botinha (VDM Metals GmbH)
4:25 p.m.	C2020-15653	Study of the Nucleation and Propagation of Open and Covered Pits in 2205 Duplex Stainless Steels	Yong Hua (University of Leeds), Anne Neville (University of Leeds), Chun Wang (University of Leeds), Erfan Abedi Esfahani (University of Leeds), Hui Feng Liu (China University of Petroleum), Jiong Qian (Zhejiang Jiuli Hi-Tech Metals Co.Ltd), Ze Zhou Wen (University of Leeds)
4:50 p.m.	C2020-15584	Pitting Corrosion of Ni-Cr-Fe Alloys in Thiosulfate and Chloride Solutions	Mariano Kappes (National Atomic Energy Commission, Argentina), Abraham Becerra Araneda (National Atomic Energy Commission, Argentina), Martin Rodriguez
POWER INDUSTRY CORROSION			
CHAIR: JON BRASHER / VICE CHAIR: GRAIG CILLUFFO			
8 TO 11 A.M. ROOM 332 E			
SPONSORING COMMITTEE: STG 41			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14660	Field Application of Corrosion Resistant Weld Overlay in Ultra-Supercritical Coal-Fired Boiler Waterwalls	Bingtao Li (Leed Metallurgical Consulting), Jun Jiang (China Guodian Corporation)
8:35 a.m.	C2020-14770	Stray Current Corrosion Risks and Case Histories in Communication Tower and Electric Transmission Applications	Mehrooz Zamanzadeh (Matergenics), Anil Chikkam (Matergenics), Ben Jessup (Exelon Corp.), Freddy Avendano (Matergenics), Kevin Groll, Nitesh Ahuja (SBA Network Services, LLC), Peyman Taheri Bonab (Matergenics Engineering Ltd.)
9:00 a.m.	C2020-15207	Novel Anti-Fouling Surface treatments for Heat Exchangers	Matthew Nakatsuka (Oceanit Laboratories, Inc.), Andrea Mansfeld (Oceanit Laboratories, Inc.), Erika Brown (Oceanit Laboratories, Inc.), Sumil Thapa (Oceanit Laboratories, Inc.), Vinod Veedu (Oceanit Laboratories, Inc.)
9:25 a.m.	C2020-14921	Inductive and DC Stray Current Interference from Different HVDC Transmission Line Systems on Metallic Pipelines	Boshra Momen Nejad (Corrpro Canada Inc.), Brandon Miller (Corrpro Canada Inc), Levi Blumhagen (CorrPro)
BREAK			
10:10 a.m.	C2020-14423	Corrosion Risk Assessment of Galvanized T&D Structures and GIS Mapping	Mehrooz Zamanzadeh (Matergenics), Peyman Taheri Bonab (Matergenics Engineering Ltd.)
10:35 a.m.	C2020-15221	Use of Halophytes to Manage Soil Characteristics In Joint Use Environments	Jon Brasher (Ovante, LLC), Audrey Gamble (Auburn University), Charles Monks (Auburn University), Dennis Delaney (Auburn University), Selina Bruckner (Auburn University)
RECENT EXPERIENCES WITH NICKEL, TITANIUM, ZIRCONIUM AND OTHER CORROSION RESISTANT ALLOYS			
CHAIR: RALPH BAESSLER / VICE CHAIR: AJIT MISHRA			
8 A.M. TO 4:30 P.M. ROOM 352 DE			
SPONSORING COMMITTEE: STG 39			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14816	A Novel High Entropy Alloy Possessing Excellent Corrosion Resistance Manufactured by Standard Cast and Wrought Processing	Alberto Polar-Rosas (Carpenter Technology Corporation), Andrea Ricci (Carpenter Technology Corporation), Samuel Kernion (Carpenter Technology Corporation)
8:35 a.m.	C2020-14813	Understanding Mu Phase Precipitation Impact on Sensitization Behavior of UNS N10276 and Its Detection Using ASTM Standard Methods	Matthew Perricone (RJ Lee Group, Inc.), Blake Restelli (RJ Lee Group), Christopher Hefferan (RJ Lee Group), Keith Wagner (RJ Lee Group), Michael Deible (RJ Lee Group)

9:00 a.m.	C2020-14969	Detecting Grain Boundary Precipitation on the Precipitation-Hardened Nickel Alloy UNS N07725: Double-loop Electrochemical Potentiokinetic Reactivation	Maria Sofia Hazarabedian (Curtin University), Mariano Iannuzzi (Curtin University of Technology), Michael Lison-Pick (Western Australian Speciality Alloys), Zakaria Quadir (Curtin University)
9:25 a.m.	C2020-14557	Alloy Uns N06058: A Solution for Demanding Corrosive Applications Where Common Members of The Ni-Cr-Mo Alloys Experience Their Limits	Helena Alves (VDM Metals International GmbH), Daniela Niespodziany (VDM Metals International GmbH), Rainer Behrens (VDM Metals International GmbH)
BREAK			
10:10 a.m.	C2020-14669	Response of Alloy UNS N08825 to the Variation of Ni Content and Annealing Temperatures in Terms of Its Corrosion Resistance	Julia Botinha (VDM Metals GmbH), Helena Alves (VDM Metals International GmbH), Peter Maas (VDM Metals GmbH)
10:35 a.m.	C2020-14254	Crevice Corrosion of Alloy 625 Strake Bands in Sea Water	Sri Krishna Chimbli (Stress Engineering Services Inc.), Dwight Janoff (BP), Leo Vega (Stress Engineering Services Inc.,)
11:00 a.m.	C2020-14772	Crevice Corrosion Resistance of New Alloy 35Mo Compared to UNS N06625 and UNS N10276	Katarina Persson (Sandvik), Andreas Rahm Yhr (Sandvik), Anna Delblanc (Sandvik AB)
11:25 a.m.	C2020-14866	Analysis of Intergranular Corrosion of UNS N10276 Pipe Longitudinal Welding Seam	Bo Zhao (China Special Equipment Inspection and Research Institute), Jing Guo (China Special Equipment Inspection and Research Institute), Tianyu Zhou (China Special Equipment Inspection and Research Institute), Tong Xu (China Special Equipent and Research Institute), Yuxin Yu (China Special Equipment Inspection and Research Institute)
LUNCH			
1:00 p.m.	C2020-14951	Grain Boundary Corrosion in Welded UNS N10276 Microstructures	Christopher Hefferan (RJ Lee Group), Keith Wagner (RJ Lee Group), Matthew Perricone (RJ Lee Group), Michael Deible (RJ Lee Group)
1:25 p.m.	C2020-14657	Effects of Minor Alloying Elements on the Metal-Dusting Behavior of Ni-Based Alloys	Bingtao Li (High Temperautre Corrosion Lab, University of Pittsburgh), Brian Gleeson (University of Pittsburgh), Heike Hattendorf (VDM Metals GmbH), Wei-Ting Chen (Missouri University of Science and Technology)
1:50 p.m.	C2020-14243	Nickel Based Alloy Casting Failure in Potash Production Mill	Newton Peterson (Stantec Energy & Resources Inc.), Alireza Kohandehghan (Stantec Consulting Ltd), Brian Wilson (Acuren Group Inc.)
BREAK			
2:35 p.m.	C2020-14285	Modeling Corrosion of Corrosion Resistant Alloys in Chemical Processes Environments including Mixed Acids and Salts	Ali Eslamimanesh (OLI Systems Inc.), Andre Anderko (OLI Systems Inc), Malgorzata Lencka (OLI Systems Inc.)
3:00 p.m.	C2020-15063	Hydrogen-Induced Cracking or Pure Titanium in Sulphuric Acid and Hydrochloric Acid Solutions Using Constant Load Method	Osama Alyousif (Kuwait University), Basel Matar (Kuwait University)
3:25 p.m.	C2020-15208	Electrochemical Evaluation of Novel Titanium Alloys	Thu Nguyen (California State Polytech University), Vilupanur Ravi (California State Polytech Univ), Jacob Giacomi (Cal Poly Pomona)
BREAK			
4:00 p.m.	C2020-15206	Corrosion Behavior of Zirconium-based Composites	Michael Kloesel (California State Polytech University), Christopher Kha (Cal Poly Pomona), Spencer Swartzbaugh (Cal Poly Pomona), Vilupanur Ravi (California State Polytech Univ)

SUBSEA MATERIALS VS. HYDROGEN EMBRITTLEMENT AND STRESS CORROSION CRACKING - DAY 1

CHAIR: RUSSELL KANE / VICE CHAIR: HERMAN AMAYA

1 TO 4 P.M. - ROOM 360 EF

SPONSORING COMMITTEE: STG 32

Start	Document #	Title	Author(s)
1:10 p.m.	C2020-14469	Effect of Different Strength Levels, Coatings and Cathodic Charging Levels on the Hydrogen Embrittlement Resistance of AISI 4340 Bolting Material	Tim Haeberle (Baker Hughes), Evan Dolley (GE Research)
1:35 p.m.	C2020-14482	A Fracture Mechanics Approach to Characterizing Hydrogen Embrittlement of Fasteners	Herman Amaya (Schlumberger), Behrang Fahimi (OneSubsea a Schlumberger company), Thodla Ramgopal (DNV GL)
2:00 p.m.	C2020-14758	Development of a Master Curve to Characterize the Susceptibility of Fastener Materials to Hydrogen Embrittlement	Ted Anderson (TL Anderson Consulting), Herman Amaya (Schlumberger)
2:25 p.m.	C2020-14489	Hydrogen Embrittlement Susceptibility of Steel Armour Wires for Flexible Pipes	Roy Johnsen (Norwegian Univ of Sci & Tech), Ellen Skilbred (NTNU), Signe Lootz (NTNU)
BREAK			
3:10 a.m.	C2020-14706	High-Strength Nickel Low Alloy Steels for Oil and Gas Equipment: ASTM A508 Grade 4N Under Cathodic Protection and Simulated Sour Environments.	Andreas Viereckl (Curtin University), Esteban Rodoni (Curtin), Garry Leadbeater (Curtin University), Mariano Iannuzzi (Curtin University of Technology), Yuta Honma (The Japan Steel works, Ltd.), Zakaria Quadir (Curtin University)
3:35 p.m.	C2020-14714	A Review of Hydrogen Embrittlement of Nickel-Based Alloys for Oil and Gas Applications	Thierry Cassagne (TOTAL), Herve Marchebois (TOTAL E&P), Thiago Mesquita (Total SA)

THE DIGITAL ASSET TRANSFORMATION - DRIVING VALUE FOR CORROSION & ASSET INTEGRITY MANAGEMENT

CHAIR: CECILIE HAARSETH / VICE CHAIR: CHRISTOPHER HOUGHTON

8 A.M. TO 3:30 P.M. ROOM 332 F

SPONSORING COMMITTEE: STG 08

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14429	Digitization Aspects in Modern Corrosion Management System	Hassan Al-Hammad (Saudi Basic Industries Corporation [SABIC]), Faisal Al-Abbas (Saudi Aramco), Hussain Al-Dakheel (King Fahd University of Petroleum & Minerals), Mohammed Al-Helal (King Fahad University), Omar AlSadoon (Sadara Chemical Company)
8:35 a.m.	C2020-14535	Corrosion Data Management Using 3D Visualisation and a Digital Twin	Tim Froome (BEASY), Cristina Peratta (BEASY), John Baynham (BEASY), Robert Adey (BEASY)
9:00 a.m.	C2020-15285	Aggregating and Standardizing Disjointed Integrity Management Data	Robert Floria (Lake Superior Consulting), Alfonso Garcia (Enbridge Pipelines Inc.)
9:25 a.m.	C2020-14645	Artificial Neural Networks on Predicting Internal Localized Corrosion	Nasser Alotaibi (Saudi Aramco), Avidipto Biswas (Saudi Aramco), Christian Canto Maya (Saudi Aramco)
BREAK			
10:10 a.m.	C2020-14832	Bayesian Network for Data-Driven Inspection Planning of Oil and Gas Pipelines	Konstantinos Pesisin (ROSEN UK), Matthew Capewell (ROSEN UK), Michael Smith (ROSEN UK)
10:35 a.m.	C2020-14757	Challenges in Developing, Deploying, and Transforming Online Corrosion Management Dashboards	Sami Al-Ghamdi (Saudi Aramco Oil Company), Hendrik Debruyne (Saudi Aramco), Lay Seong Teh (Saudi Aramco), Lay Seong Teh (Saudi Aramco), Ricardo Costa (Saudi Aramco)
11:00 a.m.	C2020-14847	Digital Asset Transformation by Continuous Corrosion (metal thickness) Monitoring: Case Studies from European Refineries	Attila Gajdacs (Emerson), Christoph Gillessen (P2I Consult), Jake Davies (Emerson)
11:25 a.m.	C2020-14959	Real-Time Process Monitoring and Predictive Corrosion Analytics: Applications and Case Studies	Pierre Constantineau (Honeywell Process Solutions), Kus Slawomir (Honeywell), Kwei Meng Yap (Honeywell Process Solutions), Sridhar Srinivasan (Honeywell Process Solutions)

LUNCH			
1:00 p.m.	C2020-14487	Machine Learning to Find Corrosion Inhibitors for Aeronautical Aluminium Alloys	Tiago Galvão (CICECO - Aveiro Institute of Materials, University of Aveiro), Alena Kuznetsova (CICECO-Aveiro Institute of Materials, University of Aveiro), Gerard Novell-Leruth (CICECO-Aveiro Institute of Materials, University of Aveiro), Joao Tedim (University of Aveiro), José Gomes (CICECO-Aveiro Institute of Materials, University of Aveiro), Mario Ferreira (Universidade de Aveiro)
1:25 p.m.	C2020-14779	Remote, Visual Inspection and Digital Analysis for External Corrosion Assessment in Refining Unit Applications	Slawomir Kus (Honeywell Process Solutions), Sridhar Srinivasan (Honeywell Process Solutions)
1:50 p.m.	C2020-14463	The Maturation and Deployment of Autonomous Corrosion and Coating Evaluation Systems to Enable Condition Based Maintenance	Jeff Demo (Luna Innovations), Fritz Friedersdorf (Luna Inc.), Mark Kim (Luna Innovations Inc.)
BREAK			
2:35 p.m.	C2020-14453	Using 3D Model And AI to Predict Atmospheric Corrosion - a Smart Tool for Decision Makers	Otávio Correa (Vidya tecnologia), Fulvio Silva (Vidya TEC), Jorge Selene (Vidya Tec)
3:00 p.m.	2020-15239	Statistical Analysis for Groundbed Life Estimation	Jason Moral (Kinder Morgan), Jared Pannell (Aegion), Sam Fuqua (Corrpro)
THURSDAY, MARCH 19			
CONTROL OF CORROSION IN OIL AND GAS WITH INHIBITORS - DAY 2			
CHAIR: FERNANDO FARELAS / VICE CHAIR: JEREMY MOLONEY			
8 TO 11 A.M. - ROOM 362 AB			
SPONSORING COMMITTEE: TEG 184X			
Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14591	The Development of Novel Corrosion Inhibitors for High Temperature Sour Gas Environments	Jody Hoshowski (Schlumberger), Alyn Jenkins (Schlumberger), Paul Barnes (Schlumberger Production Technology), Rolando Perez Pineiro (M-I SWACO a Schlumberger Company), Tore Nordvik (Schlumberger)
8:35 a.m.	C2020-14398	Two Way Application of Corrosion Inhibitor in Gas and Condensate Field	Susumu Hirano (INPEX Corporation), Atsushi Kobayashi (INPEX Corporation), Hironari Iijima (INPEX Corporation), Kazuyo Sasaya (INPEX Corporation), Takashi Ito (INPEX Corporation), Toshiyuki Sunaba (Inpex Corporation)
9:00 a.m.	C2020-14848	Effect of Steel Microstructure and Corrosion Product Characteristics on Inhibition Performance of Decanethiol Against TLC	Zineb Belarbi (Ohio University), David Young (Ohio University), Fernando Farelàs (Institute for Corrosion and Multiphase Technology), Marc Singer (Ohio University)
9:25 a.m.	C2020-14759	Understanding Synergistic Effects between Corrosion Inhibitor Molecules using Density Functional Theory	Dharmendr Kumar (Tata Research Development and Design Center, Tata Consultancy Services), Beena Rai (Tata Research Development and Design Center, Tata Consultancy Services), Vinay Jain (Tata Research Development and Design Center, Tata Consultancy Services)
BREAK			
10:10 a.m.	C2020-15056	Adsorption and Self-Assembly of Corrosion Inhibitors on Metallic Surfaces Studied Using Molecular Simulations	Xueying Ko (Ohio University), Sumit Sharma (Ohio University)
10:35 a.m.	C2020-15079	Adsorption Free Energy of Corrosion Inhibitor Molecules at Metal-Water and Air-Water Interfaces: A Computational Investigation	Himanshu Singh (Ohio University), Sumit Sharma (Ohio University)

CORROSION IN SWEET AND SLIGHTLY SOUR PRODUCTION CONDITIONS - DAY 2

CHAIR: ZIRU ZHANG / VICE CHAIR: SUDHAKAR MAHAJANAM

8 TO 9 A.M. - ROOM 361 EF

SPONSORING COMMITTEE: TEG 059X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14486	The Effect of Minor Oxygen Ingress on Initiation and Propagation of Localized Corrosion of X65 Mild Steel in Marginally Sour Environments	Wei Zhang (Ohio University), Bruce Brown (Institute for Corrosion and Multiphase Technology), David Young (ICMT), Gheorghe Bota (Institute for Corrosion and Multiphase Technology, Ohio University), Marc Singer (Ohio University), Srdjan Nestic (Ohio University)
8:35 a.m.	C2020-14790	The Combined Effect of O ₂ and CO ₂ on Corrosion Of Flexible Armour Wires	Gaute Svenningsen (Institute for Energy Technology), Arne Dugstad (Inst for Energy Technology), Benjamin Thoppil (4subsea), Jan Muren, John Melville (Shell UK Limited), Kushang Sanghavi (Shell), Morten Eriksen (4subsea), Simona Palencar (IFE)

NON-METALLICS FOR CHEMICAL AND MINERAL PROCESSING AND OIL AND GAS PRODUCTION

CHAIR: MICHAEL STEVENS / VICE CHAIR: JEFFREY HAMILTON

8 TO 11 A.M. ROOM 342 E

SPONSORING COMMITTEE: TEG 191X, STG 33

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14919	A Novel Gasket Design for an Isolating Gasket to Solve Common Sealing Problems	Steven Bond (Flexitallic), Yi Li (Flexitallic)
8:35 a.m.	C2020-14520	Compatibility of Polymers Exposed to Heating Oil Blends with 10 % and 20 % Biodiesel (FAME)	Sina Pöttsch (Federal Institute for Materials Research and Testing [BAM]), Margit Weltschev (BAM), Ralph Bäßler (BAM - Federal Institute for Materials Research and Testing)
9:00 a.m.	C2020-14613	Elastomer Compatibility with a Pyrolysis-derived Bio-oil	Michael Kass (Oak Ridge National Laboratory), Christopher Janke (Oak Ridge National Laboratory), James Keiser (Oak Ridge National Laboratory), Raynella Connatser (Oak Ridge National Laboratory), Samuel Lewis (Oak Ridge National Laboratory)
9:25 a.m.	C2020-15107	Experiences and Opportunities for Continuous Improvement with Spoolable Composite Pipelines	Frank Gareau (Acuren-Skystone International Inc.), Alex Tatarov, Arash Ilbagi (Skystone International Inc.)
BREAK			
10:10 a.m.	C2020-15043	Long-Term Performance of a Subsea Wet Insulation Material at 180 °C Continuous Operation Temperature	Eileen Wan (Shawcor Ltd.), Espen Ommundsen (Norner Research AS)
10:35 a.m.	C2020-14965	Nanolaminated Alloys to Diminish Corrosion and Wear on Artificial Lift Components	Christina Lomasney (Modumetal Inc), Stuart Wilson (Conoco Phillips), Timm Burnett (Modumetal Inc)

OIL & GAS COATING TECHNOLOGY - DAY 2

CHAIR: BENJAMIN CHANG / VICE CHAIR: ANDY BODINGTON

8 TO 9:30 A.M. - ROOM 362 EF

SPONSORING COMMITTEE: STG 02, STG 03, TG 260/263/264/312/313

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14358	Qualification and Application Programs of Linings for Hydrocarbon Aboveground Storage Tanks	Jiajun Liang (Enbridge Pipelines Inc.), Amal Al-Borno (Charter Coating Service (2000) Ltd.), Amy Baxter (Enbridge Energy Company, Inc.), Haralampos Tsapralis (Enbridge Pipelines Inc.)
8:35 a.m.	C2020-14894	Comparative Evaluation of Four Viscoelastic Materials for Coating Patch Repairs	Haralampos Tsapralis (Enbridge Pipelines Inc.), Jiajun Liang, Shan Rao (A Plus Coating Solutions Inc.)
9:00 a.m.	C2020-14305	Diamond Like Carbon Coating for Long IDs of Drill Collars	Nausha Asrar (Schlumberger Products Center), Jeffrey Ham (Schlumberger)

PIPELINE INTEGRITY SYMPOSIUM - DAY 2

CHAIR: MATTHEW ELLINGER / VICE CHAIR: ANDREW LUTZ

8 TO 11:30 A.M. - ROOM 370 ABC

SPONSORING COMMITTEE: TEG 267X

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14640	Estimating Corrosion Rate Risk Distributions using Machine Learning and Geospatial Analytics	Thomas Hayden (Northwestern University), Haralampos Tsapraillis (Enbridge Pipelines Inc.), Joseph Mazzella (Engineering Director, Inc.), Len Krissa (Enbridge Pipelines Inc.)
8:35 a.m.	C2020-14602	Reliable, Traceable, Verifiable and Complete Pipeline Records	Matthew Romney (T.D. Williamson), Greg Donikowski (T.D. Williamson)
9:00 a.m.	C2020-14882	Pipeline and Subsea Integrity Assessment Using Corrosion Direct Assessment and Local Area Inspection	Yougui Zheng (Shell Global Solution), Johannes Sonke (Shell Global Solutions), Mark Mateer (Shell Global Solutions), Peter van de Camp (Shell Global Solutions), T. Martin (Shell Global Solutions), William Nisbet (Shell Global Solutions)
9:25 a.m.	C2020-14975	Mandatory Integrity Reassessment of Gravity-Fed Crude Oil Pipelines Using MP-ICDA in Kuwait	Patrick Teevens (Broadsword Corrosion Engineering Ltd.), Amer Jarragh (Kuwait Oil CO), Shabbir Safri (Kuwait Oil Company)
BREAK			
10:10 a.m.	C2020-14977	Successful Application of MP-ICDA to Assess and Confirm Crude Oil Pipeline Corrosion Threats in Kuwait using ILI	Patrick Teevens (Broadsword Corrosion Engineering Ltd.), Amer Jarragh (Kuwait Oil CO), Shabbir Safri (Kuwait Oil Company), Shabbir Safri (Kuwait Oil Company)
10:35 a.m.	C2020-14962	Monitoring and Assessing Pipeline Water Crossings in the Face of Severe Flooding, River Scour, and River Channel Migration	Vignesh Shankar (PureHM), Chukwuma Onuoha, Eric Pozniak (PureHM), Mill Jawed (PureHM), Shamus McDonnell (PureHM)
11:00 a.m.	C2020-15185	Deepwater Riser Repair Systems	Oludare Abiodun Jeremiah (FEDDO Pty Ltd), Adenike Ogunbode (FEDDO Integrated Service Ltd), Tekena Jim-George (FEDDO Integrated Service Ltd)

SUBSEA MATERIALS VS. HYDROGEN EMBRITTLMENT AND STRESS CORROSION CRACKING - DAY 2

CHAIR: RUSSELL KANE / VICE CHAIR: HERMAN AMAYA

8 TO 11 A.M. - ROOM 360 EF

SPONSORING COMMITTEE: STG 32

Start	Document #	Title	Author(s)
8:10 a.m.	C2020-14533	The Effect of Interactions between Cathodic Protection Potential and Stress Concentration on Hydrogen Embrittlement of Precipitation-Hardened Nickel A	Imran Bhamji (TWI Ltd), Bryan Fahimi (Schlumberger, 3MT), Herman Amaya (Schlumberger), Kasra Sotoudeh (TWI Ltd.), Menno Hoekstra (TWI Ltd)
8:35 a.m.	C2020-14541	The Role of Cathodic Protection Simulation in Assessing Hydrogen Embrittlement Risks for CRA's and Other Materials - Subsea Gasket Case	Behrang Fahimi (Onesubsea- A Schlumberger Company), Ali Shirani (Onesubsea), Herman Amaya (Onesubsea), Mehrooz Zamanzadeh (Matergenics), Peyman Taheri Bonab (Matergenics Engineering Ltd.)
9:00 a.m.	C2020-14891	Evaluation of HAC Susceptibility in DMWs for Subsea Service under Cathodic Protection	James Rule (The Ohio State University), Boian Alexandrov, Ryan Buntain (The Ohio State University)
9:25 a.m.	C2020-14667	Influence of the Hardening Phases on the Hydrogen Embrittlement Susceptibility of Ni-Alloys based on UNS N07718	Julia Botinha (VDM Metals GmbH), Bodo Gehrman (VDM Metals International GmbH), Helena Alves (VDM Metals International GmbH)
10:10 a.m.	C2020-14851	Heat Treatment and Notch Severity Effects on the Inconel® 718 Susceptibility to Hydrogen Embrittlement Evaluated by the RSL Method	Waldek Bose Filho (University of Sao Paulo), Sinésio Franco (Federal University of Uberlândia), Danilo Souza (Federal University of Uberlândia), Guilherme Martiniano (Federal University of Uberlândia), José Leal (Federal University of Uberlândia), Marcelo Piza Paes (Petrobras)
BREAK			
10:35 p.m.	C2020-15091	Comparison of Hydrogen Embrittlement Testing Methods of Alloy 718	Brian Kagay (Colorado School of Mines), Kip Findley (Colorado School of Mines), Stephen Coryell (PCC Energy Group), Steve McCoy (PCC Energy Group)

MONDAY, MARCH 16

Leadership: Activate the Leader Within

Forum 8 to 11:30 a.m. / Workshop 1:30 to 3:30 p.m.
George R. Brown Convention Center, Room 371 ABC
Presented by John Todd, KTA-Tator, Inc. and Stephanie Biagiotti, Xcel Energy Inc.

What will it take for you to become the leader you want to be? Training is often a one-time academic event that teaches ideas, approaches, and tools. Leadership, however, is a complex skill that is developed over time and should be approached like building a habit; a few training sessions will not lead to lasting results. Leaders must commit to ongoing efforts for development of their leadership skills and abilities. Companies are increasingly relying on multi-disciplinary teams and studies show improved performance of teams that rely on the collective capabilities of men and women with a diverse mix of ages and cultures. But a mix of diverse people does not guarantee high performance. Inclusive leadership is needed to bring everyone together and effectively implement the strategy.

This forum will provide guidance from diverse leaders to help you activate the inclusive leader already within you by giving you the confidence to lead and influence diverse, high-high performing teams.

Establish Your Brand

Lynsay Bensman, Director of US Pipeline Services, DNV GL;
Session 8:15 to 9:15 a.m.

Everyone At The Table (Diversity and Inclusion)

Cortland Russell, President and CEO, Out in Science, Technology, Engineering, and Mathematics (oSTEM), Inc.
Session 9:15 to 10:15 a.m.

Break 10:15 to 10:30 a.m.

Be a Leader

Kimberly Krieger, COO Production, BPX Energy
Session 10:30 to 11:30 a.m.

Seven Enduring Truths of Knowledge Management Workshop

Cindy Hubert, Executive Director Client Solutions, APQC
Workshop: 1:30 to 3:30 p.m.

As digital transformation sweeps organizations and the pace of change accelerates, knowledge management programs are embracing the disruptions while keeping their eye on fundamentals like honing their strategies, identifying critical knowledge, and engaging end users in knowledge sharing and reuse. APQC has been at the forefront of learning from organizations across the globe on what works and what doesn't in KM. Using best practices and learnings from the past 25 years, Cindy Hubert will share 7 enduring truths for KM. Participants will walk away from this interactive session with tips and techniques that help them navigate the waters of change and uncertainty.

Topics to be discussed include:

- Common definition for knowledge management
- Why organizations pursue knowledge management
- How to identify KM approaches that improve and enable knowledge flow across the organization
- Recognize the key roles and responsibilities associated with managing knowledge

The goal of the workshop is to provide participants what they need to accelerate their planning and implementation of KM.

Sponsored by:



NACE Water Forum: Sharing Best Practices in the Water and Wastewater Industries

8:30 a.m. to noon
George R. Brown Convention Center, Room 362 D
Presenters: Paul Acosta (Tuscon Water), Jeff Giddings (HDR), Bob Murphy (Sherwin-Williams), Bobbi Jo Merten (Bureau of Reclamation), John Norton, Jr. (Great Lakes Water Authority). Sponsored by the NACE Water and Wastewater Council.

The Water Forum is an annual opportunity for professionals in the water and wastewater industries to discuss corrosion issues and challenges facing the industry. Invited owners, operators, and industry experts will share best practices and lessons learned from their work, highlighting case studies ranging from protective coatings and cathodic protection implementation to asset management. The presenters will also compare new and emerging trends and technologies with traditional corrosion control techniques and discuss how these can be effectively implemented in the water and wastewater industries. The Water Forum is designed to be participative, and all conference attendees interested in this field are encouraged to attend.

Barrier and Anti-Corrosion Properties of Graphene Enhanced Coatings

10 a.m. to noon
George R. Brown Convention Center, Room 361 EF
Presented by: Terrance Barkan, Graphene Council

Graphene is a relatively new nano-material that exhibits a wide range of useful properties. Made from just a few atomic layers of pure carbon, Graphene enhanced coatings have been tested and proven to provide significantly improved barrier and anti-corrosion properties. Applications range from metal roofing that has a guaranteed life extended by 50% to a real life test of a marine coating on an ocean going cargo vessel.

Moderated by The Graphene Council, you will hear from a panel of graphene producers and formulation experts from North America, Europe and Australia how this novel nanomaterial is driving important advances for the coatings sector using existing standard processes and materials. Learn how graphene can be added to coatings formulations, and key processing steps that ensure an effective application.

Selecting the Right Surface Preparation for Performance

1 to 2:30 p.m.
George R. Brown Convention Center, Room 361 EF
Presented by David Hunter, Pond and Co.

This forum discusses one of the least understood problems in the coatings industry: Properly specifying surface preparation for the environment that will give the performance desired. The forum will detail how surface preparation and desired performance are linked and the environment is critical in being included or understood so the materials can give the lifecycle desired. Case histories will be presented from various industries, highlighting production impact and solutions provided.

The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation

1 to 3 p.m.
George R. Brown Convention Center, Room 362 D
Presented by Christina Lomasney, Modumetal

Corrosion affects everything around us—our infrastructure, transportation, manufacturing, and environment. We know it is a costly and challenging problem. As industry insiders, how can we better understand the business risks brought forth by corrosion,

and bridge the gap between those risks and solutions that will address this critical issue in a meaningful way?

Join a panel of industry leaders from emerging businesses and global corporations alongside policymakers and technologists for a conversation on the business impact of corrosion today. Led by Christina Lomasney, panelists from a variety of industries will share a "state of the industry" update regarding corrosion costs, risks, and solutions from their unique perspectives. These insights will drive a moderated discussion about current and emerging challenges, and how policy and technology can be leveraged together for a corrosion-free future. They will discuss how industries can innovate and achieve infrastructure and components that are second to none, at a cost sustainable for generations.

TUESDAY, MARCH 17

Battle Against Corrosion in Latin America

1 to 5 p.m.

George R. Brown Convention Center, Room 350 DE
Presented by Oladis de Rincon, CEC – Universidad del Zulia, Venezuela; Marianella Ojeda, Promigas Colombia; and Gustavo Romero, PENSPEN, Mexico

The study of corrosion and its prevention in Latin America had its initial epicenter at universities and research institutes. In countries such as Argentina, Brazil, Mexico, and Venezuela, important developments were fostered in these institutes that became the seeding places for both new technical development and for new career opportunities. The work was always done in collaboration with international partners and with the presence of NACE influence through various means.

Local NACE sections also emerged around those efforts, which allowed the work to spread within countries and across borders to other neighboring countries. From the overall effort, the result has been a new generation of local leaders in the field, graduate and post graduate studies, abundant research, development of the corrosion industry, and continuous support toward battling corrosion and protecting society from its impact.

This forum will highlight the influence of research institutes and universities on the battle against corrosion in Latin America, as well as the significant technical progress made and the new upcoming leaders who are influencing the current dynamic in this battle.

Sponsored by:



WCO Forum – Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions

1 to 5 p.m.

George R. Brown Convention Center, Room 330 A
Presented by Damien Féron, WCO president, Willi Meier, WCO Director General and George Hays (WCO Director, United Nations relations)

Over the past decades, low-carbon energies have emerged as a strategic priority to decrease carbon dioxide (CO₂) releases in the atmosphere to limit global warming. The Intergovernmental Panel on Climate Change (IPCC), a United Nations body for assessing the science related to climate change, includes as low-carbon energies: renewable energies, nuclear energy, and carbon capture and storage. The development of these forms of energy rises corrosion issues that the World Corrosion Organization (WCO, a non-governmental organization recognized by the United Nations) is addressing.

#CORROSION2020

The debates will be facilitated by international points of views given by: Damien Féron, WCO President (low carbon energies & corrosion), Raul Rebak from GE-USA (Environmental Degradation of Light Water Reactor Fuel Rods in the Entire Fuel Cycle), N. Larché from IFC-France (Collecting data and modelling for cathodic protection in the field of off-shore renewable energy), Digby Macdonald from UC Berkeley-USA (Main corrosion issues in fusion technology), Gareth Hinds from NPL-UK (Cost reduction of water electrolyzers via insights into anode current collector corrosion), Ralph Bassler from BAM-Germany (Corrosive CO₂-Stream Components, challenging for Materials to be Used in CC(U)S Applications). Others areas will be covered also as geothermal energy and solar energy.

Join us at the interactive forum that provides the opportunity to learn and exchange information on corrosion issues and remedies in the new and developing fields of "low-carbon energies."

PHMSA Pipeline Safety Forum

1:30 to 4 p.m.

George R. Brown Convention Center, Room 310 ABC
Presented by Kevin Garrity, Mears; and Alan Mayberry, PHMSA

The Pipeline and Hazardous Materials Safety Administration (PHMSA) and NACE members play a critical role in protecting the public from potential catastrophic failures of liquid/gas pipelines. Join policymakers, regulators, and industry experts for a discussion on how PHMSA and other agencies address corrosion in pipeline safety. The forum will provide both a regulator and industry perspective on best pipeline safety practices and the latest developments.

The PHMSA Forum is your chance to hear an annual update from key PHMSA officials and discuss proposed rules that may be considered in 2020. Additionally, you'll have the opportunity to hear from fellow members and stakeholders on the latest trends in pipeline safety.

WEDNESDAY, MARCH 18

Premature Coating Failures – Common and Uncommon Causes and How to Investigate Coating Failures When They Occur

8 a.m. to noon

George R. Brown Convention Center, Room 360 EF
Presented by Mike O'Brien, Mark 10 Resource Group, Inc.

Premature coating failures continue to cost asset owners, paint manufacturers, fabricators, contractors, shipbuilders, and others substantial amounts of unbudgeted money each year. Most of these failures are preventable if the proper principles are employed for selecting, applying, and inspecting the coatings. This tutorial is based on hundreds of real-life coating failures investigated by the presenter during his 40 years in the coating industry. This practical and informative tutorial is presented using many real-life case histories. It addresses coating failures that occur on steel, concrete, hot-dip galvanizing, and ductile iron substrates and explains the important properties for each of these substrates to consider when selecting and applying coatings to them. Failures involving most of the commonly applied coatings, including, but not limited to, inorganic zinc, organic zinc, epoxy, polysiloxane, polyurethane, water-based acrylic, and polyurea are discussed and pictures of the actual failures with these coating types are shown.

NEW - When a premature coating failure occurs, it is important to investigate it using proper principles, techniques, and procedures. During the presentation this year, the tutorial will include a new section on some basic principles to employ when investigating a premature coating failure, including how to prepare for a coating failure investigation, how to conduct the on-site investigation, how to determine the laboratory testing to perform, and how to analyze the results and write the report.

Forums

IMPACT PLUS: A Blueprint for Improved Corrosion Management Practices and Sustainability

9 to 10 a.m., 10 to 11 a.m., 11 a.m. to noon

George R. Brown Convention Center, Room 350 DE

Presented by Elaine Bowman, NACE International

Companies are finding IMPACT PLUS to be an effective method for improving corrosion management practices and sustainability within their organizations. Those using IMPACT PLUS have seen that this one-of-a-kind corrosion management tool provides a simple way for their organizations to identify gaps in their corrosion management and sustainability practices and delivers a method for roadmap creation leading to higher performance. Attendees will learn how many have utilized IMPACT PLUS to create a framework and communications that support asset longevity and corrosion management targets at all levels of their organizations.

A Tour to West Asia and Africa: Corrosion Management Challenges and Opportunities in the Most Fascinating Area in the World

1 to 5 p.m.

George R. Brown Convention Center, Room 320 DEF

Presented by Gasem Fallatah, NACE International

The Middle East and Africa region is exposed to harsh environments that include constant exposure to high temperatures, salinity, and humidity levels—all factors that create unique corrosion management challenges. These challenges have required a faster rate of research for corrosion control methods to counteract these challenges, making this region a hub for innovative infrastructure development and mega projects that attract potential investors. With this forum, corrosion experts from the Middle East and Africa will showcase multimedia presentations addressing new forms of corrosion problems being faced. In addition, they will take a more in-depth look at the utilization of nonmetallic materials/applications, knowledge transfer and retention, and the digital transformation within corrosion control. This forum is designed in an exhibition style setting and aims to take you through a technical, informative “tour” of the area. Join us on an escape to the Middle East and Africa region complete with live music, regional cuisine, and featuring exciting activities from across the region.

Sponsored by:



CORTEC
MIDDLE EAST



Kabbani
Construction
Group

MASTERS OF SPECIALIZED CONTRACTING

Corrosion Under Insulation: Materials, Fundamental, Identification and Mitigation

1 to 4 p.m.

George R. Brown Convention Center, Room 382 A

Presented by David Hunter, Pond Co.; Scott Sinclair, Johns Manville and Jonathan Osei-Kuffour, Rockwool

This forum will discuss the materials and mechanisms of corrosion under insulation (CUI), and how to identify and prevent or mitigate CUI problems. Materials and methods of identification will be discussed, as well as using risk-based methods for dealing with large areas where visual inspection becomes cost prohibitive. Case histories will be from various industries, highlighting production impact and solutions provided.

What Does a Facility Owner Look for in a Quality Coating Contractor?

2 to 4 p.m.

George R. Brown Convention Center, Room 350 C

Panel Discussion Featuring: Connor McManus, TC Energy, Canada; Harry Tsapraillis, Enbridge, Canada; Brooke A. Divan, Director of Field Relations Paint Technology Center, US Army Corps of Engineers; Samir Degan, NIICAP representative to India/India Oil, India; Jeremy Day, Blastco, USA (contractor representative)

Join this panel discussion organized by NIICAP (NACE International Institute Contractor Accreditation Program) to hear what facility owners look for in a quality coating job and in a contractor. The importance of quality work and correct specifications are directly tied to ROI on any asset, given their impact on the life of structures, facilities, pipeline, etc. Use of proper surface preparation, application, and inspection techniques lead to the highest quality work and extends the life of the asset, while reducing project costs by avoiding rework and other job non-conformances.

Thermal and Cold Spray Coatings – Processes, Applications and Challenges

1 to 5 p.m.

George R. Brown Convention Center, Room 350 DE

Presented by Shiladitya Paul, TWI; James Weber, James K. Weber Consulting, LLC; Frank Prenger, Grillo-Werke Aktiengesellschaft; and Dave Harvey, TWI

This session will cover discussions on thermal and cold spray coatings for mitigation of corrosion and wear with a specific focus on (but not limited to) surface preparation, coating consumable selection, spray method selection, spray parameter development, in-line quality and inspection, testing and qualification, operational experience, cost reduction, maintenance, and repair. The subjects to be covered include the latest research and field experience on thermal spray coatings, materials, processes, and strategies for corrosion control, etc. The group will also discuss conventional and novel thermal and cold spray coating systems used to prevent corrosion and wear in offshore, onshore, oil and gas, subsea, marine, construction, chemical industry, refinery, construction, automotive, power, and aerospace, etc.

Corrosive Chronicles and *MP* Innovation Theater

These theaters will feature experienced corrosion professionals and NACE staff who will present interactive forums on a variety of corrosion-related topics on the Exhibit Hall floor. Conference attendees will learn unique lessons and solutions to corrosion issues that are relatable to their own field of expertise. Topics of discussion include the following:

TUESDAY, MARCH 17

NACE Institute Certification Exam Development

10:30 a.m. to noon

Exhibit Hall E/Corrosive Chronicles Theater (Booth 2407)

Presented by Kari Hodge, Ph.D., NACE International Institute

Are you interested in shaping the future of NACE Institute Certifications or simply learning more about how NACE Institute Certifications are developed? If so, you are invited to attend a 90-minute session, held by the NACE Institute exam development team. This session is designed to engage members in an open forum for dialogue and questions. During this session you will learn about the exam development process, how you can participate in exam development activities, and how these activities protect the value of the NACE Institute Certifications.

Hexcorder Pro Digital Combined CIPS/DCVG Pipeline Integrity Surveys

11 to 11:45 a.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by Pat Yaremko, Cathodic Technology, Ltd.

This presentation will review the features and benefits of performing pipeline integrity surveys using the Cath-Tech Hexcorder Pro survey system. Topics will include a walkthrough of the Android app with its various features and benefits highlighted.

The Cath-Tech Hexcorder Pro is designed to provide state-of-the-art pipe coating condition data (DCVG) and/or pipeline cathodic protection data (CIPS) with feature-rich graphics in the field, in real time. The Hexcorder may be operated in numerous modes including DCVG only, CIPS only, combined DCVG and CIPS, and multi-person DCVG mode, among others.

The session will cover the key benefits of the Hexcorder Pro, including:

- Performing DCVG and CIPS simultaneously with all data gathered at the same geographic location and at the same time with the exact same field conditions instead of two separate conventional surveys.
- All equipment is fully GPS equipped, enabled, and data integrated.
- No special software required—you already own any software you need!
- The Hexcorder Pro is built by corrosion engineers for corrosion engineers specifically designed to do nothing but pipeline integrity surveys.

Corrosion Control and Ecosystems Enhancement for Offshore Monopiles

1:15 to 2 p.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by Monica M. Maher and Geoff Swain, Center for Corrosion and Biofouling Control, Florida Institute of Technology

Corrosion has been reported inside hollow steel monopile foundations used to support offshore wind-powered turbines. This research investigated incorporating perforations in the monopile walls that allow the free flow of ambient seawater into the interior, the installation of cathodic protection, and enable the interior structure to provide a habitat for marine life. Partially submerged steel pipes with different treatments were deployed. The results demonstrated that a cathodically protected perforated monopile

structure creates an environment with more favorable corrosion mitigation and water chemistry compared to a sealed structure. Furthermore, the perforated cathodically protected pipe recruited a diverse population of settled and mobile organisms.

The Importance and Value for Inspection of Mechanical Insulation Systems

1:30 p.m. to 2:15 p.m.

Exhibit Hall E/Corrosive Chronicles Theater (Booth 2407)

Presented by: Ronald L. King, National Insulation Association Past President & Consultant

The value proposition starts and stops with the facility owner. The inspection of mechanical insulation systems in new construction and existing facilities supports achieving the objectives for which the mechanical insulation system was designed, identifying visual and hidden personnel and asset-integrity safety areas of concern and controlling costs, which will yield a return on investment.

In the overall cost structure for new construction and facility maintenance, mechanical insulation represents a very small amount of the overall cost. The impact of mechanical insulation is taken for granted during the design phase, not normally inspected during the construction phase, and not focused upon in the maintenance phase. This equation will ultimately yield negative results for the facility owner.

However, the importance and value not only extends to the facility owner but the engineering/design firm; the general and or mechanical contractor, the independent inspection firms and the insulation contractor. This presentation will explore the importance and value of the inspection of mechanical insulation systems to all channel participants. The inspection of mechanical insulation systems is more important today than ever.

Leveraging Water Repellency Technology to Mitigate Corrosion Under Insulation Challenges

2:15 to 3 p.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by Adam Whitney, ROCKWOOL Technical Insulation

The task of mitigating corrosion under insulation (CUI) is an industry challenge. It is important to choose an insulation material with key characteristics that help prevent water from taking hold of the system. Wet insulation offers reduced performance and water trapped under or in the insulation material, which may cause corrosion of unprotected metal. While stone (mineral) wool insulation is frequently used, the significant variations of water repellency properties within the product family are not well understood, since stone wool is treated with different types of additives to achieve water repellency.

As a distinguished recipient of the 2019 MP Corrosion Innovation of the Year Award, ROCKWOOL Technical Insulation's ProRox with WR-Tech (Water Repellency Technology) puts our stone wool insulation truly in a "class of its own." WR-Tech incorporates a revolutionary, coating-friendly and water repellent binder technology (an inorganic resin additive) that coats each individual fiber of our stone wool pipe insulation during the production process, to help reduce and mitigate the harmful effects of CUI.

Being the world's largest manufacturer of stone wool insulation, it is our desire to not only educate the industry about the water repellency of insulation, but to also innovate and continuously improve the performance of insulation materials. This presentation is intended to educate the audience on the water repellency

Corrosive Chronicles and *MP* Innovation Theater

properties of mineral wool products with different types of hydrophobic treatment, as well as the effects on corrosion. It will specifically highlight our innovative WR-Tech material, which offers superior water repellency and moisture dissipation performance.

Does Your Daily Inspection Report Tell the Story?

2:45 p.m. to 4:45 p.m.

Exhibit Hall E / Corrosive Chronicles Theater (Booth 2407)

Presented by: Sean Browning, Pond & Co

Writing the a good Coatings Inspection report is critical. There are different reporting formats. Most of them are acceptable, but what makes in the report is what important and more critical that some inspectors realize. Reporting format sometimes will depend on if you are a QC or a QA. All sections of the Coatings Inspection report will be discuss. Project information, equipment, materials, containment, surface, application, inspections, corrective actions, non-conformances and sign-offs.

NACE-SSPC Discussions Town Hall

3:15 to 4:45 p.m.

Exhibit Hall E / Corrosive Chronicles Theater (Booth 2407)

Presented by: Bob Chalker, NACE International

Executive leadership and the Presidents from both organizations will provide an update on recent discussions with SSPC, The Society for Protective Coatings, related to a possible combined organization. Each town hall meeting is intended to provide members with information about the proposal, solicit feedback, and answer questions.

WEDNESDAY, MARCH 18

Shifting the Paradigm of Protective Materials Design Via Self-Healing Functionality

11 to 11:45 a.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by: Dr. Gerald O. Wilson, Autonomic Materials, Inc.

In a 2016 report by the National Association of Corrosion Engineers (NACE), the global cost of corrosion was estimated to be about \$2.5 trillion USD, which amounts to about 3.4% of global Gross Domestic Product (GDP). Industries such as oil and gas, infrastructure protection, and marine that maintain a disproportionate amount of their assets in extremely corrosive environments bear a disproportionate amount of these costs. Add to these costs the environmental and individual safety consequences of material failure due to corrosion and the case for investing in new technologies geared towards improving corrosion protection can hardly be overstated.

In this talk, we will report on novel additives which leverage the incorporation of microencapsulated healing agents into coating systems with a view towards lengthening their service lives and that of their underlying substrates while minimizing the opportunity cost of downtime associated with maintenance. These self-healing additives have been evaluated in a broad range of coating systems selected to provide the asset owner/operator with a range of smarter coating solutions aimed at delivering improved readiness and cost savings across the value chains of the industries highlighted above.

Contractor Awards Program

Noon to 1 p.m.

Exhibit Hall E/Corrosive Chronicles Theater (Booth 2407)

Join *CoatingsPro* Magazine and the NACE International Institute Contractor Accreditation Program (NIICAP) for recognitions of achievement. *CoatingsPro* Magazine will again recognize industry excellence in the application of commercial and industrial high-performance coatings with the fourth annual Contractor Awards Program. NIICAP will in turn present its coveted 5 Star Awards to coatings contractors recently attaining this achievement.

Join us as we announce the accomplishments of the 2020 *CoatingsPro* winners in these six categories: Commercial Concrete, Commercial Roof, Industrial Concrete, Industrial Steel, Specialty Project, and Contractor/Crew MVP. For more information, visit www.coatingspromag.com/contractor-awards.

Advancing Cathodic Protection Testing Through Integration and Automation

1:15 to 2 p.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by Bill Mott and Charlie Petrie, Taku Engineering

Our product development team has utilized state-of-the-art technology to develop a GPS synchronized cathodic protection (CP) current interrupter that fits in your pocket. The Pocket Interrupter One (Pi-1) is designed to be intuitive and simple to use while providing advanced capabilities.

We have also developed an algorithm that can automatically pick the "on," "instant off," and most depolarized potential from a CP waveform. We are now integrating a high sample rate waveform logger and automated waveform analysis into a handheld device, and eventually we will integrate it into the Pi-1.

NACE-SSPC Discussions Town Hall

2:30 to 4 p.m.

Exhibit Hall C / MP Innovation Theater (Booth 311)

Presented by: Bob Chalker, NACE International

Executive leadership and the Presidents from both organizations will provide an update on recent discussions with SSPC, The Society for Protective Coatings, related to a possible combined organization. Each town hall meeting is intended to provide members with information about the proposal, solicit feedback, and answer questions.

NACE Institute Certification Exam Development

3:30 to 5 p.m.

Exhibit Hall E/Corrosive Chronicles Theater (Booth 2407)

Presented by Kari Hodge, Ph.D., NACE International Institute

Are you interested in shaping the future of NACE Institute certifications or simply learning more about how NACE Institute certifications are developed? If so, you are invited to attend a 90-minute session, held by the NACE Institute exam development team. This session is designed to engage members in an open forum for dialogue and questions. During this session you will learn about the exam development process, how you can participate in exam development activities, and how these activities protect the value of the NACE Institute certifications.

Corrosive Chronicles and *MP* Innovation Theater

Adjustable Atmospheric Corrosion Test Rack

4:15 to 5 p.m.

Exhibit Hall C/MP Innovation Theater (Booth 311)

Presented by Raghu Srinivasan, University of Alaska Anchorage

Modular and adjustable atmospheric corrosion tests were designed and installed on the roof of the University of Alaska's Engineering Parking Garage. Racks were 46 by 46 in (1.17 by 1.17 m) and can be adjusted to three different angles (0, 30, and 45 degrees to the horizontal), similar to a car hood. The angle of exposure affects the snow/ice retention, and this leads to the formation of varying thicknesses of moisture on a metal surface. The angle of exposure also affects the wash off from rain, and this can change the atmospheric corrosion mechanisms. This rack helps in identifying the weather parameters by isolating the corrosion-inducing variables and their primary effect on corrosion in extreme cold climates.



JOIN US IN THE
DAIRYLAND LOUNGE



VIRTUAL
REALITY

+



SELFIE
STATION

+



LIVE
ENGAGED

+

FOR EACH PERSON WHO PARTICIPATES,
DAIRYLAND WILL DONATE \$10 TO
INTERNATIONAL JUSTICE MISSION TO
HELP RESCUE VICTIMS FROM VIOLENCE.

CREATE YOUR OWN
CORROSION 2020 T-SHIRT!



LOCATED ACROSS FROM BOOTH 2135

#CORROSION2020

Workshops and Other Learning Opportunities

Protective Coatings Workshop

Tuesday, March 17, 10 a.m. - 5 p.m. and Wednesday, March 18, 10 a.m. - noon | Exhibit Hall

Want to stay current on the latest coatings developments and technologies available?

NACE International and the NACE Coatings Council are excited to announce the return of the Protective Coatings Workshop at CORROSION 2020.

This interactive workshop, designed for coatings applicators, inspectors, and contractors of all experience levels, will feature engaging discussion and presentations from coatings industry leaders, an introduction to new emerging technologies and techniques, and highlight best practices from experts. In addition, you will get the opportunity to network with fellow contractors, inspectors, and suppliers.

Don't miss this unique opportunity expand your coatings knowledge and earn CEUs and/or PDHs!

Registration to the Protective Coatings Workshop includes:

- Access to the workshop for both days
- Access to the CORROSION 2020 Exhibit Hall on Tuesday and Wednesday
- Access to the Coatings Experience
- Attendance to the *CoatingsPro* Contractor Awards Program
- Lunch on Tuesday

Registration fees: NACE Member Price: \$199 USD; Nonmember Price: \$249 USD

Admission to the Protective Coatings Workshop is also included with a paid full conference registration or with a Tuesday or Wednesday one-day or multi-day conference registration.

The Protective Coatings Workshop is supported by *CoatingsPro Magazine*, *INSPECT This*, and the Master Painters Institute.

TUESDAY, MARCH 17, 2020	
10 to 10:45 a.m.	A Look at the Industrial Painting and Coatings Trade in 10 Years <i>Presented by Anton Ruesing, IUPAT/FTI</i>
10:45 to 11:15 a.m.	Surface Preparation <i>Presented by Joe Walker, Elcometer; Johnny Eliasson, Chevron</i>
11:15 to 11:45 a.m.	Using Dry Film Thickness Measurement Equipment Effectively <i>Presented by Mike Beamish, Defelsko</i>
11:45 a.m. - 1 p.m.	Lunch
1 to 1:30 p.m.	Robotics in Coatings Inspection <i>Presented by Norman Spence, Spence Consulting</i>
1:30 to 2 p.m.	Augmented Reality in Coatings Inspection <i>Presented by John Todd, KTA</i>
2 to 2:30 p.m.	Regulatory Update / Overview <i>Presented by Alison Kaelin, ABKaelin Quality Consulting</i>
2:30 to 3 p.m.	Break
3:30 - 3:30 p.m.	From the Sublime to the Ridiculous: Life in the Fast Coatings Lane <i>Presented by Presented by Vijay Datta and Mike O'Donoghue, International Paint</i>
3:30 to 4:30 p.m.	Passive Fire Protection <i>Presented by Russel Norris, Sherwin Williams</i>
4:30 to 4:30 p.m.	Shop and Field Applications for Metallic Zinc Coatings <i>Presented by Bernardo Duran, International Zinc Association</i>
WEDNESDAY, MARCH 18, 2020	
10 to 10:45 a.m.	The Misconceptions of Chemically Grouping Coatings <i>Presented by Paul Vinik, Greenman-Pedersen, Inc.</i>
10:45 to 11:15 a.m.	Protective Coatings in Infrastructure: Attributes, Structure Requirements and Case Studies <i>Presented by Steven Reinstadler, Covestro LLC</i>
11:15 to 11:45 p.m.	Architectural and Industrial Maintenance (AIM) VOC Regulations and PCBTF (Oxsol 100) VOC Exemption Update <i>Presented by David Darling, American Coating Association</i>
noon to 1 p.m.	CoatingsPro Contractor Awards

Workshops and Other Learning Opportunities

Corrosion In Marine Exhaust Gas Cleaning Systems (Scrubbers)

Saturday, March 14, 9 a.m. to 4 p.m.
Hilton Americas – Houston

This one-day seminar focuses on guidance and current discussion of materials selection and corrosion of marine exhaust gas cleaning systems (EGCS or scrubbers). The marine industry is facing the challenge of adopting new technologies and/or operational practices to comply with stricter international, regional, national and local regulations introduced to reduce air emissions from ships. The adverse effects of exhaust gas emissions from internal combustion engines and boiler exhaust gases on human beings and sensitive ecosystems have been well documented by the scientific community.

Critical amongst these regulations are the measures to reduce sulfur oxide (SOx) emissions inherent to the relatively high sulfur content of marine fuels. Ship designers, owners and operators have a number of different routes to achieve SOx regulatory compliance including:

- Use low-sulfur marine fuels in existing machinery
- Install new machinery (or convert existing machinery where possible) designed to operate on a low sulfur alternative fuel, such as liquefied natural gas (LNG)
- Install an Exhaust Gas Cleaning System (EGCS) as an after-treatment device

Program Pricing:

- NACE Member: \$425
- Non-Member: \$495

NOTE: Registration is separate from CORROSION 2020. Sessions can be added individually or added-on to full registration.

Corrosion Impacts In Renewable Energy

Saturday, March 14, 9 a.m. to 4 p.m.
Hilton Americas – Houston

This one-day seminar focuses on a variety of renewables markets such as wind and solar energy and will identify corrosion management methodologies in these respective areas. Corrosion is a continuing and major issue in all fields of energy and particularly renewable energy. Newly engineered systems are designed for up to 30 years of service but exposure to environmental corrosion, UV, extreme temperatures and salt corrosion can challenge component durability. Excessive component failures can lead to high maintenance cost and overall under performance of energy output.

Program Pricing:

- NACE Member: \$425
- Non-Member: \$495

NOTE: Registration is separate from CORROSION 2020. Sessions can be added individually or added-on to full registration.

Future Robotic Technologies In Confined Spaces

Saturday, March 14, 9 a.m. to 4 p.m.
Hilton Americas – Houston

This one-day seminar will focus on current, and future shifts in asset owner requirements, and emerging methodologies, technologies and materials for asset integrity maintenance. In response to Health Safety Security and Environment (HSSE) risks and corresponding liability issues and costs, many asset owners are employing mitigation initiatives to reduce, or in some cases, completely eliminate human confined space entry (CSE) altogether.

This forward-looking series of discussions will offer a first-hand look at one large asset-owner's aggressive new plan to fully eliminate direct human interaction in permanent CSE. Additionally, existing processes and technology of maintenance service providers, original equipment manufacturers (OEM), and coatings manufacturers will be discussed to showcase the quantum shift in industry.

Corrosion Management In Water/Wastewater

Saturday, March 14, 9 a.m. to 4 p.m.
Hilton Americas – Houston

This one-day seminar focuses on corrosion detection and mitigation in the water/wastewater industry. The speakers will share problem-solving strategies, case studies and analytical data from the following perspectives: research and development, treatment systems, maintenance troubleshooting, inspection protocols and water technology methods.

According to the American Waterworks Association (AWWA) industry database, there is approximately 1,483,000 km of municipal water piping in the United States. This number is not exact, since most water utilities do not have complete records of their piping system. The sewer system consists of approximately 16,400 publicly owned treatment facilities releasing some 155-million-meter cube of wastewater per day (1995). The total annual direct cost of corrosion for the nation's drinking water and sewer systems was estimated at \$36.0 billion. This estimated statistic accounted for the costs of replacing aging infrastructure, corrosion inhibitors, internal mortar linings, and external coatings and cathodic protection.

Program Pricing:

- NACE Member: \$425
- Non-Member: \$495

NOTE: Registration is separate from CORROSION 2020. Sessions can be added individually or added-on to full registration.

Workshops and Other Learning Opportunities

Corrosion Management In FPSOs

Saturday, March 14, 9 a.m. to 4 p.m.
Hilton Americas – Houston

This one-day seminar focuses on corrosion management of floating production, storage and offloading (FPSO) units and the extension of the life of offshore structures – fixed or floating static equipment, beyond that indicated by the original design philosophy. This event will provide insight into how to manage such concerns as process safety, material degradation, corrosion/erosion monitoring, non-destructive and intrusive inspection and maintenance.

Program Pricing:

- NACE Member: \$425
- Non-Member: \$495

NOTE: Registration is separate from CORROSION 2020. Sessions can be added individually or added-on to full registration.

NSRP Surface Preparation and Coatings (SP&C) Panel Meeting

Tuesday, March 17, 8 a.m. to 5 p.m.
Wednesday March 18, 8 a.m. to 5 p.m.
Hilton Americas, Room 335 A

The National Shipbuilding Research Program (NSRP) SP&C Panel Meeting is a great forum for diverse groups to come together and inspire the research, evaluation, development, and sustainment of current and emerging technologies. The desired outcomes of these efforts are reduced costs in construction, maintenance, and repairs and/or enhanced quality of coatings and corrosion control of Naval and commercial vessels. These meetings offer the participants an opportunity for engagement; from suppliers to shipbuilders, to improve processes, streamline production, enhance schedule performance, and reduce cost.

NACE Consortia Additive Manufacturing Roundtable

Wednesday, March 18, 9 a.m. to 3 p.m.
Hilton Americas - Ballroom of Americas, F

This one-day round-table will focus on addressing solutions to corrosion control and mitigation in additive manufacturing. The Additive Manufacturing Industry is projected to reach \$1+ billion USD by 2025 with companies seeking to focus on accelerating and integrating additive manufacturing technologies to their businesses to build products and unique parts within larger structures. The technology allows for greater design ability and for assemblies to be printed in one process. This operation efficiency reduces production time, minimizing time to market and reduces risk. The industry's only corrosion-related consortia administered by the premier global corrosion engineering association is seeking corrosion science and engineering experts to collaborate in a neutral forum for researching innovative solutions to key challenges in the field of additive manufacturing.

Thank You to Our Exclusive Sponsors

*As of February 26, 2020



GenNEXT Bash Signature Sponsor,
Darrel D. Byerley Memorial
Golf Tournament Shirt Sponsor



Conference Bags, Harley, Benches



Dairyland Golf Lounge



We protect and beautify the world™

Registration & Express Pass



Opening Reception



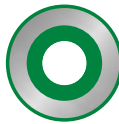
Gen Next Bash Titanium Sponsor



Student Poster Session,
Leadership Forum,
NACE Foundation Scholarship
Awards Ceremony



Wireless Internet, Gen
Next Bash Silver Sponsor



Hotel Room Key, mobile app,
Aisle sign, Crew Brew



Conference Proceedings, Harley



Water Stations



Headshot Station, Darrel D. Byerley
Memorial Golf Tournament Signature Sponsor



Headquarter Hotel Room Drop,
Notebooks, Mobile App
Symposium Coffee Break



CORROSION Mini-Camp



Pens, Aisle Sign, Crew Brew



an EnPro Industries company
Product Display



Donut Sundae Bar Station



Grand Expo Cups and Napkins



Escalators



Hanging Banner &
Floor Decal



Professional Development
Hours (PDH) Station



MAKING A DIFFERENCE AROUND THE WORLD
Outstanding Student Award



Stronger. Safer. Infrastructure.®

Meeting Signs, Sponsored Content



Lanyards



NACE Book Store Bags



Latin America Area Forum

See Page 114
For Additional
Sponsors

Student Poster Session

Posters are grouped in three categories in which they will be judged. Judging categories are:

- Mars Fontana Prize for the best posters in “Corrosion Engineering”
- Harvey Herro Prize for the best posters in “Applied Corrosion Technology”
- Marcel Pourbaix Prize for the best posters in “Corrosion Science”

Sponsored by:



Discover what role you could play

Supporting Publication:



Student Poster Orientation

Monday, March 16 | 9 to 10:30 a.m. | Room 320 AC

Poster Setup

Monday, March 16 | 11:30 a.m. to 3:30 p.m. | Exhibit Hall

First Poster Session

Monday, March 16 | 5 to 7 p.m. | Exhibit Hall

Second Poster Session

Tuesday, March 17 | noon to 1:30 p.m. | Exhibit Hall

Poster Winner Announcement

Wednesday, March 18 | 12:30 p.m. | Exhibit Hall

Posters should not be removed from the Exhibit Hall until Wednesday, March 18 after 1 p.m.!

MARS FONTANA CATEGORY

A Laboratory Investigation on the Effect of Chloride Roadway Deicers on the Corrosion of Buried Pipes	Mehdi Honarvar Nazari	Washington State University Pullman
A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions	Utibe Eno Charles Granville	University of Virginia
AC Induced Cracking Susceptibility of Low Carbon Steels Under Cathodic Protection	Lizeth Sanchez	University of Akron
Accelerated Corrosion Test to Determine Grout Robustness for Post-Tensioned Bridges	Rutambara Sonawane	Florida International University
Change in Microstructure Hardness and Corrosion Properties of Al-xV Alloy Produced by Different Sintering Temperature Using Spark Plasma Sintering	Jijo Christudasjustus	University of Akron
Chloride Corrosion Threshold in Reinforced Fly Ash Concrete	Juan Bosch Giner	University of Akron
Chloride Diffusion in Alkali Activated Fly Ash	Evan Dimmick	University of Akron
Corrosion Behavior and Hardness of Mg-X Wt% Al (X=5, 10, 15, 20) Alloys Synthesized by High Energy Ball Milling	Kelly Emeh	University of Akron
Corrosion Behavior of Low-Cost Compositionally Complex Alloys derived from AlFeMnSi via the Phase Separation Approach	Sean O'Brien	University of Akron
Corrosion Behavior Of Metal-Ceramic Composites	Kentaro Lunn	California Polytechnic State University, Pomona
Corrosion Initiation and Propagation of Carbon Steel Rebar Embedded in Binary and Ternary Concrete	Kazi Naimul Hoque	Florida Atlantic University
Corrosion Performance of Steel Reinforced Carbonated Calcium Silicate Concrete for Sustainability Applications	Carolina Paez	University of South Florida
Device for Imaging Cross-Section of Post-Tensioned Structural Tendons in the Field	David Dukeman	University of Alberta
Early-Stage Oxidation Mechanism of UNS N07214 in Dry and Humid Environments	Nicholas Ury	University of South Florida
Effect of Cr and Mo Alloying Elements on Corrosion of High Strength Low Alloy Steel	Mohiedin Bagheri Hariri	California Polytechnic State University, Pomona
Effects of Nitrite and Nitrate on Chloride-Induced Corrosion of Steel Bar in Simulated Concrete Pore Solutions	Chenxi Liu	Ohio University
Effects of Solution Parameters and Gamma-Radiolysis on Corrosion Dynamics of Galvanically-Coupled Dissimilar Metals	Mi Li	Ohio State University
Erosion and Corrosion of Al/SiC Metal Matrix Composites	David Calderon	Western University
Failure Analysis of Alloy C-276 Using Modern Characterization Techniques	Desmond Williams	California Polytechnic State University, Pomona
Failure Analysis of Deaerator Enclosure & Evaluation of Process Data to Improve MOE	Luis Riojas	Queen's University

#CORROSION2020

Student Poster Session

Field Exposure Corrosion Testing Using Electrochemical Impedance Spectroscopy (EIS)-based Applique Sensors	Justin Terosky	University of Texas at El Paso
Impedance Based Corrosion Sensing with ZnO/PVDF Electrospun Fiber Mats	Tonoy Chowdhury	Pennsylvania State University
Impedance Response Influenced by the Variability of the Random Physical Properties Distribution for Immersed Coating Material	Seongkoo Cho	University of North Texas
In Situ Characterization of Zirconium Oxides for Nuclear Fuel Cladding Applications	Michael Reynolds	Texas A&M University
Investigation of Localized Corrosion Resistance for Surface Treated Martensitic Stainless Steels	Samuel McMurdie	Boise State University
Lunar Influences on Reinforced Concrete Corrosion	Venkatesan Mukeshvashan	Boise State University
Measurement of Corrosion Fatigue Crack Growth on AA7085-T7451 in Complex Aerospace Environments	Brandon Free	B. S. Abdur Rahman Crescent Institute Of Science And Technology
Modeling of Microbiologically Influenced Corrosion (MIC) for Risk-Based Inspection (RBI) in the Oil and Gas Industry: Screening Assessment	Andre De Araujo Abilio	Ohio State University
Numerical Modeling and Experimental Approach to the Local pH Variations in a Carbon Steel/Aluminum-Alloy Galvanic Couple Under Thin Electrolyte Films	Allan Ruiz	University of Alberta
pH-Controlled Release of Corrosion Inhibitors From Colophony Microcapsules Containing Nitrite for Steel Reinforced Concrete	Jacob Ress	National Autonomous University of Mexico
Prediction of Corrosion Inhibitor Behavior in Oil/Water Flow: A Critical Review	Yi He	University of Akron
Quantifying the Propagation Stage of Corrosion Resistant Reinforcing Steel	Nelly Orozco	Ohio University
Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System	Anwar Sadek	University of South Florida
Reliability-Based Finite Element Analysis of Pipeline Dents Interacting With Corrosion Features	Jialin Sun	University of Akron
Sacrificial Anode Cathodic Protection Design for Internal Protection of Pipelines	Kelechi Anosike	University of Calgary
SCC Study of 316LN Stainless Steel Rebars in Simulated Concrete Pore Solution Contaminated With Chloride Ions Using Slow Strain Rate Testing	Ulises Martin	Federal University of Technology Owerri
The Effect of Corrosion Location Relative to Local Stresses on the Fatigue Life of Geometrically-Complex, Galvanically Corroded AA7075-T6	Carly Cocke	University of Akron
The Effect of Microstructure on (Localized) Corrosion and Passivity Behaviour of High Strength Steels	AYTAC Yilmaz	University of Virginia
The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on Corrosion Fatigue of AA5456-H116 in 3.5 wt.% NaCl	David Schrock	Delft University of Technology (TU Delft)
Use of Impressed Current for Accelerated Corrosion Testing of Al Alloy Panels	Mahdi Jokar	Ohio State University
Corrosion under Hot Dilute Acidic Pre-hydrolysis Biorefineries Processes	Minkang Liu	Ohio State University
HARVEY HERRO CATEGORY		
A Comparative Study on the Corrosion Behavior of Anodic Oxide Films on Aerospace Alloys during Electrochemical Impedance Spectroscopy, Salt Spray and Immersion Tests	Bashir Jelani Usman	University of Manchester
A Novel Electrode Material for Supercapacitors	Jacob Benoun	California State Polytechnic University, Pomona
Calculation of Surface Speciation on Mild Steel under Applied Polarization	Zheng Ma	Ohio University
Cathodic Poisoning Effect on Corrosion Behavior of High-Energy Ball Milled Mg-10Al Alloy by Addition of GE	Mohammad Umar Farooq Khan	University of Akron

Student Poster Session

Cathodic Reduction Kinetics on Stainless Steel Surfaces in Corrosive Evaporated Environments	Jacob Carpenter	University of New Mexico
Chlorine and Sulphur Induced High Temperature Corrosion in a Thermal Cracking Process of Waste Plastics	Manuela Nimmervoll	University of Leoben
Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys	Dadi Zhang	Ohio State University
Corrosion Behavior of Alloys in Purified Molten Salts	Chi Loh	California Polytechnic State University, Pomona
Corrosion Behavior of Metallic Alloys in Novel Molten Chlorides for Concentrated Solar Power Applications	Dominic Dinh	California Polytechnic State University, Pomona
Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel	Lindsay Braithwaite	University of Western Ontario
Corrosion Resistant Nanostructured Eutectic High Entropy Alloy	Shuo Shuang	City University of Hong Kong
Corrosion Testing of Additively Manufactured Ti-6Al-4V With Different Print Parameters	Brielle Ibe	Boise State University
Design of Low Cost Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance	Samuel Inman	University of Virginia
Designing Corrosion Inhibitors with High Aqueous Solubility and Low Tendency Towards Micellization: A Molecular Dynamics Study	Himanshu Singh	Ohio University
Development of a Low-Powered Wireless Sensor Network of Conductivity Probes to Detect the Presence of Fluids That Cause Internal Pipeline Corrosion	Christina Forbes	University of Alaska Anchorage
Effect of Activators on Pack Carburization of a Low Carbon Steel	Patrick McCurry	California Polytechnic State University, Pomona
Effect of pH on Additively Manufactured Biomedical Alloys in Phosphate-Buffered Saline	Armando Shehi	California Polytechnic State University, Pomona
Effect of Polyaniline/Chitosan Composite on Corrosion Behavior of Nanostructured Titanium in Hanks' Solution	Perumal Agilan	Anna University
Electrodeposition of Metallic Films on 3D Printed Polymer Foams as Electrodes for Water Splitting	Rogine Gomez	California Polytechnic State University, Pomona
Elucidating the Effect of Feedstock Powder Morphology on the Corrosion of Selective Laser Sintered Additively Manufactured 316L Stainless Steel	Andrew Shumway	US Naval Academy
Galvanic Corrosion Investigation of Structural Transition Joints	Luke Wiering	North Dakota State University
Green Smart Anti-Corrosion Coating	Subhalakshmi Suresh Kumar	University Teknologi Petronas
High Temperature Oxidation Resistance of Additively Manufactured Ni-Based Superalloys	Sedigheh Rashidi	University of Akron
Influence of Build Orientation and Surface Finish on the Corrosion of Additively Manufactured 316L	Jesse Duran	University of New Mexico
Influence of Graphene Enrichment on Erosion-Corrosion and Cracking Behaviors of Electroless Ni-P Composite Coatings	Ahmad Raza Khan Rana	Dalhousie University
Localized Corrosion Mechanism of Heat Treatable AA6xxx at Anodic Potentials During Galvanic Coupling With Cfrp in Automobile Applications	Priyanka Adapala	Ohio State University
Manganese-Cobalt Coatings for Ferritic Stainless Steels	Logan Gallegos	California State Polytechnic University Pomona
Microstructure and Corrosion Behavior of 3D-Printing Maraging Steel and the Effects of Heat Treatment	Lin Chen	Texas A&M University
Modeling of the Hydrogen Embrittlement of Zn-Ni Coated High Strength Steel under Atmospheric and Immersion Conditions	Asfia Tanjim Totini	University of Texas at San Antonio
Pack Aluminizing of UNS S30400 Stainless Steel	Kourtney Steidel	California Polytechnic State University, Pomona

Student Poster Session

Pitting Corrosion Behavior of Ni38Fe20Cr _x (MnCo)42-x High Entropy Alloys	Sarita Sahu	Ohio State University
Pitting of Austenitic Stainless Steel 316L Under Simulated Atmospheric Exposure for Spent Nuclear Fuel Storage Dry Canister Applications	Tasnia Fatima	University of Texas at San Antonio
Replacing Ruthenium in a Corrosion-Resistant High Entropy Alloy With Commodity Elements	Anup Panindre	Ohio State University
Resistivity, Sorptivity & Porosity of Concretes Containing Supplementary Cementitious Materials	Sanjoy Barman	Florida Atlantic University
Separation of Corrosive and Non-corrosive Sulfur Compounds from Vacuum Gas Oils by Ligand Exchange Chromatography	Ishan Patel	Ohio University
Stress Corrosion Cracking of 316L Stainless Steel Produced by Selective Laser Melting	Victor Cruz de Faria	Monash University
Surface Modification of AZ31 Magnesium Alloy for High Corrosion Resistance by Reactive Friction Stir Processing	Jae Yeon Kim	Seoul National University of Science and Technology
The Corrosion of Copper in the Chloride and Sulphide-Containing Environment Anticipated in a Deep Geologic Repository for the Permanent Disposal of Used Nuclear Fuel	Mengnan Guo	University of Western Ontario
The Effect of Build Orientation on the Corrosion Behavior of Selective Laser Melted UNS 30403	Kevin Guo	California Polytechnic State University, Pomona
The Effects of Nitinol Purity and Surface Finish on Corrosion Susceptibility	Grazziela Sena	California Polytechnic State University, Pomona
The Effect of Substrate Oxygen Content on the Short-Term Corrosion Behaviour of Copper in Aqueous Sulfide Solutions	Anna Dobkowska	University of Western Ontario
The Relationship Between Microstructure and Galvanic Corrosion of Low Alloy Steel A508 and 309L/308L Austenitic Stainless Steel Dissimilar Metals Weld	Bright Okonkwo	Institute of Metal Research, Chinese Academy of Science
Thermal Cycling of Stainless Steel 316 with PCM 638: A Corrosion Study	Raihan Rumman	Flinders University
MARCEL POURBAIX CATEGORY		
A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential Non-Iterative Approach	Xiangming Sun	Vanderbilt University
A Smart Coating Embedded with pH-Responsive Microcapsules Containing a Corrosion Inhibiting Agent	Changkyu Kim	Texas A&M University
Anticorrosion Performance of Hybrid Smart Release Bionanocomposite Coatings on Aluminium Alloy 6061	Sarah Ulaeto	National Institute for Interdisciplinary Science and Technology (NIIST)
Application of a Synthetic Antimicrobial Peptide in Inhibiting Corrosion by a Sulfate-Reducing Bacterium	Junlei Wang	Ohio University
Application of Electrochemical Impedance Spectroscopy to Identify Degradation of Antifouling Coatings on Steel in Marine Environments	Samanbar Permeh	Florida International University
Characterization of Early-Stage Oxide Films on Metallic Alloys	Jaymn Singh	California Polytechnic State University, Pomona
Completing the Circuit: A Novel Mechanism of Microbially-Induced Carbon Steel Corrosion at an Aqueous/Non-Aqueous Interface	Sai Prasanna Chinthala	University of Akron
Corrosion Behavior of In-Situ Consolidated Nanocrystalline Al-2at.%V Alloy	Chathuranga Witharamage	University of Akron
Corrosion Susceptibility of an Additively Manufactured Al-Si-Mg Alloy	Kevin Robles	California Polytechnic State University, Pomona
Chemical Waves in Corrosion - Rethinking Interfacial Transport Processes	Youn Gyeong Shin	Western University
Corrosion in Trace H ₂ S in CO ₂	Adam Cutright	Ohio University
Critical Literature Review of Batch Inhibition Applied for TLC Mitigation	Mengqiu Pan	Ohio University
Critical Literature Review of Fe ₃ C Effect on Corrosion Inhibitor Performance	Shuai Ren	Ohio University
Customisation of Implant Materials for Skeletogenesis: From Corrosion to Cell Culture	Saranya Kannan	Anna University

Student Poster Session

Detection of Corrosion Using Millimeter Waves	Yshai Gabai	Ariel University
D-limonene Enhancement of THPS Biocide Treatment of Biofilm and Biocorrosion	Pruch Kijkla	Ohio University
Effect of Chloride Droplet Size on Pitting Corrosion of Type 304 Stainless Steel	Alana Parey	Ohio State University
Effectiveness of Strontium Zinc Phosphosilicate Inhibitor Pigment on the Active Protection of AA2198-T851 Aluminium Alloy in Sodium Chloride Solution	Shedrack Gad	University of Manchester
Effects of Quenching Media and Addition of Boron and Titanium Nano Particles Powder on Corrosion Resistance of Al-7Si-3Mg Alloy	Aqeel Al Attar	Missouri University
Evaluation of Corrosion Behavior of Silicate Coated AZ31 Mg Alloy in Earle's Solution	Kalaiyaran Madhu	Anna University
Evaluation of Hydrogen Evolution Reaction in Aqueous Solutions Containing Dissolved CO ₂ in High Pressures	Flávio de Sousa	Federal University of Rio de Janeiro
Evaluation of Techniques for Determining Critical Micelle Concentration of Corrosion Inhibitors	Negar Moradighadi	Ohio University
Exploring Caesalpinia Coriara as a Green Anodizing Additive for Aerospace Applications	Eduardo Lodato	La Universidad del Zulia (LUZ)
Formation Modes of Corrosion Product Layers in Aqueous CO ₂ Environments	Sahithi Ayyagari	Ohio University
Formulation of Coating Systems with Reflective Cool Pigments	Tyler Laughorn	University of Akron
How Entrainment of Oil Molecules in Adsorbed Corrosion Inhibitors Improves Film Properties-a Computational Study	Xueying Ko	Ohio University
Influence of Hard TiN Inclusions of Strained Supermartensitic Stainless Steel (SMSS) on the Nucleation of Pitting Corrosion	Lucas Souto	Universidade Federal do Rio Grande do Sul
Magnetite Nanoparticles Accelerate Microbiologically Influenced Corrosion Caused by Desulfovibrio vulgaris Against Carbon Steel	Di Wang	Ohio University
Microbiologically Induced Corrosion of 2205 Duplex Stainless Steel	Zinan Zhao	California Polytechnic State University, Pomona
Microbiologically Induced Corrosion of Open-Cell Aluminum Foams	Alessandro Pereyra	California Polytechnic State University, Pomona
Modeling Uniform CO ₂ Corrosion of Mild Steel in High Salinity Environments	Fazlollah Madani Sani	Ohio University
New Green Anodizing Processes	Nathalie Romero Echeto	University of Zulia
Pitting Initiation on X65 Mild Steel in Marginally Sour Environments due to Trace Amount of Oxygen Ingress	Wei Zhang	Ohio University
Quartz Crystal Microbalance: Working Principles and Relevance for Quantifying Adsorption Kinetics of Corrosion Inhibitors	Kushal Singla	Ohio University
Solvent-Free Coating Using MACO Bio-Based Reactive Diluent	Ryder James	University of Akron
Study of Corrosion Inhibition Persistency	Kasra Shayar Bahadori	Ohio University
Testing the Effectiveness of Reflective Cool Pigments	Ashleigh Carpenter	Texas A&M University
The Effect of Coating Deficiencies in the Aluminized and Galvanized Steel Pipes	Mohammed Al Yaarubi	University of Akron
The Effects of H ₂ S Adsorption on the Hydrogen Permeation in High Strength Low Alloy Carbon Steels	Lianlian Liu	University of South Florida
The Influence of Iron Sulfides on Localized Corrosion of Mild Steel: A Review on the Effect of Experimental Conditions	Payman Sharifi Abdar	Texas A&M University
The Use of Atomic Emission Spectroelectrochemistry (AESEC) to Study the Behaviour of Nickel Alloys Under Industrially-Relevant Conditions	Jeffrey Henderson	Ohio University
Study on the Corrosion Protection of ZrO ₂ /ZnO/TiO ₂ Nanocomposite Coated Stainless Steel Prepared by Using Radio Frequency Sputtered Ultra-Thin Coating Method	Minho Lee	University of Western Ontario

Symposia Index (Symposia 2020 Listed by Administering STGs)

SPONSORING TEG LISTED	ADMINISTRATIVE STG	DAY	TIME	ROOM
01 REINFORCED CONCRETE				
	Cathodic Protection of Reinforced Concrete and Steel Frame Structures: A Retrospective on Technology	Wednesday	8 a.m. to 2 p.m.	351 EF
02 COATINGS AND LININGS, PROTECTIVE: ATMOSPHERIC & 03 COATINGS AND LININGS, PROTECTIVE: IMMERSION AND BURIED SERVICE				
260 & 470	Oil and Gas Coating Technology	Wednesday	8 a.m. to 2:30 p.m.	362 EF
		Thursday	8 to 10 a.m.	
255X	Thermal and Cold Spray Coatings	Monday	8 a.m. to noon	351 EF
05 CATHODIC/ANODIC PROTECTION				
	AC Interference, AC Induced Corrosion, AC Risk Assessment, Monitoring, and Mitigation	Wednesday	8 a.m. to 6 p.m.	General Assembly B
	Anodic and Cathodic Protection	Tuesday	9 a.m. to 5:30 p.m.	371 DF
06 CLEANING, CHEMICAL AND MECHANICAL				
188X	Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation	Wednesday	8 a.m. to 1:30 p.m.	340 B
08 CORROSION MANAGEMENT				
	Corrosion Management - Implementation & Progress	Monday	8 a.m. to 3:30 p.m.	360 EF
		Tuesday	9 a.m. to 1:30 p.m.	
	The Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management	Wednesday	8 a.m. to 3:30 p.m.	332 F
10 NONMETALLIC MATERIALS OF CONSTRUCTION				
191X	Non-Metallics for Chemical and Mineral Processing and Oil and Gas Production	Thursday	8 to 11 a.m.	342 E
11 WATER TREATMENT SYSTEMS				
	Recent Developments in Mineral Scales and Deposits Control Technologies	Monday	8 a.m. to 3:30 p.m.	382 A
		Tuesday	9 a.m. to 6 p.m.	
30 OIL AND GAS PRODUCTION—CATHODIC PROTECTION				
	Offshore Cathodic Protection – Case Studies, New and Novel Designs or Inspection Techniques	Monday	8 to 11 a.m.	340 A
31 OIL AND GAS PRODUCTION—CORROSION AND SCALE INHIBITION				
286X	Control of Problematic Microorganisms in Oil and Gas Field Operations	Tuesday	9 a.m. to 5 p.m.	332 F
095X	Corrosion in Sweet and Slightly Sour Production Conditions	Wednesday	8 a.m. to 5 p.m.	361 EF
		Tuesday	8 to 10 a.m.	
202X	Flow Assurance in Oil and Gas from Inland to Subsea	Monday	8 a.m. to 2 p.m.	332 F
341X	Materials and Integrity in Oil Sands	Tuesday	9 a.m. to noon	352 DE
253X	Progress in Laboratory Testing of Corrosion Inhibitors for Oil Field Applications	Monday	8 a.m. to 1:30 p.m.	362 EF
077X	Solid Particle Erosion and Erosion-Corrosion	Monday	8 to 11:30 a.m.	340 B
282X	Sour Corrosion	Monday	8 a.m. to 2:30 p.m.	352 DE
32 OIL AND GAS PRODUCTION—METALLURGY				
	Advances in Materials for Oil and Gas Production	Monday	8 a.m. to 3:30 p.m.	370 AC
		Tuesday	9 a.m. to 5:30 p.m.	
	Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking	Wednesday	1 to 4 p.m.	360 EF
		Thursday	8 to 11 a.m.	
34 PETROLEUM REFINING AND GAS PROCESSING				
	Corrosion in the Refining Industry	Tuesday	9 a.m. to 5:30 p.m.	372 DF
35 PIPELINES, TANKS, AND WELL CASINGS				
	Direct Assessment	Tuesday	9 a.m. to 1:30 p.m.	371 AC
267X	Pipeline Integrity	Wednesday	8 a.m. to 5 p.m.	370 AC
		Thursday	8 a.m. to noon	

Symposia Index (Symposia 2020 Listed by Administering STGs)

36 PROCESS INDUSTRY—MATERIALS PERFORMANCE IN CHEMICALS				
121X	Corrosion in Supercritical Systems	Tuesday	9 a.m. to 1:30 p.m.	340 A
38 PROCESS INDUSTRY—PULP, PAPER, AND BIOMASS CONVERSION				
	Corrosion Issues in the Pulp, Paper, and Biomass Conversion Industries	Wednesday	10 a.m. to 2 p.m.	340 A
39 PROCESS INDUSTRIES—MATERIALS APPLICATIONS AND EXPERIENCES				
114X, 116X	Recent Experiences With Austenitic and Duplex Stainless Steels	Monday	8 a.m. to 3:30 p.m.	370 DF
		Tuesday	9 a.m. to 2 p.m.	
	Recent Experiences with Nickel, Titanium, Zirconium and other Corrosion Resistant Alloys	Wednesday	8 a.m. to 5 p.m.	352 DE
40 MILITARY AND AEROSPACE SYSTEMS AND FACILITIES				
	Corrosion Issues in Military Equipment and Facilities	Wednesday	8 to 10 a.m.	340A
41 ELECTRIC UTILITY GENERATION, TRANSMISSION, AND DISTRIBUTION				
224X, 465X	Corrosion in Nuclear Systems	Monday	8 a.m. to 2:30 p.m.	351 AB
		Tuesday	9 a.m. to 6 p.m.	
	Power Industry Corrosion	Wednesday	8 a.m. to 3 p.m.	332 E
44 MARINE CORROSION: SHIPS AND STRUCTURES				
	Marine Corrosion - Ships and Structures	Wednesday	8 a.m. to 6 p.m.	342 D
60 CORROSION MECHANISMS				
189X	Combined-Effects Material Degradation under Atmospheric Conditions	Monday	8 a.m. to 3 p.m.	332 E
569X	Corrosion of Additively Manufactured Materials	Tuesday	9 a.m. to 3 p.m.	332 E
186X	Environmentally Assisted Cracking	Monday	8 a.m. to 3:30 p.m.	361 AB
		Tuesday	9 a.m. to 3 p.m.	
407X	Localized Corrosion - Mechanisms, Research Methods, Modelling and Control	Monday	8 a.m. to 3:30 p.m.	362 C
187X	Microbiologically Influenced Corrosion	Wednesday	8 a.m. to 3 p.m.	371 AC
474X	Nanomaterials and Coatings Technologies	Tuesday	9 a.m. to 2:30 p.m.	362 EF
61 INHIBITION—CORROSION AND SCALING				
184X	Control of Corrosion in Oil and Gas with Inhibitors	Wednesday	8 a.m. to 5 p.m.	362 AB
		Thursday	8 to 11 a.m.	
093X	Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP)	Tuesday	9 a.m. to 2 p.m.	340 B
62 CORROSION MONITORING AND MEASUREMENT—SCIENCE AND ENGINEERING APPLICATIONS				
100X	Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies	Tuesday	9 a.m. to 3:30 p.m.	382 B
RESEARCH IN PROGRESS (RIP)				
	Advanced Electrochemical Methods	Monday	8 a.m. to 3:30 p.m.	342 D
	Biomedical Materials	Monday	8 a.m. to 3 p.m.	342 E
	Marine Corrosion	Monday	8 a.m. to 3:30 p.m.	342 F
	Role of Sustainability	Tuesday	9 a.m. to 5 p.m.	342 D
	Concrete & Architecture	Tuesday	9 a.m. to 6 p.m.	342 F
		Wednesday	8 a.m. to 11 a.m.	
	Pits, Cracks and Crevices	Tuesday	9 a.m. to 6 p.m.	342 E
		Wednesday	8 a.m. to 5:30 p.m.	
RESEARCH TOPICAL SYMPOSIUM (RTS)				
	Emergent Materials	Wednesday	8 a.m. to 5:30 p.m.	361 AB

STGs without Symposia:

- 04 Coatings and Linings, Protective: Surface Preparation
- 36 Process Industry—Materials Performance in Chemicals
- 43 Transportation, Land
- 45 Pollution Control, Waste Incineration, and Process Waste
- 47 Corrosion in Mining and Mineral Processing

Managing Corrosion with Polymers

Monday, March 16

1:00pm – 4:00 pm

Room 362 A/B

Introduction to Composites

TEG 529X – Basic Education Session

This session provides a basic education on the successful use of composites in chemical handling. The session will address material selection, both for thermosets and thermoplastics used in dual laminate constructions. Additionally, it will address design and fabrication, inspection of new equipment, and fitness for service. The speakers are well-known experts in the industry who will illustrate their presentations with numerous case histories.

Tuesday, March 17

9:00 AM – 6:00 PM

Room 362 A/B

Managing Corrosion with Non-Metallics

TEG 191X – Informal Symposium

This session will cover several topics for how to manage corrosion with non-metallic solutions. Topics will include material selection for both FRP and thermoplastic constructions, new NACE and AWS standards relevant to non-metallics, design considerations for thermoplastic equipment, and case histories highlighting successes.

Wednesday, March 18

1:00 PM – 5:00 PM

Room 362 C

Maintenance Assessment and Best Practices for Reliability

TEG 239X Expert Panel Discussion

This session will host an expert panel discussion forum on non-metallic materials of construction. Experts will discuss standards and specifications for FRP equipment, how to properly maintain and operate dual laminate vessels and pipe, and how to get the most reliable service out of your FRP assets.

Thursday, March 19

8:00 AM – 12:00 PM


Room 352 F

Non-Metallic Materials of Construction

STG-10 Committee Meeting

Open to all CORROSION 2020 Attendees





Publish your research at the world's largest corrosion conference & expo

The 2021 Technical Symposium Call for Papers is **Now Open**
Closes: **May 11th, 2020**

Today's Research, Tomorrow's Technology

CORROSION
Conference & Expo **2021**
April 18-22 • Salt Lake City, UT
Salt Palace Convention Center

Submit your paper today:
nacecorrosion.org/call-for-abstracts



Get on top of your hidden corrosion problem!

The latest solution in CUI prevention and mitigation
NACE Corrosion Under Insulation Course

An interactive, hands-on training course designed to give you a practical understanding of:

- How CUI occurs and the unique problems encountered
- Various coatings, insulation and jacketing types used in CUI service
- Considerations for insulated equipment that is at risk for CUI
- Long-term mitigation programs

REDUCE costs. AVOID shutdowns. PROTECT workers.

Enroll today!

www.nace.org/cui



#CORROSION2020

Technical Committee Information

Welcome to NACE International Technical Committees!

NACE invites you to participate in the CORROSION 2020 Technical Coordination Committee Task Groups. There has never been a better time to have your voice heard at NACE, and all full conference registrants are welcome to participate! If you're new to technical committees at NACE, do not miss Technical Committees 101 on Sunday, March 15 and Monday, March 16 from 9 to 10 a.m. Learn the ropes, see what the technical committees are all about, and become invigorated in the decision-making process.



General NACE International Technical Committees Information

NACE technical committees scheduled to meet during CORROSION 2020 are listed on the following pages. For the most up-to-date technical committee meeting listing with the exact meeting times, visit the CORROSION 2020 conference web site at www.nacecorrosion.org.

All technical committee meetings are open to registered members and nonmembers at CORROSION 2020. Persons interested in joining a technical committee may contact the Technical Activities Division at NACE headquarters for additional information (+1 281-228-6264).

IMPORTANT NOTICE

Committees are organized by Specific Technology Groups (STGs) and listed numerically by Technology Exchange Group (TEG), Task Group (TG), and Work Group (WG). The number in parentheses are additional sponsor STGs, if any.

- Following each TEG and TG title is a three-digit number (e.g., 049). This is the committee designation. Note that TEG designations are always followed by an X.
- The day of the week each committee is meeting is shown following the committee designation.
- The matrix structure of NACE technical committees is designed to bring together experts from various industries who are concerned with a specific technology and want to give input.
- Note that the following schedule only indicates days that the STGs meet; see www.nacecorrosion.org for specifics on TEGs, TGs, and WGs.

For more information, visit www.nace.org/jointcc.

Standards Committee Informational Meeting

The New NACE Standards System

Learn how NACE is transitioning its standards program and how you can be a part of it. There will be a brief presentation with the opportunity for questions afterwards.

When: Sunday March 15, 2020, 5 to 5:30 p.m.
George R. Brown Convention Center, Room 350 DE

This meeting is open to all Committee Members

Technical Committee Meetings

REINFORCED CONCRETE - STG 01				
Name	Committee(s)	Day	Time	Room
Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars	TG 052 (11)	Monday	8 to 9 a.m.	Room 351 C
Cathodic Protection for Masonry Buildings Incorporating Steel Frames - SOA Report	TG 329 (05)	Monday	9 to 10 a.m.	Room 351 C
Electrochemical Realkalization of Steel-Reinforced Concrete - A State of the Art Report"	TG 556	Monday	10 to 11 a.m.	Room 351 C
Sacrificial Cathodic Protection of Reinforced Concrete Elements	TG 557 (05)	Monday	11 a.m. to noon	Room 351 C
Test Procedure for Embeddable Impressed Current Anodes for Atmospherically Exposed Structures	TG 472 (05)	Monday	11 a.m. to noon	Room 352 B
Stray Current Corrosion in Reinforced and Prestressed Concrete Structures-SOA Report	TG 572 (05)	Monday	1 to 2 p.m.	Room 351 C
Inspection Methods for Corrosion Evaluation of Prestressed Concrete Structures	TG 504	Monday	2 to 3 p.m.	Room 351 C
Reinforced Concrete: Sacrificial Cathodic Protection of Reinforced Concrete Elements	TG 047 (05)	Monday	3 to 3:30 p.m.	Room 351 C
Testing and Evaluation of Corrosion on Steel-Framed Buildings	TG 460 (02)	Tuesday	9 to 10 a.m.	Room 351 C
Reinforced Concrete: Design, Evaluation, and Remediation	TEG 053X	Tuesday	10 a.m. to noon	Room 351 C
State of the Art Report: Criteria for Corrosion Control of Steel in Concrete	TG 545	Tuesday	1 to 2 p.m.	Room 351 C
STG 01 Strategic Planning	STG 01	Tuesday	2 to 3 p.m.	Room 351 C
STG 01 Reinforced Concrete	STG 01	Tuesday	3 to 5 p.m.	Room 351 C
COATINGS AND LININGS, PROTECTIVE: ATMOSPHERIC - STG 02				
Name	Committee(s)	Day	Time	Room
Coatings, Thermal-Spray for Corrosion Protection	TEG 255X (01, 03)	Monday	8:30 to 10 a.m.	Room 361 D
Liquid-Applied Thermal Insulative Coating for Atmospheric Service at 0 to 375 °F	TEG 424X (03, 04, 35, 43)	Monday	10 to 11:30 a.m.	Room 361 D
TG 260/263/264/312/313 JOINT {02/03}	TG 312	Monday	1 to 2 p.m.	Room 361 D
TG 260/263/264/312/313 JOINT {02/03}	TG 313	Monday	1 to 2 p.m.	Room 361 D
TG 260/263/264/312/313 JOINT {02/03}	TG 260 (33)	Monday	1 to 2 p.m.	Room 361 D
Standard Practice for Application and Inspection of Intumescent Fireproofing	TG 568 (03)	Tuesday	9 to 11 a.m.	Room 361 D
Offshore Coatings: Laboratory Testing Criteria	TEG 346X (03, 44)	Tuesday	11 a.m. to noon	Room 361 D
Threaded Fasteners: Coatings and Methods of Protection for Threaded Fasteners Used with Structural	TEG 311X	Tuesday	1 to 2 p.m.	Room 361 D
Measurement of Leachable Chloride Content of Coatings Applied to Stainless Steel in High Temperature	TG 549 (03, 04)	Tuesday	2:30 to 4 p.m.	Room 361 D
STG 02,03,04	STG 02	Thursday	1 to 2:30 p.m.	Room 382 C
COATINGS AND LININGS, PROTECTIVE: IMMERSION AND BURIED SERVICE - STG 03				
Name	Committee(s)	Day	Time	Room
Advances in Corrosion Under Insulation (CUI) Technologies	TEG 351X (04)	Sunday	1 to 5 p.m.	Room 382 C
Field-Applied Fusion-Bonded Epoxy (FBE) Pipe Coating Systems for Girth Weld Joints: Application, Performance, and Quality Control	TG 249 (04, 35)	Monday	10 to 11 a.m.	Room 382 C
Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines	TG 248 (04, 35)	Monday	11 to 11:30 a.m.	Room 382 C
TG 260/263/264/312/313 JOINT {02/03}	TG 263 (33)	Monday	1 to 2 p.m.	Room 361 D

Technical Committee Meetings

COATINGS AND LININGS, PROTECTIVE: IMMERSION AND BURIED SERVICE - STG 03 (continued from previous page)

Name	Committee(s)	Day	Time	Room
TG 260/263/264/312/313 JOINT {02/03}	TG 264 (33)	Monday	1 to 2 p.m.	Room 361 D
Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection	TG 470	Monday	2 to 3 p.m.	Room 361 D
External Repair, Rehabilitation, and Weld Joints on Buried Steel Pipelines	TG 247 (04, 35)	Monday	2 to 3 p.m.	Room 382 C
Prequalification of Flow Efficiency Pipeline Coatings	TG 490 (35)	Tuesday	9 to 11 a.m.	Room 382 C
Coating, Polyolefin Resin Systems: Review of NACE SP0185-2007	TG 265 (04, 05, 35)	Tuesday	11 a.m. to noon	Room 382 C
High Temperature, High Pressure, Corrosive Service Environments Pertaining to Oil and Gas and Other Industrial Applications	TEG 526X (33)	Tuesday	1 to 2 p.m.	Room 361 C
Plural Component Spray Standard Method	TG 565 (02)	Tuesday	1 to 3 p.m.	Room 382 C
Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating	TG 031 (05, 35)	Tuesday	3 to 6 p.m.	Room 382 C
Review of ISO 21809, for NACE National Adoption of "Petroleum and natural gas industries - External	TG 479 (02, 04, 35)	Wednesday	8 to 11 a.m.	Room 382 C
Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance, and Quality	TG 298 (04, 35)	Wednesday	11 a.m. to noon	Room 382 C
Standard Practice for Evaluating Protective Coatings for Use Under Insulation	TG 516 (02, 04, 43)	Wednesday	1 to 2 p.m.	Room 382 C
Coatings and Linings, Protective: Immersion and Buried Service	STG 03	Thursday	9 to 10 a.m.	Room 382 C
STG 02,03,04	STG 03	Thursday	1 to 2:30 p.m.	Room 382 C

COATINGS AND LININGS, PROTECTIVE: SURFACE PREPARATION - STG 04

Name	Committee(s)	Day	Time	Room
Surface Preparation Issues	TEG 469X (02, 03)	Wednesday	9 a.m. to noon	Room 362 C
Nonvisible, Nonwater-Soluble Contaminants Affecting Corrosion Protection	TEG 423X (02, 03)	Wednesday	10 a.m. to noon	Room 352 F
STG 02,03,04	STG 04	Thursday	1 to 2:30 p.m.	Room 382 C

CATHODIC/ANODIC PROTECTION - STG 05

Name	Committee(s)	Day	Time	Room
Cathodic Protection of Metallic Structures Submerged in Fresh Water	TG 526	Sunday	8 to 10 a.m.	Room 360 AB
Steel, Structural: Corrosion Control of Pilings in Nonmarine Applications	TG 018 (01, 03)	Sunday	10 a.m. to noon	Room 360 AB
AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring	TG 430 (35)	Sunday	1 to 3 p.m.	Room 360 AB
Field Procedures relating to Pipeline AC Interference Detection, Monitoring & Mitigation	TG 584	Sunday	3 to 5 p.m.	Room 360 AB
Cathodic Protection and Corrosion Control Research Development	TEG 016X (30, 31, 32, 35)	Monday	8 to 10 a.m.	Room 360 AB
ICCP of Internal Submerged Surfaces of Steel Water Storage Tanks; Galvanic Anode CP of Internal	TG 167	Monday	10 to 11 a.m.	Room 360 AB
Galvanic Anode CP of Internal Submerged Surfaces of Steel Water Storage Tanks	TG 284 (11, 35)	Monday	10 to 11 a.m.	Room 360 AB
Corrosion Probes for Soil and Concrete	TEG 321X (35)	Monday	11 a.m. to noon	Room 360 AB

Technical Committee Meetings

CATHODIC/ANODIC PROTECTION - STG 05 (continued from previous page)

Name	Committee(s)	Day	Time	Room
Interference Problems	TEG 262X (35)	Monday	1 to 2 p.m.	Room 360 AB
Corrosion Control Coordinating Committee	TEG 022X (01)	Monday	2 to 3 p.m.	Room 360 AB
Cathodic Protection Rectifier Safety	TG 388 (01, 30, 35)	Tuesday	10 a.m. to noon	Room 360 AB
Cathodic Protection Monitoring: Use of Coupons	TEG 338X (35)	Tuesday	1 to 3 p.m.	Room 360 AB
Cathodic Protection Coupon Technology	TG 210 (35)	Tuesday	3 to 5 p.m.	Room 360 AB
DC and AC Transit Stray Current Problems	TEG 024X (03)	Wednesday	8 to 10 a.m.	Room 360 AB
Direct Current (DC) Operated Rail Transit and Mine Railroad Stray Current Mitigation - Review 10B189	TG 297 (03, 35)	Wednesday	10 a.m. to noon	Room 360 AB
-850 mV Potential Criterion	TG 583	Wednesday	1 to 3 p.m.	Room 360 AB
Cathodic Protection: Pipe-Type Cable	TEG 197X	Wednesday	3 to 5 p.m.	Room 360 AB
STG 05/35	STG 05	Thursday	3 to 5 p.m.	Room 351 D

CLEANING, CHEMICAL AND MECHANICAL - STG 06

Name	Committee(s)	Day	Time	Room
Cleaning: Chemical and Mechanical Cleaning	TEG 188X	Sunday	9:30 to 11:30 a.m.	Room 342 A
Chemical Cleaning Test Methods - Low-Temperature Solutions	TG 344 (62)	Sunday	1 to 2 p.m.	Room 342 A
Pre-Job Determination for the Decontamination of Refinery and Pipeline Equipment	TG 579 (11, 31)	Sunday	2 to 4 p.m.	Room 342 A

CORROSION MANAGEMENT - STG 08

Name	Committee(s)	Day	Time	Room
Corrosion Prevention and Control Planning Standard	TG 527 (40)	Sunday	8 to 10 a.m.	Room 362 C
Economics of Corrosion: Standard	TG 200	Sunday	10 a.m. to noon	Room 362 C
The Role of Corrosion in Materials Stewardship and Sustainability	TEG 531X	Sunday	1 to 2:30 p.m.	Room 362 C
Material Sustainability	TG 578	Sunday	2:30 to 4 p.m.	Room 362 C
Standard Framework for Establishing Corrosion Management Systems	TG 564	Sunday	4 to 5 p.m.	Room 362 C
Labeled Corrosion Images for Computer Vision Applications	TG 589 (62)	Tuesday	1 to 3 p.m.	Room 360 D
STG 08	STG 08	Tuesday	3 to 4 p.m.	Room 360 EF

NONMETALLIC MATERIALS OF CONSTRUCTION - STG 10

Name	Committee(s)	Day	Time	Room
Non-Metallic Materials Basic Education	TEG 528X (33)	Monday	1 to 4 p.m.	Room 362 AB
Corrosion Solutions for the Chemical Process Industry with Polymer Based Materials	TEG 191X (39)	Tuesday	9 a.m. to 6 p.m.	Room 362 AB
Nonmetallic Materials of Construction: Expert Panel Discussion	TEG 239X (39)	Wednesday	1 to 5 p.m.	Room 362 C
STG 10	STG 10	Thursday	8 a.m. to noon	Room 352 F

WATER TREATMENT SYSTEMS - STG 11

Name	Committee(s)	Day	Time	Room
Building Fire Protection Systems: Corrosion and Deposit Control	TEG 159X	Sunday	8 to 9:30 a.m.	Room 352 B
Biocide Application/Misapplication	TEG 149X	Wednesday	8 to 11 a.m.	Room 360 C
Fire Protection Systems	TG 381	Wednesday	11 a.m. to noon	Room 350 F
Boiler Waterside Failure Analysis	TEG 163X (62)	Wednesday	1 to 3 p.m.	Room 360 C
STG 11	STG 11	Wednesday	3 to 5 p.m.	Room 360 C

Managing Corrosion with Polymers

Monday, March 16

1:00pm – 4:00 pm

Room 362 A/B

Introduction to Composites

TEG 529X – Basic Education Session

- Thermoset resins – Kevin Lambrych, Ineos Composites
- Glass Reinforcements – Matt Lieser, Owens Corning
- Thermoplastics for Dual Laminates – Averie Palovcak, Arkema
- Design / Fabrication – Jeff Eisenman, Maverick Applied Science
- Inspection of New Equipment – Mike Stevens, Ineos Composites
- Fitness for Service – Pradip Khaladkar, PECT

Tuesday, March 17

9:00 AM – 6:00 PM

Room 362 A/B

Managing Corrosion with Non-Metallics

TEG 191X – Informal Symposium

- 8:00 AM – Introduction to TEG 191X – Michael Stevens, Ineos Composites
- 8:15 AM – 30 Years of FRP at a Sulfuric Acid Plant – Rafic Moubarac, Experco
- 8:45 AM – Exploring Permeation of Fluoropolymer Linings by Aggressive Service Environments – Kira Kaleps, RMB Products
- 9:15 AM – AWS B2.4 Certification Process and Thermoplastic Welding – Ted Hutton, Plastic Welding LLC
- 10:15 AM – New NACE standard on Selecting Thermoplastics for Corrosive Environments – Jay Wright, Specialty RTP
- 10:45 AM – Applications of PVDF, PVC, and CPVC in Controlling Corrosion in Chemical Processing Facilities – Dan Wagner, Americhem Systems
- 11:15 AM – Ultrasonic analysis of depth and extent of corrosion barrier damage in FRP and Dual Laminates – Geoff Clarkson, UT Comp
- 1:30 PM – Using Rubber Linings in HCL Storage Tanks – Tosin Akinwunmi, Olin Chloralkali
- 2:00 PM – Reliability of Corrosion-Resistant FRP for Chlor-Alkali – Kevin Lambrych, Ineos Composites
- 2:30 PM – FRP Tank Field Erection – Keith Wilson, Thorpe
- 3:00 PM – Corrosion Protection and Integrity Repair with Composite Materials – Matt Green, Clockspring, NRI
- 3:30 PM – Designing Piping Systems Using Thermoplastics – Steven Dolejsi, Ipex

Wednesday, March 18

1:00 PM – 5:00 PM

Room 362 C

Maintenance Assessment and Best Practices for Reliability

TEG 239X Expert Panel Discussion

- An Owner's Perspective on Buying & Maintaining Nonmetallic Equipment for Reliable Service
- Specifications and Standards for FRP Equipment – Benefits and Challenges
- Operating and Maintaining Dual Laminate Equipment

Thursday, March 19

8:00 AM – 12:00 PM

Room 352 F

Non-Metallic Materials of Construction

STG-10 Committee Meeting

- Open to all CORROSION 2020 Attendees

Technical Committee Meetings

OIL AND GAS PRODUCTION—CATHODIC PROTECTION - STG 30

Name	Committee(s)	Day	Time	Room
Cathodic Protection in Seawater - Discussion of Current Topics	TEG 166X	Tuesday	9 to 11 a.m.	Room 351 EF
Corrosion Control of Submerged Areas of Offshore Steel Structures	TG 170 (05)	Tuesday	11 a.m. to noon	Room 351 EF
Cathodic Protection Systems, Retrofit, for Offshore Platforms	TG 168	Tuesday	1 to 2:30 p.m.	Room 351 EF
Metallurgical and Inspection Requirements for Cast Galvanic Anodes for Offshore Applications	TG 454	Tuesday	2:30 to 3:30 p.m.	Room 351 EF
Petroleum , Petrochemical, and Natural Gas Industries - Cathodic Protection of Pipeline Transportation	TG 169 (05, 35)	Tuesday	3:30 to 4:30 p.m.	Room 351 EF
STG 30	STG 30	Wednesday	3 to 5 p.m.	Room 351 C

OIL AND GAS PRODUCTION—CORROSION AND SCALE INHIBITION - STG 31

Name	Committee(s)	Day	Time	Room
Oil and Gas Production, Sour Corrosion: Information Exchange	TEG 282X	Sunday	10 a.m. to noon	Room 332 D
Black Powder in Gas Pipelines	TEG 413X	Sunday	1 to 3 p.m.	Room 332 D
Flow Assurance in Oil and Gas Production: Information Exchange	TEG 202X (61, 62)	Sunday	3 to 5 p.m.	Room 332 D
Downhole Corrosion and Scale Inhibitor Application via Capillary Tubing,	TG 512	Monday	10 a.m. to noon	Room 332 D
Oil and Gas Production, Erosion Management	TG 245	Monday	2:30 to 3:30 p.m.	Room 332 D
Underdeposit Corrosion	TEG 092X (11, 38, 60, 61)	Tuesday	10 a.m. to noon	Room 332 D
Selecting Inhibitors for use as sucker-rod thread lubricants	TG 548	Tuesday	1 to 2 p.m.	Room 332 D
Summary of Knowledge and Experience on Internal Corrosion of Pipeline Under Dewing Conditions: Top of the Line (TOL) Corrosion	TG 478 (35)	Tuesday	2 to 3 p.m.	Room 332 D
TEG 059X/ TEG201X joint meeting	TEG 059X (60, 61)	Tuesday	3 to 5 p.m.	Room 332 D
TEG 059X/ TEG201X joint meeting	TEG 201X (60)	Tuesday	3 to 5 p.m.	Room 332 D
Oil and Gas Exploration Corrosion: Information Exchange	TEG 514X (32, 60)	Wednesday	9 a.m. to noon	Room 332 D
Oil and Gas Production, Corrosion Inhibitors - Laboratory Evaluations: Information Exchange	TEG 253X (62)	Wednesday	1:30 to 2:30 p.m.	Room 332 D
Internal Corrosion Monitoring of Subsea Production and Injection Systems	TG 445 (62)	Wednesday	2:30 to 4:30 p.m.	Room 332 D
Oil and Gas Production - Corrosion and Scale Inhibition	STG 31	Thursday	9 to 11:30 a.m.	Room 332 D
Oil & Gas End-User Experience with Molecular Microbiological Methods (MMM) and Problem Solving	TEG 286X (60)	Thursday	1 to 2 p.m.	Room 332 D
Bacterial Growth in Oilfield Systems—Field Monitoring: Review of NACE Standard TM0194-2014	TG 214 (60)	Thursday	2 to 4 p.m.	Room 332 D

OIL AND GAS PRODUCTION—METALLURGY - STG 32

Name	Committee(s)	Day	Time	Room
Joint Meeting IOGP 15156 (ISO/TC 67/WG 7) + TG 299	TG 299	Sunday	1 to 4:30 p.m.	Room 372 ABC
Oil and Gas Production Materials Information Exchange	TEG 374X (33)	Wednesday	7:30 to 10 a.m.	Room 372 ABC
Oil and Gas Production Test Methods Learning	TEG 577X (30, 34, 62)	Wednesday	10 a.m. to noon	Room 372 ABC
Sulfide Corrosion Cracking: Metallic Materials Testing Techniques	TG 085 (62)	Wednesday	1 to 2:30 p.m.	Room 372 ABC
Computerized Environmental Cracking Database	TG 257 (34, 62)	Wednesday	1 to 2 p.m.	Room 362 D

Why fight corrosion if you don't have to ?

FRP

FRP piping systems are inherently corrosion resistant, requiring no costly labor-intensive corrosion prevention plan. Additional advantages include:

- High strength-to-weight ratio
- Lightweight compared to most metals
- Non-conductive to electricity
- Dimensionally stable
- Low installation and maintenance costs
- Unlimited shape/size configurations

✓ NM.2 compliant
✓ In stock

RPS Composites Dual Laminate Pipe

Dual Laminate Pipe could be an excellent alternative for applications which traditionally use **lined steel**.

- Our seamless bonded liner eliminates liner failures, weep holes and vents, and the potential for highly corrosive leaks: FEP PFA PVDF CPVC PP PVC ECTFE HDPE
- At a fraction of the weight of steel, dual laminate reduces labor, time, and machinery required for installation.
- The internal and external corrosion resistance of dual laminate will extend piping system life 3x-5x over lined steel.
- Gives you the option to reduce or eliminate flanged connections in your system resulting in lower materials and labor costs, reduced system weight, fewer failure points, streamlined profile, fewer parts requiring mapping, assessment and maintenance, no flange protection required, and no risk of over-torquing.

A dual laminate combines the **superior corrosion resistance** of thermoplastics with the **load-carrying capability** of FRP.

Trust RPS Composites as your **turnkey provider** of FRP and Dual Laminate piping systems: from design, project management, and manufacturing, to installation, maintenance, and repair.

Speak with our materials and field service experts at **Booth 2209** or have coffee with us at the TEG191x session Tuesday morning.

Technical Committee Meetings

OIL AND GAS PRODUCTION—METALLURGY - STG 32 (continued from previous page)

Name	Committee(s)	Day	Time	Room
Test Method for Resistance to Environmentally-Induced Hydrogen Stress Cracking in Welds	TG 554 (30, 34)	Wednesday	2 to 4 p.m.	Room 362 D
Four-Point Bend Test Method	TG 494 (62)	Wednesday	2:30 to 4 p.m.	Room 372 ABC
Environmental Prediction for Material Selection in Oil and Gas Production	TG 571 (31)	Wednesday	4 to 5 p.m.	Room 372 ABC
Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments	TG 084	Wednesday	4 to 5 p.m.	Room 362 D
Slow Strain Rate Test Method for Screening Corrosion-Resistant Alloys for SCC in Sour Oilfield Service	TG 133	Thursday	8 to 9 a.m.	Room 372 ABC
Ripple Load Test for Evaluation of Sour Service Cracking Resistance	TG 544	Thursday	9 to 10 a.m.	Room 372 ABC
Cracking, Stepwise: Pipeline Steels	TG 082 (34, 62)	Thursday	10 to 11 a.m.	Room 372 ABC
Evaluation of Carbon and Low-Alloy Steels for Resistance to Stress-Oriented Hydrogen-Induced Cracking	TG 536 (34, 62)	Thursday	11 a.m. to noon	Room 372 ABC
STG 32 Officers Meeting	STG 32	Thursday	1 to 2:30 p.m.	Room 372 ABC
STG 32	STG 32	Thursday	2:30 to 4:30 p.m.	Room 372 ABC

OIL AND GAS PRODUCTION—NONMETALLICS AND WEAR COATINGS (METALLIC) - STG 33

Name	Committee(s)	Day	Time	Room
Nonmetallic Materials for Onshore and Offshore Facilities	TEG 500X	Sunday	9 a.m. to 5 p.m.	Room 350 F
RP0191 Worksheet for Selection of Oilfield Nonmetallic Seal System	TG 912 (03, 10, 32)	Monday	8:30 to 11:30 a.m.	Room 350 F
Insulation for Upstream and Downstream Oil and Gas Operations	TEG 086X	Monday	1 to 4 p.m.	Room 350 F
Coating and Lining Technology for Oil and Gas	TEG 524X	Tuesday	9 to 11:30 a.m.	Room 350 F
STG 33	STG 33	Tuesday	1:30 to 4:30 p.m.	Room 350 F

PETROLEUM REFINING AND GAS PROCESSING - STG 34

Name	Committee(s)	Day	Time	Room
Materials and Fabrication Practices for New Pressure Vessels Used in Wet H ₂ S Refinery Service	TG 301 (32)	Monday	8 to 9 a.m.	Room 372 DEF
Refineries, Environmental Cracking: Review of NACE SP0403 (Formerly RP0403)	TG 177 (60)	Monday	9 to 10 a.m.	Room 372 DEF
Refinery Injection and Process Mixing Points	TG 174	Monday	10 to 11 a.m.	Room 372 DEF
Joint API/NACE Advisory Committee - API 751 Safe Operation of HF Alkylation Units - Corrosion and Materials Sections	TG 510	Monday	11 a.m. to noon	Room 372 DEF
Weldments, Carbon Steel: Prevention of Environmental Cracking in Refining Environments	TG 326	Monday	1 to 1:30 p.m.	Room 372 DEF
Detection, Repair, and Mitigation of Cracking in Refinery Equipment in Wet H ₂ S Environments	TG 268	Monday	1:30 to 2 p.m.	Room 372 DEF
Carbonate Stress Corrosion Cracking in Refinery Alkaline Sour Waters	TG 347 (60)	Monday	2 to 2:30 p.m.	Room 372 DEF
Petroleum Refining Sulfide Stress Cracking (SSC): Review of NACE Standard MR0103	TG 231 (60)	Monday	2:30 to 3 p.m.	Room 372 DEF
Petroleum Refinery Corrosion Specialist Certification and Oversight of Refining Industry Corrosion Control Course Content	TG 393	Monday	3 to 3:30 p.m.	Room 372 DEF
Refining Industry Information Exchange	TEG 205X	Wednesday	8 a.m. to 5 p.m.	Room 372 DEF
STG 34	STG 34	Thursday	8 to 10 a.m.	Room 372 DEF

TECHNOLOGY EXCHANGE GROUP

TEG 500X - STG-33

Nonmetallic Materials for Onshore and Offshore Facilities
Sunday March 15: 9:00 am - 12 noon and 1:00 pm - 3:00pm
George R. Brown Convention Center - Room 350 F

Chair: Michael Yee | mike@rtconsults.com Vice Chair: Bryan Hutton | bryan.hutton@lubrizol.com

Join TEG500x as we work to promote the awareness of nonmetallic materials in facilities such as offshore and chemical onshore facilities. Our goals are to provide:

- Real-world applications and opportunities to improve corrosion resistance
- Increase awareness and understanding of existing and emerging technologies
- Provide opportunities for Leaders in the Industry to share Corrosion wins and Lessons Learned



Chair – Michael Yee, RTConsults

Michael Yee is the Principal of RT Consults which is a 3rd-party nonmetallic inspection company for the FRP and nonmetallic coatings industry. Has over a decade of experience in the nonmetallic industry and is a NACE Level III Certified Coating Inspector with a background in chemical engineering and construction management.



Vice Chair – Bryan Hutton, Corzan Piping Systems

Bryan Hutton is the Market Development Manager for Lubrizol. Currently serving as the CPI lead for Lubrizol specializing in general chemical and Chlor-Alkali processes. Since graduating from University of Delaware with a Bachelor of Science degree in Chemical Engineering, he has been employed with Lubrizol for almost 24 years.

TEG WILL BE DISCUSSING TG-574 FORMED TO CREATE NACE STANDARD ON INSTALLATION AND INSPECTION CRITERIA FOR GRP, FRP THERMOSET, AND THERMOPLASTIC PIPING SYSTEMS FOR OIL & GAS INDUSTRY.

Technical Committee Meetings

PIPELINES, TANKS, AND WELL CASINGS - STG 35				
Name	Committee(s)	Day	Time	Room
Pipeline Crossings: Steel-Cased, Thrust-Bored, and HDD	TEG 208X (05)	Sunday	8 to 9 a.m.	Room 351 D
Pipeline Corrosion Management	TG 370 (02, 03, 05)	Sunday	8 to 10 a.m.	Room 350 C
Underground Storage Tank Systems: Corrosion Control by Cathodic Protection	TG 011 (05)	Sunday	9 to 11 a.m.	Room 351 D
Microbiologically Influenced Corrosion on External Surfaces of Buried Pipelines: Detection, Testing	TG 237 (60)	Sunday	10 to 11 a.m.	Room 350 C
Monitoring of Pipeline Casing Using CP Coupons, ER Probes, Permanent Reference Electrodes, etc. with the Annular Space of the Casing	TG 547 (05)	Sunday	11 a.m. to noon	Room 351 D
Steel Pipelines and Piping Systems: Internal Corrosion Control	TG 038	Sunday	1 to 2 p.m.	Room 350 C
Control of External Corrosion on Underground or Submerged Metallic Piping Systems	TG 360 (05, 30)	Sunday	1 to 5 p.m.	Room 351 D
Pipeline External Corrosion Confirmatory Direct Assessment	TG 377 (05)	Sunday	2 to 4 p.m.	Room 350 C
Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metal Tank Systems	TG 209 (05)	Monday	8 to 9 a.m.	Room 351 D
Multiphase Flow - ICDA	TG 426	Monday	9 to 10:30 a.m.	Room 351 D
Molecular Microbiological Methods - Sample Handling and Laboratory Processing	TG 561 (60)	Monday	9 to 11 a.m.	Room 350 C
Internal Corrosion Direct Assessment Methodology for Liquid Petroleum Pipelines	TG 315	Monday	10:30 a.m. to noon	Room 351 D
Internal Corrosion of Pipelines: Review of NACE Standard TM0172	TG 382	Monday	1 to 2:30 p.m.	Room 350 C
Hydrotesting and Long-Term Wet Storage of Pipelines, Risers, and Subsea Equipment	TG 440 (31, 60)	Monday	1 to 3 p.m.	Room 351 D
Determining Corrosive Properties of Water-Soluble Liquid Hydrocarbon Pipeline Cargoes	TG 455	Monday	2:30 to 3:30 p.m.	Room 350 C
Stress Corrosion Cracking Direct Assessment, External	TG 273	Tuesday	9 to 10:30 a.m.	Room 351 D
Internal Corrosion Direct Assessment	TG 293 (05)	Tuesday	9 to 10:30 a.m.	Room 350 C
Mitigation and Prioritization Strategies for Casings	TG 567	Tuesday	10:30 a.m. to noon	Room 351 D
Pipeline Integrity Assessment: Corrosion Defect Prioritization for Risk Based management Implementation	TEG 573X	Tuesday	1 to 3 p.m.	Room 351 D
Techniques for Evaluating the Corrosiveness of Onshore Structures External Environment	TG 369 (05)	Tuesday	1 to 3 p.m.	Room 350 C
Well Casings, Corrosion Control: Information Exchange	TEG 080X	Tuesday	3 to 5 p.m.	Room 351 D
Direct Assessment Methodology Application	TEG 558X (STAG A77)	Wednesday	8 to 10 a.m.	Room 351 D
External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms	TG 013 (05)	Wednesday	8 to 10 a.m.	Room 352 A
Standard for External Corrosion Control of On-Grade Carbon Steel Storage Tank Bottoms	TG 543 (05)	Wednesday	10 a.m. to noon	Room 352 A
Pipelines, Steel-Cased	TG 012 (05)	Wednesday	10 a.m. to noon	Room 351 D
Corrosion Management of Aboveground Storage Tanks	TEG 132X	Wednesday	1 to 3 p.m.	Room 351 D
Report on Underdeposit Corrosion (UDC) of Pipelines	TG 533 (31, 60)	Wednesday	1 to 3 p.m.	Room 352 A
Application of Cathodic Protection for External Surfaces of Steel Well Casings	TG 446 (05)	Wednesday	3 to 5 p.m.	Room 352 A
Pipelines: In-Line Inspection	TEG 267X	Wednesday	3 to 5 p.m.	Room 351 D

Technical Committee Meetings

PIPELINES, TANKS, AND WELL CASINGS - STG 35 (continued from previous page)				
Name	Committee(s)	Day	Time	Room
External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX)	TG 357	Thursday	8 to 8:30 a.m.	Room 350 C
Standard Practice for the Drone Inspection for Corrosion under Insulation of Pipelines	TG 552	Thursday	8 to 9 a.m.	Room 351 C
Best Practice of Carbon Steel HDD Design, Construction and Management	TG 585 (05)	Thursday	8 to 10 a.m.	Room 351 D
Technical Guidance for Using Self-Propelled In-Line Inspection Devices in the Direct Examination Phase of External Corrosion Direct Assessment	TG 522 (31, 41)	Thursday	8:30 to 10 a.m.	Room 350 C
Pipeline Direct Assessment Methodology	TG 041	Thursday	10 a.m. to noon	Room 350 C
3D Laser and Structured Light	TG 502 (05)	Thursday	10 a.m. to noon	Room 351 D
Pipeline Coating: Aboveground Techniques for the Underground Evaluation of Condition	TG 294 (03, 05)	Thursday	1 to 3 p.m.	Room 351 D
STG 05/35	STG 35	Thursday	3 to 5 p.m.	Room 351 D
PROCESS INDUSTRY—MATERIALS PERFORMANCE IN CHEMICALS - STG 36				
Name	Committee(s)	Day	Time	Room
Sulfuric Acid - Material and Experiences	TEG 115X	Monday	8 to 10 a.m.	Room 342 A
Failure Prevention Case Histories	TEG 118X (39)	Monday	10 a.m. to noon	Room 342 A
Hydrofluoric Acid: Materials for Receiving, Handling, and Storing	TEG 119X (34)	Monday	1 to 2 p.m.	Room 342 A
Hydrofluoric Acid and Hydrogen Fluoride: Review of NACE Publication 5A171	TG 358 (34)	Monday	2 to 3 p.m.	Room 342 A
Materials for Handling Concentrated Sulfuric Acid at Ambient Temperatures	TG 372 (34)	Monday	3 to 3:30 p.m.	Room 342 A
Hydrochloric Acid and Chlorine: Materials and Experiences	TEG 398X (10)	Tuesday	9:30 to 11:30 a.m.	Room 342 A
Design, Fabrication, and Inspection of Tanks for Storage of Concentrated H ₂ SO ₄ and Oleum	TG 217 (34)	Tuesday	1 to 3 p.m.	Room 342 A
Control of Corrosion Under Thermal Insulation and Fireproofing Materials - A Systems Approach	TG 325 (03, 04)	Tuesday	3 to 5 p.m.	Room 342 A
Stress Corrosion Cracking of Carbon and Low-Alloy Steels in Anhydrous Ammonia Service	TG 433	Wednesday	10 a.m. to noon	Room 342 A
PROCESS INDUSTRY - HIGH TEMPERATURE - STG 37				
Name	Committee(s)	Day	Time	Room
TEG 123X/126X/128X/270X Joint Meeting	TEG 123X, TEG 126X, TEG 128X, TEG 270X	Wednesday	1 to 3:30 p.m.	Room 350 F
STG 37	STG 37	Wednesday	3:30 to 4 p.m.	Room 350 F
PROCESS INDUSTRY—PULP, PAPER, AND BIOMASS CONVERSION - STG 38				
Name	Committee(s)	Day	Time	Room
Process Industry-Pulp, Paper, and Biomass Conversion	STG 38	Wednesday	3 to 5 p.m.	Room 340 A
PROCESS INDUSTRIES—MATERIALS APPLICATIONS AND EXPERIENCES - STG 39				
Name	Committee(s)	Day	Time	Room
Metals: Reactive	TEG 120X	Tuesday	9 a.m. to noon	Room 361 EF
Stainless Steels, Duplex and Ferritic: Application	TEG 114X	Tuesday	2 to 3:30 p.m.	Room 361 EF
Stainless Steels: Austenitic and Nickel Alloys	TEG 116X	Tuesday	3:30 to 5 p.m.	Room 361 EF

Technical Committee Meetings

MILITARY AND AEROSPACE SYSTEMS AND FACILITIES - STG 40				
Name	Committee(s)	Day	Time	Room
Corrosion Under Paint (CUP) Test Standards for Equipment Used in the Nondestructive Evaluation (NDE)	TG 511 (08, 44, 62)	Monday	1 to 3 p.m.	Room 342 C
Military and Aerospace Systems and Facilities	STG 40	Wednesday	2:30 to 4:30 p.m.	Room 352 F
ELECTRIC UTILITY GENERATION, TRANSMISSION, AND DISTRIBUTION - STG 41				
Name	Committee(s)	Day	Time	Room
Geothermal System Corrosion	TEG 182X	Sunday	9 to 11 a.m.	Room 330 A
Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures	TG 529 (02)	Sunday	11 a.m. to noon	Room 330 A
Electric Utility Transmission and Distribution Corrosion and Grounding: Discussion of Issues	TEG 368X / WG12	Sunday	1 to 3 p.m.	Room 330 A
Renewable Energy Facilities Design, Construction and Commissioning	TEG 530X	Sunday	3 to 5 p.m.	Room 330 A
Power Generation and Delivery Education Roadmap	TEG 473X	Thursday	8 to 9 a.m.	Room 330 A
Nuclear Buried Piping	TG 404 (03, 05, 35)	Thursday	9 to 11:30 a.m.	Room 330 A
Nondestructive Evaluation (NDE) Technologies to Evaluate Buried Pipe in Nuclear Power Plants	TG 471 (03, 05, 35)	Thursday	11:30 a.m. to noon	Room 330 A
Nuclear System Corrosion	TEG 224X	Thursday	1 to 3 p.m.	Room 330 A
Electric Utility Generation, Transmission, and Distribution	STG 41	Thursday	3 to 5 p.m.	Room 330 A
TRANSPORTATION, LAND - STG 43				
Name	Committee(s)	Day	Time	Room
STG 43 Day 1	STG 43	Tuesday	9 a.m. to noon	Room 361 C
STG 43 Day 2	STG 43	Wednesday	9 a.m. to noon	Room 362 D
Land Transportation: Information Exchange on Corrosion and Coating-Related Issues	TEG 291X	Wednesday	10 to 11 a.m.	Room 351 C
MARINE CORROSION: SHIPS AND STRUCTURES - STG 44				
Name	Committee(s)	Day	Time	Room
Corrosion Protection of Wind Energy Equipment and Facilities	TEG 582X (01, 02, 03, 04, 05, 41)	Sunday	8 to 10 a.m.	Room 342 B
Corrosion Protection of Offshore Wind Power Units	TG 476 (02, 05, 08)	Sunday	10 a.m. to noon	Room 342 B
Citric Acid-Based Stainless Steel Passivation of Tankers and Storage Tanks	TG 570	Monday	8 to 10 a.m.	Room 342 B
Discussion on Ecological Risks of BioFouling	TEG 532X	Monday	10 a.m. to noon	Room 342 B
Dry Docking Hull Surface Maintenance and Repair Standard Practice	TG 576	Monday	1 to 2:30 p.m.	Room 342 B
Splash Zone Site-Applied Corrosion Protection System	TG 542 (02, 03)	Tuesday	9 to 11 a.m.	Room 342 B
Marine Corrosion of Copper Alloys	TEG 523X	Tuesday	1 to 3 p.m.	Room 342 B
Marine Corrosion: Ships and Structures	STG 44	Tuesday	3 to 5 p.m.	Room 342B
POLLUTION CONTROL, WASTE INCINERATION, AND PROCESS WASTE - STG 45				
Name	Committee(s)	Day	Time	Room
Pollution Control, Waste Incineration, and Process Waste	STG 45	Sunday	1 to 1:30 p.m.	Room 342 B
White Paper: Corrosion Prevention and Control for Marine Scrubbers	TG 575 (44)	Sunday	1:30 to 5 p.m.	Room 342 B

Technical Committee Meetings

CORROSION IN MINING AND MINERAL PROCESSING - STG 47				
Name	Committee(s)	Day	Time	Room
Corrosion in Mining and Mineral Processing	STG 47	Wednesday	8 to 10 a.m.	Room 360 D
Materials Selection and Corrosion Control in the Mineral Processing Industries	TEG 509X	Wednesday	10 a.m. to noon	Room 360 D
Slurry Pipeline Corrosion Management	TG 559 (31)	Wednesday	1 to 2 p.m.	Room 360 D
The Mitigation of Internal Corrosion in Non-Lined, Non-Coated Pipelines Carrying Seawater for the Mining Industry	TG 563 (35)	Wednesday	2 to 3 p.m.	Room 360 D
Concrete and Structural Steel in Mining	TEG 929X	Wednesday	3 to 4 p.m.	Room 360 D
CORROSION MECHANISMS - STG 60				
Name	Committee(s)	Day	Time	Room
Environmentally Assisted Cracking	TEG 186X	Sunday	10 a.m. to noon	Room 342 C
Atmospheric Corrosion	TEG 189X (02, 40, 62)	Sunday	1 to 3 p.m.	Room 342 C
Microbiologically Influenced Corrosion	TEG 187X (11)	Sunday	3 to 5 p.m.	Room 342 C
Biomedical Implant Device Corrosion	TEG 331X	Tuesday	9 a.m. to noon	Room 352 F
Nanotechnology and Corrosion	TEG 474X	Wednesday	1 to 3 p.m.	Room 342 B
Biodegradable Magnesium Alloys	TG 495	Wednesday	3 to 5 p.m.	Room 342 B
Additive Manufacturing Corrosion Issues	TEG 569X (32)	Thursday	8 to 10 a.m.	Room 342 B
Localized Corrosion	TEG 407X (31)	Thursday	10 a.m. to noon	Room 342 B
Corrosion Mechanisms	STG 60	Thursday	1 to 3p.m.	Room 342 B
INHIBITION—CORROSION AND SCALING - STG 61				
Name	Committee(s)	Day	Time	Room
Top-of-Line Corrosion	TEG 515X	Sunday	9 to 11 a.m.	Room 352 A
Vapor Corrosion Inhibitors and Rust Preventives for Interim (Temporary) Corrosion Protection	TG 261 (02)	Sunday	11 a.m. to noon	Room 352 A
State-of-the-Art Research on Corrosion Inhibitors	TEG 094X	Sunday	1 to 5 p.m.	Room 352 A
Inhibition - Corrosion and Scaling	STG 61	Monday	8 to 10 a.m.	Room 352 A
Vapor-transported Corrosion Inhibitors & Rust Preventives for Interim (Temporary) Corrosion Protection	TEG 093X (11)	Monday	10 a.m. to noon	Room 352 A
Underdeposit Corrosion - Testing and Mitigation	TG 380 (31, 60)	Monday	1 to 3:30 p.m.	Room 352 A
CORROSION MONITORING AND MEASUREMENT—SCIENCE AND ENGINEERING APPLICATIONS - STG 62				
Name	Committee(s)	Day	Time	Room
Electrochemical Measurements Information Exchange	TEG 097X (41)	Sunday	9 a.m. to 5 p.m.	Room 332 E
Electrochemical Measurements	TEG 097X (41)	Sunday	2 to 3 p.m.	Room 332 F
Acoustic Emission Testing and Measurement	TEG 098X	Sunday	3 to 5 p.m.	Room 340 A
Sensors: Corrosion and Corrosiveness Sensor Technology	TEG 100X (41)	Wednesday	8 to 10 a.m.	Room 351 AB
Hydrogen Permeation Technology - Online	TEG 108X (31, 34)	Wednesday	10 a.m. to noon	Room 351 AB
Test Method for Monitoring Atmospheric Corrosion Rate by Electrochemical Measurements	TG 530 (40, 41)	Wednesday	10 a.m. to noon	Room 382 A
Techniques for Monitoring Corrosion - Field Experience	TEG 391X (31)	Wednesday	1 to 3 p.m.	Room 351 AB
Corrosion Monitoring and Measurement - Science and Engineering Applications	STG 62	Wednesday	3 to 5p.m.	Room 351 AB

Administrative Meetings

ADMINISTRATIVE MEETINGS				
Name	Day	Time	Location	Room
NACE Foundation Board of Directors	Friday	7 a.m. to 5 p.m.	George R. Brown Convention Center	Room 320 C
NACE Board of Directors	Saturday	8 a.m. to 5 p.m.	Hilton Americas - Houston	Ballroom of Americas- AB
Area Coordination Committee	Sunday	8 to 11 a.m.	George R. Brown Convention Center	Room 352 F
ACPC Session I	Sunday	9 to 11 a.m.	George R. Brown Convention Center	Room 350 A
MP Editorial Advisory Board	Sunday	10 a.m. to noon	George R. Brown Convention Center	Room 350 B
Publications Activities Committee	Sunday	1 to 5 p.m.	George R. Brown Convention Center	Room 361 D
TCC Session I	Sunday	1:30 to 4:30 p.m.	George R. Brown Convention Center	Room 352 F
Education Subcommittee	Monday	8:30 to 11:30 a.m.	George R. Brown Convention Center	Room 342 C
Awards Committee	Monday	9 a.m. to noon	George R. Brown Convention Center	Room 352 F
NACE Institute - Specialty Board for Pipeline Certifications	Monday	10 a.m. to noon	George R. Brown Convention Center	Room 332 A
Past Presidents Council	Monday	10 a.m. to 1 p.m.	Hilton Americas - Houston	Room 335 A
<i>CORROSION</i> Journal Editorial Board	Monday	11:30 a.m. to 1:30 p.m.	George R. Brown Convention Center	Room 350 A
TCC Advisory Committee on Operations	Monday	11:30 a.m. to 3:30 p.m.	George R. Brown Convention Center	Room 350 B
NACE Institute - Specialty Board of Protective Coatings Certifications	Monday	1 to 3:30 p.m.	George R. Brown Convention Center	Room 332 A
Policy Committee	Monday	1:30 to 5 p.m.	Hilton Americas - Houston	Room 335 A
NACE Institute Policy and Practices Committee	Tuesday	7:30 a.m. to noon	George R. Brown Convention Center	Room 332 A
TCC Planning Committee	Tuesday	9 a.m. to noon	George R. Brown Convention Center	Room 360 D
Internal Corrosion Subcommittee	Tuesday	11:30 a.m. to 1 p.m.	George R. Brown Convention Center	Room 342 C
Pipeline Subcommittee	Tuesday	2 to 3:30 p.m.	George R. Brown Convention Center	Room 342 C
NIICAP Oversight Board	Wednesday	8 to 11 a.m.	George R. Brown Convention Center	Room 352 B
NACE Institute Certification Commission	Wednesday	8:30 a.m. to noon	George R. Brown Convention Center	Room 332 A
CIP Subcommittee	Wednesday	9 to 10:30 a.m.	George R. Brown Convention Center	Room 342 C

Administrative Meetings

ADMINISTRATIVE MEETINGS <i>(continued from previous page)</i>				
Name	Day	Time	Location	Room
ACPC Session II	Wednesday	9 to 11 a.m.	George R. Brown Convention Center	Room 350 B
Standards Committee Informational Meeting	Wednesday	11 a.m. to 1 p.m.	George R. Brown Convention Center	Room 371 DEF
Cathodic Protection (CP) Subcommittee	Wednesday	1:30 to 3:30 p.m.	George R. Brown Convention Center	Room 342 C
TCC Reference Publications Committee	Wednesday	2 to 4 p.m.	George R. Brown Convention Center	Room 350 A
Research Committee	Thursday	7:30 to 11:30 a.m.	George R. Brown Convention Center	Room 350 DE
Exhibits Committee	Thursday	8 to 10 a.m.	George R. Brown Convention Center	Room 352 B
NACE Institute Board of Directors	Thursday	9 a.m. to noon	George R. Brown Convention Center	Room 332 A
Conferences and Exposition Activities Committee (CEAC)	Thursday	10 to 11:30 a.m.	George R. Brown Convention Center	Room 352 B
TCC Session II	Thursday	11:30 a.m. to 2:30 p.m.	George R. Brown Convention Center	Room 342 A
Technical and Research Activities Committee (TRAC)	Thursday	3 to 4:30 p.m.	George R. Brown Convention Center	Room 342 A

ISO Meetings

ISO MEETINGS				
Name	Day	Time	Location	Room
NACE MR0175/ISO 15156 Maintenance Panel	Sunday	8 a.m. to noon	George R. Brown Convention Center	Room 372 ABC
NACE MR0175/ISO 15156 Maintenance Agency	Sunday	4:30 to 5:30 p.m.	George R. Brown Convention Center	Room 372 ABC
ISO TC 35 U.S. TAG	Wednesday	1 to 3 p.m.	George R. Brown Convention Center	Room 361 D
ISO TC 156 U.S. TAG	Wednesday	3 to 5 p.m.	George R. Brown Convention Center	Room 361 D

Other Meetings

OTHER MEETINGS				
Name	Day	Time	Location	Room
TCC 101 Session I	Sunday	9 to 10 a.m.	George R. Brown Convention Center	Room 342 F
Western Area Board of Trustees	Sunday	11 a.m. to 4 p.m.	George R. Brown Convention Center	Room 360 C
Latin American Area Board of Trustees	Sunday	noon to 5 p.m.	George R. Brown Convention Center	Room 360 D
East Asia & Pacific Area Board of Trustees	Sunday	1 to 4 p.m.	George R. Brown Convention Center	Room 361 C
General Membership	Sunday	4:30 to 5 p.m.	George R. Brown Convention Center	Room 350 DE
Standards Committee Informational Meetings	Sunday	5 to 5:30 p.m.	George R. Brown Convention Center	Room 350 DE
Speakers Breakfast	Monday	7 to 8 a.m.	George R. Brown Convention Center	Room 320 ABC
Central Area Board of Trustees	Monday	8 a.m. to noon	George R. Brown Convention Center	Room 360 C
Mini-Keynote	Monday	8 to 9:30 a.m.	George R. Brown Convention Center	310 ABC
TCC 101 Session II	Monday	9 to 10 a.m.	George R. Brown Convention Center	Room 382 B
Student Poster Orientation	Monday	9 to 10:30 a.m.	George R. Brown Convention Center	Room 320 ABC
NACE/SSPC Town Hall	Monday	9 to 10:30 a.m.	George R. Brown Convention Center	Room 350 DE
NACE U Student Meeting	Monday	1 to 2 p.m.	George R. Brown Convention Center	Room 350 DE
Eastern Area Board of Trustees	Monday	1 to 5 p.m.	George R. Brown Convention Center	Room 360 C
Keynote	Monday	3:30 to 4:30 p.m.	George R. Brown Convention Center	General Assembly B
Fellows Breakfast	Tuesday	7 to 9 a.m.	George R. Brown Convention Center	Room 381 A
Speakers Breakfast	Tuesday	7 to 8 a.m.	George R. Brown Convention Center	Room 320 ABC
Northern Area Board of Trustees	Tuesday	8 to 9:30 a.m.	George R. Brown Convention Center	Room 360 C
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 1	Tuesday	8 a.m. to 5 p.m.	Hilton Americas - Houston	Room 335 AB
Plenary	Tuesday	8 to 9 a.m.	George R. Brown Convention Center	General Assembly B
APPEAL Consortia	Tuesday	9 a.m. to 3:30 p.m.	Hilton Americas - Houston	Ballroom of America A
International Education Partner Meeting	Tuesday	9 to 11:30 a.m.	George R. Brown Convention Center	Room 342 C
Whitney Lecture	Tuesday	11:15 to 11:45 a.m.	George R. Brown Convention Center	310 ABC
ACPC Symposium Officer Training	Tuesday	11:30 a.m. to 1 p.m.	George R. Brown Convention Center	Room 362 D
European Area Board of Trustees	Tuesday	12:30 to 4 p.m.	George R. Brown Convention Center	Room 360 C
Career Fair	Tuesday	1 to 5 p.m.	George R. Brown Convention Center	Room 381 B
West Asia & Africa Area Board of Trustees	Tuesday	2 to 4 p.m.	George R. Brown Convention Center	Room 352 F
Speakers Breakfast	Wednesday	7 to 8 a.m.	George R. Brown Convention Center	Room 320 ABC

Other Meetings

OTHER MEETINGS <i>(continued from previous page)</i>				
Name	Day	Time	Location	Room
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 2	Wednesday	8 a.m. to 5 p.m.	Hilton Americas - Houston	Room 335 AB
NACE Consortia Additive Manufacturing Roundtable	Wednesday	9 a.m. to 3:30 p.m.	Hilton Americas - Houston	Ballroom of America A
CORROSION: Opportunities Realized Mini-Camp	Wednesday	9:30 a.m. to 5 p.m.	George R. Brown Convention Center	Room 381 AB
Section Officer Meeting on Elections	Wednesday	10 to 11 a.m.	George R. Brown Convention Center	Room 330 A
Standards Committee Officer Orientation	Wednesday	11 a.m. to 1 p.m.	George R. Brown Convention Center	Room 371 DEF
Speller Lecture	Wednesday	11:45 to 11:45 a.m.	George R. Brown Convention Center	310 ABC
TCC Officer Training	Wednesday	noon to 2 p.m.	George R. Brown Convention Center	Room 352 F
cKit™ Training for Sections	Wednesday	3:30 to 5 p.m.	George R. Brown Convention Center	Room 381 AB
Speakers Breakfast	Thursday	7 to 8 a.m.	George R. Brown Convention Center	Room 320 ABC
NACE/SSPC Town Hall	Thursday	9 to 10:30 a.m.	George R. Brown Convention Center	Room 332 E
African Corrosion Professionals Meeting	Thursday	1 to 5 p.m.	Hilton Americas - Houston	Room 335 AB

CORROSION
Conference & Expo 2020
March 15-19 • Houston, Texas

Leadership: Activate the Leader Within

Monday, March 16
8 to 11:30 a.m. | Room 371 ABC

Seven Enduring Truths of Knowledge Management Workshop
1:30-3:30 p.m.

At NACE's interactive Leadership Forum, learn from those who have successfully embarked on challenging professional journeys and experienced results. These top leaders will provide guidance from diverse perspectives to help you activate the inclusive leader already within you by giving you the confidence to lead and influence diverse, high-performing teams no matter your role or title.

Sponsored by

Presented by:

- Kimberly Krieger, Chief Operating Officer for BPX Energy
- Cortland Russell, President & Chief Executive Officer for oSTEM.
- Lynsay Bensusman, Head of U.S. Pipeline Services at DNV GL
- John Todd, Operations Manager for KTA-Tator
- Stephanie Biagiotti, Manager for Geospatial Technology and Asset Data for Xcel Energy, Inc.

Thank You to Our Sponsors



Visit nacecorrosion.org/sponsor-opps or contact sales@nace.org for sponsorship opportunities.



FULL SERVICE TANK SUPPORT

BOOTH 2320

No matter where your business operates domestically, HMT can support you with a wide range of coating and inspection services designed to fit your needs.

*Learn more about our **Coatings & Inspection** capabilities by visiting our website or our booth.*



CONTACT US TODAY! 1-877-246-8828 | HMTTANK.COM | tankservices@hmttank.com

Guest Program

The Guest Program is a social program designed for the enjoyment of the guests of conference registrants. Guest program registration does not give attendees access to any technical symposia or committee meetings. Program details and locations are listed below.

Guest Reception

Hilton Americas Hotel, Room 343 AB

On Sunday, March 15, guests will enjoy an afternoon to unwind and relax with other Guest Program attendees. The reception will last from 2 to 5 p.m., and food and drinks will be provided.

Opening Reception

Hilton Americas Hotel

Kick off CORROSION 2020 at the Hilton Americas Hotel on Sunday evening from 5:30 to 7 p.m. with conference attendees and exhibitors. Drinks and hors d'oeuvres will be provided.

Continental Breakfast

Hilton Americas Hotel, Room 346

All Guest Program registrants are invited to enjoy an expanded continental breakfast at the Hilton Americas Hotel on Monday through Thursday, serving from 8 to 9:30 a.m. Breakfast is only available to those who have registered for the Guest Program. No other registrations for the conference will be permitted to partake in the breakfast.

Guest Program Registration

Guest Program registrants may pick up their badges at the CORROSION 2020 registration desk located in Exhibit Hall D in the George R. Brown Convention Center. On-site registration for the Guest Program will be conducted during regular conference registration times. The Guest Program badge is your "ticket" to the Guest Program activities and the CORROSION 2020 Expo Grand Opening.

Note: Only guests who wish to attend the Guest Program activities or the Expo Grand Opening are required to register for the Guest Program.

All tours will depart from Hilton Americas, side entrance on Avenida De Las Americas.

Guest Tours

Space limited on each tour. Tickets must be purchased in advance. If a minimum is not met a tour is subject to cancellation.



Saturday March 14

Space Center Houston

9 a.m. – 3 p.m.

This tour will take you to Space Center Houston. As the Official Visitor Center for NASA's Johnson Space Center, Space Center Houston is the only place on Earth that gives guests an out-of-this-world journey through human adventures in space. Since 1992, this \$75 million, 180,000 square foot, "edu-tainment" complex has entertained and informed over 11 million star-struck guests from every corner of the globe.

Ongoing Attractions, Exhibits, and Tours

The tour will include a visit to Independence Plaza, which contains the historic shuttle carrier aircraft NASA 905 with the high-fidelity shuttle replica Independence mounted on top. This is the only place on earth where you can actually board a space shuttle!

Then journey into space with the film "On Human Destiny" at the Destiny Theater. View artifacts and hardware on display in the Starship Gallery and trace the progression of America's Manned Space Flight. This incredible collection includes an original model of the Goddard Rocket; the actual Mercury Atlas 9 "Faith 7" capsule flown by Gordon Cooper; the Gemini V Spacecraft piloted by Pete Conrad and Gordon Cooper; a Lunar Roving Vehicle Trainer; the Apollo 17 Command Module; the giant Skylab Trainer; and the Apollo-Soyuz Trainer.

Also available is a NASA Tram Tour. This 90-minute journey behind-the-scenes at Johnson Space Center includes stops at several NASA facilities including Mission Control, Astronaut Training Facilities, and Rocket Park, where you will see the biggest, fastest, most powerful rocket in the world at The Saturn V Experience.

Price: \$105 USD per person, 20-person minimum.

Price includes access to Space Center Houston.

Does not include lunch.

Sunday, March 15

Houston Art and Architecture Tour

8:30 a.m. – 12:30 p.m.

Take a tour of Houston—the 4th largest city in the United States. It's one of the most diverse cities in the U.S., with people flocking here from all over the world. Explore Houston's history, culture, and diversity through this art tour. Your certified professional tour guide will entertain you with great stories, history, and culture while exploring the magnificent and abundant art.

You will drive through downtown Houston, which boasts a beautiful modern skyline intensified by public art installations by Miro, Dubuffet, and Mel Chin—just to mention a few. The skyline is a work of art in itself with the designs of architects like Phillip Johnson, John Burgee, I.M. Pei, Joseph Finger, and Alfred Finn.

Walk through the magnificent lobby of Chase Bank, one of the finest examples of Art Deco Architecture in the city and explore the Houston tunnel system—a city within a city under the streets of downtown Houston. Visit the famed Art Car Museum full of imaginative and artfully constructed art cars, low riders, and mobile contraptions.

#CORROSION2020

Guest Program

Visit the Menil Collection—John and Dominique de Menil began actively collecting art in the 1940s, ultimately amassing nearly 16,000 paintings, sculptures, decorative objects, prints, drawings, photographs, and rare books. Drive through the amazing River Oaks neighborhood where the “who’s who” of Houston make their home. Be awed by the mansions and beautiful gardens owned by oil millionaires, doctors, bankers, lawyers, and business owners. Drive through The Texas Medical Center—the largest medical center in the world. Learn the fascinating story of how it began and how it has become one of the most renowned medical centers in the world, with emphasis on cancer and the heart. Cross over to the Rice University campus—the Ivy League school of the southwest. Hear the scandalous story about the school that was built as a result of the discovery of William Marsh Rice’s murder in the year 1900.

Price: \$70 USD per person, 20-person minimum.

Monday, March 16

Galveston Island/Tree Sculptures/Sunflower Bakery 9 a.m. - 4 p.m.

Galveston Island is a small, romantic island tucked deep within the heart of south Texas. It has been explored and occupied since the early 1500s and was once known as the richest city in Texas, considered “the Wall Street of the Southwest,” and the “Ellis Island of the Southwest.” It has seen its share of calamities, yet the worst natural disaster in U.S. history, the 1900 storm, could not erase the tranquility of a Galveston sunset.

Begin with a tour of the island. Your professional tour guide will entertain you with fascinating stories about the island’s history, events, and characters. Drive by the “Broadway Beauties,” an amazing group of historic homes that portray early 20th century family life among Galveston’s most elite. Enjoy ghost stories, since Galveston is considered one of the most haunted cities in America! Drive past whimsical tree sculptures that have replaced the majestic oaks that were destroyed during Hurricane Ike in 2008 and once lined many neighborhoods. Stop for lunch at the Sunflower Bakery. Stop at the Strand, where you will have time for shopping and sightseeing. The Strand National Historic Landmark District was the heart of Galveston in the late 1800s and early 1900s when its star was bright and it was full of great promise, the “New York of Texas.” This district offers marvelous downtown shopping, numerous antique stores, and incredible art galleries, in a fabulous setting among one of the largest and most well-preserved concentrations of Victorian architecture in the country. Other features that give the Strand its unique and romantic charm are the high curbs, overhanging canopies that were meant to shade the streets, and the horse drawn carriages that pass slowly in the streets, at so much slower a pace than the automobiles of today. Lunch is included at the Sunflower Bakery.

\$115 USD per person, 20-person minimum, includes lunch.

Tuesday, March 17

Old Town Spring 9 a.m. to 3 p.m.

Step back in time and check out Old Town Spring. Old Town Spring is located 40 minutes north of downtown Houston in Spring, Texas. It is a historic 1900s railroad town that has been completely transformed into a unique shopping and eating destination open year-round. Dozens of shops, restaurants, museums, and art galleries line the streets, inviting customers to explore the turn of the century town and truly get lost in time. You will find a variety of antiques, collectibles, clothing, and accessories for the home and gifts for all occasions. The merchants of Old Town Spring literally travel the globe in search of unique and unusual wares for their shops. Browse fun shops like The Blue Giraffe, Cupcake Fabrics and Quilts, Keller Candle Company, and more. Enjoy a leisurely lunch, on your own, at one of the many restaurants offering a tempting array of menus. You will want to return again and again.

\$80 USD per person, 20-person minimum, lunch on own.



Networking Activities

F NACE Foundation event **S** Student event

Saturday, March 14

NACEcares Volunteer Day 7 a.m. to 2 p.m.

Join the NACEcares Team as we partner with the Houston Habitat for Humanity to come together and give back to our hosting city.

Transportation from the convention center and lunch will be provided. We will meet at Registration Saturday at 6:45 a.m.

Limited spots available.

CORROSION Crew Social Brew 6 to 10 p.m. ■ El Big Bad

Welcome to Houston and the start of CORROSION 2020! Join other attendees at El Big Bad, located in Houston's historic Market Square. Enjoy a taste of local Mexican cuisine made with fresh ingredients in a fun, colorful, and inviting atmosphere.

Admission to this ticketed event includes dinner, a drink ticket, and live entertainment. Hosted by the NACE Houston section.

Sponsored by:



Sunday, March 15

F 25th Annual NACE Race benefiting the NACE Foundation 8 a.m. ■ Memorial Park Houston, TX

Join us for this year's NACE Race and run for a reason at CORROSION 2020! This noncompetitive 5K run/walk is a tradition for conference attendees and their guests, and a great way to stretch your legs before the start of the conference. The \$20 entry fee includes an official race shirt and post-race celebration, including refreshments and medal presentation for 1st, 2nd, and 3rd place finishers in the men's and women's divisions. Bus transportation is provided to and from the convention center.

Sponsorships are also available starting at \$150! NACE staff contact: **Brandy Adams, +1 281-228-6478, brandy.adams@nace.org.**

Title Sponsor:



Bus Sponsor:



F Darrel D. Byerley Memorial Golf Tournament benefiting the NACE Foundation ■ 8:30 a.m. Wildcat Golf Club Houston, TX



Start your week at CORROSION 2020 with a relaxing round of golf on Wildcat Golf Club's Lakes course, a links-style course with Texas Hill Country topography. Designed by renowned golf architect Roy Case, the course ensures that guests will enjoy navigating around the water, managing the rolling fairways, and experiencing the fast greens and dramatic elevation changes, while taking in stunning views.

NACE staff contact: **Heather Lowry, +1 281-228-6205, heather.lowry@nace.org.**

Signature Sponsor:



Shirt Sponsor:



Beverage Cart & Station Sponsor:



Tuesday, March 17

Opening Reception

5:30 to 7 p.m.

Ballroom of the Americas, Hilton Americas Houston

The 2020 Opening Night Reception opens CORROSION 2020 in Houston, as attendees and exhibitors interact over drinks and hors d'oeuvres. Drink tickets will be provided at registration. This reception is cosponsored by Carboline and NACE International. The two organizations are bound together by a common vision of corrosion prevention, environmental preservation, and education.

Sponsored by:



Monday, March 16

F 15th Annual Silent Auction

benefiting the NACE Foundation

Monday, March 16 to Wednesday, March 18

Exhibit Hall ■ George R. Brown Convention Center

Take a break from the action in the CORROSION 2020 exhibit hall and browse the wide variety of items and collectibles available at the silent auction! Items will be on display and open for bidding during conference hours through 4 p.m. on Wednesday, March 18.

Proceeds will benefit the NACE Foundation in our efforts to inspire the future workforce to pursue careers in science, technology, engineering, and math (STEM).

S NACE U Student Meeting

Today's Students,

F Tomorrow's Solutions

1 to 2 p.m.

George R. Brown Convention Center,

Level 3, Room 350 DE



Join us for a panel discussion where panelists include former NACE student members discussing the impact of NACE in their professional career.

Exhibit Hall Grand Opening

5 to 7 p.m. ■ George R. Brown Convention Center

The grand opening is one the most popular events each year and will be your first opportunity to meet with exhibiting companies.

A complimentary drink ticket (only good at the Expo Grand Opening) will be included in your packet. Badges must be presented for admittance.

Headshot Station

8 a.m. to 5 p.m. ■ George R. Brown Convention Center, Level 3, Across from 350 D and 360 A

Need to upgrade your professional headshot? Stop by the Headshot Station to update your look and professional profile.

Sponsored by:



Career Fair

1 to 5 p.m. ■ George R. Brown, Level 3, Room 381B

Whether you are a student, new to the industry, or a corrosion expert, take advantage of the Career Fair. Our goal is to assist you with your career and recruitment needs.

Job seekers—find your dream job and connect with registered employers.

Employers—register for an exhibit booth today to recruit your dream candidate.

For more information, contact FirstService at firstservice@nace.org.

S GenNEXT Bash

benefiting the NACE Foundation

F House of Blues ■ Houston, TX



7 to 8 p.m. Scholarship Awards Ceremony

8 to 11 p.m. The Grooves Band/Dancing

Come for the awards...stay for the party!

Don't forget to wear your green and join us on St. Paddy's Day as we honor our outstanding 2020 students and scholarship recipients and celebrate the future of our industry.

Individual tickets are \$65 and can be purchased at Registration. Sponsorships are also available!

NACE staff contact: **Heather Lowry, +1 281-228-6205,**

heather.lowry@nace.org.

Tickets will not be available for purchase at the door the night of the event.

Note: To attend the Scholarship Awards Ceremony you must have a GenNEXT Bash ticket. Student registrants for CORROSION 2020 receive a complimentary event ticket with their conference registration. Conference shuttles will be available for guests' transportation needs. Limited hosted bar.

Scholarship Awards Ceremony Sponsor:





GenNEXT Bash Signature Sponsor:



Additional sponsors continued on the next page.

Networking Activities

 NACE Foundation event  Student event


Titanium Sponsor:



Silver Sponsor:



Wednesday, March 18

 **CORROSION:**
Opportunities Realized
**George R. Brown
Convention Center**
9 a.m. to 3:30 p.m.



To educate the next generation on the destructiveness of corrosion, the NACE Foundation is hosting a day-long mini-camp for local high school students in conjunction with CORROSION 2020.

Students from Houston-area high schools will participate in hands-on, corrosion-related activities, using the NACE Foundation's cKit™ (Corrosion Toolkit). They will learn basic scientific principles of corrosion in topics such as oxidation, thermodynamics, and electrochemistry. Students will also have the opportunity to learn about research and career opportunities from industry professionals and university students while touring the CORROSION 2020 show floor.

Volunteers are needed. For information on how you can get involved, contact **Brandy Adams, +1 281-228-6478, brandy.adams@nace.org**.

Signature Sponsor:



Section Officer Meeting on Elections 10 to 11 a.m.

George R. Brown Convention Center, Level 3, Room 330 A.
During this meeting we will provide section officers with a detailed introduction to the procedures for section nominations and elections.

cKit™ Training for Sections

3:30 – 5 p.m. ■ George R. Brown Convention Center

The NACE Foundation would like to invite you to join us for a drop-in event at CORROSION 2020 to introduce you to the NACE Foundation's cKit™ (Corrosion Toolkit) and the experiments included in it. We will have the experiments from the cKit on display along with two of our master instructors to help guide you through the kits, how they can be used locally in your community, and how to help conduct the experiments. Please reserve some time on your CORROSION calendar for the afternoon of Wednesday, March 18th. For more information, please contact Brandy Adams at brandy.adams@nace.org or 281-228-6478.

NACE Honoree Night

6:15 to 10 p.m. ■ Minute Maid Park

NACE invites you to an evening of celebration as the association's annual awards are presented in recognition of members who have made outstanding contributions to NACE and the corrosion control profession. Taking place at Minute Maid Park, the evening will include recognition of our volunteer board leaders, presentation of the 2020 NACE awards, and the passing of the gavel to the incoming 2020- 2021 NACE president. Guests will then enjoy a relaxing evening of networking, heavy hors d'oeuvres, and entertainment. Please contact us about sponsorship opportunities. Tickets are available online or by contacting **firstservice@nace.org**. Space is limited, so it is recommended that you purchase your tickets in advance.

PROTECT YOUR PIPELINES FROM CORROSION.



Materials. Installation. Cathodic protection.

We provide best-in-class cathodic protection systems, pipeline inspection, interior pipe linings, interior and exterior pipe coatings and insulation as well as pipeline repair capabilities. These solutions enhance the safety, environmental integrity, reliability and compliance of our customers' oil, gas and mining pipelines.

We also provide inspection services to monitor these systems and detect early signs of corrosion. With offices across the country, we are ready to mobilize for your project. **VISIT US IN BOOTH 1435 AT NACE CORROSION 2020** for live demos and learn about the technologies we offer for your corrosion solution needs.

www.corrpro.com 844.619.2926



corrpro

COATING
SERVICES

united

PPG ASSET INTEGRITY MANAGEMENT™

**FUTUREEDGE 50
AWARDS**

WINNER 2020

FROM IDG



An **innovative solution** that takes the guesswork out of asset maintenance.

AIM for predictability

Forecast the future condition of your protective coatings using our dynamic, data-driven model.

AIM for greater precision

Plan and schedule your corrosion management more precisely than ever before.

AIM for better budgeting

Prioritize and rank your maintenance spending, so you can budget more effectively.

AIM for optimization

Optimize your asset maintenance process.

To start, we'll map your facility, conduct a field assessment survey, upload photos, and enter data. Then you can begin viewing your future from multiple perspectives.

AIM for a future that offers greater control. Get in touch with your PPG representative and find out more today.

www.ppgpmc.com/aim | 1-888-9PPGPMC | PMCMarketing@ppg.com

The PPG Logo is a registered trademark of PPG Industries Ohio, Inc. PPG Asset Integrity Management and PPG AIM are trademarks of PPG Industries Ohio, Inc.



The Exhibition

Expo Schedule

Monday, March 16.....	5 to 7 p.m.
Tuesday, March 17.....	10 a.m. to 5 p.m.
Wednesday, March 18.....	10 a.m. to 5 p.m.
Thursday, March 19.....	9 a.m. to noon

Expo Events

Monday, March 16

Cathodic Protection (CP) Field.....	5 to 7 p.m.
Coatings Experience.....	5 to 7 p.m.
Expo Grand Opening*.....	5 to 7 p.m.
NACE Foundation Silent Auction Bidding.....	5 to 7 p.m.
Student Poster Session.....	5 to 7 p.m.

Tuesday, March 17

CP Field.....	10 a.m. to 5 p.m.
Coatings Experience.....	10 a.m. to 5 p.m.
Complimentary Lunch (full conference attendees only).....	11:45 a.m. to 1 p.m.
Corrosive Chronicles and MP Innovation Theater.....	10:30 a.m. to 5 p.m.
NACE Foundation Silent Auction Bidding.....	10 a.m. to 5 p.m.
Protective Coatings Workshop.....	10 a.m. to 5 p.m.
Student Poster Session.....	noon to 1 p.m.

Wednesday, March 18

CORROSION: Opportunities Realized Mini-Camp.....	9:30 a.m. to 3:30 p.m.
CP Field.....	10 a.m. to 5 p.m.
Coatings Experience.....	10 a.m. to 5 p.m.
Corrosive Chronicles and MP Innovation Theater.....	10:30 a.m. to 5 p.m.
NACE Foundation Silent Auction Bidding.....	10 a.m. to 4 p.m.
Protective Coatings Workshop.....	10 a.m. to noon
Student Poster Session Winners Announced.....	12:30 p.m.

Thursday, March 19

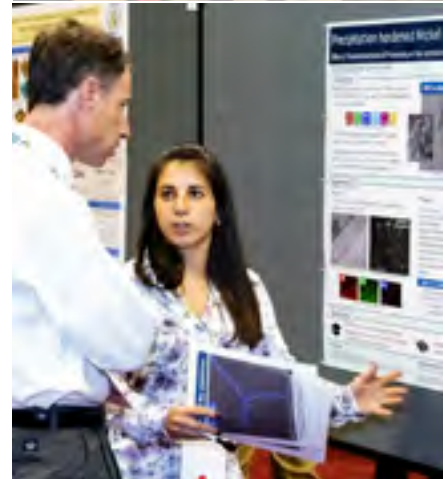
CP Field.....	9 a.m. to noon
Coatings Experience.....	9 a.m. to noon
Harley Giveaway.....	10:30 a.m.

**Please note: Due to laws/liabilities, no one under the age of 18 will be given access to the Exhibit Hall during the Expo Grand Opening on Monday, March 16.*

Student Poster Display

To encourage student involvement in the field of corrosion technology, the NACE Research Committee sponsors a Student Poster Session at CORROSION 2020. Posters will be on display in the Exhibit Hall on Monday evening through Thursday, and the display will be staffed by students on Monday from 5 to 7 p.m. and Tuesday from noon to 1 p.m. Winners will be announced on Wednesday at 12:30 p.m.

Sponsored by:



Corrosive Chronicles and MP Innovation Theater

The popular and expanded Corrosive Chronicles Theater will feature experienced corrosion professionals and NACE staff who will present interactive forums on a variety of corrosion-related topics on the Exhibit Hall floor. Conference attendees will learn unique lessons and solutions to corrosion issues that are relatable to their own field of expertise. The theaters will be split into the Corrosive Chronicles and MP Innovation Theater and will be open to conference attendees on Tuesday, March 17 and Wednesday, March 18. Please see the *CORROSION 2020 Final Program* for more information and for theater assignments.

2020 Expo Hall

Cathodic Protection Field—Open during exhibit hours

Check out the field testing exhibit on the show floor—an actual representation of a cathodic protection (CP) field with the opportunity for hands-on activities. Perform several CP-related tests at the field testing exhibit and learn from industry experts who will be available to answer questions or discuss CP problems you may have. This is your opportunity to gain hands-on experience by performing tasks such as:

- CP interference
- Alternating current voltage mitigation
- Electrical isolation testing and short locating
- Testing of an impressed current CP system
- Galvanic CP system testing
- Obtaining soil resistivity measurements

The Coatings Experience—Open during exhibit hours

Returning for 2020. Join us on the Exhibit Hall floor for The Coatings Experience. This interactive area will introduce those interested in coatings to the ins and outs of application, surface preparation, inspection plans, and coatings selection in a fun and interactive way!

Dairyland Lounge

Across from Booth #2135

Get this year's hottest souvenir—a customized, live printed CORROSION t-shirt available at the Dairyland Lounge (located on aisle 2100). While you're there, sit back and relax or immerse yourself in a virtual reality experience. For each person who participates, Dairyland will donate \$10 to International Justice Mission to help rescue victims from violence. The lounge is open to all attendees during show floor hours.

Sponsored by:



Harley Giveaway

This is YOUR chance to ride away on a Harley Davidson in Houston! Simply visit each High Rollin' for a Harley sponsor at CORROSION 2020 and collect a playing card at each sponsoring booth. Once playing cards have been collected from all sponsors, hightail it over to the Harley on the Exhibit Hall floor, and complete the submission card to enter to win. Return to the Exhibit Hall on Thursday at 10:30 a.m. to see if you've won!

Sponsored by:



Product Showcase

The Product Showcase is a dedicated area to increase awareness and interest in CORROSION 2020 exhibitors' products. Each product will have a description of its purpose and booth number of the exhibiting company. The product showcase will be located at the entrance to the Exhibit Hall. If you're interested, contact Roberta Arnold by phone at +1 281-228-6286 or email roberta.arnold@nace.org.

Protective Coatings Workshop

NACE International, *CoatingsPro Magazine*, Master Painters Institute (MPI), *INSPECT This*, and NACE Coatings Council are excited to announce the return of the Protective Coatings Workshop at CORROSION 2020! This interactive workshop, designed for those working in or interested in learning more about coatings, will feature presentations from coatings industry leaders, an introduction to new emerging technologies, and highlight the experience and accomplishments of those currently involved in the coatings field.

See p. 84 for complete schedule.

N 10X Engineered Materials

Booth 1154

10X Engineered Materials is a technology-driven manufacturer producing a new class of sustainable, high-performance abrasives that address OSHA's free silica ruling in blasting. We have developed products that meet the critical industry need for fast, cost-effective abrasives free of silica and beryllium. They contain virtually zero leachable heavy metals and ultra low chlorides. Our abrasives are fast acting on tough coatings and leave an excellent profile with a white metal finish and virtually no embedment. Our products are sustainably sourced and manufactured entirely in the USA. Address: Wabash, IN. Web site: www.10Xem.com.

N 3E NDT, LLC

Booth 2121

(See page 187 for company profile)

4Z Elektronik Otom. Ve Kaynak Sist. San Ltd. Sti.

Booth 2203

4Z Electronics Automation and Welding Systems Ltd. is a company offering high technology products for Cathodic Protection and Geophysics sectors. 4Z aims to produce the highest quality products in its class while leaving the least carbon footprint. The products are designed and manufactured in compliance with the international standards. 4Z serves the Cathodic Protection Sector with the following products: CP Rectifiers: High efficiency 5-1000A, 5-100V 1Ph-3Ph Cathodic Protection Rectifiers with SCADA connectivity and GPS synchronized interrupter option. Solid State Mitigation Cells: 0.65kA, 3.7kA, 5kA, 10kA, 15kA, 30kA (30 cycle) Solid State Mitigation Cells for Pipeline AC voltage mitigation and grounding. Address: Ankara, Turkey. Web site: www.4zelektronik.com.

A.E.P.S.

Booth 2318

The Smart Strap is a modification of a standard pipe support clamp utilizing a stainless steel mesh in place of the standard rolled steel plate for the hold down component. The design of the Smart Strap allows for retrofitting to existing supports by various other manufacturers. The connection of the strap to any anchoring system is made utilizing standard bolting through a fabricated plate integrated into the stainless mesh. Address: Lafayette, LA. Web site: www.aepsupports.com.

A.W. Chesterton Company, ARC Industrial Coatings

Booth 1457

Extreme corrosion conditions strain the limits of conventional coating technologies. Where these conditions are present, rely on ARC's advanced technology and superior technical and field services to meet your specific coating needs. Our products utilize 100% solids epoxy, urethane and novolac vinyl ester chemistries, which are reinforced with engineered ceramics, mineral glass flake, fibers and graded quartzes. Available in trowel applied resurfacing grades, screed grades, brush, roller, and sprayable grades, our coatings have been successfully protecting and enhancing industry's process equipment and structures in the most aggressive conditions; for over 30 years and in more than 100 countries. Address: Groveland, MA. Web site: www.arcindustrialcoatings.com.

N Abrasive Warehouse & Equipment

Booth 2316

We are a local distributor for all your surface preparation needs. Our company has over 100 years of experience and knowledge to better assist you. We are able to provide you with a full array of abrasives whether cleaning the hardest metals or creating a delicate finish on to special alloys and contamination is a concern. Most of our abrasives are also available with the proper certification needed to conform to today's industry standards. We are also distributors for many other leading industrial equipment companies in the surface preparation industry. Whether you are in need of new equipment, replacement parts, and technical assistance or service our staff can be reached to help. With safety being such a large concern to our customers and

their own employees, our equipment is certified to meet or exceed your necessary safety standards. Address: Houston, TX. Web site: www.abrasivewarehouse.com.

Abrasives, Inc.

Booth 1256

Abrasives Incorporated. Home of Black Magic® Coal Slag, and distributor of a full spectrum of effective blast media, efficient equipment and parts. We work with our customers to align products and materials that do the best job in the shortest amount of time with high quality products. Address: Glen Ullin, ND. Web site: www.abrasivesinc.com.

Abriox, Inc.

Booth 1547

Abriox is a dynamic technology company specializing in remote monitoring units (RMUs) for cathodic protection (CP). Our Merlin® rectifier monitor has earned a reputation as a reliable, easy-to-use RMU with outstanding customer support. The Merlin RMU is small enough to mount inside the rectifier cabinet and the Merlin HEMI will hide inside a standard test post. The Merlin RMU can be controlled with simple commands from your cell phone. Technicians can take CP readings or start an interruption cycle in only a few seconds. Address: Amelia, OH. Web site: www.abriox.com.

Access Plug Flange, Inc. (APF)

Booth 2010

Access Plug Flange, Inc. (APF) manufactures inspection ports that are installed on the insulation jacket of insulated pipelines, vessels, tanks, and equipment, allowing inspectors safe and easy access to perform nondestructive testing for mechanical integrity purposes and to check for CUI. APF inspection ports are designed to meet process temperatures ranging from -185 to 1200°F (-120.6 to 648.9°C). They are available in a wide variety of shapes and sizes. APF inspection ports are weather-tight, reliable, durable, safe and easy to install. As a worldwide leader of inspection port technology, we appreciate your continued support. Address: Houston, TX. Web site: www.inspectionplug.com.

Accurate Corrosion Control, Inc.

Booth 2327

Accurate Corrosion Control, Inc. (ACCI) is an employee owned corporation specializing in corrosion control and cathodic protection. Established in 1984 in Phoenix, Arizona, the Company maintains the same high standards it was founded on 35+ years ago, providing quality corrosion control engineering, monitoring, installation and materials, on time and within budget. ACCI currently has 90 employees that work from our Glendale, AZ and Pleasanton, CA offices. ACCI is licensed in Arizona, California, Utah, New Mexico, Nevada, Washington, and Texas, and has performed Engineering projects in various parts of the United States. ACCI employs a trained and NACE certified workforce that can provide turnkey corrosion control projects to all industries. Address: Glendale, AZ. Web site: www.accuratecorrosion.com.

Acuren Inspection

Booth 1100

Acuren provides state-of-the-art nondestructive testing, inspection, engineering and rope access enabled industrial services. We are pleased to serve many of the largest and most sophisticated industrial firms and markets in the world, with clients in the refinery, chemical, pipeline, storage tank, power generation, pulp & paper, aerospace, automotive, and pharmaceutical industries through over 80 locations, over 100 in-house engineers, and over 4,000 employees throughout North America and the United Kingdom. The recent acquisition of Skystone International deepens Acuren's engineering and technology-enabled asset integrity capabilities, including our expansion into cathodic protection services. Address: Conroe, TX. Web site: www.acuren.com.

N Add Energy LLC

Booth 440

Add Energy is recognized as a quality provider of Maintenance Optimization Engineering and Technology services to the upstream, midstream and downstream midsize to small operator/owner who have single or multiple high density complex and aging assets, either constructed or acquired, have higher than industry average maintenance spend. Add Energy whose "client first, client always" approach assures we will always build on what success the client has had and enable them to further strengthen their A&M programs guaranteeing the client only invests in what is needed for the site and that "Best Practices" is defined individually by our clients and not necessarily by the industry itself. We are therefore different in that we work closely with all our clients to deliver the best fit for purpose A&M solution because we know one size does not fit all. Address: Houston, TX. Web site: www.addenergy.no.

Admiral Instruments

Booth 1850

Admiral Instruments designs, builds, and distributes potentiostats to carry out advanced corrosion and other electrochemical measurements. Our instruments are capable of ASTM G59, G61, G102, G106, and much more! We offer a growing selection of products including the low-priced, easy-to-use family of Squidstat™ potentiostats. Our products are uniquely suited to satisfy those with limited budgets or those seeking highly specialized capabilities including multi-sine EIS and equivalent circuit modeling. The Squidstat Plus, our most popular potentiostat, features ±1A max current, ±10V scan range, and EIS up to 1 MHz all for a low price of just \$4,900. Interested? Visit our booth to learn about our popular FREE 30-day potentiostat trial program! Address: Phoenix, AZ. Web site: www.admiralinstruments.com.

Advance Products & Systems, Inc.

Booth 1741

Advance Products & Systems, LLC is a leading manufacturer and distributor of oil and gas, water and waste water, industrial and mechanical, and chemical pipeline products. APS is dedicated to manufacturing quality pipeline solutions that provide customers with confidence in knowing they have a dependable product backed by over 40 years of industry-leading excellence. Protect your investment against corrosion with flange isolating gasket kits, Integra II SSAFS® fire-rated gasket kits, severe service gasket kits, Kleebrand® flange protectors with Radolid® nut and bolt protection caps, Isojoint® monolithic isolating joints, ApogeeAero® anti-corkscrewing roller casing spacers, etc. Address: Lafayette, LA. Web site: www.apsonline.com.

N Advanced OEM Solutions

Booth 2344

Advanced OEM Solutions (AOS) is the premier provider of customizable Phased Array, Full Matrix Capture (FMC), and Multi-Channel Conventional UT hardware. Enabling clients and partners to create custom solutions and products for NDT, we provide an "outside of the box" solution to your inspection needs. Break into new markets, refresh current product lines, save time and money on expensive and risky R&D and expand your business. What's unique? Customizable, Open Platform Concept, Compact, Perfect for automated inspection systems, Excellent Price Point, Easy to Integrate and Example Source Code Provided. Address: West Chester, OH. Web site: www.aos-ndt.com.

● **Advanced Polymer Coatings**

Booth 1647

Advanced Polymer Coatings manufactures ChemLine® high-performance coatings and tank linings for aggressive cargos and severe environments. ChemLine® coatings provide superior chemical resistance to a wide array of aggressive chemicals, even at elevated temperatures (400°F). It is suitable for cargo immersion service in over 5,000 chemicals including aggressive acids, alkalis, solvents, CPPs and edible oils. It is the preferred lining system for bulk storage tanks and terminals, tanker containers, marine barges, railcars, stacks, ductwork, FGDs and IBCs. Address: Avon, OH. Web site: www.adv-polymer.com.

● **S Aegion Coating Services, LLC**

Booth 1435

Aegion Coating Services, LLC specializes in unique robotic coating solutions for onshore and offshore pipelines and field joints. We offer proprietary FBE, epoxy and urethane coating solutions, along with specialized equipment, for projects in North America, the Middle East, and South America. We are dedicated to high standards of quality and are ISO 9001:2015-certified. Address: Conroe, TX. Web site: aegioncoatingservices.com.

AGRU America, Inc.

Booth 2314

AGRU America offers semi-finished products including sheets, round bar stock, and welding rods to suit a wide range of applications. This includes PE, PP, PVDF, ECTFE, FEP, and PFA. We also offer a wide range of concrete protective products including liners and sheet materials as well as pipe and fittings. AGRU America is part of the worldwide AGRU Group, an Austrian family-owned business since 1948 with production facilities in Austria, the U.S., Germany and China, and distribution in over 80 countries worldwide. Address: Georgetown, SC. Web site: www.agruamerica.com.

S AkzoNobel

Booth 2441

AkzoNobel has a passion for paint. We're experts in the proud craft of making paints and coatings, setting the standard in color and protection since 1792. Our world class portfolio of brands – including Dulux, International, Sikkens and Interpon – is trusted by customers around the globe. Headquartered in the Netherlands, we operate in over 80 countries and employ around 35,000 talented people who are passionate about delivering the high performance products and services our customers expect. Address: Houston, TX. Web site: www.internationalpaint.com.

Alabama Laser

Booth 1519

Alabama Laser offers laser cladding / weld overlay services to provide enhanced wear and corrosion resistance. Cladding of hydraulic shafts, pump components, downhole tools, valve components, boiler tubes, cylinders, fittings, and flanges. ASME code stamp certified. Additional laser services: welding, cutting, etching/marking, and heat treating. Custom laser systems, process development, complete machining services. Address: Munford, AL. Web site: www.alabamalaser.com.

N Alisto Engineering Group

Booth 2207

Alisto Engineering Group is a minority-owned business providing integrated engineering, environmental and construction services with a multi-disciplinary staff of more than 100 highly qualified and experienced engineers, scientists, technicians, and administrative personnel. Established in 1992, Alisto has since gained an impressive reputation of providing excellent and cost-effective service to a diverse clientele from investor-and publicly-owned utilities; oil, gas, and energy companies; major corporations; and transportation agencies, some of whom have been our loyal partners for more than 25 years. As one of our core services, we offer turn-key corrosion protection services including field survey and monitoring, CP system design, AC and DC interference investigation and mitigation design, construction management, and CP system installation. Address: Walnut Creek, CA. Web site: www.alisto.com.

Allan Edwards, Inc.

Booth 700

Allan Edwards, Inc. is a 4th generation pipeline products provider. From the beginning the Edwards family established values of quality and high integrity standards. Allan Edwards' repair sleeves for existing pipelines offer a custom fit every time. To avoid costly shut downs due to corrosion or other pipeline integrity issues, call Allan Edwards for steel repair sleeves. We offer products such as Red One Rockshield and also specialize in buoyancy control. With over 70 year's experience, our professional team has the flexibility to offer the best pipeline repair solutions for every pipe situation. Address: Tulsa, OK. Web site: www.allanedwards.com.

● S **Allied Corrosion Industries, Inc.**

Booth 1815

Headquartered in Marietta, GA, Allied Corrosion Industries is proud to celebrate 40 years of helping our customers successfully navigate pipeline integrity management, AC mitigation, pipeline remediation, external corrosion direct assessment, cathodic protection system design and installation, and more. Our expert team is dedicated to delivering the best experiences and products to meet your current and future needs. Learn more at AlliedCorrosion.com. Address: Marietta, GA. Web site: www.alliedcorrosion.com.

N **Allied Photo Chemical**

Booth 323

Allied PhotoChemical provides UV / Ultraviolet Coatings to ELIMINATE red rust and environmental VOC's, then DELIVERS much improved ROI per linear foot than Water & Solvent-based Coatings. Allied's products help customers achieve REAL ROI – Return on their Investment. Allied's Customer FIRST initiatives put the Customer FIRST! Address: Macomb, MI. Web site: www.alliedphotochemical.com.

Allied Pipeline Technologies (APTec)

Booth 1153

APTec is a multinational, multi-disciplinary pipeline services company focused on the installation of corrosion and abrasion resistant HDPE liners, Sure-Liner™. Installing a HDPE liner can be completed immediately after construction of a new pipeline. In some areas, APTec can build, line and commission new pipelines on a turnkey basis. In other areas, APTec works with civil and pipeline construction companies to complete the lining process. Rehabilitation of existing pipelines using Sure-Liner™ is a cost effective and low impact method of extending a pipeline's lifespan. If the existing pipeline has lost pressure containing capability, APTec can complete a remediation with spoolable composite materials using the failed line as a conduit. Address: Durango, CO. Web site: www.aptecusa.com.

Allied Supreme Corp.

Booth 1563

Allied Supreme Corp. is a Taiwan based company which has engaged in fluorocarbon resins coating and lining since 1981. We are not only Du Pont's successful Licensed Industrial Applicator but also a top one Teflon process manufacturer in Taiwan. With professional technology and quality product, we have enjoyed high reputation in both domestic and foreign markets for more than 30 years till now. We supply PTFE/Modified-PTFE/PFA semi-finished products (plain, etched, and glass fabric backed lining sheets, pipe liners, welding rods and cap strips) to worldwide mainly in semiconductor and petrochemical industries. We are also able to offer a series of total solution products include PFA/PTFE lined C.S./SUS304/SUS316/SUS316L pipe, fittings, tubes, valves, filters, vessels, heat exchangers, towers, tanks, ISO tanks ... etc. Address: Taipei, Taiwan. Web site: www.alliedsupreme.com.

N **Allstream Services & Rental**

Booth 1000

For years, the oil and chemical industries have relied on outdated conventional surface preparation and coating methods that stalls assets and produces burdensome waste product. We knew we could do better, so we founded Allstream Services & Rental. We swapped grit for water, to deliver a more cost effective, efficient and environmentally friendly solution. Our UHP pumps and Robotic Surface prep systems cut the time and cost required by traditional methods getting assets back online faster without the excessive cleanup. Allstream Services and Rental... Discover the Power of Water. Address: Houma, LA. Web site: www.goallstream.com.

N **Altair**

Booth 2516

Altair is a global technology company that provides software and cloud solutions in the areas of product development, high-performance computing (HPC) and data analytics. With more than 2,000 scientists, engineers and creative thinkers in 25 countries, Altair is headquartered in Troy, Michigan, USA. Altair's mission is to explore and unleash the limitless potential of the curious and creative mind by transforming product and business decision-making through simulation, data analytics and optimization solutions. Address: Houston, TX. Web site: www.altair.com

#CORROSION2020

Amcorr Products & Services/VISCOTAQ

Booth 2042

VISCOTAQ products are viscous-elastic coatings and sealants for corrosion protection & waterproofing. VISCOTAQ is applied without primer or mess, requires minimal surface preparation and forms a homologue, continuous protective coating. VISCOTAQ'S molecular chemistry is unique and designed in such a way that the viscosity gives it permanent wetting characteristics, forcing the material to penetrate into the pores and anomalies of the substrate while the elasticity of the product gives it the strength and feeling of a solid. VISCOTAQ always remains in a semi solid state. VISCOTAQ excels on areas such as soil- to-air and coating transitions, girth welds, flanges, tank chimneys & waterproofing for casing and vaults in addition to other applications. We Moved- 5108 Rittiman Rd. #100, San Antonio, TX 78218. Address: San Antonio, TX. Web site: www.amcorrusa.com.

● S **American Innovations**

Booth 1341

American Innovations protects people and the environment by helping customers safely and efficiently manage the world's energy infrastructure. Our leading hardware, software and services transform the way companies collect, analyze and report compliance information. Used by virtually every oil and gas transmission pipeline company in North America, AI's innovative, reliable products include: Bullhorn® Remote Monitors, MicroMax® Instruments, Allegro™ Field Data Collection PC, Concentric™ Data Analysis Platform, PCS™ Compliance software, RIPL risk modeling software and survey accessories. Professional services include risk and HCA analysis, data conversion and migration, training, hardware installation and calibration, midstream and gas distribution GIS and regulatory compliance consulting. Address: Austin, TX. Web site: www.aiworldwide.com.

Andronaco Industries

Booth 543

Andronaco Industries, established in 1994, is a collection of companies focused on innovation and pioneered solutions designed for the safe and reliable transfer of corrosive fluids in the chemical, petrochemical, pharmaceutical, steel, power, and industrial wastewater markets throughout the world. Andronaco Industries' heritage product lines, some dating back to the 1930's, represent the most recognized names in fluoropolymer and composite fluid processing technologies. Our Michigan and Texas based production facilities operate the largest population and the most diverse fluoropolymer and composite manufacturing processes producing the strongest, lightest, and most chemically resistant tanks and piping systems in the world. Address: Kentwood, MI. Web site: www.andronaco.com.

● **Anode Systems**

Booth 129

Anode Systems Company and Anode Sales Company specialize in providing galvanic magnesium, aluminum and zinc anodes for pipelines and tanks. Anode Sales Company sells bagged and bare anodes for the oil and gas industry's pipelines and tanks from its headquarters in Grand Junction, Colorado. A full catalogue of its anodes and accessories can be found at www.anodesalesco.com. Anode Systems Company provides services. The services include engineering design by a NACE Cathodic Protection Specialist with over 40 years of experience, installations, surveys and repairs by construction crews. Address: Grand Junction, CO. Web site: www.anodesystems.com.

Anotec Industries

Booth 1835

Anotec Industries is recognized internationally as the leading manufacturer of high silicon cast iron anodes for impressed current systems. Anotec manufactures tubular, solid stick, and small (specialty) anode products using our perfected chill cast technology. All Anotec anodes are NSF-61 certified (safe for use in contact with potable water). Anotec also manufactures an anode sled for marine applications and a UL-listed grounding rod. All anodes are manufactured in North America under an ISO 9001 quality system and shipped throughout the world. Anotec prides itself on providing exceptional customer support and immediate shipping. Visit the friendly professionals at Anotec and find out why customers have made us "number one" for 32 years. Address: Langley, BC, Canada. Web site: www.anotec.com.

AOC Aliancys

Booth 519

AOC is the leading global supplier of polyester and vinyl ester resins used for the composites industry. With unparalleled strength and durability, AOC resins combat corrosion in the harshest conditions. Fabricators trust the complete line of resins for their consistency, durability, strength, and resistance to corrosion. With strong capabilities around the world in manufacturing and science, the company is committed to working with customers to deliver unrivaled quality, service and reliability for today, and create innovative solutions for tomorrow. Partner with AOC and we will work together to find the right solutions for your business. Address: Collierville, TN. Web site: www.aoc-resins.com.

Apache Industrial Services

Booth 1561

The foundation of Apache's culture is built around men and women of character who have an interest in making a positive impact—being different (not an also-ran)—and doing the right thing. For over thirty years, Apache Industrial Services has met the needs of the petrochemical, industrial and energy sectors by providing superior quality, service and long-term value to our customers. Through our commitment to excellence in our work, a purposeful culture of safety, and the dedication and leadership of our expert craftsmen, Apache is a company that is doing it right. Apache's consistent safety track record while experiencing meaningful growth is the indicator we are most proud of—simply put, the result of the hard work of thousands of committed craftsmen and women. Apache is a diversified industrial services soft crafts business currently employing close to 8,500 craftsmen throughout the United States and Canada doing business with the likes of ExxonMobil, P66, Valero, Shell and many others. Address: Houston, TX. Web site: www.apacheip.com.

Applied Graphene Materials UK Ltd.

Booth 1254

Applied Graphene Materials (AGM) has developed a high-volume synthesis production technology for graphene nanoplatelets (A-GNPs). A-GNPs possess unique characteristics that are then tailored into a range of production ready dispersions (Genable® range), delivering multi-functional benefits including excellent barrier, anti-corrosion and mechanical performance gains. Address: Redcar, UK. Web site: www.appliedgraphenematerials.com.

N Applied Thin Films, Inc.

Booth 1859

Applied Thin Films, Inc. develops high-temperature ceramic coatings (Cerablak®) to address extreme corrosion needs. These coatings provide sustained protection of metallic and refractory materials in harsh corrosive environments. Cerablak® coatings also provide high emissivity (energy savings) and exhibit excellent thermal shock and thermal cycling resistance. The coatings are made of refractory ceramic additives embedded in a thermally-stable aluminum phosphate matrix. Cerablak® coatings can be applied directly to metallic and refractory materials without the need for a primer with excellent adhesion due to a unique phosphate-bonding mechanism. Cerablak® coatings can be applied by spray or brush-on followed by a brief thermal cure. Address: Skokie, IL. Web site: www.atfinet.com.

Aptus

Booth 1650

Aptus has provided natural gas service providers with exceptional bridge pipeline services for more than 20 years. Our experienced team utilizes the industry's most unique access equipment to inspect and maintain natural gas crossings nationwide. Our corrosion professionals perform highly specialized work in the most difficult and unique environments for many of North America's leading energy companies. Aptus Turnkey Solutions: Site Inspections, GPS Locating, Before and After Pictorial Index w/ Assessment, Wax Tape Wrapping, Painting and Epoxy Coatings, Rock Shields, Hanger and Support Replacement, Pipe Roller and Shield Replacement, Pipeline Decommissioning and Disposal, Leak Survey and Regulator Station Assessment and Remediation. Address: Charlotte, NC. Web site: www.goaptus.com.

Aquatec Group Limited

Booth 542

Provide turnkey design and manufacture of cathodic protection and monitoring systems for offshore structures, pipelines, FPSOs, etc. Impressed current and galvanic anode CP solutions for new build and retrofit life extension projects. CP monitoring of potentials and currents, including wireless data telemetry. Providers of the unique CPGuardian retrofit ICCP system with closed loop control and through-water communications. Full lifecycle consultancy from initial concept to post-installation reporting. Address: Basingstoke, Hampshire, UK. Web site: www.aquatecgroup.com.

N Arista Materials & Consulting

Booth 316

Arista Corrosion Laboratory (ISO 17025) is an independent company located in the Houston area and specialized in the simulation of sour environments for Oil & Gas applications. Arista experts recreate an extensive range of environmental testing, giving you assurances on asset performance and safety. Through expert analysis of simulation and exposure data, we can help you to reduce the future risk of damage to pipelines and other key assets. Our services cover a full spectrum of environmental testing simulations, including pipeline corrosion testing for sour and non-sour applications; hydrogen testing; pitting; full ring tests; and a full range of SSC and SCC tests. Address: Houston, TX. Web site: www.aristaus.com.

ARK Engineering

Booth 2241

ARK Engineering and ARK Field Services provide the following services to its worldwide clients: AC and DC interference analysis, AC & DC mitigation system installation, commissioning, and maintenance, corrosion control, cathodic protection design, installation, testing and maintenance, grounding design, and construction inspection services. We guarantee our work. Address: Braintree, MA. Web site: www.arkengineering.com.

Arkema, Inc.

Booth 1754

Arkema offers high performance solutions for corrosion problems with Kynar® PVDF resin and Rilsan® fine powder coatings. Kynar® PVDF has high temperature resistance, low permeability, and high mechanical strength. It is used as a contact surface for the production, storage, and transfer of corrosive fluids including chlorine, bromine, strong acids and hydrocarbons. Rilsan® fine powders are a bio-sourced coating used for corrosion protection, impact & abrasion resistance, and flexibility, and also have potable water and food contact approvals. Providing both aesthetic and good mechanical properties, the Rilsan® PA 11 coating offers a solution for the most demanding applications. Address: King of Prussia, PA. Web site: www.arkema.com.

Armacell Energy

Booth 2520

As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. Armacell focuses on insulation materials for technical equipment, high-performance foams for hightech and lightweight applications and next generation aerogel blanket technology. Address: Oldham, UK. Web site: www.armacell.com/energy.

● Asbury Carbons

Booth 1911

Asbury Carbons is the world's largest independent processor of synthetic and natural graphite, coke, anthracite coal, carbon black, activated carbon, and a variety of other raw materials. We have plants in USA, Canada, Mexico, and Europe. Our backfill products are designed for conventional beds, top loading, deep wells and pumping slurry. We are proud to introduce our new low metals product EcoGreen CP. This material has less than 5ppm of Vanadium and Nickel while having less than 1% sulfur compared to the industry standard product which has over 1400 ppm and 500 ppm respectively while having over 4% of sulfur. Asbury Carbons has opened its newest coatings and lubricant plant in Port Huron, MI. Address: Asbury, NJ. Web site: www.asbury.com.

ASM International

Booth 120

ASM International is the preeminent association for engaging and connecting material-centric scientists and engineers and their organizations to the resources necessary to solve problems, improve outcomes, and advance society. As the world's largest and most established materials information society, ASM engages and connects you to a global network of peers and provides access to trusted materials information through reference content and data, education courses, international events, and research. Address: Materials Park, Ohio. Website: www.asminternational.org.

Aspen Aerogels

Booth 541

Keep it dry – Protect against CUI! Pyrogel® has transformed how facilities protect their assets against corrosion, proven to maintain performance in the harshest of environments, its unique chemistry and composition keeps assets drier for longer, protecting better, preserving process conditions, and saving energy. Pyrogel's versatile format supports faster installation, especially on large bore pipes, vessels, and towers. When it comes to maintenance events, Pyrogel® can be removed and reinstalled, reducing expenses and time spent managing the insulation phase. The world's leading refining, petrochemical, and industrial facilities turn to Pyrogel® for project, turnaround, API 521 upgrade and PMI programs. Stop by booth #541 to learn more. Address: Northborough, MA. Web site: www.aerogel.com.

● **Atmospheric Corrosion Specialists**

Booth 805

Atmospheric Corrosion Specialists Inc. has experience with all aspects of above ground pipelines including inspections, remediation, installation & removals. ACS offers inspection & remediation services on M&R stations, commercial and residential meters. Our vast knowledge and expertise with pipeline hardware, repairs and coating systems enable us to assist you with your above ground pipeline maintenance needs. Our crews are staffed with NACE certified, Operator Qualified and experienced technicians with specialized equipment that allows them to access inaccessible pipelines located over water, railroads or highways ensuring accurate, complete inspections and repairs. Our customers include most of the largest utilities on the East coast. Address: Richmond, VA. Web site: www.acspecialists.us.

Australasian Corrosion Association/The

Booth 127

The Australasian Corrosion Association Incorporated (ACA) is a not-for-profit, membership association that disseminates information on corrosion and its prevention through the provision of training courses, seminars, conferences, publications and other activities. The vision of the ACA is that corrosion is managed sustainably and cost effectively to ensure the health and safety of the community and protection of the environment. For further information, please visit the web site at www.corrosion.com.au / www.membership.corrosion.com.au. Address: Melbourne, Victoria, Australia. Web site: www.corrosion.com.au.

AUT Solutions

Booth 1056

Our mission is to provide current and future customers with the highest quality Advanced Non-Destructive Testing (NDT) equipment, services, and support. Located 30 minutes west of Houston Texas, AUT provides Advanced Ultrasonic Scanning systems, software, and training to an ever-growing global customer base ranging from aerospace, petrochemical, and power generation industries. We take pride in short lead times, rapid delivery, and quality products that enable our clients to meet evolving job requirements. Our team strives to provide world-class service and support after the sale to ensure the customer remains up and running without interruption. Address: Fulshear, TX. Web site: www.autsolutions.net.

Automa SRL

Booth 2303

AUTOMA was founded in 1987 as a small company involved in developing solutions for Oil, Gas and Water utilities. Since the beginning AUTOMA is engaged in the development of high performance and low power consumption devices for remote monitoring. Today AUTOMA has a complete suite of both software and hardware for application in Cathodic Protection systems and regulation/metering stations. The modular infrastructure of this line of products lends themselves to both the design of new installations and the extension of existing plants. The characterization given by AUTOMA to all its products is looking for an enhanced modularity and verticalization, allowing the solutions to adapt to the interaction preferred by users without forcing them to a complex learning curve. Address: Ancona, Italy. Web site: www.byautoma.com.

Axalta Coating Systems

Booth 327

Axalta is a leading global company focused solely on coating and providing customer with innovative and sustainable solutions. Nap-Gard® fusion bonded epoxy (FBE) powder coatings are designed to provide maximum corrosion protection of metals in demanding environments, such as wastewater, saltwater, and refining and processing of petroleum and natural gas. Nap-Gard powders are 100% solids, thermosetting coatings that can achieve a high build of 8-30 mils in just a single coat. Axalta's liquid industrial product offering includes premium quality Imron® polyurethane, Corlar® epoxy, Tufcote™ alkyd and acrylic, and Ganicin™ zinc-rich coatings formulated for tough environments and difficult surface conditions in markets that require high corrosion and chemical resistance. Address: Houston, TX. Web site: www.axalta.us/industrial.

Axess-Corrosion

Booth 1663

Axess formed with a simple vision – to provide best in class monitoring solutions for integrity management projects within the Oil & Gas sector, by combining practical experience with technical knowledge. With our domain experts based in various strategic locations including Aberdeen, Houston and Kuala Lumpur, we provide front end engineering support to CAPEX and OPEX projects through to data management and maintenance services. On time, reliable, Corrosion & Erosion Monitoring and Chemical Injection & Sampling Solutions designed for effective monitoring and chemical optimization. Axess provide our clients with the highest quality products and sensors which have been manufactured to meet industry standards such as NACE MR0175, ASME B31.3, EN10204-3.1 as standard, and ISO:9001:2015. The Woodlands, TX. Web site: www.axess-corrosion.com.

Axxiom Manufacturing

Booth 1662

When Schmidt® Manufacturing began operations more than 40 years ago; the founders shared a vision to introduce more productive equipment to the abrasive blasting industry that would also contribute to a smarter, safer workplace environment. With a team of dedicated, knowledgeable welders, engineers and staff, they produced a quality product that has come to be trusted worldwide. Axxiom® Manufacturing, Inc. is proud to be carrying on that vision and tradition. With hundreds of years of combined experience and resources, the people of Axxiom are able to design and manufacture vessels that continue to be unsurpassed in our industry. Address: Fresno, TX. Web site: www.schmidlabrativeblasting.com.

AZZ Specialty Welding

Booth 2305

AZZ Specialty Welding, a global company with 40+ years solving the energy industry's critical challenges including repair, replacement and overhaul solutions and services. AZZ leverages the industry's largest fleet of field equipment for 24 hour readiness in a wide range of vessel repair and upgrade, first time quality and schedule critical engineered repair solutions. Technology is a key performance driver for AZZ, providing options and distinctive value during solution definition and implementation with enhanced safety, improved delivery to schedule and reduced risk with higher quality. AZZ's engineering team provides the intellectual horsepower to adapt technology to the analysis of problems, and development of repair design solutions. Address: Suwanee, GA. Web site: www.azz.com/wsi.

● BAC Corrosion Control Ltd.

Booth 423

With over 60 years in the industry BAC Corrosion Control, Ltd. (BAC) offer clients a comprehensive and bespoke corrosion control service from corrosion monitoring, CP system design, product supply, site services to consultancy and training. At our facility in Telford UK, we manufacture our signature Easybond Pin Brazing equipment consumables and spares, Infinity Transformer Rectifiers and power supply units, CP equipment and thru our RCSL division we also manufacture and a full range of internal monitoring equipment and provide full technical support. Our vision is to protect the safety, long life, and environmental integrity of our clients' assets by providing the highest quality, affordable corrosion control solutions, products and services. Address: Telford, Shropshire, UK. Web site: www.bacgroup.com.

● **S** Baker Hughes (NYSE: BKR)

Booth 1335

Baker Hughes (NYSE: BKR) is an energy technology company that provides solutions for energy and industrial customers worldwide. Built on a century of experience and with operations in over 120 countries, our innovative technologies and services are taking energy forward – making it safer, cleaner and more efficient for people and the planet. Visit us at bakerhughes.com. Address: Houston, TX. Web site: www.bakerhughes.com.

BASi

Booth 949

Founded in 1974, BASi provides state-of-the-art electrochemical instrumentation, high quality electrodes, complete electrochemical cell packages, and cell stands for electroanalytical measurements of your samples. BASi offers single and multi-channel potentiostats and galvanostats for electrochemistry techniques including voltammetry, amperometry, potentiometry, electrochemical impedance spectroscopy, and more. Rely on our excellent tools and support to perform corrosion-, materials- and sensing-related measurements. Providing electroanalytical instrumentation and tools with meticulous design and manufacturing has been BASi's forte for over four decades. Reach Your Potential™ with our consistent, compatible and flexible potentiostats and our knowledgeable and helpful staff. Address: West Lafayette, IN. Web site: www.basinc.com.

● Bass Engineering Company

Booth 1340

Bass Engineering Co. brings more than 50 years of experience to the engineered design, field testing/troubleshooting, installation and commissioning of CP and AC mitigation systems. We use company-owned equipment and a dedicated team to install both galvanic and impressed current CP systems, AC mitigation systems and remote monitoring equipment. We provide corrosion control training and consulting, including integrity management, procedure development, audit preparation and support. Our materials include the patented TRITON Triple-Coupon Test Station, and other accessories critical to CP and AC mitigation system support and maintenance. Address: Longview, TX. Web site: www.bass-eng.com.

Bayou Companies/The

Booth 534

The Bayou Companies has been providing leading pipe coating products and services to the Oil & Gas industry for over 75 years. Bayou offers a complete line of coating and insulation products, including anti-corrosion, negative buoyancy, and deepwater flow assurance coating. We also offer in-house and third-party support services such as multi-joint welding, field-joint coating, end boring & beveling, pipe bends, anode and buckle arrestor installation, plus other services such as transportation and inspection. Bayou's campus sits in the Port of Iberia with 300 acres of pipe storage, as well as 6000 ft of quayside that can accommodate multiple barge loading/unloading sites. The facility has direct access to the Intracoastal waterway and Gulf of Mexico, also has onsite truck and rail access. Address: New Iberia, LA. Web site: www.bayoucompanies.com.

BEASY

Booth 823

BEASY provides galvanic corrosion and CP consultancy modelling services and software, assisting engineers to predict and interpret behaviour by providing information of the protection potentials and current densities achieved, & interference/shadowing/attenuation/stray current effects. Models can be used to assist optimization of CP design solutions (initial or life extension) and to provide input to asset/risk management planning (eg by incorporating survey & monitoring data). Applications include offshore & onshore: FPSOs, jackets & subsea equipment; wind turbines; storage tanks; well casings; pumps & caissons; pipelines and as part of the design process for structures & equipment (in the marine, aerospace, and automotive industries). Address: Billerica, MA. Web site: www.beasy.com.

Bedford Reinforced Plastics

Booth 2620

With an unlimited range of sizes and shapes, Bedford FRP solves problems. You can choose from our standard inventory of FRP profiles or our full-service design and engineering team can produce custom fiberglass pultrusions and structures to your specs. Whether you need grating, handrails, platforms, stairs, ladders or just about any construction need, Bedford has you covered. Plus, our distribution locations across the U.S. can expedite delivery and stagger shipments to fit your project schedule. Address: Bedford, PA. Web site: www.bedfordreinforced.com.

Berkeley Springs Instruments, LLC (BSI)

Booth 1953

Berkeley Springs Instruments, LLC, (BSI) has specialized in the design and manufacturing of innovative software, industrial sensors, remote monitoring and robotics for over 35 years. BSI serves a broad range of industries including energy, petrochemical, utilities, pharmaceuticals and municipalities. BSI technologies include multi-parameter sensors for inspecting and monitoring the mechanical integrity of storage tanks, pressure vessels, pipelines and piping components. BSI is also the pioneer and leader of remotely controlled robotic machines for the inspection of above ground storage tanks and confined spaces worldwide with imbedded machine learning engines for the management and interpretation of large corrosion/erosion data sets. BSI patented technologies include: THE OWL ULTRASOUND TEST STATION™, THE EAGLE ARRAY™, FALCON™ UT PROBES, and IS IN-SERVICE TANK INSPECTION ROBOTICS. Address: Cumberland, MD. Web site: www.bsientry.com.

● BGH Edelstahlwerke GmbH

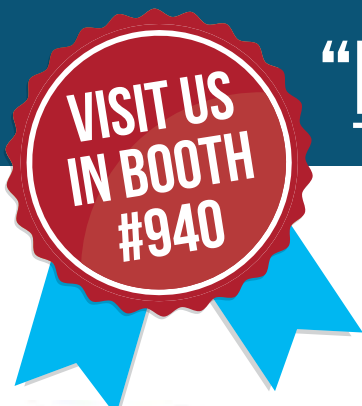
Booth 1106

BGH Edelstahl is a family owned, specialty steel mill with a strong focus on corrosion resistant alloys. We supply the oil and gas industry with bars and open die forgings in stainless steels and nickel-base alloys worldwide. To guarantee highest quality the entire steel production process, from melting/remelting to testing and finishing, is in house. Based on our long-time experience and our state-of-the-art production facilities, BGH Edelstahl is the premier steel mill for the oil and gas industry. Address: Siegen, Germany. Web site: www.bgh.de.

Bio-Logic USA, LLC

Booth 2815

Bio-Logic is a global supplier of high-performance electrochemical measurement instruments for use in corrosion testing and impedance/coatings applications. For corrosion measurement/testing we feature our: SP-200/300 system, reference grade and high-performance modular potentiostats with true floating capability, and the multi-channel VSP 300. A full range of corrosion testing cells and accessories are available. Over 15 corrosion software techniques include: Tafel, LPR, CASP, VASP, corrosion simulation, and fitting. Address: Knoxville, TN. Web site: www.bio-logic.net.



“MIC TESTING SUPPLIES.”

FAST SHIPPING!
Don't wait 6 weeks for delivery! Most orders ship in 1-3 business days. Call us at (281)-531-5319 for your rush order: many orders are shipped on the same day they are placed!



BTS

BIOTECHNOLOGY
SOLUTIONS

**QUALITY CORROSIVE BACTERIAL GROWTH MEDIA
FOR THE OIL & GAS INDUSTRY: SHIPPED FAST!**



Biotechnology Solutions TX, LLC
10516 Kipp Way Dr. Ste B
Houston, TX 77099
Telephone: (281) 531-5319
Fax: (281) 531-5031

New! ATP and Molecular Testing.

BTS now offers 2 additional types of services for corrosive bacterial detection and enumeration: ATP testing and molecular level analysis. Both can be combined with BTS' bacterial growth media to increase test speed and yield further information.

1. ATP: 2nd gen ATP testing provides quick results and quantification of total microbiological population. ATP is best suited to applications where specific bacterial identification is unnecessary and the customer requires rapid information.
2. Molecular Analysis: Complete metagenomic analysis for MIC employs the latest technologies in quantitative polymerase chain reaction (qPCR) for total microorganism quantitation and 16s rRNA gene-based next generation sequencing (NGS) for identifying species and relative populations.

Understanding the quantity and identity of the specific microorganisms found in a water system can help mitigate the effects of MIC through proper biocide treatment program development.



New! Biocide Efficacy Tests A.K.A. Kill Tests.

BTS can provide your company with biocide testing services.



BIOTECHNOLOGYSOLUTIONS.COM | SALES@BIOSOLNS.COM

● **Biosan Laboratories, Inc.**

Booth 1018
 Since 1973, Biosan Laboratories has been the trusted leader in microbiological testing for industry. Biosan manufactures several test kits for detecting corrosion-influencing microorganisms including Sani-Check BF for bacteria and fungi, Sani-Check SRB for sulfate-reducing bacteria, and Sani-Check APB for acid-producing bacteria. By detecting these microorganisms, users will be able to minimize microbiologically influenced corrosion (MIC) by optimizing the levels of additives and biocides as needed. In addition to our test kits, we also maintain a laboratory with a team of experienced microbiologists specializing in ASTM and ISO methodologies. Address: Warren, MI. Web site: www.biosan.com.

Biotechnology Solutions

Booth 940
 Got MIC? BTS manufactures quality SRB/APB bacterial growth media ("bug bottles") and biological testing materials for MIC testing in the oil & gas industry. We offer complimentary tech support and rapid delivery: most orders ship in 1-3 business days. All of our media for the detection of corrosion causing bacteria are produced in accordance with N.A.C.E. (National Association of Corrosion Engineers) standard TM0194-2014 for oil and gas system bacterial monitoring. Our anaerobic media, such as our media for the detection of sulfate reducing bacteria (SRB), are made under strict anaerobic conditions utilizing anaerobic chambers which mean fewer false positives. Address: Houston, TX. Web site: www.biotechnologiesolutions.com.

● **BK Corrosion LLC**

Booth 1642
 BK Corrosion is your trusted industry leader of cathodic protection material supplies and manufacturing. The BK corrosion motto is "Doing What's Right". We strive to be the #1 materials supplier in the U.S. Please come stop by our booth 1642 to see some familiar faces and meet the BK team. Address: Houston, TX. Web site: www.bkcorrosion.com.

Blair Rubber/MRC

Booth 2427
 Blair Rubber Co. is the worldwide leader in rubber tank linings. Since 1981, our linings have protected vessels and equipment from corrosion and abrasion in the harshest environments. Customers around the globe rely on our extensive knowledge of chemicals, applications, and the successful installation of rubber linings. Our in-depth training provides the support applicators need. And, our vertically integrated manufacturing process and complete traceability ensure consistent product quality. With the shortest lead times in the industry, we deliver superior corrosion protection and experience faster. ISO 9001:2008 with design. Address: Seville, OH. Web site: www.blairrubber.com.

Borchers CHLOR*RID

Booth 1005
 CHLOR*RID International, Inc. manufactures surface decontamination and passivation products, as well as a full line of salt testing kits. CHLOR*RID products include Chlor*Test for accurate measurements of surface adsorbed soluble salts, Chlor*Rid liquid salt remover to eliminate salt from surfaces, Hold*Blast surface passivator for the prevention of flash rust on surfaces, and Hold*Blast VAPOR to prevent flash rust specifically designed for vapor blasting. These technologies ensure proper surface preparation for high performance coatings applications where consistent performance is critical. CHLOR*RID also provides quality technical support in order to maximize product effectiveness. Address: Westlake, OH. Website: www.chlor-rid.com.

S Borin Manufacturing, Inc.

Booth 2215
 BORIN® is the most innovative manufacturer of reference electrodes in the world with the STELTHER® standard, IR-free coupon and AC-mitigation monitoring electrodes. The STELTHER® Hydrocarbon Proof™ (HCP™) electrode revolutionized the market, it can be used in all environments, even with hydrocarbons or high-chloride levels. In 40 years BORIN® Manufacturing has sold thousands of monitoring units worldwide. The state-of-the-art DART® for Rectifiers, DART® for Test Station and the New Street® DART® for below ground test stations, incorporate the most advanced technologies available in the market. The BORIN Data Center allows DART® and COMANCHE® users to access data from Rectifiers and Test Stations through any computer or smart phone worldwide. Address: Culver City, CA. Web site: www.borin.com.

Brown Corrosion Services, Inc.

Booth 1921
 Brown Corrosion Services, Inc. is concerned with metal loss—corrosion and erosion. Our company was founded to specialize in material degradation and corrosion/erosion control. We offer complete consulting, QA/QC, inspection, testing, expert witness, feasibility and design engineering, procurement, sales, installation, startup, testing, training, and operation services for corrosion/erosion studies, corrosion/erosion control, monitoring systems, failures, cathodic protection (CP), coatings, inhibition, material selection, and all other methods of corrosion/erosion control. Products include probes, coupons, acoustic sand monitoring, anti-fouling equipment, hydrogen monitoring, and CP equipment including anodes, instruments, etc. Address: Houston, TX. Web site: www.browncorrosion.com.

● **BSS Technologies - Bin Sari Specialized Technologies**

Booth 335
 BSS Technologies (BSS Tech) a specialized Corrosion Control, Cathodic protection (CP) & Antifouling services and manufacturing company from Abu Dhabi, UAE serving all continents with no Geographical barriers. Company has diversified its activities into Integrity & related industries with the core strength and focus on C P & Antifouling. Manufacturing facilities strategically placed in UAE, Saudi Arabia, India & Malaysia, serving mainly Oil & Gas, Water & Electricity, Ports, Transport, Petrochemical Industries & Infrastructure. We manufacture Transformer Rectifiers & RMCS, all types of Anodes and CP materials. We also offer all specialized CP Surveys, AC mitigation, coatings, IJs, Wireless Remote Monitoring Systems, Pin Brazing, Marine CP etc. Address: Dubai, UAE. Web site: www.bsstechnologies.com.

BTG Products

Booth 839
 Buffalo Technology Group. Ltd. (BTG Products) produces additives that can be incorporated into coatings in two primary markets: 1) commercial corrosion and bio-fouling prevention, and 2) retail mold and mildew protection. Our additives and mixed into coatings, linings, and molded products to act as a shield that prevents microbiological growth on the treated surfaces. We serve customers in a variety of industries including oil and gas, aerospace, and construction materials. Our antimicrobial technologies have been evaluated against a wide range of microorganisms and have been certified using standardized tests. Our products protect people and tangible assets from the damaging effects of microbial growth, contamination and corrosion. Address: Canyon, TX. Web site: www.btgproducts.com.

N Capital Inspectors, LLC

Booth 2551
 Capital Inspectors is a leader in the field of third-party inspection, specializing in NACE, API, and CWI/CPWI Inspection, Failure Analysis, and Coating Assessments. We operate across the US and internationally – from tank terminals to civil projects and everything in between. Our goal is to provide our clients with the best inspectors, backed up by the best reporting. We would love to work with you to meet your inspection needs. Address: Conroe, TX. Web site: www.capitalinspectors.com.

CAPROCO

Booth 1127

Caproco is an OEM of a complete range of Corrosion Monitoring Equipment which includes Access Fittings, Coupon Holders, Corrosion Probes, and Instrumentation. Caproco specializes in the custom design, fabrication and servicing of Internal Corrosion Monitoring and Control Systems. Caproco has been a world leader in Internal Corrosion Monitoring and Prevention for over 60 years. We provide the following services related to Internal Corrosion Monitoring and Control: Monitoring Program Design, Technical System Specifications, Equipment Recommendations and Design, Manufacturing and/or Procurement of Equipment, Installation/Technical Supervision of Installation, Commissioning and Operator Training, Follow-up Application and Interpretation, Lab Analysis and Field Service Support. Address: Edmonton, Alberta, Canada. Web site: www.caproco.com.

● **S Carboline Co.**

Booth 1513

Carboline Company is a St. Louis-based coatings manufacturer with global reach. The company, founded in 1947, produces high quality performance coatings, linings and fireproofing products in more than 20 manufacturing facilities around the world. Carboline's cutting-edge Research, Development & Innovation Center is a reflection of its commitment to remaining at the forefront of the protective coatings industry. Address: St. Louis, MO. Web site: www.carboline.com.

● **Catholic Protection Co. Ltd.**

Booth 1443

Founded in 1950, this year Catholic Protection Co. Ltd (CPCL) is celebrating 70 years. CPCL was one of the first companies to provide cathodic protection equipment and engineering expertise in the oil, gas and marine construction industries. CPCL has become a world leader in the defence against corrosion and anti-fouling. Operating in 6 continents, CPCL is the preferred choice for companies requiring a complete corrosion control solution and combines consultancy, design and manufacture of bespoke materials and systems with a superb after sales service. CPCL also leads the market in the field of Marine Electrolytic Anti-Fouling systems, with the Cuprion range being used in over 30 countries worldwide. The breadth of CPCL's client base and diverse nature of both on and offshore projects have driven innovation, giving CPCL a leading edge in a competitive market. Address: Grantham, Lincolnshire, UK. Web site: www.catholic.co.uk.

Catholic Technology Ltd.

Booth 1716

With 40+ years' experience manufacturing state-of-the-art instrumentation for corrosion professionals worldwide, Cath-Tech will feature our newest touch screen current interrupters that are non-orientation/polarity sensitive! The Hexcorder Pro ECDA pipeline integrity survey system documents critical CIPS/DCVG/GPS data seamlessly without the need for specialized software. The CorrReader Pro, GPS synchronized handheld data logger captures critical CP anywhere you can connect to a structure. GPS synchronized stationary data loggers are available to monitor dynamic stray currents or telluric interference. See us for your complete pipeline integrity survey solutions! Address: Bolton, ON, Canada. Web site: www.cath-tech.com.

CCB International

Booth 2414

CCB International is the manufacturer of the CCB® Sleeve, designed to isolate the portion of an internally coated pipe destroyed by the heat from the welding process. The CCB® Sleeve is the most simplistic and efficient method to provide positive corrosion protection in a traditionally troubled spot for all internally coated pipeline systems. Address: Houston, TX. Web site: www.ccb-intl.com.

CCI Piping Systems

Booth 2728

Protecting your infrastructure since 1995, CCI Piping Systems has proven itself time and again with innovative solutions, creative ideas and a firm commitment to our customers. CCI manufactures the following quality products: ArmorCote™ Original Polyolefin Coated U-Bolts, Pipe Supports, Casing Spacers & End Seals, Wrap-It Link™ Wall Penetration Seals & Wall Sleeves with Water Stops. Address: Breaux Bridge, LA. Web site: www.ccipipe.com.

#CORROSION2020

N CDI Services

Booth 2623

CDI Safety Services is a Safety Training and compliance service available to all employers needing assistance with their Health and Safety Programs and compliance with Local, State and Federal requirements. We provide training and counseling to help you provide a safe and healthy workplace with OSHA, DOT and Industry Standard certifications. We offer Operator Qualification credentialing for corrosion protection work through NCCER, Energy WorldNet and Verforce. Our Mobile Training ability allows us to bring our services to you wherever we are needed. Address: Tomball, TX. Web site: www.cdifasetysservices.com.

● **N CEC Energy Services**

Booth 2548

CEC Energy Services provides turnkey Industrial I&E and Cathodic Protection services. Created in 1956, Coonrod Electric has since maintained a proud heritage of providing turnkey I&E construction, maintenance and turnaround services to a variety of clients in both South Texas and the Permian. Our Company's vision continues to evolve & adapt to the ever-changing Oil & Gas Industry in order to surpass our client's power & energy needs. CEC Corrosion Services has offered distinctive cathodic protection and pipeline integrity solutions to our customers in the oil and gas industry for more than 40 years. Our goal is to ensure the integrity of our customer's assets and to prove that we are "Worth Your Metal™." Address: Sinton, TX. Web site: www.cecnrg.com.

N CeRam-Kote

Booth 2648

Leaders in Ceramic Coating Technology – CeRam-Kote™ Coatings, Inc. is the manufacturer of the CeRam-Kote™ family of high performance polymer coating products. Our Corporate Center consists of 70,000 square foot under roof and 10-acres of secured concrete yard located in the Industrial Airpark of Big Spring, Texas, U.S.A. We have numerous international distributors. Our company was formed in 1985. It has long been recognized for the quality Pipe Coating Division services of Oil Country Tubular Goods and the Product Division that sells CeRam-Kote™ products in the can in all industries where critical service is essential. New to the market: Ceram-Kote MIC-Guard with patented anti-microbial corrosion additive. Address: Big Spring, TX. Web site: www.ceram-kote.com.

CerAnode Technologies-Div of APS Materials, Inc.

Booth 1027

APS Materials, Inc., a high-tech arc plasma spray coatings company, located in Dayton, Ohio, is a trusted provider of thermal spray solutions for the biomedical, aerospace, and semiconductor industries. CerAnode Technologies Intl. Div. manufactures a full line of mixed metal oxide (MMO) impressed current anodes for most every application within the cathodic protection industry, offering their unique EMMO arc-plasma sprayed surface architecture enhancement, making them the most abrasion-resistant MMO anode available. Global Cathodic Protection, Inc. is a full-service corrosion mitigation company located in Houston, Texas, and offers engineering, construction, materials supply, and consultation. Address: Dayton, OH. Web site: www.ceranode.com.

C-FER Technologies (1999), Inc.

Booth 538

C-FER works with operating companies to push the limits of engineering constraints to improve performance in existing assets, and to develop new resources. We provide full-scale equipment testing and qualification, risk management and engineering consulting services. Our facilities can accommodate a wide range of specimen sizes and testing scenarios, including testing at high pressure and high temperature, and in explosive and toxic environments. Our capabilities include: sour burst testing of pressure vessels, full size tubular evaluations in critical environments, sour service OCTG connection qualifications, and fatigue assessments of tubulars in sour environments. For more information, visit our website at www.cfertech.com. Address: Edmonton, AB, Canada. Web site: www.cfertech.com.



BEAT CORROSION

PROTECT AGAINST DISASTER. SAVE TIME AND MONEY.

CleanWix 207 is the only product that eliminates **everything** that promotes rust back and under film corrosion, while significantly improving coating adhesion. What makes CleanWix 207 so different is the way it removes all contaminants on the surface of the metal, down to the microscopic level, while preventing rust-back in a 1-step process. No other process will offer you these results or savings!



Reduce downtime and maintenance by eliminating the need to repeatedly prep and recoat metal.



Can reduce project costs by up to 50% by eliminating the need to repeat metal prepping steps.



Extend coating service life exponentially by removing the unseen cause of under-film corrosion.

- Not an inhibitor or a film former
- Improves adhesion
- Significantly prevents rust-back
- Non-flammable
- Water-based
- Fast-drying
- Non-toxic
- No need to coat same day



Robert Richter Managing Partner **404.895.4728**
Trey Chandler Managing Partner **713.962.5823**

713.623.1894

info@buycleanwix.com

buycleanwix.com

S **Champion Corrosion Products, Inc.**

Booth 2340

Champion Corrosion Products, Inc. providing quality service and Cathodic Protection materials and supplies for 20 years! Now with 2 locations to better serve your C.P. needs. Address: Seguin, TX. Web site: www.championcorrosion.com.

Chapman Engineering

Booth 523

Internal/External corrosion control, engineering, cathodic protection design, installation, testing, high-voltage AC modeling of pipeline interactions, design and build AC mitigation, pipeline integrity and surveys. Owner/operator of drill rig and water truck for anode bed installations. Also performs environmental assessment and cleanup, compliance with both pipeline safety and environmental regulation requirements for its customers. Address: Boerne, TX. Web site: www.chapman.engineering and www.chapmandrilling.com.

Chase Corp-Tapecoat/Royston

Booth 1613

Since 1941, Tapecoat/Royston has offered a complete line of coating solutions for oil and gas pipelines, compressor and pumping stations, industrial needs, and the marine industry, including offshore. ISO 9001:2000-approved, Tapecoat/Royston manufactures and sells premium quality anticorrosion products: two-part epoxies, mastics, tape systems with integrated primer adhesive, high-temperature coating solutions, rockshield, wax and petrolatum tapes, including modular systems for marine applications. Address: Westwood, MA. Web site: www.chasecorp.com.

N **CHEMetrics, Inc.**

Booth 2618

At CHEMetrics, we're proud of our 50-year track record of providing safe, simple, accurate water analysis test kits for the petroleum industry. Our kits and instruments allow analysts to test for more than 40 water quality analysis parameters. Need to ensure that contaminants are removed or at permissible levels? All our kits feature self-filling CHEMets® reagent ampoules and are widely used for influent, process and wastewater/effluent analysis in refineries and chemical plants. Count on us for rapid results, superior quality, world-class technical support, speedy order processing, low cost per test, and our second-to-none customer service. For more information, visit www.chemetrics.com or call 800.356.3072. Address: Midland, VA. Web site: www.chemetrics.com.

N **ChemQuest Chemicals, LLC**

Booth 439

Our Only Business is Contract Manufacturing. ChemQuest is a full-service toll processing, blending, and repackaging facility located just miles from Houston's Port. Capable of supporting small to large scale projects, we offer scale up to full production and various value-added services to support your company's growth. Address: Pasadena, TX. Web site: www.chemquestchemicals.com.

ClampOn

Booth 936

ClampOn offers topside and subsea nonintrusive corrosion-erosion monitoring systems that monitor and quantify changes in wall thickness over a large area of a pipeline. ClampOn is also the leading worldwide supplier of topside and subsea noninvasive ultrasonic intelligent sensors for particle/sand, pig, leak, vibration, and corrosion-erosion monitoring. We continue to work with our customers in the oil and gas industry to optimize their well productivity and to safeguard their investments. Our newest product, the ClampOn CUI corrosion under insulation monitoring solution, allows operators to measure water ingress in the insulation and corrosion along the pipe using permanent microwave antenna arrays, installed strategically along the pipe. Address: Houston, TX. Web site: www.clampon.com.

S **Clariant Oil Services**

Booth 1259

Clariant Oil Services is a leading provider of production chemical technologies and services to the global O&G industry. Our corrosion management services provide the support and innovative solutions you need to protect the integrity and extend the life of your process systems. Our corrosion experts offer process system reviews to identify the corrosion risks and develop a strategy to identify the most cost-effective risk reduction activities. Our customized service includes the support to implement and manage the corrosion control activities, extensive in-house test capability, high-performance chemical solutions, and routine monitoring. Through a program of innovation excellence, we strive to deliver best-in-class products and services. Address: The Woodlands, TX. Web site: www.clariant.com/oil.

S **CleanWirx 207**

Booth 708

CleanWirx 207 is the only product that eliminates everything that promotes rust back and under film corrosion, while significantly improving coating adhesion. What makes CleanWirx 207 so different is the way it removes all contaminants on the surface of the metal, down to the microscopic level, while preventing rust-back in a 1-step process. No other process will offer you these results or savings! Distributed by: CRW Consulting & Distribution. Address: Katy, TX. Web site: www.buycleanwirx.com.

● **Clemco Industries Corp.**

Booth 1250

Clemco Industries is the world's largest manufacturer of air-powered abrasive blast equipment used to clean, deburr, shot peen, remove coatings from, finish, or otherwise improve surfaces being blasted. Since the mid-1940s, Clemco Industries has built industrial-grade blast equipment for contractors, facility owners, metal fabricators, and manufacturers around the globe, and also offered safety and protection accessories. Clemco blast machines range in size from 0.5 to 160 cuft, and it also manufactures wetblast systems; manual, automated, and custom-engineered blast cabinets; blast rooms—predesigned, preassembled, and custom-engineered; as well as reclaim and dust-collection systems. For more than 75 years, Clemco has listened to what its customers want—and delivered it. Address: Washington, MO. Web site: www.clemcoindustries.com.

S **Clock Spring /NRI**

Booth 625

ClockSpring/NRI is the high-performance critical infrastructure company providing innovative, award-winning asset integrity solutions for the safe and sustainable construction, repair, maintenance and structural strengthening of oil, gas, and water pipelines; industrial pipeworks; wastewater and stormwater infrastructure; and bridges and other industrial structures. ClockSpring/NRI's highly engineered solutions are verified safe, delivered rapidly, easy to install, cost effective to deploy, and durable for decades. We support our industry with engineering services, education programs, and high availability. Address: Houston, TX. Web site: www.clockspring.com.

Coast to Coast Inspection Services

Booth 1312

Coast to Coast is proud to offer peace of mind to pipeline owners and operators by providing a variety of pipeline integrity examinations including ECDA, ICDA, SCCDA, ILI Data Validation, and Corrosion and Cathodic Protection. At Coast to Coast, we pride ourselves in working individually as one unit and share a common goal that is driven by providing a strong work ethic, unmatched customer service, and superior inspections. Our exceptional team of skilled technicians are trained in UT, MT, Shearwave, Phased Array, Laser Scan, and many other NDE methods to provide for your every need. Address: Portland, OR. Web site: www.coastnde.com.

ABRASIVE BLASTING IS HARD WORK. CLEMCO MAKES IT EASIER.

- Industrial-quality machines
- Range in size from 0.5 cuft to 160 cuft
- Loaded with standard features
- Easy to operate and maintain
- Last for years
- Rugged, reliable, and versatile



CLEMCO

www.clemcoindustries.com

S Coastal Corrosion Control, Inc.

Booth 1014

Coastal Corrosion Control, Inc., established in 1990, offers a full range of cathodic protection services. Since the start, Coastal Corrosion Control, Inc. has grown and developed into the Gulf South's leading single source corrosion protection provider. Having both onshore and offshore capabilities, we offer foreign and domestic services to a wide range of industries, including oil and gas exploration, production, transportation, petrochemical refineries, electric generation, municipal, and governmental facilities. Address: Baton Rouge, LA. Web site: www.coastalcorrosion.com.

Coating Society of the Houston Area

Booth 122

The objective of the Coating Society is to act as a conduit for exchanging ideas, experiences, and best practices for protective coating for the purpose of corrosion mitigation. To achieve this goal the Coating Society conducts regular membership meetings throughout the year, holding fundraising and networking events, and awards academic scholarships. The Coating Society of the Houston Area was established in 1956 as a 501(c)(3) charitable organization with the purpose of promoting education and best practices in corrosion control and to expand the knowledge and proper use of protective coatings to mitigate the effects or corrosion in industry. Our membership consists of individuals and companies in Southeast Texas and neighboring areas, that are involved in all aspects of protective coatings including end users, applicators, inspectors, manufacturers and suppliers. Address: Houston, TX. Web site: www.coatingsocietyofhouston.org.

N Cogne Specialty Steel USA, Inc.

Booth 436

Cogne Acciai Speciali is a steel company based in the NW of Italy, leader in stainless steel and Nickel base long products. Cogne's main fields are: Oil & Gas, Automotive, Aerospace, Chemical, Medical, Communication and semi-conductors, Energy, Food, Architectural Building and Construction. The company offers a unique range of products, in accordance with the highest international quality standards. The organization counts production plants in Italy, Switzerland, Mexico, Brazil and China. The group has several distribution hubs in Italy, France, Germany, Switzerland, UK, Turkey, Hong Kong, South Korea, Thailand, China, Shanghai, USA, Mexico and Brazil. Cogne is accredited by the most important Quality Certifications worldwide recognized. Address: Fairfield, NJ. Web site: www.cogne.com.

Comsol, Inc.

Booth 441

COMSOL is a global provider of simulation software for product design and research to technical enterprises, research labs, and universities. Its COMSOL Multiphysics® product is an integrated software environment for creating physics-based models and simulation applications. A particular strength is its ability to account for coupled or multiphysics phenomena. Add-on products expand the simulation platform for electromagnetics, structural, acoustics, fluid flow, heat transfer, and chemical applications. Simulation experts rely on COMSOL Compiler™ and COMSOL Server™ to deploy applications to their design teams, manufacturing departments, test laboratories, and customers throughout the world. Address: Burlington, MA. Web site: www.comsol.com.

N Concrete Sealants, Inc.

Booth 518

Concrete Sealants, Inc is an industry leading manufacturer with over 50 years experience in the waterproofing and corrosion protection industries. ConSeal's innovating products include chemical admixtures, protective coatings, pipe wraps, and hybrid silicone products. Address: Tipp City, OH. Web site: www.conseal.com.

Corr Instruments, L.L.C.

Booth 628

Our nanoCorr® for coupled multielectrode array sensors (CMAS) are backed by eight patents. They measure real-time rates of general and localized corrosion from 0.0002 to 50 mm/y [0.01 to 2,000 mpy]). We offer a full range of retractable and retrievable CMAS probes for installation in high-pressure systems. Unlike the conventional ER and LPR probes, our systems can be used in H2S systems without bridging effect. Our nanoCorrs have a fast response (20s) and support wireless, RS-232, 4-20 mA, and USB memory options. Our UltraDeg® Probes for high temperature and high pressure pH, ORP, conductivity, and reference potential measurements have been used worldwide in laboratories, oil wells, geothermal plants, and nuclear power systems. Some of the models are tolerant of H2S and high-pressure gases. Address: Carson City, NV. Web site: www.corrinstruments.com.

N CorrMagnet Consulting, Inc.

Booth 901

CorrMagnet Consulting Inc. provides scientifically accurate, technologically enabled, practically feasible, and economically manageable solutions to control internal and external corrosion of oil and gas production systems, transmission pipelines, storage tanks, refinery infrastructures, and distribution systems. We develop comprehensive corrosion management program; perform direct assessments (internal, external, and stress corrosion cracking); prepare corrosion control status reports and corrosion incidence reports; develop mitigation, monitoring, and inspection strategies; and analyse data to prioritize maintenance and repair activities or to develop other suitable solutions to effectively and economically control corrosion. Address: Calgary, AB, Canada. Web site: www.corrmagnet.com.

● Corrosion Materials

Booth 2126

Corrosion Materials is a nickel alloy and titanium distributor with locations in Baker, Louisiana; Houston, Texas; Bolingbrook, Illinois; Auburn, Massachusetts and Shanghai, China. We offer a full line of product forms, in-house processing, machining, welding and metallurgical assistance. Corrosion Materials has been serving the process industries for over 50 years and is ISO 9001 certified. Address: Baker, LA. Web site: www.corrosionmaterials.com.

● Corrosion Service Company Limited

Booth 2225

Founded in 1950, our diverse and talented group of professionals specializes in corrosion control for various industries around the world. Our service offerings include Cathodic Protection, Anotecion® Anodic Protection, Potential Adjustment Protection®, Internal Corrosion Monitoring, Inhibited Corrosion Protection systems, Vapor Corrosion Inhibitor (VCI) solutions, Dynamic Stray Current testing, Expert Witness Services and mitigation for Transit, AC & DC Mitigation for pipelines installed in corridors shared with high voltage power lines. We are also proud to offer buried pipeline and station facility Integrity Assessments utilizing industry-leading survey and evaluation techniques. Address: Markham, ON, Canada. Web site: www.corrosionservice.com for services or products. corrosionservice.com for materials. Address: Markham, ON, Canada. Web site: www.corrosionservice.com.

● Corrpro Companies, Inc.

Booth 1435

Corrpro is the complete corrosion protection source for various structures worldwide. With dedicated corrosion control professionals, state-of-the-art research and testing laboratories, and production facilities, we offer innovative, cost-effective, and long-term solutions for preserving assets through corrosion control. We are committed to rigorous engineering and design procedures, advanced research, and proper application of products and services aimed at preserving piping, equipment, and infrastructure in diverse industries and environments. Our services allow institutions to stop the corrosion of metallic structures and prevent or substantially delay the vastly higher expenditures required to replace deteriorated and unsafe structures. Address: Houston, TX. Web site: corrpro.com.



SPECIALIZING IN PIPELINE INTEGRITY AND A/C MITIGATION

Corrosion prevention has been our business since we opened our doors. Coastal Corrosion Control, Inc. employs professional construction and installation personnel. We can perform cathodic protection surveys, turnkey installations, evaluate soil conditions, and develop a cathodic protection system to meet your needs. We have the right combination of personnel, equipment and materials to do your job right the first time and give you a total job guarantee.

CALL US AT 1-225-275-6131



Todd Miller: 1-225-275-6131, ext. 104

Bud Dupree: 1-225-275-6131, ext. 103

Visit us online at www.coastalcorrosion.com

● **Cortec Corporation**

Booth 1715

Cortec® Corporation is the global leader in environmentally friendly Vapor phase Corrosion Inhibitor (VpCI®) and Migrating Corrosion Inhibitor (MCI®) Technology. Cortec has been awarded more than 50 patents and continues to develop new products for a wide variety of corrosion inhibiting applications. Address: Saint Paul, MN. Web site: www.cortecvci.com.

Cortest, Inc.

Booth 1122

Cortest, Inc. (Willoughby Ohio) is the leading manufacturer of laboratory equipment for corrosion testing. Throughout its 40 year history, Cortest has produced innovative test systems which are safe, reliable, and of the highest quality. In addition to its extensive line of standard test systems, Cortest manufactures custom equipment to meet the specific requirements of the researcher. Products include: proof ring test systems, autoclaves up to 70MPa and 600°C, gas and liquid flow loops, slow strain rate systems, corrosion fatigue systems, jet impingement, rotating cylinder electrode, inhibitor evaluation, all with fully automated controls. Cortest serves many industries, including oil and gas, steel, nuclear, chemical processing, military, and education. Address: Willoughby, OH. Web site: www.cortest.com.

Cosasco (Rohrback)

Booth 1635

Cosasco is the world leader in corrosion and erosion monitoring technology. Since 1950, Cosasco has provided leading-edge corrosion monitoring and chemical injection solutions for such diverse industries as oil and gas, petrochemical, water treatment, chemical, pulp and paper, pharmaceutical, and utilities. Corrosion is an enormous cost to these industries as measured in equipment maintenance and replacement, leaks, and system failures. Cosasco helps dramatically reduce this waste by delivering corrosion monitoring equipment and services, extending equipment and asset life. Address: Santa Fe Springs, CA. Web site: www.cosasco.com.

Crane Resistoflex®

Booth 1753

RESISTOFLEX®, a business of Crane Co. (CP&E), is the largest plastic-lined piping products supplier in the world, with production and sales locations in the Americas, EU, Asia, and Australia. Resistoflex invented the PTFE lined hose in 1953 for the aerospace and chemical industries, and in 1956 introduced the world's first pipe and fittings lined with Teflon™ PTFE. We also offer a full line of pipe and fittings lined with polypropylene, ETFE, HDPE, and Kynar® PVDF. Resistoflex corrosion-resistant plastic lined pipe, fittings, and hoses lined with Teflon™ PTFE are used in corrosive fluid services as an economical alternative to expensive alloys. Crane Co. is traded on the New York Stock Exchange (NYSE:CR). Teflon™ is a trademark of The Chemours Company FC, LCC used under license by Crane CP&E. KYNAR® is a registered trademark of Arkema Inc. Address: Marion, NC. Web site: www.cranecpe.com.

CRC-Evans

Booth 1057

CRC-Evans is the world's largest provider of specialized pipeline construction, automatic welding equipment, and field joint coating services with an extensive fleet supporting our worldwide customer base. We are a market leader in each of our core businesses, and with regional capabilities around the world, we provide the most comprehensive support structure in the industry. Employing the world's most talented and experienced technicians and engineers—and the world's newest pipeline technologies—our purpose is to support every need within the onshore pipeline industries. CRC-Evans' corporate headquarters is in Houston, Texas. Company offices and facilities are also located in the United States and Canada. Address: Houston, TX. Web site: www.crc-evans.com.

Creafom

Booth 443

Creafom is a worldwide leader in portable and highly accurate 3D measurement solutions. We develop turnkey solutions designed to meet the needs of the NDT industry, including Pipecheck, a code-compliant solution specifically developed for pipeline corrosion and mechanical damage assessment, as well as SmartDENT 3D, an aircraft surface inspection software for non-destructive testing (NDT) designed especially for aerospace applications. Paired with the HandySCAN 3D scanner, both software represents a safe, cost-effective and time-saving solution for either pipe inspection or aerospace MRO services. This NDT solution makes it possible to obtain all the information necessary to maintain integrity. Address: Levis, QC, Canada. Web site: www.creaform3d.com.

CTI Industries, Inc.

Booth 1110

CTI Industries specializes in service life extension of existing damaged/leaking heat exchanger tubes, thereby eliminating the need for bundle replacement. CTI Shield/Seals and Full-Length Tube Liners are also utilized in new tubes to add reliability to critical heat exchangers. CTI's life extension systems are used in air fin coolers, waste heat boilers, steam condensers, feed water heaters, and numerous other types of heat exchangers. These repairs have been successfully applied at refineries, chemical plants, LNG Plants & tankers, electric utilities, naval and commercial vessels along with various industrial facilities. Address: Orange, CT. Web site: www.cti-ind.com.

Curran International, Inc.

Booth 611

Curran International provides innovative value added services for exchangers; applications of thin film anti-foul coatings; cooling water protective and scale release coatings; fluoropolymer and baked phenolic barrier coatings; installation of alloy tube liners and ferrules; field condenser re-tube and turnkey epoxy cladding; thermal spray internal coatings; proprietary dry grit Curran Cleaning of air coolers, reactors, reboilers, condensers for high integrity inspection and tube repair. Visit Curran to discuss your fixed equipment reliability challenges – we offer mobilize technicians and equipment to perform work globally. Address: Dickinson, TX; web site: www.curranintl.com.

Cypress Energy

Booth 2300

Cypress Energy Partners is a master limited partnership traded on the New York Stock Exchange providing essential environmental services to the energy and municipal water industries. Cypress subsidiaries include: Tulsa Inspection Resources provides independent pipeline & infrastructure inspection, integrity, non-destructive examination, mechanical integrity, and ILI support services. Cypress In-Line Inspection provides ultra-high resolution MFL systems utilizing advanced technology to deliver the best conditional assessment of your pipeline assets. Cypress Pipeline and Process Services provides fluid & water treatment, flushing, pumping, nitrogen and hydrotest services both onshore and offshore. Cypress Environmental group provides EPA Class II saltwater disposal, water treatment, hydrocarbon recovery, and water pipeline transportation and development to the upstream industry. Address: Tulsa, OK. Web site: www.cypressenergy.com.

● **D.E. Stearns Co./The**

Booth 1617

The D. E. Stearns Co., in Shreveport, Louisiana, is the original manufacturer of Holiday Detectors and has continued to manufacture the finest quality Holiday Detectors & related equipment in use throughout the world. For further details, see us at www.destearns.com or at Booth 1617 to visit with our experienced staff. Address: Shreveport, LA. Web site: www.destearns.com.

SAVE *the* DATE

The Complete Corrosion Experience

Interact and exchange knowledge
with the entire global corrosion community.

- ▲ *Learn from more than 1,000 hours of technical education from more than 15 industries*
- ▲ *Visit 400+ exhibiting companies showcasing the latest products, technologies, and services in the corrosion industry*
- ▲ *Connect with 5,000+ corrosion professionals – from engineers to coating contractors – from 65 countries*
- ▲ *Increase your knowledge and gain Professional Development Hours*

CORROSION
Conference & Expo **2021**
April 18-22 • Salt Lake City, UT

nacecorrosion.org

 **NACE**
INTERNATIONAL

S Dairyland Electrical Industries, Inc.

Booth 2135

Dairyland is the world's leading manufacturer of solid-state decoupling products used to provide safety protection for equipment and personnel while optimizing CP system performance. Our proven product designs are backed by third party certification to standards around the world ensuring we deliver products that perform. In addition to offering rugged products that have been trusted worldwide, at Dairyland we pride ourselves on being a resource for technical guidance on various applications relating to isolation, grounding, over-voltage protection and associated issues. Please feel free to contact us at anytime for assistance at marketing@dairyland.com or via our website at: www.dairyland.com. Address: Stoughton, WI. Web site: www.dairyland.com.

Dakota Ultrasonics Corp.

Booth 1217

We manufacture a complete line of portable ultrasonic thickness gauges, flaw detectors, bolt monitors, and transducers. Our thickness gauge line includes both dual and single element gauges with a variety of models and specific features, including our new coating measurement gauges. The flaw detectors are full-featured gauges designed to meet a variety of industry requirements. Our bolt monitor very accurately measures the stress, elongation, load, percent strain, and raw time in fasteners, and is currently being used and recognized by NASA. Address: Scotts Valley, CA. Web site: www.dakotaultrasonics.com.

Dale Fastener Supply

Booth 522

Dale Fastener Supply has been manufacturing and fabricating U-bolts, Coated U-bolts, Anchor bolts, J-bolts, Stud Bolts, and supplying fasteners since 1959. Our success has been possible through excellent service and a commitment to quality, unmatched in the industry. Over time the contact area between the un-coated U-bolts and pipe erodes and starts deteriorating the material in the presence of moisture. This excessive corrosion at the pipe support point is the leading cause of process pipe failure and will eventually develop into the pinhole leaks. PRO-COAT U-BOLT™ are designed to solve this problem. PRO-COAT U-BOLT™ are available and stocked in all the standard pipe sizes. Special sizes are made to order. Address: Houston, TX. Web site: www.dalecompany.com.

● **Dampney Co., Inc.**

Booth 1646

Since 1917, Dampney Co., Inc. of Everett, Massachusetts, has been a world-class manufacturer of high-performance heat resistant coating solutions. Dampney Company offers a varied and extensive product line that serves the refining, chemical processing, metal fabricating, water/wastewater, marine, pipeline, power, OEM, pulp and paper, and materials processing markets. Dampney Company offers heat-resistant, VOC-compliant, ambient and hot applied coatings available in a range of standard and custom colors. Dampney Company proudly supports the leading technical and trade associations serving the protective coating and paint industries and is a member of the American Coatings Association (ACA), NACE International, and SSPC: The Society of Protective Coatings. Address: Everett, MA. Web site: www.dampney.com.

Danatronics Corp.

Booth 1011

After 16 years in business and a combined 125 years of NDT know how, Danatronics has emerged as a leading innovator in the manufacture of NDT Equipment. Our offerings include ultrasonic inspection products, hall effect gages and video inspection equipment. Our hand-held corrosion and precision thickness gages include our popular EHC-03 and EHC-09 series of corrosion thickness gages, our UPG-07 series of precision thickness gages along with our most popular product, the ECHO series that combines corrosion, precision and flaw detection into one unit. Our newest product, the MTG-99 is a Hall Effect Thickness Gage able to measure non-ferrous materials with access to both sides. Visit us at booth #1011 to see our full product line. Address: Danvers, MA. Web site: www.danatronics.com.

DC Voltage Gradient Technology & Supply Ltd. (DCVG Ltd)

Booth 529

DCVG, Ltd. is a company dedicated to R&D of equipment for the pipeline industry including DCVG, CIS, Data Loggers, Smart Interrupters & software. DCVG Ltd has 38 years' experience in pipeline inspection technology, particularly DCVG. It is also involved in providing training for CP, DCVG, CIS, Soil Resistivity & other pipeline survey techniques in UK & Worldwide with 4 levels of training. DCVG Ltd carries out full after sales repair & maintenance of equipment including full calibration & issue of certificates and upgrades of DCVG & CIS meters and Interrupters. New products include, software, ProCoMeter, Potentiostat, DC Resistance Meter & Remote Control DCVG. Address: Swan Lane, Hindley Green, Wigan, UK. Web site: www.dcvg.co.uk.

● **S De Nora**

Booth 1935

With over 90 years of experience in electrochemistry, De Nora is recognized as a worldwide leader in mixed metal oxide (MMO) anodes. De Nora's MMO anodes are specifically designed to solve corrosion problems in major infrastructure assets such as oil, gas and water pipelines, power plants, energy facilities, off-shore platforms, deep wells, above ground storage tanks and steel reinforced concrete structures. De Nora's full range of time tested De Nora Lida® anodes are available in various geometries and dimensions, and include tubular, rod, wire, disk, flexible and linear anodes, as well as ELGARD® ribbon mesh and mesh anodes. Address: Concord, OH. Web site: www.denora.com.

Deepwater Corrosion Svcs.

Booth 916

Deepwater protects our clients' assets from corrosion. We solve corrosion problems and improve anti-corrosion technology to reduce maintenance costs and preserve the integrity of infrastructure. Our brands include I-Rod® pipe supports, Polatrak® offshore CP probes and TankGard™ anode systems for tank internals. Address: Houston, TX. Web site: www.stoprust.com.

DeFelsko Corporation

Booth 1227

DeFelsko, a leading U.S. manufacturer of inspection instruments, proudly manufactures PosiTector and PosiTest brand of instruments including the PosiTector series of interchangeable probes for measuring coating thickness, surface profile, environmental conditions, salt contamination, concrete moisture, hardness and wall thickness. Products include the PosiTector 6000 series of coating thickness gages, the PosiTector SST Soluble Salt Tester for measuring soluble salt contamination using the Bresle method, the PosiTest HHD High voltage Pinhole Detector for detecting holidays, discontinuities and other flaws in coatings, and the PosiTest AT Adhesion Tester for measuring the adhesion of coatings to metal, concrete and other rigid substrates. Address: Ogdensburg, NY. Web site: www.defelsko.com.

Dehumidification Technologies, L.P.

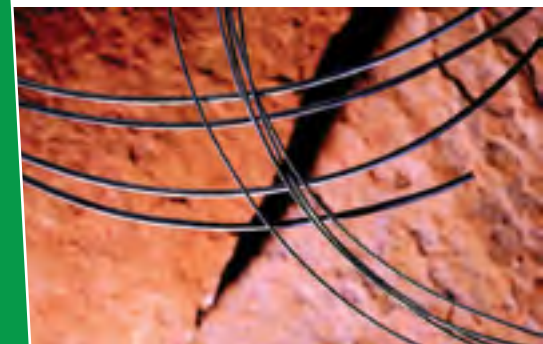
Booth 923

DH-Tech is a portable climate control company that focuses on humidity and temperature control. We provide services/equipment for blasting and coating of tanks, confined spaces in the marine, petrochem, power, and municipal sectors. We have the largest variety of fleet including Refrigerant and Desiccant-Style Dehumidifiers (200 to 20,000 CFM) to create any environment for our clients. Dehumidification is essential to slow down corrosion growth and the negative effects of the unpredictable outside environment. Our equipment can help maintain dry, cool, or hot conditions inside the space to allow work to continue around the clock. There are many other benefits for dehumidification, so come to booth 923 to find out how we can help you. Address: Houston, TX. Web site: www.rentdh.com.



Designed to protect
everywhere

DE NORA LIDA® MIXED METAL OXIDE (MMO) ANODES



Ease of Installation

- Lower weight vs. silicone/graphite anodes.
- Reduced handling and installation costs.

Used in every impressed current application

- Pipelines, above ground storage tanks, concrete structures, offshore.

Lowest life cycle cost.

Supported by an extensive network of CP engineering firms.

DE NORA TECH, LLC • LIDA.info@denora.com • www.denora.com



● **S Denso North America**

Booth 1623

Denso North America is a leading manufacturer of tapes, coatings and linings. Denso provides long-life corrosion protection for pipelines, bridges, piles, tanks and many more industries. Products include petrolatum wax tapes, pipeline liquid epoxies, high build coal tar epoxies, fiberglass & HDPE jackets, underwater epoxies, epoxy grouts, cementitious grouts, vinyl esters, polyesters, outerwraps, bitumen & butyl tapes, roadway tapes and sealing products, mastics and primers. Product brand names include Protal 7200, Densyl Tape, Glass Outerwrap, SeaShield Pile Protection Systems, Archco Tank and Pipe Linings and many more. In business for over 137 years, DENSO is recognized as the global leader in corrosion prevention. Address: Houston, TX. Web site: www.densona.com.

● **Deutsche Edelstahlwerke**

Booth 1858

Deutsche Edelstahlwerke is one of the world's leading producers and processors of special steel long products and belongs to the SCHMOLZ + BICKENBACH Group. In the three materials groups – engineering steel, tool steel and stainless, acid and heat resistant steel – Deutsche Edelstahlwerke offers international customers a uniquely wide range of product dimensions, from drawn wire with a diameter of 0.8 mm to open-die forgings with a diameter of 1,100 mm. Contact: info@dew-stahl.com. Address: Carol Stream, IL. Web site: www.schmolz-bickenbach.us.

● **S DNV GL**

Booth 1915

As the technical advisor to the oil and gas industry, we bring a broader view to complex business and technology risks in global and local markets. Our staff of materials scientists, engineers, and API, ASNT and NACE-certified specialists is backed by the foremost materials and corrosion technology laboratory in North America. Our expertise includes corrosion management, fatigue and environmentally assisted cracking, asset integrity management, risk management, regulatory

compliance, management system development, remaining life assessment, welding technology, and flow optimization/simulation. Address: Dublin, OH. Web site: www.dnvgl.com.

Drinkwater Products

Booth 727

Drinkwater Products provides pipeline integrity solutions for both inside and outside of the pipe. Recognized as an industry leader in the pipeline pigging world, Drinkwater Products not only provides the largest selection of pigging products available, it also provides the knowledge and expertise to pick the right pig for your application. We have earned that reputation because we believe in helping our customers build effective maintenance programs, not just purchase products. In addition to pipeline pigs, Drinkwater keeps the largest inventory of Pikotek Flange Insulation Kits from GPT. We have proudly partnered with the Pikotek brand for 20 years, which gives us the product knowledge needed to provide our customers with accurate solutions. Address: Franklin, LA. Web site: www.drinkwaterproducts.com.

Droycon Bioconcepts, Inc.

Booth 2627

DBI is the manufacturers of the BART; a simple test for the bacteria that causes microbiologically influenced corrosion (MIC), as well as other nuisance bacteria. The tests include sulfate-reducing bacteria (SRB), acid-producing bacteria (APB), iron-related bacteria (IRB), and the heterotrophic aerobic bacteria (HAB), which can replace the dip paddles. Address: Regina, SK, Canada. Web site: www.dbi.ca.

N E&P Services Group

Booth 2308

We are a production midstream chemical provider. Our services include rod lift, gas wells, ESP, oil gathering systems, gas gathering, batch treat, and continuous programs. Our specialties include dry gas line cleaning and corrosion on internal systems. We have 2 senior internal corrosion technologists; Jason Wilson (NACE # 7744110) and Bud Allred (NACE # 447541). Address: Kilgore, TX. Web site: www.epservicesgroup.com.

The best choice for completion tools!

Corrodur 4418 Mod

The answer to increasing demands in the oil and gas exploration industry!

Corrodur 4418 Mod is a Super 13Cr type steel, that combines high strength, high toughness and good resistance to pitting and sulphide stress cracking. A material solution produced by Deutsche Edelstahlwerke, a company of SCHMOLZ + BICKENBACH Group that exceeds conventional chrome steels in terms of performance.

Visit us at NACE Corrosion2020: booth #1858 or find out more about our steel solutions on our homepage www.dew-stahl.com/oil-gas

SCHMOLZ + BICKENBACH GROUP

SCHMOLZ + BICKENBACH
International



N E2G The Equity Engineering Group

Booth 959
E2G helps clients improve profitability with consulting strategies & software tools to manage risk while controlling inspection costs throughout the life-cycle of facility equipment. Facility operators use a life-cycle approach to manage equipment through capital project consulting, technology, & engineering standards aligning with E2G's expertise in Risk-Based Inspection, Fitness-For-Service, Fluids Systems, Process Technology, Rotating Equipment, Vibration and Dynamics, Materials and Corrosion, & Mechanical and Structural consulting. This integrated approach ensures equipment integrity throughout its life as analysis is performed at appropriate levels & commitment of resources is balanced with technology that is continuously evolving. Address: Shaker Heights, OH. Web site: www.e2g.com.

ECKART GmbH

Booth 704
ECKART - a member of ALTANA AG - is one of the leading international manufacturers of metallic pigments for the paints and coatings industry, the graphic arts industry, the lightweight concrete industries and the cosmetics industry. In addition to use as a decorative design element, especially in the coatings industry, pigments do also have functional features as well. These can be applied in many different ways. ECKART offers various products with functional features like conductivity, reflection or for corrosion protection. Address: Hartenstein, Bavaria, Germany. Web site: www.eckart.net.

N ECS - The Electrochemical Society

Booth 2615
ECS is the global leader in advancing theory and practice at the forefront of electrochemistry, solid state science, and technology. Founded in 1902 as a nonprofit professional organization, ECS has 8,000+ individual and institutional members in 85+ countries. Their research enables solutions to major challenges facing the planet: renewable energy, clean transportation, communications, and more. ECS hosts meetings, publishes scientific papers, fosters training and education, and cooperates with other organizations. Contact us at sponsorship@electrochem.org. Address: Pennington, NJ. Web site: www.electrochem.org.

EDDYFI Technologies

Booth 1947
Eddyfi Technologies provides the most advanced NDT technologies in the world, helping OEMs, asset owners and service companies enhance productivity, save lives, and protect the environment. Its mission is to push the limits of advanced NDT to new heights by featuring various NDT modalities and investing massively in product advancement. Eddyfi Technologies offers a diversified portfolio of NDT sensors, instruments, and software for the inspection of critical components and assets in key industries such as aerospace, oil & gas, and power generation. Address: Quebec, QC, Canada. Web site: www.eddyfitechnologies.com.

EIU, Inc.

Booth 701
Since 1980, EIU is a premier electrical and instrumentation contractor working across the US for the pipeline, industrial and chemical, wood and food processing plant markets. EIU can provide industrial electrical, equipment grounding, cathodic protection design and installation, AC mitigation design and installation, electrical safety inspection, trained mitigation installation inspectors, interference studies, and engineering services. EIU uses Safe Engineering Services CDEGS modeling software to build a computer model of the 3-dimensional pipeline and transmission circuit layout. Our workforce of 200 plus employees are highly trained in our trade and have outstanding safety record to accompany long histories with EIU maintains a high safety record and are members of ISNETWORLD and NMCS. Address: Haines City, FL. Web site: www.eiuintc.com.

● **Elcometer**

Booth 2127
For more than 70 years Elcometer has been a world leader in the design, manufacture and supply of inspection equipment to the surface preparation, coatings, concrete and metal detection industry. By providing industry leading, quality products; supported by best-in-class customer service at a competitive price. In 2018 Elcometer launched a range of blast equipment. Developed alongside Elcometer's sister company, the range is the culmination of over 35 years of design, manufacture and service of abrasive blast machines. With products designed to meet the needs of the coatings and blasting industry, Elcometer will provide you with the solution to your requirements - whatever and wherever they might be. Address: Warren, MI. Web site: www.elcometerusa.com.

● **Elecsys Corporation**

Booth 741
Elecsys Corporation is a leading manufacturer and supplier of remote monitoring equipment for cathodic protection and corrosion applications. Our state-of-the-art Watchdog remote monitors set the industry standard for features and reliability. Our new SentraLink product family brings our cost-effective and intuitive report-by-exception communication technology to sensor monitoring. This enables users to continually monitor corrosion rates, pressures, temperatures, tank levels, and much more. Our Elecsys Web Monitor user interface is unparalleled for ease of use and depth of features. View data, get alarm alerts, automatically produce reports, reprogram, and control the entire system all from any web-enabled device. We connect industry! Address: Olathe, KS. Web site: www.elecsyscorp.com.

Electralloy, a G.O. Carlson, Inc. Co.

Booth 2635
Electralloy is a custom melt producer of stainless, duplex, nickel, copper nickel, low expansion, and Nitronalloys. Product forms include ingot, master alloy, billet, bar, block, slab, G.O. Carlson Plate, and Nitronic weld wire. Electralloy and G.O. Carlson Plate provide consistent high-quality products for demanding markets such as aerospace, power generation, forging, nuclear, marine, chemical, petrochemical, corrosion, and high temperature environments. For critical requirements, when the metal makes the difference, call Electralloy and G.O. Carlson Plate. Address: Oil City, PA. Web site: www.electralloy.com.

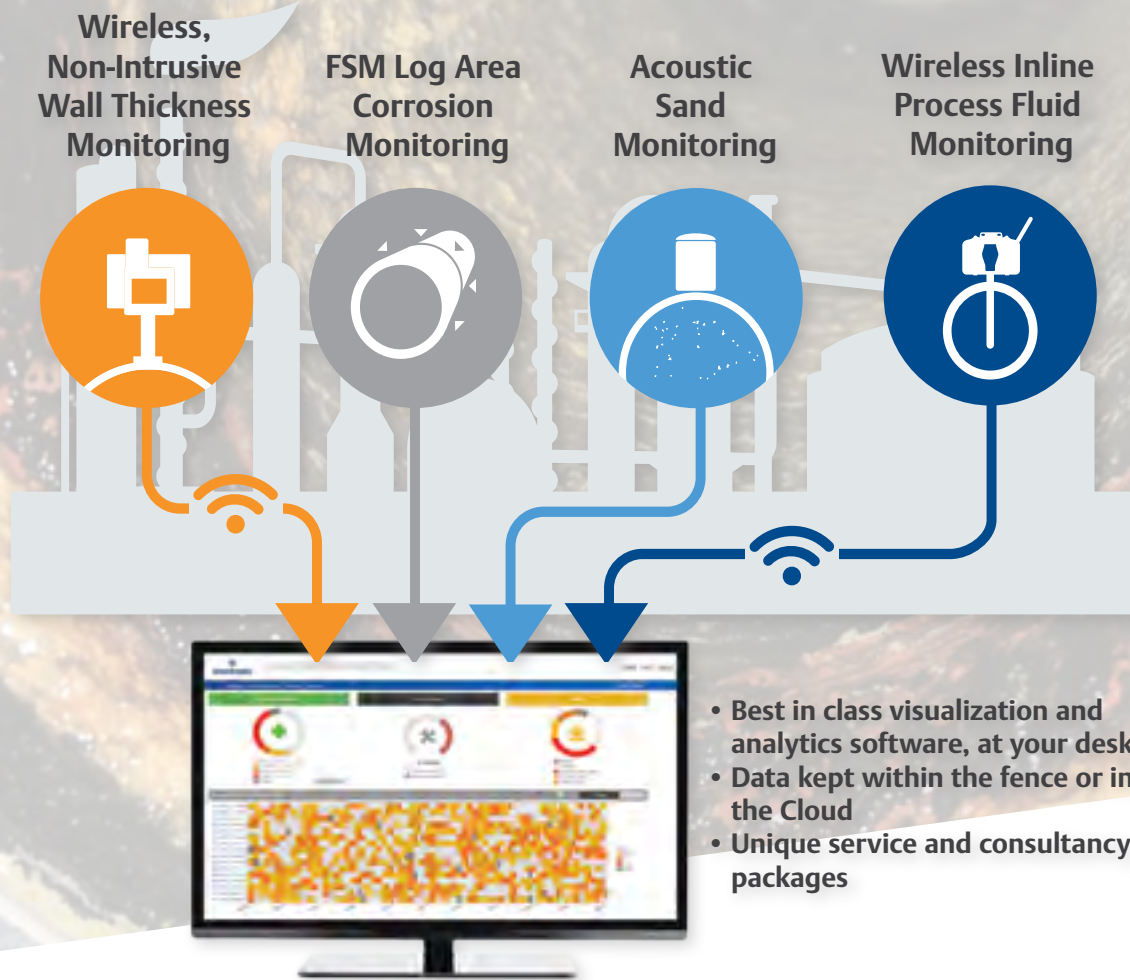
● **Element Materials Technology**

Booth 535
We are Element, one of the world's leading independent providers of testing, inspection and certification services to a diverse range of industries, where failure "in service" is simply not an option. Everything we do is aligned to deliver one thing for our customers - Certainty. We exist to help all of our customers to make certain that the materials and products that they make are safe, quality compliant and ultimately fit for purpose using our 200 years of testing experience and our global testing capabilities. That is the Certainty of Element. Address: Houston, TX. Web site: www.element.com.

N Elementar Americas, Inc.

Booth 2646
Elementar is the world leader in high-performance analysis of organic and inorganic elements. NOW FEATURING the ferro.lyte®: a mobile metal analyzer optimized for use in metal production, metal processing, and metal recycling. The ferro.lyte is the lightest and most compact spark OES spectrometer of its kind. Thanks to the innovative all-in-one concept, it is as mobile as a handheld and therefore optimally suited for fast, precise metal analysis and identification (PMI) on-site. The exclusion of atmospheric influences through the CONLYTE® technology enables on-site analyses with laboratory quality. Furthermore, ferro.lyte offers an intuitive user interface that makes navigation through workflows and software functions incredibly easy. Stop by our booth for a live demonstration! Visit ElementarAmericas.com for more information! Address: Ronkonkoma, NY. Web site: www.elementaramericas.com.

Cutting-edge Corrosion and Erosion Monitoring Helps You Maximize Your Operational Output



Emerson helps you transform the way you drive your facility's operational reliability, efficiency and safety. By bringing together the widest corrosion and erosion monitoring portfolio from Rosemount™ Permasense, and Roxar™ coupled with analytics applications from Emerson's Plantweb™ digital ecosystem, our vast industry expertise and local service capabilities provide a comprehensive solution tailored to your toughest challenges.

To learn more, visit us at Booth 1721.



CONSIDER IT SOLVED™

ELEMKO S.A.

Booth 618

ELEMKO is a manufacturing, design and consulting company specializing in grounding, lightning protection and AC & DC interference systems. ELEMKO can offer customized and unique solutions in challenging projects linked with AC & DC interference caused by HV lines or other DC or AC interference sources such as Railway, PV Solar Power Plants, AC Wind Power Plants etc. ELEMKO operates from Europe (Athens, Greece & London, UK) and from Middle East (United Arab Emirates). Our core business include - Grounding systems - Grounding enhancing compounds - DC Decoupling devices - Surge protective devices - Lightning protection systems - Cathodic protection solutions linked with AC and DC corrosion. Address: Metamorphosis, Attiki, Greece. Web site: www.elemko.gr.

● **Elsyca NV**

Booth 1043

Elsyca supplies specialized computer modelling software and industrial engineering services for oil & gas, energy utilities, offshore industry. Our software and engineering solutions are based upon industry proven, verified and accepted electrochemical and electrical engineering principles of corrosion, cathodic protection and AC & DC interference. Elsyca's extensive practical and scientific expertise results in professional engineering services with hands-on field measurement procedures for attacking the most complex challenges. This expertise ensures that our computational models reflect the real world conditions ensuring the most cost effective industrial engineering solutions for our clients. Discover our unique approach for pipeline integrity management, above ground storage tanks and AC & DC interference risk assessment and mitigation design. Address: Wijgmaal, Belgium. Web site: www.elsyca.com.

N **EMD Performance Materials**

Booth 907

EMD Performance Materials brings color to life with innovative effect pigments and functional materials for coatings, cosmetics, plastics and printing industries. We deliver high-purity specialty chemical materials for the electronics and automotive industries. Additionally, we offer products for applications in consumer electronics, semiconductors, lighting and solar. EMD Performance Materials is the North American high-tech materials business of Merck KGaA, Darmstadt, Germany, with USA headquarters located in Philadelphia Address: Philadelphia, PA. Web site: www.emdgroup.com.

S **Emerson**

Booth 1721

Emerson is the market leader in the configuration and supply of corrosion and erosion monitoring and management solutions. Our extensive portfolio of measurement technologies, infrastructure, and software combines the industry-renowned brands like Permasense, Roxar, WirelessHART, DeltaV controls, Plantweb, AMS and Fieldwatch software into integrated solutions to help our customers achieve top quartile business performance. Address: Houston, TX. Web site: www.emerson.com.

● **EN Engineering**

Booth 1022

EN Engineering provides engineering, consulting, and automation services to pipeline companies, utilities, and industrial customers. Our mission is to build long-term relationships and to grow as a leading engineering firm by providing excellence from start to finish. Operating within the oil, gas, water, wastewater, alternative energy, and transit industries, EN has expertise in corrosion control, cathodic protection monitoring, AC threat assessment and mitigation, DC stray current analysis and mitigation, CP field surveys, integrity management, internal corrosion, risk assessment, DA process and procedures, project management, specifications, welding procedures, metallurgy, failure analysis, and data evaluation. Address: Warrenville, IL. Website: www.enengineering.com.

EnerClear Services, Inc.

Booth 2253

EnerClear Services is an innovative insitu pipeline epoxy coating process that provides a cost-effective solution for the prevention of corrosion in new pipelines, or the rehabilitation of worn, corroded or scaled existing pipelines. Flood coating reduces owning and operating costs by extending asset life, reducing or eliminating the need for corrosion inhibitors, increasing flow efficiencies (while reducing pumping power required which lowers CO2 emissions) and increasing line capacity while delivering a uniform thin film coating. Challenges arising from bends (45's and 90's), risers, operational infrastructure and other on-site barriers are mitigated by the process, and our small on-site footprint has minimal impact on operations. EnerClear's process is capable of cleaning and coating lines from 100 meters up to 20 km in length in a single section, and up to 36" ID. Address: Sylvan Lake, AB, Canada. Web site: www.enerclearservices.com.

Energy Economics, Inc.

Booth 1221

We make buying corrosion protection material easy. Put our distributor network to work for you. Our full line of Cathodic Protection materials means less time tracking deliveries for: anodes, rectifiers, test stations, coupons, backfill, and more. We custom manufacture magnesium anodes and offer a variety of linear, canister, and tubular anodes. Email your material list to: sales@eei.com Our team sends you a custom quote for your project. Have corrosion concerns? Put our NACE Certified Cathodic Protection team to work for you. We offer a variety of natural gas line surveys and full line of CP Construction services including surface and deep well ground beds, AC mitigation and other grounding projects. Our team partners with utilities and CP engineers to mitigate corrosion and maintain the integrity of your gas line assets. Address: Dodge Center, MN. Web site: www.eei.com.

N **Energy Saving Crew, dba ESC Induction**

Booth 1559

At ESC Induction, we provide custom induction heating solutions at a lower cost of energy. Applications include: Rebar Epoxy Coating, Billet Forging, Case Hardening, Brazing, Bonding and Hot Forming Normalizing. Address: Fort Morgan, CO. Web site: www.escinduction.com.

Enviropeel USA

Booth 525

Enviropeel is a leading innovator in contamination and corrosion prevention. Using its patented Bearing Shield to seal off bearings from contamination and ingress, Enviropeel has been proven to extend bearing lifecycles by 500% - helping companies save invaluable time, effort and money in repairs and replacements. Stop by (booth 525) for an interactive product demonstration! Address: Indianapolis, IN. Web site: www.enviropeel.com.

ErgonArmor

Booth 2419

ErgonArmor provides asset protection for harsh environments. ErgonArmor's Industrial Corrosion and Wear Protection provides protection of concrete and metal structures from damaging and costly chemical and corrosion attack. This is done through installation of novel, unique chemical and corrosion resistant solutions. These solutions are Novocoat and Corrosion Engineering systems. They include liquid applied polymer coatings and linings, chemical resistant mortars and grouts, thermoplastic and brick and tile linings. Address: Flowood, MS. Web site: www.ergonarmor.com.

European Federation of Corrosion (EFC)

Booth 124

The EFC is a federation of 38 organizations (Member Societies and Affiliate Members) with interests in corrosion based in 25 different countries within Europe and beyond. Taken together, its Member Societies represent the corrosion interests of more than 25,000 engineers and scientists. Founded in 1955, its aim is to advance the science of the corrosion and protection of materials by promoting cooperation in Europe and collaboration internationally. The EFC is registered in Belgium and has secretariats in Germany, France and the United Kingdom. Address: Frankfurt, Germany. Web site: www.efcweb.org.

Evonik Corp.

Booth 622

Evonik Industries is one of the world leaders in specialty chemicals. The Resource Efficiency segment supplies high performance materials for environmentally friendly and energy-efficient systems. Our High Performance Polymers business line produces polymers suitable for many applications in the oil and gas sector which provide protection against corrosion or chemicals, increase the safety of energy transport, or enhance the efficiency of energy generation. Gas Pipes and fittings produced from VESTAMID PA12 are now approved by PHMSA for gas distribution services up to 250 psig. Address: Parsippany, NJ. Web site: www.evonik.com or www.vestamid.com.

Expro Americas, LLC

Booth 960

Expro's flarestack services offer the industry's premier all-inclusive portfolio of midstream solutions for safely and quickly vaporizing and burning off highly volatile liquids in operations ranging from routine pipeline maintenance blow-downs to emergency response. Complementing our flarestack services is a full suite of high and low-pressure rated systems for separation, chemical cleaning, fluids handling, storage, solids handling and disposal, as well as filtration units and knock-out vessels. The Expro filtration separator is the industry choice for delivering clean products to processing plants and cleaning vapors. The units can be rigged up with a manifold to allow uninterrupted pipeline flow while changing filter elements. Address: Houston, TX. Web site: www.exprogroup.com.

E-Z Line Pipe Support Company, LLC

Booth 624

E-Z Line Pipe Support Company was established in 1952 with the development of the E-Z Line Adjustable Pipe Support. Fueled by the growth of the Houston petrochemical industry in the late 60's and early 70's, E-Z Line expanded in to the field of structural steel fabrication. In 1984, E-Z Line expanded into natural gas transmission, supplying E-Z Line products such as adjustable supports, CSB (pipe clamp, steel shim block and base plate assemblies), structural steel pipe supports and platforms for natural gas compressor stations facilities. Today E-Z Line supplies products and structural steel to all major oil and gas companies. Address: Manvel, TX. Web site: www.ezline.com.

Farwest Corrosion Control Co.

Booth 1135

Farwest Corrosion Control Company is an industry pioneer and leader in comprehensive cathodic protection and corrosion control services and related products. Service offerings include engineering, technical consultation and cathodic protection installation. The firm also distributes and manufactures products for cathodic protection and corrosion control applications. Founded in 1956, Farwest remains privately held and family owned and is a Certified Woman Owned Business. Headquartered in Southern California, Farwest also has eight regional operations and over 175 employees. Address: Downey, CA. Web site: www.farwestcorrosion.com.

Fibergrate Composite Structures

Booth 2715

With over 50 years of experience in the fiberglass reinforced plastic (FRP) industry, Fibergrate Composite Structures is the leader in the manufacture, distribution, design, fabrication and installation of quality fiberglass reinforced plastic (FRP) structural products and engineered solutions for industrial, commercial, and recreational applications. Fibergrate's products provide economical and safe solutions in a variety of industries. These products are lightweight and low maintenance and offer corrosion resistance, slip resistance, impact resistance, and high strength, as well as significant ergonomic and safety benefits. Address: Dallas, TX. Web site: www.fibergrate.com.

Fischer Technology, Inc.

Booth 2321

Visit the Fischer Technology booth to see the latest instruments for nondestructive and precise measurement of corrosion protection coatings. Coating thickness measurement according to international standards IMO PSPC and SSPC-PA2. Fischer instruments also

measure paint thickness, thermal spray aluminum over stainless steel, intumescent coatings, holiday testing, surface profile of blasted surfaces and more. Address: Windsor, CT. Web site: www.fischer-technology.com.

Fisher Company

Booth 1756

Fisher Company has been in the continuous business of providing composite FRP fabrication as well as fluoroplastic linings and coatings for more than 40 years. We invented high build coatings of greater than 1mm decades ago. Presently, we apply Kynar® PVDF coatings in excess of 6mm. We focus on the needs of chemical, mining, mineral process, nuclear and pharmaceutical applications for chemical resistance and high purity. We developed the first fluoropolymer coatings to meet USP Class VI and 87. The largest steel tank to be lined on a customer's site with Kynar® PVDF sheet has been in service for a decade. It is 28'Ø and 21' tall. It is ozonated high purity water. Address: North Salt Lake, UT. Web site: www.fisherutah.com.

Flexitallic

Booth 806

Developer of the spiral wound gasket in 1912, Flexitallic has built on this legacy of innovation with revolutionary products & materials such as Thermiculite® and Change® gasket. The varied product offering of The Flexitallic Group includes spiral wound gaskets, semi-metallic gaskets, Kammprofiles, sheet gaskets and dynamic and static packings. Our Change-HF gasket is considered one of the best solutions in fighting corrosion in HF-Alky applications. And this year we are introducing our new line of insulating gaskets, the IsoFlex series. Come by our booth to see the entire corrosion family developed by the leader in sealing technology. Flexitallic is the most trusted name in industrial sealing. Address: Deer Park, TX. Web site: www.flexitallic.com.

Fluoramics, Inc.

Booth 1652

Fluoramics has provided premier rust stoppers, sealants, and lubricants for over 50 years. All of our products, including HinderRUST, which is engineered with Tufoil Technology, use a proprietary dispersion of PTFE which is formulated to provide superb lubrication, more robust surface film management, and long lasting protection against corrosion. HinderRUST, available in three versions, prevents flash rust and provides long-lasting protection against corrosion. Its unique wetting & lubricating capabilities allow HinderRUST to soak deep into joints, crevasses, and wire ropes. Fluoramics' products are solvent-free, non-flammable, and low-VOC, making them ideal for use everywhere, including enclosed areas. Address: Winona, MN. Web site: www.fluoramics.com.

French Creek Software, Inc.

Booth 1214

French Creek Software began developing and marketing software tools for water treatment professionals in 1989, including the industry standard WaterCycle(R) series for cooling water, DownHole SAT(R) for oil field brines, MineSAT(TM) for process and waste waters, WatSIM(TM) for municipal water treatment (including lead and copper modeling); and hydROdose(R) for membrane systems. Many of our customers use "branded" versions customized with their corporate identity and in some cases, custom algorithms. Upgrade your in-house software with the French Creek Engine libraries for windows(R) and Unix(R) including web apps and controllers. The Libraries are close to plug and play and add the scale modeling and dosage calculations. Visit us at NACE. Address: Valley Forge, PA. Web site: www.frenchcreeksoftware.com.

G2 Integrated Solutions

Booth 314

G2 Integrated Solutions (G2-IS) provides responsive support and a comprehensive suite of risk management, engineering, field services and technology solutions that address asset performance throughout its life cycle. Our experts understand your goals and offer analytical insights to help make practical, cost-effective decisions to address the most critical problems in the context of current and future regulatory requirements and long term asset management strategies. Address: Houston, TX. Web site: www.g2-is.com.

Galvotec Alloys

Booth 2235

As a recognized leader in The Cathodic Protection Industry, Galvotec Manufactures the Highest Quality Aluminum, Zinc and Magnesium Anodes in the market. Established in 1984, we have 36 years of tried-and-true experience and thousands of satisfied customers. Galvotec's ISO-9001:2008 certified foundry, ISO-17025:2005 accredited laboratory, and our highly experienced Professional Staff make us the most qualified Galvanic anode manufacturer in the world. We are the largest and most competitive anode supplier to the oil and gas industry thanks to our proprietary production technology and unmatched production volume. Address: McAllen, TX. Web site: galvotec.com.

Galvotec Corrosion Services, LLC

Booth 2235

Galvotec Corrosion Services LLC provides a full range of cathodic protection services for offshore systems worldwide, including evaluation, engineering, design, material supply, installation, and monitoring. The company consists of fully qualified CP personnel including engineers, field technicians, and installation personnel. Galvotec Corrosion Services offers the exclusive impressed current Lockheed-Galvotec Vertical Tension Anode system and retrofit galvanic anode assemblies for extending the life of existing offshore structures, as well as a large inventory of anodes for water handling vessels and tanks. Address: Harvey, LA. Web site: galvoteccorrosion.com.

Gamry Instruments

Booth 1740

Gamry Instruments designs, manufactures, and sells a variety of electrochemical instrumentation and accessories that are designed to fit your needs and budget. From basic DC corrosion measurements to electrochemical impedance to electrochemical noise to electrochemical frequency modulation, Gamry is at the forefront of electrochemical corrosion measurement instrumentation. We have a variety of instruments available from single and multichannel potentiostats to a multiplexer, a quartz crystal microbalance, and rotating electrode/cylinder setup. Stop by the booth to talk to the experts and find out why Gamry is known as the worldwide leader in electrochemical corrosion instrumentation. Address: Warminster, PA. Web site: www.gamry.com.

Gecko Robotics

Booth 1948

Gecko Robotics (Gecko) make robots for industrial inspections. Our technology and services perform safe, fast and accurate inspections on critical industrial assets. Gecko's wall climbing robots and inspection teams perform non-destructive testing for clients across the United States and internationally. Gecko's inspections are 10x faster than current methods and collect 1000x data. Address: Pittsburgh, PA. Web site: www.geckorobotics.com.

General Corrosion Corp.

Booth 1656

General Corrosion Corporation has been providing cathodic protection services to the pipeline, power-generating, underground and aboveground storage tank, infrastructure and water facilities' industries for more than 20 years. General Corrosion Corporation works through-out the Midwest from Minnesota to Texas. We dedicate ourselves to customer satisfaction through mutual cooperation and strict performance requirements. Address: Minneapolis, MN. Web site: www.generalcorrosioncorp.com.

Gentherm Global Power Technologies

Booth 934

Providing ultra-reliable, off-grid remote power for clients around the world, Gentherm Global Power Technologies is the world leader in the manufacturing and distribution of thermoelectric generators (TEGs). Applications include: cathodic protection, automation, SCADA and telecommunications for gas wells, pipelines, offshore platforms and telecom installations. Featuring a solid-state design, TEGs offer continuous operation in all weather and temperature conditions, are cost-effective and easy-to-use. Gentherm Global Power Technologies, Power where you need it®. Address: Calgary, AB, Canada. Web site: www.genthermglobalpower.com.

GeoCorr Pipeline Inspection Technologies

Booth 504

GeoCorr provides Inline Inspection Tools and Services. Customer satisfaction, responsiveness and quality results remain our top priorities. Stop by to speak with us regarding our capabilities: Geometry Inspections 3" to 48", MFL/Geometry Combo Inspections 3" to 16", Inertial Mapping, Inspections (IMU) 6" to 48", Tethered/Wireline/ or Bidirectional Inspections, Dual Diameter Inspections, Gauge Pigs Sales and Rentals, Launcher and Receiver Rentals, Tracking and/or AGM Placement. Address: Houston, TX. Web site: www.geocorr.com.

Geopolymer Solutions, LLC

Booth 815

Geopolymer Solutions LLC, has developed Industry Changing Technology that eliminates Corrosion Under Fireproofing (CUF). The inherent ability to bond chemically to the substrate passivizes the steel, there-by eliminating the ability for corrosion to occur. FP250 is the World's only Geopolymer (SFRM), tested in accordance with Underwriters Laboratories Inc. UL 263 and UL 1709-time temperature burn curves. FP250 has passed 10K hours of Salt Spray (Fog) exposure testing, ASTM B-117, making it the World's only cementitious (SFRM) that inhibits corrosion equal to or better than Intumescent, Galvanizing, and Prime Coats. FP250 does not require the use of Lath, Primers, or Scratch coats. The advantages of FP250 are second to none, making it best in class. Address: Conroe, TX. Web site: www.geopolymertech.com.

Girard Industries

Booth 2034

Girard Industries began manufacturing the foam polly-pig in 1968 and since then we have expanded our manufactured products to encompass the complete line of pipeline cleaning pigs. Our Turbo Series® are solid cast polyurethane cup and disc pigs with available brush options. We have the largest size ranges of Spheres with up to 5 different sphere sizes per nominal pipe size. Our Steel Mandrel pigs are available in a variety of configurations with options including brushes, magnets, gauging plates and more. We also manufacture polyurethane replacement parts, including Discs & Cups for almost every steel body pig in use today. Along with our products we supply Hi-T Pigalert, pig-tracking equipment, and other pipeline cleaning related products. Address: Houston, TX. Web site: www.girardindustries.com.

GISS (USA) East Corp.

Booth 601

We provide Quality Inspection and NDE Services to the Fabrication, Oil and Gas, Pipeline, and Power Generation sectors throughout North America. GISS employs highly trained knowledgeable and professional staff that specialize in providing technical expertise in Integrity Assessment, Inspection and NDE services. Through continued competency management, training and building upon our current knowledge base, we can provide our clients with up-to-date inspection and examination techniques, and ultimately a detailed final report. GISS is leading the industry with the latest advanced NDE and Inspection tools with the support from level 2 and 3 technical specialists. Address: Clare, MI. Web site: www.giss-usa.com.

GMA Garnet Group

Booth 2019

GMA Garnet Group is the leading producer of industrial garnet for the blast-cleaning and surface preparation industry, with advanced mining and processing operations established within Western Australia, Montana USA and strategically located distribution warehouses worldwide. The group has also pioneered the operation of large-scale garnet recycling facilities in Italy, Saudi Arabia, United Arab Emirates, and USA, offering an environmentally friendly solution to the disposal of used garnet. Address: The Woodlands, TX. Web site: www.gmagarnet.com.



CORROSION STOPS HERE.

EVOLUTION™ ISOLATION GASKET.
THE FUTURE OF FLANGE ISOLATION.

Pipelines and the media flowing through them have changed over the past fifty years. The fully encapsulated EVOLUTION™ gasket provides impermeable resistance to chemicals, including H₂S, steam, and CO₂; is easier to install due to its 1/8" (3mm) design; has passed API 6FB fire testing, and the handle simplifies installation while providing laser etched traceability. Regain confidence in your pipeline's isolation gaskets with EVOLUTION™.

Learn more: www.gptindustries.com/evolution



GMC Electrical, Inc.

Booth 2335

GMC Electrical, Inc. was originally founded in 1984 by Gary L. Matlack who at that time had over 17 years' experience in the corrosion control industry ranging from layouts, testing, installations, research, and development of permanent reference electrodes. The STAPERM line of permanent reference electrodes are a long-life, highly stable electronic device for measuring the voltage potential of structures to be protected or measured in the surrounding electrolyte along with GMC being supplier of all related cathodic protection materials along with the Western United States Importer and distributor of BAC Pin Braze equipment and providing design, installation, maintenance and testing of Cathodic Protection Systems. Available through a worldwide distribution network of GMC Electrical. Address: Corona, CA. Web site: www.gmcelectrical.net.

● **Goebel Fasteners, Inc.**

Booth 2103

Goebel Fasteners, Inc. is the leading global specialist for innovative fastener solutions. Being located in the Gulf Coast region, we focus extra attention on corrosion resistant products. High-quality materials, such as Stainless 316 & Duplex 318L, are what our new products are created from; which range from self-tapping/drilling screws, waterproof rivets, cobalt drill bits, sealing washers, & toggle latches. These are widely used in offshore, oil & gas, marine applications and areas where chlorides are present. Goebel Fasteners, Inc. offers the largest range of innovative fastener solutions in the industry; "Quality The First Time". Address: Houston, TX. Web site: www.goebelfasteners.com.

● **S GPT**

Booth 826

GPT is the world's leading manufacturer of critical service flange systems, electrical flange isolation kits (for cathodic protection and galvanic corrosion prevention) and isolation joints for the oil and gas production, processing, gas transmission, pipeline, power generation and utility industries. GPT products are approved and in use by virtually all of the major international oil and gas operators, engineering contractors and gas transmission companies. GPT is also a supplier of Dairyland decouplers. GPT products are designed to be problem solving, engineered solutions to industrial sealing and isolation problems which continually plague conventional sealing/isolation products. GPT is an ISO 9001:2008 manufacturing company and introduced the first metal cored isolation kit, the first fire safe isolation kit and the first chemically resistant isolation kit. Address: Wheat Ridge, CO. Web site: www.gptindustries.com.

N Grandis Titanium

Booth 1017

GRANDIS TITANIUM is a major worldwide supplier of titanium products. We maintain inventory of over a thousand tons of titanium to assure immediate shipment to our customers. Titanium is shows remarkable corrosion resistance in oxidizing acid environments. We serve customers in the Aerospace, Chemical, Power Generation, Geothermal, Oil & Gas, Mining, Hydro-Metallurgy, Pulp & Paper, Desalination, Thermal Processing, and Galvanic Anodizing industries, among others. Address: Rancho Santa Margarita, CA. Web site: grandis.com.

N Green Diamond Performance Materials

Booth 2451

Green Diamond Performance Materials delivers the most cost-effective, best profiling, consistent and environmentally friendly Abrasive Blast Media in the industry. Green Diamond abrasives are single sourced from our +14 million-ton magnesium orthosilicate reserve located in Riddle, Oregon. We combine hardness, angularity and precision particle gradation to deliver the cost saving performance, cleanliness and consistency of our world-class products. No respirable free silica; Beryllium Free; Cost-effective; Controlled profile; Consistency from a single source in the USA; Cleanliness & low dusting; Outstanding Customer Service. Address: Riddle, OR. Web site: www.greendiamondpm.com.

Greenman-Pedersen, Inc. (GPI)

Booth 1223

Greenman-Pedersen, Inc. (GPI) is a leading engineering consulting firm that specializes in the innovative design and construction of transportation infrastructure and building projects. Our coatings experts consist of nearly 100 coatings professionals and inspectors, spread throughout our 54 office locations and our full-service coatings laboratory, allowing us to provide local staffing for most projects. Our coatings experts have earned a reputation for excellence in the coatings industry, and are proudly one of only thirteen SSPC Quality Program 5 (QP5) Certified Firms. Several members of our staff serve as instructors for NACE & SSPC certification courses and are also involved with technical committees and local chapters. Address: Babylon, NY. Web site: www.gpinet.com.

Grid-Guard (Product of JDR Enterprises)

Booth 540

Grid-Guard rock shield products have been used on thousands of miles of pipeline in the U.S. and Canada throughout the last 25+ years. As part of our ongoing desire to innovate and help pipeline owners/contractors keep costs low while maintaining integrity for their pipeline, we are introducing Grid-GuardHD (11mm) and HD PLUS (with fabric). Grid-GuardHD PLUS is an 11mm, extruded polyethylene with a geotextile backing that eliminates abrasiveness, increases impact protection, and acts as a slip sheet around your line after burial. This innovative rock shield is making great strides in North America and is available at distributors throughout the U.S. and Canada. (Does not inhibit CP). Address: Alpharetta, GA. Web site: www.j-drain.com.

● **Grillo-Werke AG**

Booth 2514

Grillo-Werke AG is the world's largest producer of zinc and zinc alloy wire for corrosion protection. As the global leader with six decades of experience, our zinc and zinc aluminum wire provides optimum corrosion protection. Grillo wires are used in various global industries ensuring active and sustainable corrosion protection. Some of these Metallizing applications include bridges, wind towers, cast iron pipes, heat exchangers and capacitors applied through either Arc or Flame Thermal Spraying. In our Research and Development, we use our long-standing expertise to find optimal solutions for our customers and to develop new products. Headquartered in Duisburg, Germany, Grillo employs over 1,600 people worldwide. Address: Duisburg, Germany. Web site: www.grillo.de.

Guided Ultrasonics Ltd.

Booth 334

Guided Ultrasonics Ltd. (GUL) is the global leader in guided wave technology, our products and services represent the most advanced equipment to assess pipes and other structures from a single, remote and easily accessible location. The Wavemaker® G4mini system is the most reliable long range screening equipment in the market. GUL monitoring is the leading edge technology for large area monitoring, a cost efficient option to continuously evaluate pipelines. The QSR1® is the only quantitative short range guided wave scanning system that indirectly measures remaining wall thickness. Our services include consultancy and onsite support by the world's leading GWT experts, assisting our clients and industry with their projects. Address: London, UK. Web site: www.guided-ultrasonics.com.

Harsco Minerals International

Booth 1152

Harsco Corporation is a diversified environmental and industrial services company serving global industries that are fundamental to worldwide economic growth. The Company operates in three segments: Environmental, Industrial and Rail. Harsco Environmental is the premier provider of material processing and environmental services to the global steel and metals industries. We have developed a range of by-products for specialized applications across industry, construction and agriculture. Harsco Minerals is an industry pioneer in the processing of mineral products for environmentally beneficial uses and is known throughout the industry for its high quality, high performance BLACK BEAUTY® abrasives, roofing granules and aggregates products. Address: Camp Hill, PA. Web site: www.blackbeautyabrasive.com.



FULL SERVICE TANK SUPPORT

BOOTH 2320

No matter where your business operates domestically, HMT can support you with a wide range of coating and inspection services designed to fit your needs.

*Learn more about our **Coatings & Inspection** capabilities by visiting our website or our booth.*



CONTACT US TODAY! 1-877-246-8828 | HMTTANK.COM | tankservices@hmttank.com

Exhibitors

N —New Exhibitors **S** —2020 Sponsors ● NACE Corporate Member

● Haynes International, Inc.

Booth 1320

Haynes International is one of the world's largest developer, manufacturers, and distributors of high-performance nickel- and cobalt-based alloys for use in corrosion and high-temperature applications. Our proprietary alloys are known as HASTELLOY(R) and HAYNES(R) alloys. Our standard product forms include sheet and plate, bar and billet, seamless and welded pipe and tubing, wire and welding consumables, fittings and flanges. Our products are distributed primarily through our worldwide service and/or sales centers. All of these centers are company operated. For more than 100 years, Haynes International has been a leader in alloy innovation. Address: Kokomo, IN. Web site: www.haynesintl.com.

HCL Fasteners

Booth 614

HCL Jetty Pile Corrosion Protection Solutions: Splash Zone & Tidal Pile Protection - Series 100 - Petrolatum Tape, HDPE Outer Armour & Smart Band High Strength Clamping System - Provides full Splash Zone Pile Corrosion Protection. Highly suited for Diver Installation using HCL Hand Tools Submerged Zone Pile Protection - HCL ICCP Installation Solution - Full Non-Metallic Installation solution for ICCP Systems - PU Mounting saddles for the anodes & electrodes, Smart Band Polymer Strapping system for Cable management and Saddle mounting. Highly suited for fast and efficient Diver Installation. Address: Bath, UK. Web site: www.hclfasteners.com.

Hempel USA

Booth 1853

Since 1915 Hempel has been a world-leading coatings specialist, providing protection and inspiration to the world around us. Today we have over 6,000 people in 80 countries delivering trusted solutions in the protective, decorative, marine, container, industrial and yacht markets. Hempel is proudly owned by the Hempel Foundation, which supports cultural, humanitarian and scientific causes across the world. Address: Conroe, TX. Web site: www.hempel.us.

N Heuristech

Booth 1054

Heuristech uses Differential Reflectometry Mapping (DRM) to assess coating on buried pipeline networks. This groundbreaking technology allows to detect and characterize coating defects and anomalies, including coating delaminations and disbondment. DRM is non-destructive, non-invasive, and unaffected by surface conditions; therefore it is ideally suited to assess pipelines in cities, under waterways, and in other challenging environments. Thanks to this technology, our customers substantially cut their corrosion mitigation costs and acquire a precise knowledge of their pipeline network state. Heuristech is all about tackling corrosion the right way. Address: Strasbourg, Bas-Rhin, France.

● **S** High Performance Alloys, Inc.

Booth 435

High Performance Alloys is a small family owned company providing materials for wear, high temperature and corrosion resistance. Through a narrow selection of stock materials, and custom orders 'HPAlloys' or 'HPA' has provided materials and services to the oil/gas, marine, chemical processing, pollution remediation, and nuclear industries for over 35 years. Manufacturing at HPAlloys has grown to include open die forging, radial forging, hot rolling, cold rolling, straightening and grinding. Soon we will compile a wire draw line with straighten and cut capabilities. All mechanical and chemical testing is performed outside, at highly accredited laboratories. Experience the difference a change in supplier can make, visit our website at www.hpallloy.com, call our toll free line in the US 800-472-5569 or send an email to sales@hpallloy.com. Address: Windfall, IN. Web site: www.hpallloy.com.

● Highland International, LLC

Booth 710

Highland International is at the forefront of coating innovation. Taking a different approach to making paint has driven our unique products to new heights. Instead of formulating a coating with the hopes of finding a good fit in various industries; Highland researches particular industries to pinpoint specific needs that are not currently being met.

The results are in our coatings. From extreme abrasion resistance, harsh chemical resistance, and extreme temperature resistance, Highland coatings are some of the most durable coatings on the market. You get all of that and more at an affordable price. When it comes to protecting your assets, trust Highland. Address: Boone, NC. Tel: +1 828-265-2513. Web site: www.highland-international.com.

Highridge Consulting Services LLC

Booth 1459

Highridge specializes in a variety of corrosion services including some of the following, Corrosion Technicians, ECDA Programs, DCVG, ACVG, Close-Interval Surveying, Inspection for Cathodic Protection Projects, AC mitigation/gradient mat installation, Interference testing, Cathodic Protection Installation, and Coating Inspection/Consulting. Highridge strives to be one of the premier contactors in the industry. Address: Prague, OK. Web site: www.highridgecorrosion.com.

HJ3 Infrastructure Group LLC

Booth 1156

HJ3 Composite Technologies, LLC is a leading manufacturer of CarbonSeal™ engineered composite repair systems designed to extend the life of critical assets in process facilities. By working closely with owner/operators and certified applicators, HJ3 provides engineered repair solutions same day to restore strength to damaged or corroded piping systems. By extending the service life of the piping system to the next scheduled outage, owner/operators stay online and avoid the cost associated with an unexpected outage. All HJ3 engineered repair systems conform to ASME PCC-2, ASME B31, ISO 24817, DOT, API and CSA Z662 standards. Common Applications include: Flare Lines, Hydrocarbons, Cooling Water Piping, Firewater Piping, CUI- Corrosion Under Insulation, Acid Lines, Blow Down Lines, and Sour Water lines. To date, HJ3's CarbonSeal system has been used extensively worldwide by numerous Fortune 500 companies operating in heavy industries. Address: Tucson, AZ. Web site: www.hj3.com.

● HMI Technical Solutions

Booth 1151

HMI Technical Solutions (HMITS) provides results-driven engineering, design, and integrated solutions to the power, oil & gas distribution, and communications industries. HMITS' best-in-class services include design, asset integrity management, feasibility studies, surveys, constructability reviews, and turnkey delivery services within these core utility segments. With a genesis in construction and a skilled team of multidiscipline engineers and project management professionals, the privately-held firm brings a deep understanding of infrastructure to every project. Address: Blue Bell, PA. Web site: www.hmiservices.com.

N S HMT

Booth 2320

HMT is the global leader in aboveground storage tank solutions. Over 40 years of experience have earned HMT a reputation of excellence in new tank construction, optimization, fabrication, repair & maintenance, emissions control, inspections, calibration, corrosion resistant coatings, and engineering services. Our full suite of Inspection Services include API 653, 570, and 510 Inspections, Phased Array Ultrasonic Testing, Guided Wave Ultrasonic Testing, Ultrasonic Corrosion Mapping, 3D Laser Modeling, as well as traditional NDT services (UT Thickness, MT, PT, LT/BT). Address: The Woodlands, TX. Web site: www.hmttank.com.

● **S** HoldTight Solutions, Inc.

Booth 1118

HoldTight Solutions, Inc. is a manufacturer and distributor of additives for the coatings surface preparation industry to assist with cleaning blasted surfaces of soluble salts and contaminants and to prevent flash rusting prior to coating. The additive, HoldTight® 102 is used with dry abrasive, wet abrasive and UHP blasting. Additionally, HoldTight distributes a preservation coating, HT 365, to prevent corrosion and flash rusting of bare steel for up to one year. This is used for storage, shipping and fabrication of steel products. Finally, HoldTight distributes testing equipment for measurement of surface conductivity and water quality that also benefit the surface preparation market. Address: Houston, TX. Web site: www.holdtight.com.



Tough. Durable. Reliable.

Protect your underground pipeline with the BoreShield™ ARO II system for directional drilling and boring applications. Easily wrapped installation and short cure time for abrasion resistance and corrosion protection.



Our Solutions

 mike.smith@indumar.com
 713-977-4100
InduMar.com

● Honeywell Corrosion Solutions

Booth 1727

Honeywell Corrosion Solutions™ is a provider of industry-leading corrosion prediction and monitoring software/systems, including Predict®-RT, industry's first real time corrosion software sensor framework, as well as corrosion prediction and materials selection solutions for refinery and oil/gas industries. Honeywell's advanced materials evaluation and corrosion research capabilities are enabled by a state-of-the-art corrosion laboratory and a comprehensive portfolio of consulting services. Honeywell's blend of products and services are leveraged to assist Honeywell customers realize significant operational benefits, including optimized inspection and predictive maintenance, reductions in corrosion and materials expenditures, and drive efficient reliability management while optimizing throughput. Address: Houston, TX. Web site: www.honeywellprocess.com/corrosion

● HORIBA Scientific

Booth 2637

HORIBA Scientific, world leader in spectroscopic instrumentation, offers products for solids samples analysis from C/S/O/N and H elemental analyzers to GD-OES spectrometers for depth profiling studies. The GD-Profiler 2 spectrometer is an efficient tool for corrosion studies. It can perform depth profiles on conductive or non-conductive samples, from the first nanometer down to 150 microns and is able to characterize all elements from Hydrogen to Uranium, including Deuterium, C, O, N and Cl. The GD-Profiler 2 is the perfect tool for corrosion studies: characterization of protective coatings and evaluation of their efficiency, testing of alloy degradation, diffusion studies, and measurement of depth of penetration for each element. Address: Piscataway, NJ. Web site: www.horiba.com/scientific.

Houston Electron Microscopy

Booth 714

Houston Electron Microscopy is a materials laboratory specializing in microanalysis of inorganic and organic materials. We provide analysis services to manufacturing facilities, laboratories, consultants, engineers, and researchers. Using the latest microanalysis technology, the ColorSEM and microFTIR, we can deliver answers to your materials problems, fast and efficiently. Stop by our booth 714 for a discussion on how we can help you in your analysis needs. Address: Houston, TX. Web site: www.houstonem.com.

HydraTech Engineered Products, LLC

Booth 306

HydraTech Engineered Products manufactures the HydraWrap composite repair systems for the repair, protection, and rehabilitation of piping, tanks, structural components, and similar civil and mechanical assets. The HydraWrap FRP systems are engineered and designed for each application. The HydraWrap systems are epoxy and carbon fiber or fiberglass composites which comply with ASME PCC2 standards, are also ABS certified. HydraTech also manufactures Waterline 8001/8002, an NSF61 certified epoxy; and PolySpray - rapid setting polyurea coatings for applications requiring a high build protective linings. Address: Cincinnati, OH. Web site: www.hydratechllc.com.

IBIX North America

Booth 2023

IBIX North America located in Tampa Bay, FL along with its affiliated Global Partners Tecnosupply/IBIX SRL. As OEM, we provide technical solution-driven products for a large variety of Industrial applications. Supporting diagnostics, repair and preservation materials for Building, Structural, Historic as well Transportation Industries, Marine, Offshore Markets which utilize our compact blast systems for Restoration projects. Service, Supply and distribution is done through our comprehensive National Distributors. Along with our Surface prep technology, we also provide on-site coating equipment for long term corrosion protection along with the appropriate Polymer and repair materials providing the total solution package for North America. Address: Largo, FL. Web site: www.ibixusa.com.

ICORR Technologies, Inc.

Booth 841

ICORR Technologies is a full service CATHODIC PROTECTION and

Pipeline Maintenance provider. ICORR is family owned and we pride ourselves on being big enough to serve, but small enough to provide excellent services, safely. CP installation, engineering, and survey services that include: Impressed current and galvanic systems, A/C mitigation design and installation, Test Station installation, Anomaly digs, Pipeline and station maintenance, Interference testing, Close interval surveys, Current mapping, Internal corrosion monitoring, Vacuum excavation, Mud and air drilling, Field surveys, Test point surveys, Gas leak surveys and Remote monitoring. Address: Morgan, UT. Web site: www.icorrtech.com.

N Ideal Products

Booth 500

Since 1991, Ideal Products has provided innovative solutions to help protect assets while increasing Productivity and decreasing Safety risks. Ideal, Products specializes in mechanical insulation systems while dedicated to provide an extensive line of innovative products to help address corrosion under insulation (CUI). Some of these products include ThermalJacs547® pipe insulation with vapour barrier options, various systems in order to prevent direct contact of insulation to pipe, and WeatherJacs® fittings that come with high visibility labels, easy installation, and patented weather seal system for superior resistance to moisture ingress. Ideal Products also offers full custom fabrication solutions. For more information, please contact customer service at: Canada: 1-800-299-0819; U.S.A.: 1-888-877-7685 or visit: www.idealproducts.ca.

N S Imperative Chemical Partner

Booth 2518

Imperative Chemical Partners strives to set a new standard in chemical services with a focus on effective chemistries, reliable service, and proven program management – all coordinated and supported by an organization with the combined resources, experience, and expertise to deliver results. With over thirty service locations across Texas, New Mexico, Oklahoma, Illinois, and North Dakota, Imperative has the capability to service major integrated production companies and transportation infrastructures, yet maintains the flexibility and responsiveness to service independent operations. When results matter, the right choice in your chemical partner is Imperative. Address: Midland, TX. Web site: www.imperativechemicals.com.

Inductosense Limited

Booth 2519

We are Inductosense, a technology company made up of ultrasonics NDT experts. We design, develop and manufacture innovative internal corrosion monitoring systems, with a key focus on wireless, battery-free and permanently installed ultrasonic sensors. Address: Bristol, UK. Web site: www.inductosense.com.

● InduMar Products, Inc.

Booth 115

InduMar has provided innovative solutions for pipe leaks, corrosion repair, and pipe rehabilitation for over 30 years. Our products include the GAS RISER RESCUE™, STOP IT® PIPE REPAIR SYSTEM, STOP IT HP™, STOP IT® PIPE REPAIR CLAMP, FIX STIX™ EPOXY, FUSION TAPE™, STOPITPSX™, BORESHIELD™, FLATPATCH™, SPILLCORRAL™ and a complete line of Emergency Leak Repair Kits. For Corrosion we offer VISCOTAQ and STOP IT® PIPE REPAIR SYSTEM. Contact us at +713-977-4100. Address: Houston, TX. Web site: www.indumar.com.

INEOS Composites

Booth 927

INEOS Composites is a premier, global specialty chemical company serving customers in a wide range of consumer and industrial markets. With worldwide resources, including dedicated corrosion teams across the globe, INEOS Composites provides innovative corrosion-resistant solutions and application guidance for your specific need. Derakane™ resins set the standard in demanding industrial applications such as chemical processing, pulp bleaching, air pollution control, waste water treatment and mineral processing. These resins provide outstanding corrosion-resistant properties in FRP (fiber-reinforced plastic) piping, tanks, scrubbers and ducting applications. Address: Dublin, OH. Web site: www.ineos.com/composites.

JOIN US AT
**BOOTH
#1053**



**MINIMIZE
TURNAROUND TIME.
EXTEND SERVICE LIFE.**

HIGH-VELOCITY ALLOY CLADDING.
ENVIRONMENTAL PRODUCTS.
CERAMIC COATINGS.
ONLINE SERVICES.

integratedglobal.com



Innerspec Technologies

Booth 2400

Innerspec provides Non-Destructive Testing solutions that require high-power ultrasonic instrumentation, non-contact techniques, or customized integrations. The products developed by Innerspec include both integrated and portable systems that utilize non-contact EMAT (Electro Magnetic Acoustic Transducers) and Dry-Coupled Piezoelectric transducers. Innerspec provides Non-Destructive Testing solutions that require high-power ultrasonic instrumentation, non-contact techniques, or customized integrations. Address: Forest, VA. Web site: www.innerspec.com.

InnoTech Alberta

Booth 1657

InnoTech Alberta offers a diversified range of scientific, engineering and technological research talent and testing capabilities. Our multi-disciplinary research teams and unique facilities support technology scale-up and can accelerate technology development that serves both the private and public sector. Address: Edmonton, AB, Canada. Web site: www.innotechalberta.ca.

Innovative Analytical Solutions (IAS)

Booth 1849

Innovative Analytical Solutions provides laboratory and field instruments for metal analysis. I.A.S. LLC represents Belec Spectrometer from Germany and Frontics America from South Korea. The Belec systems are Optical Emission Spectrometers capable of complete elemental analysis for certification and verification of analytical chemistry and alloy identification. The Frontics instruments are Micro Indentation Testers that can non-destructively measure Tensile, Yield, Hardness and Fracture Toughness. Address: Bremen, AL. Web site: www.steelalyzer.com.

N Innovative Surface Prep

Booth 1046

From equipment rentals to turnkey operations, Innovative Surface Prep offers cutting-edge UHP water blasting solutions for all your surface preparation needs. Equipped with industry-leading robotics, decades of coating and corrosion experience, and a proprietary system, we offer clients absolute results coupled with an unmatched customer experience. Address: Gray, LA. Web site: www.isprllc.com.

Intech Services

Booth 626

Intech Services offers a full line of Teflon™ industrial coatings including PTFE, FEP, ETFE, and PFA coatings, and is the sole distributor of Teflon™ industrial coatings to the U.S. and Canada. Chemours specialty fluoropolymers offer unique resistance to both environmental and chemical corrosion at relatively thin film builds. Teflon™ one-coat corrosion-resistant coatings combat the most corrosive environments, specifically engineered for coating fasteners for offshore drilling, chemical processing, and water treatment. Tefzel® is a high-build ETFE coating with an improved formulation of the ETFE resin for superior chemical protection, and Ruby Red PFA coatings provide excellent permeation resistance for the chemical processing industry. Address: Newark, DE. Web site: www.intechservices.com.

S Integrated Corrosion Companies

Booth 1121

Integrated Corrosion Companies, has been providing cathodic protection since 1932, specializing in onshore/offshore corrosion prevention and cathodic protection for a wide range of industries for both Water and Wastewater and Oil & Gas. Services include engineering and design, CP inspection, surveys, installation and construction management. The staff is made up of professional engineers and technicians that hold NACE certifications specializing in corrosion prevention and cathodic protection. From Inception to Completion We Mitigate Your Corrosion Problem! Address: Houston, TX. Web site: www.integratedcorrosion.com/ab.

● Integrated Global Services

Booth 1053

Integrated Global Services (IGS) provides on-site erosion and corrosion protection through internationally qualified advanced metal cladding of vessels in refining, petrochemical, and chemical plants. Vessel protection with High Velocity Thermal Spray and Weld Overlay technologies and engineered materials is customized for specific environments. Alloys applied to surfaces on-site in-situ in short turnarounds significantly extend the service life and increasing the reliability of mission critical equipment. Address: Richmond, VA. Web site: www.integratedglobal.com.

Integrity Products

Booth 2101

Integrity Products is headquartered in Sherwood Park, Alberta, Canada. We create, manufacture, and supply world-class products for various industries, including Oil and Gas, Petrochemical, Pulp and Paper, NDT and Power Generation. Our core products include our patented inspection ports, Integrity Plugz™, as well as our full line of Corrosion Under Insulation (CUI) mitigation products. Our focus is to create a better way by developing quality products, service and solutions for our clients. We are committed to building relationships by working closely with our clients to delivering solutions to the problems they experience in their industries. Address: Sherwood Park, AB, Canada. Web site: integrity-products.com.

S Integrity Solutions Field Services Ltd.

Booth 810

Integrity Solutions Field Services, Inc. is a full service cathodic protection company. We specialize in surveys such as CIS and DCVG, have extensive experience in the ECDA process, and can offer turnkey services for all four phases. We offer corrosion control services including NDE inspections, AC mitigation, design, and modeling, atmospheric inspection and rehab, and a myriad of technician troubleshooting. Our in house custom software can provide data in any format to interface with your existing GIS. Our deliverables are customizable and one of the best in the industry. Address: East Lansing, MI. Web site: www.isfieldservices.com.

● International/Interprovincial Corrosion Control. Co. Ltd.

Booth 1712

ICCC provides engineering services & the supply/manufacture of Corrosion Control/Cathodic Protection Materials throughout North America. ICCC is a member of NACE with experienced Corrosion Engineers specializing in the Cathodic Protection of buried or immersed metallic structures. For 65+ years, ICCC has manufactured the Rustrol® Product Line for world-wide distribution. The Rustrol® Cathodic Isolator®, Model: CI, Model: SSP and DC-Decoupler™, Model: DCD are designed & utilized with Rustrol® Gradient Control Systems to protect the safety of the general public, operating personnel & equipment during electrical disturbances such as AC Fault Currents, Lightning, and Mitigation of AC Induced Voltages. Rustrol® Systems is globally certified. Address: Burlington, ON, Canada. Web site: www.rustrol.com.

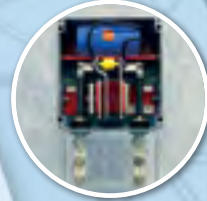
● S International Painter Union and Allied Trades

Booth 2001

The International Union of Painters and Allied Trades is committed to providing our industry partners a highly trained and certified workforce to mitigate the devastating impact of corrosion on our infrastructure and facilities. A proud partner of NACE and SSPC, and a leader in meeting those industry certifications. Learn more at www.IUPATIndustrial.com – www.iFTI.edu – www.IUPAT.org. Address: Hanover, MD. Web site: www.iupat.org.



INTERNATIONAL CORROSION CONTROL INC.
INTERPROVINCIAL CORROSION CONTROL COMPANY LTD.
Industry Leaders ... since 1957



Specializing in the science of corrosion prevention, ICCC has been providing high quality products and engineering services for the Cathodic Protection/Corrosion Control Industry for over 65 years.

- Magnesium & Zinc Anodes
- Impressed Current Anodes
- Rectifiers/Junction Boxes
- Pipeline Cleaning Swabs
- Cadweld/Thermoweld Products
- Monolithic Isolating Joints
- Pipeline Coatings

Rustrol Cathodic Isolator effectively blocks the DC current needed for Cathodic Protection, while providing grounding path for:

- AC Fault Currents
- Lightning Protection
- Mitigation of Induced AC Voltages
- Power Switching Surge Currents

Cathodic Isolator features electronic/electrical construction that responds instantly, protecting personnel and equipment against electrical shock hazards.

Contact ICCC for competitive pricing and "on-time" delivery.



E-mail: Contact@Rustrol.com
 Central Fax: 905-333-4313

● Interplastic Corporation

Booth 904

Interplastic is a manufacturer of unsaturated polyester, vinyl ester, and specialty resins; gel coats; adhesives and compounds; and colorants under the CoREZYN® and Silmar® brand names for the composites, cast polymer, and solid surface industries. All manufacturing facilities and research and development laboratories are ISO 9001:2008 and 14001:2004 certified. CoREZYN and Silmar products are sold throughout North America and in selected areas around the world. Address: St. Paul, MN. Web site: www.interplastic.com.

Intertek

Booth 922

Intertek offers an unmatched range of integrated corrosion solutions for many industries. Our portfolio covers testing and consultancy and we provide an independent quality service. Operating globally, our state of the art laboratories undertake all aspects of material degradation studies to internationally recognized standards. We are experts in Corrosion Inhibition, Microbiology, Sour Service, Flow Assurance, Failure Analysis, Fracture Mechanics and Asset Integrity Management. Intertek delivers innovative Assurance, Testing, Inspection and Certification solutions, and is dedicated to ensuring the quality and safety of our clients' products, assets and processes. Address: Houston, TX. Web site: www.intertek.com.

N ION Science, Inc.

Booth 422

ION Science is the largest manufacturer of photoionization detection (PID) sensors with our technology trusted by major gas detection manufacturers around the globe. As well as sensors, we manufacture a range of leading handheld, personal and fixed PID detection instruments for the fast, accurate detection of volatile organic compounds (VOCs) and other toxic or combustible gases. Additional to our PID range are our gas leak detectors, SF6 leak detectors, and portable mercury detectors designed for variety of diverse applications. Address: Stafford, TX. Web site: www.ionscience-usa.com.

Ionix Advanced Technologies

Booth 506

Ionix Advanced Technologies is the leading manufacturer of extreme environment corrosion monitoring UT sensors, capable of permanent installation across a temperature range of -55oC (-67oF) to +550°C (+1022oF). Our HotSense™ non-invasive thickness monitoring platform has been designed with flexibility in mind, both from an installation and data-gathering perspective. Ionix provides a complete automated and wireless solution to enable our clients to collect reliable and repeatable wall thickness measurements and corrosion rates that facilitate data-driven decisions of high value, leading to improved operational safety cost-reduction. E-mail contact: contact@ionix.at. Address: W. Yorkshire, UK. Web site: ionix.at.

N IPEX USA, LLC

Booth 1658

IPEX offers a comprehensive range of thermoplastic piping products and accessories for a wide spectrum of demanding industrial applications. In corrosion resistant materials from PVC, CPVC and ABS to PVDF and PP. Every system comes with the integrated system advantage, which means that customers can be confident everything is backed by the same company, instead of buying a piping system with components from different manufacturers. Our commitment to excellence means IPEX also brings accountability, reliability and integrity to each and every project, backed by strong distributor relationships and the industry's most comprehensive and experienced sales and technical support network. Address: Oakville, ON, Canada. Web site: www.ipexna.com.

Iris Inspection Services, Inc.

Booth 1939

Iris Inspection Services® was the first company to specialize only in tube inspection, this has allowed us to provide Inspectors with much greater experience. We offer IRIS, Eddy Current, Remote Field, Magnetic Flux Leakage, Near-Field Testing and Remote Visual Inspection. We offer T/A exchanger coordination with our cloud-based management software. Iris designed and manufactures the IRIS9000 and the new IRIS 9000plus system which established and continues to provide the greatest accuracy, repeatability and

production along with the best durability in the industry. IRIS has been the tube inspection leader for 33 years and counting. You can rely on us to help you choose the best method for your inspection needs. Address: Baytown, TX. Web site: www.iris-inspection.com.

IRISNDT, Inc.

Booth 1819

IRISNDT is a NDT and asset integrity engineering firm in the USA, Canada, UK, and Australia. Services: NDT - conventional/digital RT, mag particle/dye penetrant, UT inspection, PMI/OES, resident inspectors. Advanced NDT - AUT, PA, TOFD, AUBT/ABSA, GWT, Laser Profiling, EMAT, Tube Insp. (IRIS, ECT, RFT, NFT), PEC, AE, ACFM, Drones, Turnarounds. Engineering - Field Metallography Replication, Failure Analysis, Robotics, Refractory Inspection, Asset Integrity, RBI, and FFS. Other - Heat Treating, high production XBM and Induction Bolt Removal. Personnel include API QUTE/QUSE specialists, API Inspectors, Engineers, Rope Access. Address: Houston, TX, and 23 other locations in the USA. Web site: www.irisndt.com.

IRT Integrated Rectifier Technologies, Inc.

Booth 1934

IRT is a leading manufacturer of CP transformer rectifiers and junction panels and has been servicing a variety of clients and applications internationally since 2001. We offer standard products for basic CP applications and also work with clients to develop custom solutions for special applications. Our products are designed and manufactured with quality, reliability, safety, and practicality in mind. All rectifiers are supplied with NRTL electrical approval from CSA or ETL (C/US certification and/or special approval). We also offer a number of rectifier training classes at various locations throughout the US. Contact us by phone at 780-447-1114 (Head Office) / 918-805-7587 (USA Office) or by E-mail at sales@irtrectifier.com. Address: Edmonton, AB, Canada. Web site: www.irtrectifier.com.

Ivium Technologies

Booth 1847

Ivium Technologies is a leading manufacturer of potentiostats/galvanostats with integrated FRA/EIS for corrosion measurements. For both field and lab measurements we offer the truly portable USB powered potentiostats with FRA/EIS: #pocketSTAT2 (handheld)/#CompactStat (24bit high resolution). For dedicated research/testing see our: #Vertex (entry level)/#IviumStat (24bit high resolution all purpose)/#Ivium-n-Stat multi-channel potentiostat. Our powerful IviumSoft control and data analysis software offers all electrochemical and corrosion techniques, and is included free of charge with each instrument. Additional options such as multiplexers and power boosters are available, including a magnetic cell for EIS measurements in the field. Address: The Netherlands. Web site: www.ivium.com.

JA Electronics Mfg. Co.

Booth 1542

JA Electronics has been providing quality, custom CP equipment for 40 years. JA equipment is manufactured to individual customer specifications & requirements. We are a Custom Manufacturer of CP Rectifiers, Junction Boxes, Solar CP Units, and related equipment. Rectifiers include Air-cooled, Oil-cooled, Manual control, Auto-Potential, Dual Rectifiers, and other specialty equipment. Come ask us about our "Quick-Turn" Rectifiers that can be shipped in less than 1-2 weeks. Junction box options include Positive Anode, Negative Splitter, Uni-directional bond, and various other customized options. Address: Stafford, TX. Web site: www.jaelectronics.com.

N Japan System Planning Co., Ltd.

Booth 2416

Japan System Planning contributes to sustainable development goals with environment-friendly devices. We manufacture and sale the only one anti-corrosion device in the world, Pipetector, for inside pipes that converts red rust to black rust. We have installed the device to Buckingham Palace, the Palace of Westminster, Windsor Castle, etc. in England, and more than 4,100 buildings including hotels, hospitals, schools and apartments in Japan. It is an efficient and cost-effective solution for the problems caused by red rust inside piping, and there is no need to stop the business during installation. The cost is 5 to 10% compared to pipe replacement. Address: Shibuya, Tokyo, Japan. Web site: www.jsp-world.com.



JENNINGS ANODES

Approved Vendor



Certification



Visit us at Booth #2343

Over 40 yrs. of Proven Experience

Reliable Source of Entire Range of Cathodic Protection Anodes

MMO Linear Anodes

- Various Current Ratings
- Continuous High-grade MMO Wire closely crimped with Cable
- High Tensile Strength & Heavy-Duty Braiding
- Packed on Reel, easy for Transportation & Installation



HSCI Anodes

- Chill Casting in Metal Molds
- Compact Anode Structure and Longer Life
- Improved Impact Resistance
- Anode Utilization: Max. 85% to 90%
- Easy and Efficient Cable Connection with Proprietary Device



MMO Anodes

- Various Kinds of Shapes: Wire, Strip, Plate, Sheet, Tube and Solid Bar etc.
- Reliable, Dimensional and Chemical Stability
- Longer Anode Life and Durable
- Light Weight for Transportation & Installation
- Applications: Concrete / Seawater / Soil



Jennings Anodes also provides Sacrificial Anodes.

Tel: +1 (281) 501 8398
Email: sales@jenningsanodes.com
Website: www.jenningsanodes.com
Houston, TX



● Jennings Anodes USA

Booth 2343

Jennings Anodes USA Inc. based in Texas is a leading supplier of entire range of Cathodic Protection Anodes including but not limited to: High Silicon Cast Iron (HSCI) Tubular and Solid Stick Anodes, Mixed Metal Oxide (MMO) Anodes, MMO Linear Anodes, zinc ribbon, heat treater anodes, magnesium anodes, aluminum anodes, zinc anodes, etc. We are also capable of providing pre-packaged sacrificial anodes and canister impressed current anodes or connecting anodes with lead wires and cables upon request. With Over 40 years' proven experience and expertise, high-grade quality of Jennings Anodes products is guaranteed to ensure the performance of your protected structure and system. Address: Houston, TX. Web site: www.jenningsanodes.com

JENTEK Sensors, Inc.

Booth 2202

JENTEK's new jET handheld system and larger GridStation GS8200 systems have established JENTEK as the leader in eddy current array performance, with easy to use and competitively priced products. Expect to see increasing implementations of JENTEK products for applications including: (1) crack detection and depth sizing at and away from welds as a replacement for MPI, (2) corrosion imaging through paint and insulation for piping, vessels and aircraft structures, (3) coating characterization and coating aging assessment, (4) post process and in-process layer by layer additive manufactured part qualification, and (5) stress and residual stress monitoring above water and deep sea for piping, risers and dynamic components. Address: Marlborough, MA. Web site: www.jenteksensors.com

N J.H. Fletcher & Co.

Booth 438

J.H. Fletcher & Co. has been engineering and manufacturing equipment since 1937. Fletcher maintains a focus on providing solution that eliminate operational problems and create a safer and more efficient work environment, while specializing in designing equipment for difficult, hazardous, and confined spaces. Fletcher's current product lines of focus are Multi-Purpose Blasters and Safe Ladle Access Systems. Both are designed around creating a safer environment for the operator as well as improving operation efficiency. Fletcher also offers custom built equipment, designed to fit specific operations and needs. Address: Huntington, WV. Web site: www.jhfletcher.com

Johns Manville

Booth 1551

Johns Manville, a Berkshire Hathaway company (NYSE: BRK.A, BRK.B), is a leading manufacturer and marketer of premium-quality products for building insulation, mechanical insulation, commercial roofing and roof insulation, as well as fibers and nonwovens for commercial, industrial and residential applications. JM serves markets that include aerospace, automotive and transportation, air handling, appliance, HVAC, pipe and equipment, filtration, waterproofing, building, flooring, interiors and wind energy. In business since 1858, the Denver-based company has annual sales over \$3 billion and holds leadership positions in all of the key markets that it serves. Johns Manville employs 8,000 people and operates 46 manufacturing facilities in North America, Europe and China. Additional information can be found at www.jm.com. Address: Denver, CO. Web site: www.jm.com

Jotun Paints, Inc.

Booth 2317

At Jotun, we protect property by providing solutions that not only enhance the appearance of your asset but also ensure long-lasting durability. Our range of paints and coatings are inspired by technology, designed to meet the latest industry standards, and developed with sustainability in mind. Our specialties include coatings for corrosion and fouling protection of metal substrates and passive fire protection of steel. For more than 30 years, Jotun has supplied coatings and services that extend the life, operational performance, and flow assurance in plants, terminals, offshore structures, pipelines, global marine fleets, ports, and harbor. Address: Houston, TX. Web site: www.jotun.com

S JRGO, LLC

Booth 2243

As a true turnkey service provider, JRGO, LLC can manage all aspects of a project, all under one roof—meaning a smoother process and more efficient use of budget for our clients. Our services include: Technical and Cathodic Protection Services including detailed auditing, design, monitoring and installation; Construction & Excavation, including Groundbed installations; Integrity Services uses the latest, most advanced technologies for pipeline integrity and ILI validation. We also can support your material validation program. The installation and purchase of Sensor Network Products for Asset Integrity and Corrosion Monitoring using the installed ultrasonic sensors. Address: Mt. Pleasant, MI. Web site: www.jrgollc.com

Kantex Industries, Inc.

Booth 1142

Kantex has provided cathodic protection installation services since 1991 and continues to be the leader in the field as well as both air and hydro vacuum excavation services. Kantex provides services to pipeline, refineries, water and waste water across the US. Address: Olathe, KS. Web site: www.kantex.com

● **N** Kennametal

Booth 921

Kennametal Conforma Clad™ and Kennametal Stellite™ provide specialized products & manufacturing services to extend component life in demanding corrosive and erosive environments. Our UltraFlex™ surface treatment accommodates the most complex geometries, including inside diameters & non-line-of-sight surfaces. UltraFlex easily conforms to intricate shapes by forming a metallurgical bond, providing unparalleled wear resistance & extending component life. We integrate manufacturing processes with engineering knowledge, and offer custom solutions to meet your specific needs. Our quality assurance & production controls meet demanding industry specs. Our materials have been protecting critical equipment for over 100 years - let us show you why. Address: Latrobe, PA. Web site: www.conformaclad.com

Koch Specialty Plant Services LLC

Booth 1004

Koch Specialty Plant Services, LLC (KSPS) is the global provider of turnaround, specialty tower, mechanical, and NDT / Inspection services to the process industries. KSPS provides expertise to its business partners in all phases of plant operations. KSPS has been the leader in the tower services and mass transfer equipment installation business since 1970. Our fully integrated approach is designed to identify the unexpected from the beginning to end of every project. KSPS NDT & Inspection Services provide full service mechanical integrity programs that include NDT, API, CWI, & other industry certified professionals to keep your operation up and running efficiently and worry free. Address: Houston, TX. Web site: www.kochservices.com

KORTEK Corrosion Technologies Co., Ltd.

Booth 2415

KORTEK specializes in cathodic protection, and delivers turnkey cathodic protection systems with project design, AC mitigation modelling, fully-certified installation crew, material supply, ECDA data collection DCVG and CIP Surveys, periodic care and inspection throughout the world. More than 25 years' experience on site has led to R&D of innovative and efficient CP products under the name of UNICORR including All-in-One CP Tester, Remotely-Monitored and Controlled Data Loggers, Current Interrupters and DC Decouplers. KORTEK has been serving customers both locally and internationally to provide for their every cathodic protection requirement with highly-skilled professionals since 1992. Address: Ankara, Turkey. Web site: www.kortek.com.tr

● KTA-Tator, Inc.

Booth 1314

KTA-Tator, Inc. was the first Coating Inspection Firm qualified under SSPC QP-5 and employs over 140 NACE Certified Inspectors and 70+ CWI's across the globe to service our clients. KTA professionals are supported by analytical and physical testing laboratories accredited

to ISO 17025 by A2LA (Testing Cert. #2455.01) and a fully stocked coating and corrosion inspection instrument sales department providing sales, calibration, and repair accredited to ISO 17025 by A2LA (Testing Cert. #2455.02). In addition to our coating, steel, and concrete inspection services, we also provide NDT, coating assessments, failure analysis, EH&S services, safety and coatings training. We also offer free educational articles, videos, and eBooks through KTA.com. Address: Pittsburgh, PA. Web site: www.kta.com.

Kuraray America, Inc.

Booth 1141

Kuraray America is a global leader in the manufacture and supply of specialty chemicals, fibers and resins. Kuraray offers some H2S scavengers for oil and gas. Prenal (SAL) is a H2S/Mercaptan scavenger and FeS inhibitor. Its structure is similar to Acrolein but Prenal is much safer chemical. Nonanedial, a novel oil soluble H2S scavenger, is suitable for downhole injection, inline injection, tower applications and in-tank treatment to effectively remove H2S from oil and gas. Additionally, Kuraray manufacturers and supplies other products including Cementing Agents, Drilling Fluid Additives, Water Soluble Films and Water Treatment Chemicals. Address: Houston, TX. Web site: www.kuraray.com.

LAIKEN S.A.

Booth 1040

Laiken is an Argentine Company founded in 1985, ISO 9001 certified, specialized in the manufacture and sales of anodes for cathodic protection. We manufacture aluminum, zinc, magnesium, graphite, titanium and high silicon cast iron anodes. We provide everything needed for Corrosion Control from a wide range of instruments for PIPELINE INTEGRITY such as ECDA instruments, Remote Monitoring units, Holiday detectors, to different products and accessories such as CADWELD weldings, cable, rectifiers. We export our materials to all the world. Product Quality is our most important commitment as well as giving Technical Support to all our clients. Address: Buenos Aires, Argentina. Web site: www.laiken.com.ar.

● Lake Superior Consulting

Booth 2350

Lake Superior Consulting, LLC (LSC), a Shawcor company, is an engineering consulting and services company providing integrity management solutions and pipeline and facilities engineering solutions for the energy industry. Since 2002, the principles of excellence and integrity have driven every aspect of LSC and the way we support our clients. LSC continues to use innovative technologies to execute a wide range of projects and meet the increasing needs of our US and Canadian client base. LSC is headquartered in Duluth, Minnesota. With over 300 engineers, technicians, and specialists, we operate fully integrated offices in Houston, TX; Kansas City, KS; Minneapolis, MN; Omaha, NE; and Pittsburgh, PA. Address: Duluth, MN. Web site: lsconsulting.com.

S Lamons

Booth 2434

Lamons is a worldwide manufacturer of sealing gaskets with a variety of fasteners for flanged applications. Our ISOTEK™ sealing/isolation range of products (ISOGUARD™, DEFENDER™, MATRIX™ & KI) is manufactured in the USA to ISO 9001:2015 standards. Providing value added performance for end users and installer CP needs. Visit for live GasketApp demos. Address: Golden, CO. Web site: www.lamons.com.

N Laserline, Inc.

Booth 905

Founded in 1997, Laserline grew within a few years to becoming an international leading developer and manufacturer of diode lasers for industrial applications. Laserline has international subsidiaries in USA, Brazil, Japan, China, South Korea as well as partners in Europe and in Asia. Laserline diode lasers can be found in a wide variety of different sectors and application areas. Typical applications are classical forms of metal processing such as welding, brazing, surface hardening & heat treatment, repair of coatings, plastic welding, tape laying, additive manufacturing or welding of fiber composites. Lasers are compact, robust, easy to integrate, carry a 5-year warranty and have excellent plug-wall efficiency up to 50%. Address: Santa Clara, CA. Web site: www.laserline.com.

#CORROSION2020

N Latitude Ltd.

Booth 501

(See page 187 for company profile)

LBBC Baskerville

Booth 2120

LBBC Baskerville, part of LBBC Group, will be introducing their new product range of corrosion testing autoclaves which have been developed based on input from industry experts within the corrosion community. Efforts have focused on addressing current limitations of corrosion testing with a vision to improve industry testing standards by replicating challenging field environments. The new autoclave system incorporates many optional features including corrosion coupon configurations, retractable coupons, electrochemical sensors, injection/sampling systems, dual-autoclave systems and advanced surface treatment that offers superior corrosion resistance suitable for aggressive sour environments. The new product range is suitable for a number of applications and industries including Oil and Gas, Nuclear, CCS, Geothermal as well as Academia. Address: Leeds, UK. Website: www.lbbcaskerville.co.uk.

N LineVision

Booth 1215

Pipeline operators face the growing challenge of protecting their assets and personnel from the risks of AC interference. Accurate power flow data from overhead lines is an essential input to produce high quality AC models and protection system designs. This data can be difficult to obtain and doesn't provide a complete picture of the AC power flow dynamics. LineVision PACT monitoring services provide: • Improved accuracy when performing AC Interference Studies; • Continuous inputs to pipeline integrity management software platforms; • Real-time alerts to field crews when power flows change, increasing step and touch voltage potential risk; • Turnkey solution with remote data collection and web access, eliminating the need for field visits. Address: Somerville, MA. Web site: www.linevision.co/pact.

● Lloyd's Register

Booth 418

We are one of the world's leading providers of professional services for engineering and technology – improving safety and increasing the performance of critical infrastructures for clients in over 75 countries worldwide. You need a partner to listen and focus on what really matters to you and your customers. Use our expertise and over 250 years' experience to deliver the smart solution for everyone. After all, there are some things technology can't replace. The profits we generate fund the Lloyd's Register Foundation, a charity which supports engineering-related research, education and public engagement around everything we do. All of this helps us stand by the purpose that drives us every single day: Working together for a safer world. Address: Houston, TX. Web site: www.lr.org.

Loftis Company, The

Booth 2614

70 Years of Success! We are a full service CP provider specializing in design, materials and installation services. Having been in business for nearly 70 years, we're not learning how to do our job on your project. We have the decades of experience and dedication to our services to ensure your assets are protected. The Loftis Company owns and operates all of our specialty CP drilling and installation equipment and never depend on subcontractors. You can depend on Loftis to get jobs done right the first time. Our customers deserve a job well done and we intend to deliver. Committed to quality cathodic protection since 1952. Address: Midland, TX. Web site: www.loftiscompany.com.

S LORESCO, Inc.

Booth 1619

LORESCO® manufactures impressed current anode backfill for all field conditions. LORESCO® SC-3® designed specifically for demanding anode systems. LORESCO® meets all standards for impressed current anode backfill. SC-3® and RS.3® carry an NSF certification. Other LORESCO® products are replaceable deep anode systems, AllVent™, and PermaPlug™. These products represent the finest innovations available for the deep-anode cathodic protection industry. For quality service and price, specify LORESCO®. Address: Purvis, MS. Web site: www.loresco.com.

N LS Industries

Booth 2643

LS Industries is a leader in the surface preparation industry. Specializing in designing and manufacturing machines that automate the surface preparation process. This will reduce production time and labor costs all while giving you a more consistent product. LS Industries offers many standard machines for common projects, but we also specialize in providing custom solutions for more intricate projects as well. Including blast rooms, cylinder blasters, pipe blasters, structural steel blasters and many others. Contact LS Industries with your metal finishing needs. Address: Wichita, KS. Web site: www.lsindustries.com.

Luna Innovations

Booth 909

Luna's innovative systems and protective materials enhance asset availability while reducing the cost of corrosion control for today's corrosion management programs. Our line of Acuity Corrosion Management Systems provides critical corrosivity measurements for data-driven asset management, and Luna's family of eco-friendly protective coatings inhibit the formation of corrosion on high-risk components. Address: Charlottesville, VA Website: lunainc.com

● **M.C. Miller Co., Inc.**

Booth 1319

M.C. Miller Co., Inc. has been serving the needs of the corrosion control industry since 1945 as a manufacturer of equipment and software for the collection and management of corrosion control data. We offer state-of-the-art dataloggers, CIS and DCVG survey equipment, soil and marine reference electrodes, soil resistivity test kits (including resistance meters), GPS current interrupters, CP system multimeters, voltmeters, coupons, and flange and casing insulation checkers. M.C. Miller Co., Inc.—Trusted by Corrosion Engineers Worldwide. Address: Sebastian, FL. Web site: www.mcmiller.com.

Magnetic Products and Services, Inc.

Booth 2200

MPS Gaussbusters provide Degaussing (DEMAGNETIZING) services all over the world for the pipeline industry providing welders with a quick, easy solution to arc blow out. From subsea habitats to oil rigs in the North Sea, pipelines and rotating machinery, this portable, easy to use yet extremely effective equipment saves time and ultimately money to the client. MPS assists those performing Integrity Services, Pipeline Construction/services, Welding equipment/services, magnetic measuring/testing. MPS Gaussbusters manufacture/sell the equipment we use in the field - Portable Auto Degauss System: 60', 100', 120" cable lengths available, Gaussmeter: a reliable analogue meter, Pocket Gaussmeter: LCD readout or BAR color coded for welders. Address: Holmdel, NJ. Web site: www.gaussbusters.com.

Magneto Special Anodes; an EVOQUA Brand

Booth 1020

Optima(R) and Magneto Special Anodes from EVOQUA for impressed current cathodic protection have long provided outstanding performance and reliability. Since the acquisition of MAGNETO by EVOQUA the original Optima(R) business unit is now backed-up and reinforced by MAGNETO companies in the Netherlands and China and is now able to provide stronger technology and worldwide coverage for sales, and manufacturing and supply. All forms of mixed metal oxide products are available: tubular, wire, ribbon, and products for steel-in-concrete applications, plus platinized titanium and niobium primarily for probe anodes. Address: Union, NJ. Web site: www.evoqua.com/en/brands/magneto/Pages/Applications.aspx.

N Marvel Industrial Coatings

Booth 2836

Marvel Industrial Coatings is The protective coatings company! As an industry leader for the industrial, automotive, OEM and oil & gas industries, our coatings systems, top tier Graco high pressure and spray foam equipment, exceptional technical support and world class customer service makes us the most dependable and reliable protective coatings company in the market. With the highest quality hybrids, foam and 100% pure polyureas, the difference is Marvel! Address: Houston, TX. Web site: www.marvelcoatings.com.

● **Mascoat**

Booth 2211

Mascoat is the leading manufacturer of thermal insulating, highly reflective, and anti-condensation coatings that can help companies save money on energy, maintenance, and installation. The coatings prevent CUI, protect personnel, and save energy by reflecting energy back into the product, not just dissipating it. Depending on the coating, they are applicable to substrates up to 350 °F (177 °C) and allow for constant inspectability. Since they can be applied in a fraction of the time of conventional insulation, installation costs are kept to a minimum. Mascoat has proven its coatings can protect personnel from burns to ASTM 1055 and 1057 with as little as 1-mm thickness up to 275 °F. Address: Houston, TX. Web site: www.mascoat.com.

● **S MATCOR, Inc.**

Booth 1325

MATCOR provides comprehensive services by NACE-trained technicians including cathodic protection engineering, AC mitigation, installation and maintenance services, specialized close interval survey (CIS) teams, and the industry's largest fleet of construction equipment. Proprietary products and systems are USA-designed and manufactured at our ISO 9001:2015 certified plant: AC mitigation systems; cathodic protection systems including deep anodes, shallow ground beds, tank ring anode systems, rectifiers and more. Key proprietary materials include The MITIGATOR® Engineered AC Mitigation System, the Durammo® Deep Anode System and the industry standard SPL™ MMO impressed current linear anodes, including the Iron Gopher® - designed specifically for horizontal directional drilling (HDD) applications. A BrandSafway Company. Address: Chalfont, PA. Web site: www.matcor.com.

N Matergenics, Inc.

Booth 951

Matergenics Inc. is a state-of-the-art materials testing laboratory and corrosion engineering firm, providing root cause failure analysis determinations, inspection and corrosion risk assessment of aging infrastructure and equipment, metallurgical testing; coating testing, concrete and other material testing. We provide cathodic protection design and installation as well. Industries we serve include the electric power utility, telecommunication, oil and gas, aerospace, automotive, water and waste water, medical, and manufacturing. Our vision is to provide new, innovative solutions for complex materials problems to enable clients to improve existing product or processes, develop new materials, and circumvent future materials failures in the making. Address: Pittsburgh, PA. Web site: www.matergenics.com.

McClure Energy Solutions

Booth 1852

McClure Energy Solutions (MES) suite of surveying, engineering and construction services help our clients make everyday life better, easier and safer. Through our expertise, we provide solutions for energy and infrastructure. Large enough to effectively serve our clients while offering the personalized service of a smaller firm, MES is able to provide end-to-end solutions from field survey to design, EPC, automation and controls, pipeline integrity, construction, maintenance and data management. Our comprehensive offering for pipeline integrity and corrosion includes integrity management, right-of-way clearing, close interval survey and inspection, ILI project management, vacuum truck excavation (air/hydro), turnkey cathodic protection and AC mitigation design and installation. Address: North Kansas City, MO. Web site: www.mcclureenergy.com.

● **S Mears Group, Inc.**

Booth 1814

Mears is a respected turnkey and qualified provider of corrosion engineering, construction, and integrity services to the Oil, Gas and Energy industries. We have over 125 NACE certified engineers, technicians, and a skilled workforce to address any needs in corrosion control and integrity solutions. Mears provides NDT services for pipeline and pressure vessel inspections. Our services include Turnkey Direct Assessment, ILI/DA digs, AC Mitigation, cathodic protection testing, design, and installation, pipeline recoating and rehabilitation. Tel: 800MEARSCP. Address: Rosebush, MI. Web site: www.mears.net.

MESATM

CORROSION CONTROL + INTEGRITY

BOOTH 2035

YOUR PARTNER IN MANAGING
YOUR CORROSION CONTROL
NATIONWIDE

- + MATERIALS
- + PIPELINE CP
- + AST SOLUTIONS
- + DIGS
- + CASING SOLUTIONS
- + INTEGRITY ASSESSMENTS
- + VAC EXCAVATION SERVICES

TINKER & RASOR + **LORESCO** + **ANOTEC**

NCC + **SEALFORLIFE** + **3M** + **DE NORA**



CALL US TODAY **888.800.6372**
VISIT US ONLINE AT **MESAPRODUCTS.COM**



● MESA

Booth 2035

MESA is the industry-leading provider of full-service corrosion control solutions, including materials, design, engineering, installation, & technical maintenance. We offer a full line of CP materials & test equipment, anode manufacturing (impressed & galvanic), CP systems for conventional & deep well, & specialize in custom directionally drilled ground beds, well casings, linear anode installations, & vacuum excavations. We are the exclusive distributor/applier of Cortec CorroLogic™ corrosion inhibitor systems for tank floors, roofs, & pontoons. MESA's construction & integrity will address cased pipe remediation, ECDA & ICDA direct examination, CIS/DCVG/ACVG/GPS/PCM/Soil, asset & profile mapping, GIS integration, and AC assessments. Address: Tulsa, OK. Web site: www.mesaproducts.com.

● Metal Samples

Booth 1519

Metal Samples offers a complete line of corrosion monitoring products including mechanical and hydraulic high-pressure access systems, ER and LPR corrosion probes and instruments, corrosion test coupons, coupon holders, test racks, chemical injection systems, as well as specialized monitoring systems for erosion, hydrogen permeation, and biofilm formation. Metal Samples designs and manufactures custom monitoring solutions for challenging and unique applications, and we offer unmatched customer service in our industry. We also offer extensive manufacturing services including laser cladding, which can be used to improve corrosion or wear resistance of a surface. Address: Munford, AL. Web site: www.metalsamples.com.

Metallurgical Engineering Services

Booth 711

Metallurgical Engineering Services (MES) provides independent materials testing, failure analysis, non-destructive testing, corrosion testing, and engineering consulting for a variety of industries. Our accredited, independent test laboratory is located in the Dallas/Ft. Worth metroplex. Our state-of-the-art laboratory offers quality testing, modern equipment, an experienced staff, and rapid turnaround. Address: Richardson, TX. Web site: www.metengr.com.

MetriCorr

Booth 2351

MetriCorr develops, produces, and sells equipment for monitoring of corrosion rate and corrosion protection of metallic structures. Joint industry research and scientific programs is our DNA from which new state-of-the-art concepts and monitoring solutions are fostered. We assist the industry with data interpretation and services related hereto. Preservation, illustration, analysis and reporting of data are made through our intuitive CP*Manage WebService. Our key competencies are electrical interference on pipelines as well as complete systems for monitoring of offshore wind power foundations. Please visit our website www.metricorr.com or contact us through info@metricorr.com for further information and inquiries. Address: Roedovre, Denmark. Web site: www.metricorr.com.

Metrohm USA, Inc.

Booth 2118

From routine moisture analysis to sophisticated anion and cation quantification, Metrohm offers a complete line of analytical laboratory and process systems for titration, ion chromatography, electrochemistry and spectroscopy. Address: Riverview, FL. Web site: www.metrohm.com.

Microbial Analysis

Booth 419

Mitigating microbial growth is paramount for preventing issues such as microbiologically influenced corrosion (MIC) and souring in oil and gas applications, demanding reliable testing and a team of experts committed to your microbial mitigation strategy. At Microbial Analysis / OSP we understand microbial results are important, providing microbial identification and evaluation through technology and services to ensure our clients are protecting their assets with the best information and products available. We are committed to providing evolved microbial testing and quality reports for our clients to support data driven decisions. You can't mitigate, what you can't measure. Address: Groningen, Netherlands. Web site: www.microbialanalysis.com.

Microbial Insights, Inc.

Booth 1010

Microbial Insights, Inc. (MI) is a biotechnology laboratory that offers a wide range of cutting edge Molecular Microbiological Methods (MMMs) to describe and quantify microbial communities. Our genetic and biochemical analyses aid clients in understanding and managing biological processes for assessing, understanding and controlling MIC. Address: Knoxville, TN. Web site: www.microbe.com.

● MISTRAS Group, Inc.

Booth 715

MISTRAS Group (NYSE: MG) is a leading OneSource provider of asset protection solutions for corrosion. We specialize in managing, mitigating, and preventing corrosion using a full suite of nondestructive testing (NDT) inspection, maintenance, and monitoring solutions. We offer: 1) Corrosion assessment programs for corrosion under insulation (CUI), flow-accelerated corrosion (FAC), and touch point corrosion (TPC) 2) Corrosion mitigation and build-up removal services 3) CALIPERAY family of remote corrosion measurements systems and portable systems for spot corrosion inspection 4) Plant Condition Management Software (PCMS), which keeps tracks of Corrosion Monitoring Locations (CMLs) and other mechanical integrity data. Address: Princeton Junction, NJ. Web site: www.mistrasgroup.com.

● S Mobiltex Technologies, Inc.

Booth 721

Mobiltex provides reliable industry leading solutions for corrosion prevention monitoring and interruption control through its CorTalk product suite. Our product line includes fixed/portable interrupters, data loggers, wireless remote monitoring units for rectifiers/testpoints/coupons, and our web-accessed CorView data platform for a turnkey solution to your corrosion prevention monitoring requirements. CorTalk products have been designed to accommodate low cost monitoring and data logging to more sophisticated expandable monitoring and synchronized interruption control systems. Address: Calgary, AB, Canada. Web site: www.mobiltex.com.

Modern Water, Inc.

Booth 821

Modern Water Inc. is recognized globally for the development and sale of analytical instruments and technologies. The wide range of offerings includes a QuickChek SRB test kit for the detection of SRB in 20 minutes. The QuickChek SRB also complies with the ASTM D8243-19. Modern Water is the manufacturer of the "gold standard" Microtox Series of rapid toxicity analyzers. This instrument series offers capabilities to determine acute toxicity in water, sediment and solids. It is part of the regulatory compliance in Canada for drilling muds testing. There are many other SW846 method approved test kits for use in field environmental testing as well as instrumentation for water analysis. Address: New Caslte, DE. Web site: www.modernwater.com.

Modumetal, Inc.

Booth 1047

Modumetal is pioneering the manufacture of a new class of nanolaminated metals with applications across a range of industries including energy, aerospace, automotive and construction. Modumetal's patented manufacturing approach uses electricity, rather than heat, as its primary energy input, enabling near room temperature operations and unlocking unprecedented materials performance at competitive costs. Modumetal has established partnerships with leading oil and gas, aerospace and technology companies. Address: Seattle, WA. Web site: www.modumetal.com.

Montipower Americas, Inc.

Booth 2527

MontiPower Americas, Inc. will showcase the innovative Bristle Blaster technology in a variety of surface preparation tools designed to deliver superior results for the best possible coating bond. The Bristle Blaster, the only handheld power tool that both cleans and profiles steel surfaces, will remove corrosion, scale and coatings while creating a 2.7 to 3.3 mil surface profile. This technology has been extended to new revolutionary products that increase the speed, coverage and performance for non-blasting surface preparation. With offices in Houston, TX and Manassas, VA, we are proud to offer same day shipping for tools, consumables and spares, as well as on-site training and technical support to our customers through North America. Web site: www.montipower.com



VISIT BOOTH NO.
2527



**IT'S
GONNA
GET ROUGH**

www.montipower.com



EXHIBITORS
165

Exhibitors

N —New Exhibitors

S —2020 Sponsors

● NACE Corporate Member

NACE International

Booth 2729

This is your one stop for all things NACE! Staff representatives will be available to provide information on the many resources the Worldwide Corrosion Authority® has to offer the corrosion control and protective coatings professional. From technical training programs, industry standards and publications, and conferences and events, NACE is THE global destination for corrosion control solutions. Headquartered in Houston, Texas, NACE International serves 37,000 members in 140 countries with offices in San Diego, CA, USA; Kuala Lumpur, Malaysia; Dubai, UAE; Shanghai, China; Al-Khobar, Saudi Arabia; and Sao Paulo, Brazil. Address: Houston, Texas. Phone: +1 281-228-6200. Web site: nace.org.

NACE International Media

Booth 2721

Corrosion/protective coatings professionals: learn here how you can subscribe to Materials Performance, CORROSION journal, CoatingsPro Magazine, and any of the NACE Industry Digital Issues and Newsletters. Interested in authoring an article for publication in these leading publications? Talk to our editors about that here too. And marketers, find out how all of NACE's media options can help you reach your target market. Learn more at www.nace.org/resources.

Nalco Water, an Ecolab Company

Booth 1035

We solve our customers' toughest process and water challenges so they can sustainably, reliably and profitably refine fuels and process petrochemicals. Our proven chemistry and digital technologies combined with service increase refinery and petrochemical plant availability and the useful life of customer assets while improving product quality and yields. Our solutions come from teamwork – the interplay of considerable expertise, firsthand experience and innovative research. We establish true partnerships with our customers to compound our collective knowledge and realize real-world innovations that measurably improve efficiency and profitability. We do more than meet the demands of refining and petrochemical operations. Together, we create value. Address: Sugarland, TX. Web site: www.nalcowater.com.

NCP Coatings, Inc.

Booth 1055

A third-generation family-owned business, NCP develops and manufactures technologically advanced primers, enamels, textured coatings, topcoats, reducers and marking paints. The company recently celebrated 70 years of supplying the global paint coatings arena. Headquartered in southwest Michigan, NCP employs more than 100 people at its primary manufacturing facility. Clients include OEM manufacturers in industries like heavy truck/trailer, recreational marine/commercial shipbuilding and off-road equipment. Other industries served include aerospace, military weaponry, ground force equipment and naval shipbuilding. NCP Coatings is well regarded for its specialized line of tree marking coatings utilized by U.S. and Canadian forestry industries. Address: Niles, MI. Web site: www.ncpcoatings.com.

NDT Global

Booth 321

NDT Global is a leading supplier of ultrasonic pipeline inspection robotics and integrity services solutions. Its state-of-the-art inspection robotic fleet provides the entire ILI service spectrum for onshore and offshore pipelines worldwide. The full range of services includes; geometry and deformation inspection, metal loss and crack inspection, defect assessment and fitness-for-purpose investigations. First run success, best data quality and rapid report delivery are our key benchmarks. We boast a skilled engineering and project management team, complemented by one of the best data analysis teams in the industry. Address: Houston, TX. Web site: www.ndt-global.com.

NDT Seals, Inc.

Booth 843

We design, manufacture and distribute the patented NDT Inspection Plug and NDT Inspection Point Labels used in the Process Safety Management (PSM) and Mechanical Integrity (MI) efforts underway in the process industries. We are a longtime supporter of NACE and our quality management system is ISO 9001:2015 certified. Address: Houston, TX. Web site: www.ndtseals.com.

NDT Spot, Inc.

Booth 421

NDT Spot, Inc is a NDT distributor company located in Houston, TX. We are the exclusive distributor of Sonotron NDT for the States of Louisiana and Texas. Sonotron NDT manufactures the advanced line of ultrasonic equipment called Isonic, which provide unique features in the market like True-to-Geometry and the dynamic range of gain. The features of our Conventional UT and Phased Array units allows the technology to be useful for applications like complex geometry weld inspection, Corrosion Under Pipe Support (CUPS) and Tank's floor critical zone inspection. Address: Houston, TX. Web site: www.ndtspot.com.

Nippon Steel Corporation

Booth 121

Your world-class technology partner. Nippon Steel is moving ahead as a growing global steelmaker. Through our use of advanced technology, we are a world-class technology partner to our customers, based on the knowledge and experience we have gained as the largest steel mill in Japan. We are also a global leader in high-quality tubes and piping, supplying its products all over the world. Our extensive product line covers all applications, ranging from carbon steel to nickel-based alloys. As a trusted and widely renowned manufacturer, we supply high-quality pipes and tubes using the most advanced technology to provide consistent, reliable quality. As a result of continuous R&D efforts, customers are sure to find their "fit for purpose" products with us. We work closely with our customers to find the best solution for any application, no matter how challenging. Address: Tokyo, Japan. Web site: www.nipponsteel.com/index.html.

Noram / Axton

Booth 903

NORAM Engineering and Constructors, Ltd celebrates 30 years of providing proprietary engineering and equipment packages to the process and resource industries worldwide. Axton-Ellett, a wholly-owned subsidiary, specializes in custom fabrication using: stainless steels, high nickel alloys, titanium & zirconium. products include: heat exchangers, acid towers, converters, crystallizers, evaporators, reactors & pressure vessels. For "High Performance". Vancouver, BC, Canada. Web site: www.noram-eng.com.

North American Survey Corporation

Booth 1945

North American Survey Corp. (NASCORP) is a cathodic protection testing and monitoring company, headquartered in Spring, Texas. During our 30 years in business, NASCORP has performed over 100,000 miles of various over-the-pipeline surveys. Some of the surveys include CIS, ACVG, DCVG, Depth-of-Cover, Soil Resistivity, etc. Clients choose NASCORP because of our experience, honesty, integrity, and ability to provide accurate, timely data. We are proud to say they come back because of our commitment to excellence. We are members of NACE, ISNetworld, DISA, Veriforce, and NCCER, as well as being an accredited NCCER training and assessment facility. We hope you will consider NASCORP for your integrity assessment needs. Web site: www.nascorp.biz. Address: Spring, TX. Web site: www.nascorp.biz.

Northrop Grumman

Booth 1050

Northrop Grumman solves the toughest problems in space, aeronautics, defense and cyberspace to meet the ever evolving needs of our customers worldwide. Our 85,000 employees define possible every day using science, technology and engineering to create and deliver advanced systems, products and services. Address: Annapolis, MD. Web site: www.northropgrumman.com.

Northtown Company

Booth 2422

Northtown Co. is a manufacturer and distributor of a broad array of pipeline and cathodic protection products, including Trenton® wax tapes, sacrificial anodes, custom test boards and stations, exothermic welding molds and charges, bond cables, epoxies, shrink sleeves, markers, marking tape, polyethylene encasement, and more. The company offers specialty tools like crescent pipe tongs, concrete or DIP-cutting chain saws, and a full complement of safety products including barricade tapes, signs and tags, safety glasses, vests, and hard hats. Truly a one-stop shop for corrosion protection projects, the company is proud to be serving the oil and gas, marine, utility, and waterworks industries for over four decades. Address: Huntington Beach, CA. Web site: www.northtowncompany.com.

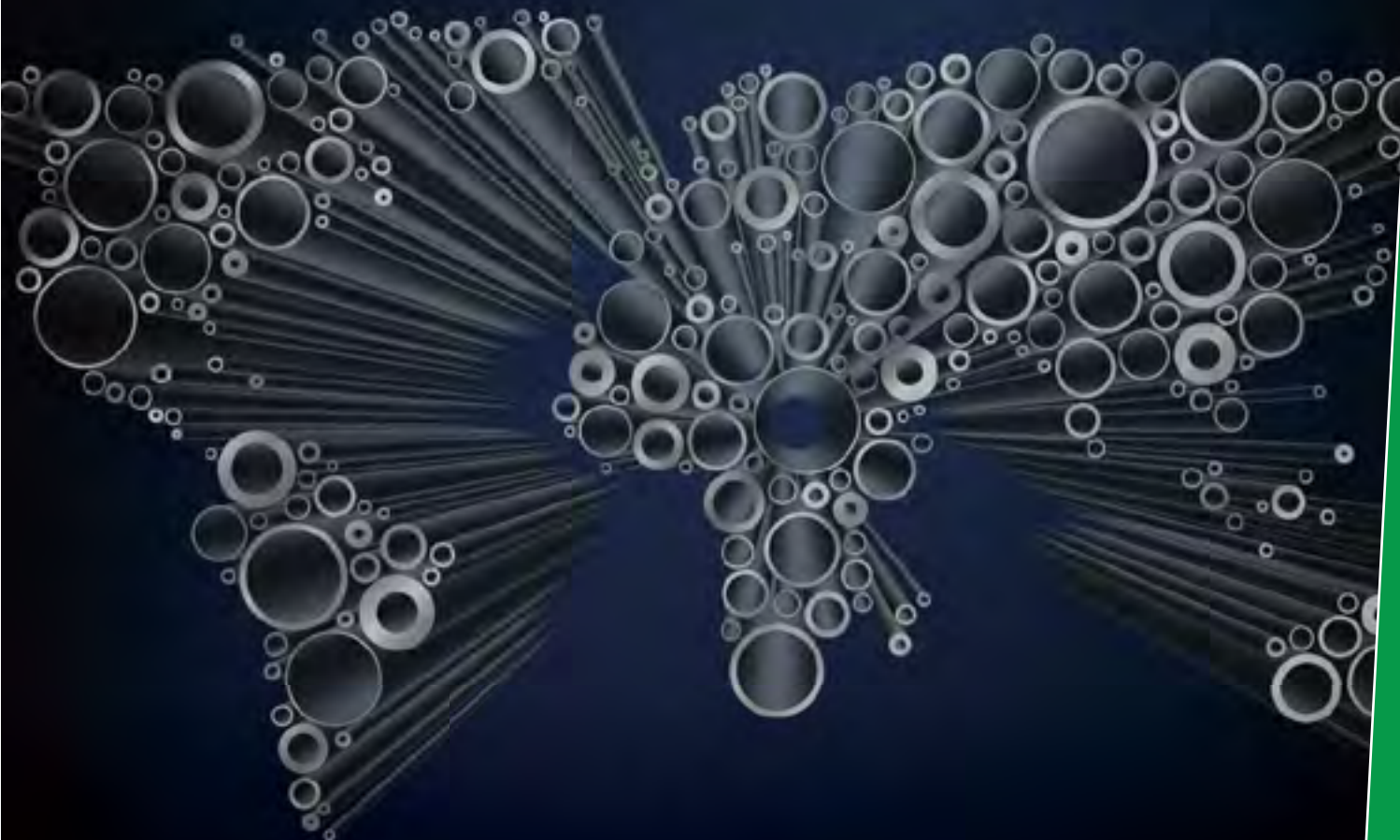


NIPPON STEEL

A world

leader in:

- NIPPON STEEL Seamless Steel Pipe and Tube



**Our world renowned strengths include
an assortment of grades and broad range of sizes.**

NIPPON STEEL CORPORATION'S seamless steel pipe and tube are *fit for purpose* original material to ensure that we deliver quality that meets and exceeds customer expectations. Our integrated quality control & traceability system, from steel melting to final product, enables us to supply consistent, high quality grades in a broad range of sizes for use in the petrochemistry, petroleum refinery, aerospace, and other industries around the world.



NIPPON STEEL

www.tubular.nipponsteel.com

Head Office (JAPAN)

NIPPON STEEL CORPORATION

6-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-8071, Japan

• Houston Office (U.S.A.)

TEL: 1-713-654-7111 FAX: 1-713-654-1261

• Düsseldorf Office (GERMANY)

TEL: 49-211-5306680 FAX: 49-211-5961163

• Singapore Office (SINGAPORE)

TEL: 65-6223-6777 FAX: 65-6224-4207

STEEL TUBING MAKES ANYTHING POSSIBLE



EXHIBITORS
167

Exhibitors

N—New Exhibitors **S**—2020 Sponsors ● NACE Corporate Member

● Norton Corrosion Ltd.

Booth 914

Since 1959, NCL provides corrosion/cathodic protection (CP) engineering, materials, and installations. Our staff includes registered PE's and ten plus corrosion professionals with various NACE certifications. Typical structures we work on include: wharfs/piers, buried piping, ASTs, USTs, refineries, waste/water treatment plants, and concrete/rebar infrastructure assets. NCL specializes in marine environment and Power Gen applications. NCL provides CP plans/specifications, corrosion evaluations, and annual surveys. Typical CP material packages range from galvanic systems to custom built ICCP sleds. NCL exclusively manufactures the Bayanode® probe anodes, NCL-GEL/CELLTM reference cells, and Morganode® II Anodes. Address: Woodinville, WA. Web site: www.nortoncorrosion.com.

NOV Tuboscope

Booth 827

Tuboscope's proven line of TK™ coatings consistently sets the industry standard for preventing corrosion & wear, improving hydraulic efficiency and controlling deposit mitigation. With over 20 coating and liner facilities, we are able to meet your OCTG corrosion control needs worldwide. Fiber Glass Systems delivers composite pipe and fittings engineered for efficiency and performance. With manufacturing facilities spanning four continents, and a sales and distribution network covering 40 countries, we provide worldwide service to the oil and gas, chemical and industrial, marine, offshore, fuel handling and mining industries. Address: Houston, TX. Web site: www.nov.com.

Novosound Ltd.

Booth 1648

Novosound push the limits of ultrasound by exploiting thin film technologies in current and untapped markets. The patented sensor technology addresses the limitations of traditional ultrasound manufacture with a printed sensor that can be mass-manufactured for NDT and Imaging applications. Novosound's "fit and forget" sensors remain operational in extremely high operating temperatures (in excess of 350°C) for continuous inspection. Novosound also sell high-res probes for Scanning Acoustic Microscopy, and flexible arrays for NDT applications. Novosound is a solution for all types of asset integrity monitoring (internal and external), corrosion monitoring, early defect identification of pipework, turbines, and hard to reach areas. We operate across the oil and gas, aerospace, nuclear, rail and manufacturing process industries. Address: Motherwell, UK. Web site: www.novosound.net.

Nukote Coating Systems Int'l. LLC

Booth 2046

Nukote Coating systems is a protective coating and liner manufacturer. We supply advance products used in the rehabilitation of liquid containment and pipeline distribution systems. Our single source solution includes; next generation surface conditioners and primers, ultra-fast spray applied products, and cutting edge robotic application equipment. Address: Houston, TX. Web site: www.nukoteglobal.com.

NVI, LLC

Booth 911

NVI, LLC, a privately owned nationwide industrial solutions provider, has achieved an unequalled reputation for quality, responsiveness, and safety. We are a source provider to thousands of companies in industries such as marine, fabrication, offshore, pipeline, and petrochemical. Our Mechanical Integrity group can support its clients throughout their project's life cycle which include Pre-construction Quality Control, New Construction, Regulatory Guidance, Risk Based Inspection, Direct Assessment, and Repair. With our highly trained personnel, you can count on NVI, LLC to propose the exact solution that best meets the needs of your project. At NVI, LLC, we will continue to invest in our people, processes, and equipment. Address: Nationwide. Web site: www.nvindt.com.

● OLI Systems, Inc.

Booth 2119

OLI Systems is an established global leader in delivering comprehensive, process optimization solutions for water chemistry based industrial applications that enhance engineering productivity,

operational efficiency and sustainability while mitigating risk. As the pioneer in electrolyte/water chemistry science and its applications to industrial processes, OLI Systems delivers the most rigorous and accurate process modeling and simulation insights and intelligence with its extensive chemistry property database, differentiated thermodynamic and kinetic models and proven software platforms. Address: Cedar Knolls, NJ. Web site: www.olisystems.com.

OmniMetrix

Booth 942

Corrosion never sleeps and the tools you use to prevent it shouldn't either. OmniMetrix provides the most accurate and longest lasting pipeline monitors in the industry. Our cathodic protection monitoring solutions can be found on rectifiers and test station as well as other critical assets such as generators and air compressors. Our monitors work 24x7 to provide the vital information you need to make important decision about your pipeline. With our modular designs, field replaceable parts, customized solutions and the superior surge protection offered by the Hero 2 rectifier monitor, it's no wonder why OmniMetrix is the leader in remote monitoring solutions. Address: Buford, GA. Web site: www.omnimetrix.net.

OneBridge Solutions, Inc.

Booth 1001

OneBridge Solutions Inc., develops and markets revolutionary new SaaS solutions that use advanced Data Sciences and Machine Learning to analyze big data using predictive analytics to assist Oil & Gas pipeline operators to predict pipeline failures and thereby save lives, protect the environment, reduce operational costs and address regulatory compliance requirements. Visit www.onebridgesolutions.com for more information. Address: Edmonton, AB, Canada. Web site: www.onebridgesolutions.com.

Onyx Services

Booth 1042

Onyx Services is a nationwide pipeline construction company that provides repair, maintenance, design, survey and inspection services coast-to-coast. One distinct point of differentiation is we provide these services on land and in water. Address: New Caney, TX. Web site: www.onyxservices.com.

N Opti-Blast Inc.

Booth 1660

Opti-Blast, Inc. is celebrating its 25th year in the Abrasive Media Blasting industry. We have been MIL SPEC approved by the United States Air Force for over 20 years. We are the leader in the abrasive industry for Plastic Media. Our Media is used to remove paint and coatings without damaging the substrate. Plastic Media is an excellent product for cleaning and prepping materials at low PSI's. We are a true manufacturer of Plastic Media. Our product is proudly made in the USA! Opti-Blast, Inc. plastic media is used throughout the world. We have major Military, Commercial, and Industrial contracts. We currently sell to over 15 nations worldwide. Address: Jacksonville, TX. Web site: www.optiblast.com.

Optimum Anode Technologies

Booth 801

Optimum Anode Technologies is a high-quality provider of cost-effective dimensionally stable anodes that are both reliable and cost competitive for most cathodic protection applications. We supply mixed-metal-oxide (MMO) and platinum catalytic coatings that are sintered to a titanium substrate, providing an anode that is both lightweight and durable. Our proprietary catalysts are suitable for use in a wide range of cathodic protection applications, including soil, carbonaceous landfill, fresh water, brackish water, and seawater. Our high-value metal substrates assure high corrosion resistance. Web site: www.optimumanodes.com.

Outokumpu Stainless, Inc.

Booth 1114

Outokumpu is the global leader in stainless steel. We aim to be the best value creator in stainless through our competitive edge of customer orientation and efficiency. The foundation of our business is

our ability to tailor stainless steel into any form and for almost any purpose. Stainless steel is sustainable, durable and designed to last forever. Our customers use it to create civilization's basic structures and its most famous landmarks as well as products for households and various industries. Outokumpu employs 10,000 professionals in more than 30 countries, with headquarters in Helsinki, Finland and shares listed in Nasdaq Helsinki. Address: Calvert, AL. Web site: www.outokumpu.com.

N **Ovolifts, LLC**

Booth 2737

Ovolifts has a unique and patented technology developed in conjunction with the petro-chemical industry for providing safe access to multiple pipe touch points in a live environment. This enables inspection and corrosion prevention maintenance on multiple contact areas whilst the pipes are in-service and averts costly plant shutdowns or extended turnarounds. Address: Houston, TX. Web site: www.ovolifts.com.

S **Owens Corning® FOAMGLAS® Insulation**

Booth 2515

FOAMGLAS® cellular glass insulation is a lightweight, rigid material with a closed-cell structure that offers long-term thermal performance for piping and equipment. It is moisture impermeable, non-absorbent, non-combustible, and has high compressive strength. The service temperature range is -450°F to +900°F (-268°C to +482°C). Address: Toledo, OH. Website: www.foamglas.com.

P.A., Inc

Booth 1918

Leading distributor of nickel, high nickel alloy and specialty stainless piping materials. Grades readily available from stock are Alloy 200, Alloy 400, Alloy 600, Alloy 601, Alloy 625, Alloy 800H/HT, Alloy 803, Alloy 825, Alloy C-276, Alloy 020, Specialty Stainless 304H, Duplex 2205 and Titanium Grade 2. Pipe and BW fittings ranging from 1/2" to 8" seamless and 10" to 14" welded. In flanges - 1/2" to 8" 150lb and 300lb weldnecks, slip-ons, blinds, socketweld and orifice. Custom fabrication available from your drawings upon request. In house PMI, LPT, Ultrasonic wall thickness testing, ID borescope, Optical emission spectrometer for chemical contenting. All performed by level 2 technicians. Address: Houston, TX. Web site: www.painc.com.

Pacific Sensor

Booth 1019

Pacific Sensor has been supplying quality corrosion monitoring equipment and services to chemical processing, petroleum, and water treatment industries around the world for over 25 years. Our products include: Corrosion Coupons, Corrosion Racks, Coupon Holders, Weight Loss Analysis for corrosion coupons, Replacement Electrodes, HFRR Test Specimens and Fuel testing. Pacific Sensor is ISO 9001 Certified and ISO 17025 accredited. Address: Carrollton, TX. Web site: pacificsensor.com.

PacTec, Inc.

Booth 2517

PacTec, Inc. in partnership with Plank Road Technologies is a global provider of flexible packaging, containment and corrosion prevention products. With over 20 US and UK patents, we have built a reputation for developing innovative solutions where none previously existed. Our newest is the patented SecurePac, a revolutionary storage technology that prevents corrosion in any environment. Assets are fully encapsulated in a reusable, gas-tight oxygen barrier enclosure then treated with our patented LOC ('Low Oxygen Content') system, removing oxygen, moisture, and harmful particulates - creating a corrosion-proof internal environment that extends the shelf-life of the enclosed asset, while eliminating traditional maintenance costs. Clinton, LA. Web site: www.pactecinc.com.

Pan American Ind., Inc.

Booth 2639

Pan American's IRISXR® inspects tubing and piping with diameters ranging from 0.36" to 44". With the IRISXR® vertical piping can be inspected to a depth of 2000' and horizontal pipes up to 15000' in length as well as heat exchangers, condensers and boilers. The

IRISXR® provides real time inspection of short runs of piping and pipelines including but not limited to: Jacketed piping, Fire tubes, Underground pipe, Pipes encased in concrete, River crossings, Risers and Loading lines. Pan American manufactures special use probes and offers services using tethered and free running inspection tools up to 3 miles. Stop by booth #2639 to see the IRISXR® along with one of our large diameter pipe inspection tools. Address: Porter, TX.. Web Site: www.IRISXR.com.

Parr Instrument Co.

Booth 2251

For over 120 years Parr Instrument Company has been providing high quality laboratory instruments for fuel testing and conducting chemical reactions and tests under heat and pressure. Our products are used for research, corrosion testing, quality assurance, production and teaching in academic research laboratories, pilot plants, and industrial production facilities. We specialize in stirred reactors, pressure vessels, and high pressure tubular reactor systems used for the study of catalytic reactions in batch, continuous-flow, multiple/parallel, fluidized-bed, and supercritical operations. These systems are for use in chemical, polymer, pharmaceutical, petroleum, hydrometallurgy, petrochemical, and biomass applications. Address: Moline, IL. Web site: www.parrinst.com.

● **PCC Metals Group**

Booth 1313

The PCC Metals Group aligns two market leaders in alloy research and development: Special Metals Corporation (SMC) and TIMET, Titanium Metals Corporation. SMC is a pioneer in nickel alloys and has invented and developed a large majority of the commercial nickel-based superalloys offered in the market today. TIMET was a founding member of the titanium industry and is the only fully integrated titanium producer in North America. PCC Energy Group companies, including RathGibson, and other Precision Castparts Corp. (PCC) divisions, leverage the in-house alloy production of the PCC Metals Group to offer increased capacity and shortened lead times. Address: Warrensville Heights, OH. Web Site: www.metalsgroup.com.

PCC Rollmet

Booth 1023

PCC Rollmet, Inc. is a manufacturer of large diameter seamless nickel alloy, stainless Steels, & duplex stainless steels in sizes 6" to 24" diameters and wall thicknesses from 0.134" to 0.750" (Can reach 1.50" wall in certain Nickel Alloys). Pipes are produced utilizing our cold rolled extrusion technology, offering higher mechanical properties, superior dimensional control, finer grain structure, and enhanced corrosion resistance for the most severe applications. We are ISO 9001, AS9100D, PED certified, and meet NACE Mro103 & 175 criteria. Address: Irvine, CA. Web site: www.rollmetusa.com.

PDS

Booth 1009

Produces a comprehensive line of high performance drilling fluids and bentonite sealants for a variety of drilling, environmental and groundwater applications. Address: El Dorado, AR. Web site: www.pdscoinc.com.

S **Penspen**

Booth 1359

Penspen provides services across the entire project lifecycle to help clients develop new energy assets and optimize existing assets from wellhead to storage and distribution. Over 65 years, we've worked on over 10,000 projects in over 100 countries for oil companies, utilities and infrastructure owners. From concept, design, engineering, project and total programme management, to asset and integrity management services, including risk and corrosion consultancy, operations, maintenance, rehabilitation to decommissioning; we provide customized services and fully integrated programmes. Penspen is a member of the Dar Group, an international network of engineering firms, comprising of over 18,000 staff and serving a wide range of industries. Address: Houston, TX. Web site: www.penspen.com.

PERMA-PIPE, Inc.

Booth 807

PERMA-PIPE is a global engineered pipe services company offering core competencies in engineering design, material sciences, fabrication, insulation, coating, and monitoring systems. With over 100 years of products manufacturing and service delivery expertise meeting globally recognized industry standards and ISO 9001 certification. PERMA-PIPE has seven strategically located manufacturing facilities in the USA (2), Canada, United Arab Emirates, Saudi Arabia, Egypt, and India. PERMA-PIPE is recognized for its excellent safety record, industry-leading products and services, the highest quality fabrication, and the lowest life-cycle cost for the most complex piping system challenges. Address: Spring, TX. Web site: www.permapipe.com.

Pigs Unlimited International, Inc.

Booth 953

Pigs Unlimited International, LLC currently manufactures all styles of pigs (foam, steel, and solid-cast) as well as spare components (cups, discs, and brushes). Our main goal is to provide our customers with the most complete line of pigs and pigging products. We strive to provide the best prices and with our large inventory base our lead times are unmatched within the pipeline pigging industry. Address: Tomball, TX. Web site: www.pigsunlimited.com.

Pine Research Instrumentation

Booth 434

Pine Research Instrumentation, Inc. offers specialized tools for electrochemical study corrosion processes. Our corrosion-specific products include potentiostats and software, ASTM standard corrosion vessels/cells, and rotating cylinder electrodes (RCE) for flow based corrosion measurements. Our RCE products, popular in both industrial and academic market segments, are often used for corrosion inhibitor screening. The RCE bundles feature the highly cited MSR Electrode Rotator, and several one liter cell options with an Open Top lid. Pine's robust cylinder electrodes feature interchangeable cylindrical metal samples that mount on a vertically oriented shaft. Our products have been designed based on input received from the corrosion community. Address: Durham, NC. Web site: www.pineresearch.com.

N Pipeline Compliance Services, LLC

Booth 2346

Family owned since 2007, Pipeline Compliance Services (PCS) is a compliance driven provider of corrosion control and cathodic protection services for energy/oil & gas operators. The PCS team includes a trained staff of NACE-certified personnel that bring many years of diversified experience to work each day. This team allows PCS to provide top quality services including cathodic protection installation, corrosion technical services, third party inspections, and project management. We take pride in utilizing our fleet of company owned construction equipment and trained service professionals to tailor projects for individual customer needs. Address: Longview, TX. Web site: www.pipelinecs.net.

● Pipeline Inspection Co., Ltd.

Booth 2027

Pipeline Inspection Co. is focused on pipeline and coatings inspection products. The principal product of Pipeline Inspection Co. is a holiday detector. All of Pipeline Inspection Co.'s products combine the latest technology in leading-edge circuitry for field proven accuracy and reliability. For well over 50 years, Pipeline Inspection Co. has earned a reputation for manufacturing equipment of superior accuracy, dependability, and durability. Pipeline Inspection Co. is dedicated to providing the best product, world-class service, and unparalleled support in the market now and in the future. Look to us for your product needs: holiday detectors, jeep meters, electronic pig tracking and locating systems, and pig tracker sensors. Address: Houston, TX. Web site: www.picltd.com.

N Plásticos Industriales de Tampico, S.A. de C.V.

Booth 1104

(See page 187 for company profile)

PLIDCO

Booth 406

PLIDCO®, The Pipe Line Development Company, has been manufacturing quality pipeline repair and maintenance fittings since 1949. PLIDCO® has become the leader in the industry by focusing on the quality and safety of our fittings which can be installed by your personnel. Unique to the PLIDCO® product line are steel GirderRings which hold seals in place and protect them from displacement and damage during installation. Stock sizes as well as custom designed fittings are available. PLIDCO® has a proven track record with hundreds of thousands of fittings sold, and safely used, worldwide for on-shore and off-shore repairs, saving time and money by minimizing costly shut-downs. Our focus on quality and safety is unmatched in the industry. PLIDCO® is ISO 9001 certified. Trust the original. Trust PLIDCO®. Address: Westlake, OH. Web site: www.plidco.com.

N Point of Instant Need Technologies

Booth 215

Point of Instant Need Technologies is a biotechnology manufacturer specializing in DNA testing kits for in field detection and quantification of MIC organisms. The PoC-Kit provides you a scientist in a box to use on site, for real time results via DNA based analysis. Get to the POINT, don't wait 28 days. Address: Norman, OK. Web site: www.PointDNA.com.

Polycorp Protective Linings

Booth 1240

Polycorp, Ltd. is an ISO9001:2015 Certified Facility holding Certificate FM64466 with design and manufacturing. Our Protective Linings Division specializes in the manufacturing of engineered elastomeric products that mitigate the risk associated with corrosion and abrasion. Our lining solutions are used to protect your primary assets such as holding tanks, process vessels, piping, mixing equipment, tank trucks, rail cars and associated equipment. Our customers benefit from the extensive BF Goodrich and Polycorp product catalogue, superior technical support and decades of experience in the protective lining industry. We offer more than 100 rubber formulations of BF Goodrich and Polycorp designed to suit a wide variety of service conditions. Web site: www.poly-corp.com.

● Polyguard Products, Inc.

Booth 1841

Polyguard's Pipeline Division was the first coating manufacturer to highlight the cathodic shielding problem, and the first to develop a coating to address the shielding problem. We've been active in the Pipeline Protective Coating industry for more than 50 years. In addition to standard types of Corrosion Coatings, this division has designed, manufactured, and introduced a number of innovative Underground Pipeline Coatings and Girth Weld Coatings, which have become commercially accepted as standards for the industry. They are both Non-Shielding Coatings and Soil Stress Tolerant. Address: Ennis, TX. Web site: www.polyguard.com.

● S Pond

Booth 1049

Pond is an Engineering, Architecture, Planning, and Construction firm that provides technology-driven services to clients throughout the nation. Our Asset Integrity group is comprised of Corrosion, Integrity, Coatings and Pipeline Survey professionals who have the qualifications and experience that inspire confidence in every job that is performed. Pond's full-service capabilities benefit our clients by delivering greater value through teamwork, responsiveness, communication, quality control, and project coordination. Our philosophy and success are based on listening to our client's needs and drawing from the expertise of our deep bench of experienced professionals to provide high quality deliverables tailored to the client's mission. Pond has Asset Integrity staff positioned throughout the US ready to suit your needs. Address: Peachtree Corners, GA. Web site: www.pondco.com.

● S PPG

Booth 1235

With PPG's decades of experience and a commitment to innovation, our protective and marine coatings business has developed a complete range of proven coating solutions to protect assets in the world's most challenging conditions. Address: Pittsburgh, PA. Web site: www.ppgmc.com.

Praxair Surface Technologies, Inc.

Booth 1021

Praxair Surface Technologies is a leading global supplier of surface-enhancing processes and materials and an innovator in thermal spray, electroplating, diffusion, and high-performance slurry coatings. We produce and apply metallic and ceramic coatings that protect critical components from a variety of environmental conditions, including wear, corrosion, and high temperatures. Our SermeTel® and SermaGard® coatings systems have sacrificial basecoats consisting of various binders, combined with metallic or ceramic materials. These systems are galvanically active, stable at elevated temperatures, electrically conductive, and have superior adhesion and resistance to mechanical damage. Address: Indianapolis, IN. Web site: www.praxairsurfacetechologies.com.

Princeton Applied Research

Booth 1543

Princeton Applied Research and Solartron Analytical combine as AMETEK Scientific Instruments, the leading manufacturer of laboratory instruments for investigations in the fields of electrochemistry, including Tafel plots for corrosion rate measurement, Electrochemical Impedance Spectroscopy (EIS) for coating evaluations, and Electrochemical Noise for galvanic couples. The VersaSCAN platform complements traditional rate measurements with 3-Dimensional mapping of localized corrosion and pitting. With core instrumentation and a full line of accessories designed for common ASTM standards, AMETEK provides accurate, fast evaluation of your material in its test environment. Address: Oak Ridge, TN. Web site: www.ameteki.com.

Proco Products, Inc.

Booth 2201

Proco Products, Inc. supplies rubber expansion joints, PTFE lined rubber expansion joints, convoluted PTFE expansion joints, metal expansion joints, duck bill rubber check valves and piping penetration seals for the industrial industry. Proco supplies its products in fluid piping systems or systems conveying solids. From chemical applications, power generation or water/waste water, Proco carries \$3M in inventory to serve the needs of our distributors and end users. Contact us today at sales@procoproducts.com and ask for our catalog of expansion joints, rubber check valves and penetration seals. Address: Stockton, CA. Web site: www.procoproducts.com.

Pro-Mark Utility Supply, Inc.

Booth 1943

Pro-Mark Utility Supply, Inc. is a leading manufacturer of Pipeline Markers, Utility Signs and Marker Posts with over 25 years of experience in identifying and marking buried pipelines. Pro-Mark also manufactures a complete line of Cathodic Protection Test Stations and accessories. Our products are made from formulated engineered resins to perform in harsh weather conditions to identify, prevent damage and dangerous accidents. All Pro-Mark products are manufactured and assembled in the USA. Our headquarters and corporate offices are located in Los Angeles, CA. Address: Whittier, CA. Web site: www.promarksupply.com.

N Pro Oil & Gas Services

Booth 1659

Pro Oil & Gas Services, LLC is a privately held company headquartered in Houston, Texas. Pro offers Drilling Services: Pre-set Surface, Water Wells, Cathodic Drilling, Grounding Holes Water Well Servicing / Rehab. Pro Oil & Gas also offers Frac Stack, Flowback, & Well Testing. Pro is committed to service excellence for our customers by providing quality equipment and experienced personnel. Address: Houston, TX. Web site: proosllc.com.

● Pro-Surve Technical Services, LLC

Booth 1052

Pro-Surve Technical Services with subsidiary companies Pro-Source Radiography and Pro-Force Industrial are an integrated inspection, NDT, reliability engineering, data management and project controls service provider assisting clients across CapEx/OpEx budgeted projects and workflow processes. We often operate "outside the box" to focus on providing complete solutions, integrating engineering with

inspection. The uniqueness of our personnel, having experience from a variety of industries, enables Pro-Surve to balance both the "Callus and the Credentials" We are proud to provide solutions-oriented services to complex challenges. Why? "because we said that we would." Address: League City, TX. Web site: www.prosurve.com.

Protección Católica de Colombia

Booth 2547

We are a company with 40 years in the industry, experience that gives quality and recognition to our brand. The company is specialized in cathodic protection services, materials manufacture and supply, inspections and testing. Address: Bogota, Colombia, Colombia. Web site: www.proteccioncatodica.com.

PSS Industrial Group

Booth 225

PSS Industrial Group is a combined group of companies including well-known brands like Pipeline Supply and Service, Industrial Air Tool, and Airtech Spray Systems, that bring high value to the energy and industrial sectors. From mass distribution to specialized services, PSS Industrial Group offers a wide variety of products and services to accomplish any project. PSS is able to help with everything from surface preparation equipment and coatings to MRO supplies, tool repairs, material handling, inspection & safety equipment and much more. With over 65 years of experience in these areas, PSS Industrial Group is the most reliable and leading source for the industrial, maintenance, construction and repair industries. Address: Houston, TX. Web site: www.pssigroup.com.

● PureHM

Booth 427

PureHM offers technology-driven pipeline integrity solutions across North America. These include above-ground inspection services such as CP surveys, coating evaluations, GPS/GIS and depth of cover surveys as well as a suite of water crossing inspection solutions. We offer end-to-end corrosion control solutions including system consulting and design, AC mitigation solutions, adjustive surveys, continuous CP monitoring, repairs, installations and materials supply. We offer leak detection solutions and pigging services, including advanced remote pig tracking. PureHM's services are cost-effective and delivered by professionals who care about their clients and the challenges they face. This allows clients to focus their resources effectively to ensure fitness for service, while maximizing product delivery as safely as possible. Address: Edmonton, AB, Canada. Web site: www.pureHM.net.

Q-Lab Corp.

Booth 906

Q-Lab Corporation is a leader in corrosion and weathering test chambers and services for the protective coatings, aerospace, and many other industries, with a global support network unmatched in the industry. The Q-FOG line of corrosion chambers performs simple salt spray tests or more complex protocols that require precise humidity control. The QUV chamber is the world's most widely used weathering tester and has been a mainstay in the coatings industry for decades. Q-Lab also provides contract laboratory and outdoor test services, including the world's largest weathering test site in south Florida. Address: Westlake, OH. Web site: www.q-lab.com.

QSA Global, Inc.

Booth 615

QSA Global, Inc. specializes in supplying premium-quality gamma radiography sources and exposure equipment for the nondestructive testing (NDT) industry, high performance sealed sources for oil well logging, industrial process control, and real-time x-ray imaging systems for NDT and security applications. OpenVision™ Digital X-Ray system (OVDX) enables real time, qualitative screening for corrosion under insulation (CUI). CUI causes unscheduled downtime if not identified and corrected, posing major cost and safety issues. Identify problem areas quickly, saving valuable time and resources. Scan miles with OpenVision™ versus mere feet accomplished by other NDT methods. OVDX is lighter, more versatile, and more durable than its predecessor, increasing inspection productivity in every way. Address: Burlington, MA. Web site: www.QSA-global.com.



★ ★ **WANTED** ★ ★

BEST

**PIPELINE PROTECTION MESH
IN THE NORTH, SOUTH, EAST & WEST**



**RockGuard[®] HD
PIPELINE PROTECTION MESH**

We are even Bigger in Texas and You can't Miss Us!

BOOTH #1247

***C'MON BY FOR A CHANCE TO GET YOUR
PERSONAL INVITE TO ATTEND OUR EXCLUSIVE HAPPY HOUR
& TO WIN A 2020 CAN-AM SIDE-BY-SIDE**



PROUD SPONSOR OF NACE 2020

CONFERENCE BAG | HARLEY GIVEAWAY | LEADERBOARD | BENCH

WWW.ROCKGUARD.BIZ

**EXCLUSIONS APPLY*

Radiodetection SPX

Booth 1914

Since Radiodetection launched the PCM (Pipeline Current Mapper), it has become first choice for many corrosion engineers conducting Indirect Inspection in their ECDA. Our PCMx includes: a battery-operated transmitter for greater portability and flexibility in the field; built-in GPS on the receiver, a mobile application and a removable foot all to ensure that field operators have the best tools for the job. Address: Raymond, ME. Web site: radiodetection.com.

Ramco Manufacturing Company

Booth 226

Ramco[®] Manufacturing is the leading manufacturer of quality products for Cathodic Protection, Corrosion Prevention, Leak Detection and Personnel Protection. Products we manufacture are designed to provide integrity and safety to piping systems. Our products are Flange Insulation Gasket Kits, Stainless Steel Flange Protectors and Coated U-Bolts for cathodic protection, pipeline security and corrosion prevention. The OnGuard™ Leak Detecting Paint quickly alerts personnel of a hazardous leak from the piping system allowing for a rapid response to correct, before the situation becomes worse. Ramco[®] Safety Shields are designed to prevent uncontrolled spray outs of hazardous liquids or gases that can result in personnel injury and equipment damage. Address: Houston, TX. Web site: www.ramco-safetyshields.com.

● RD Coatings - Dothee S.A.

Booth 1759

RD Coatings offers a line of high-quality water-based protective coatings for equipment, commercial and industrial facilities, engineered structures and building envelope.

Our coating systems consist of highly innovative and cost-effective long-term solutions for anticorrosion, concrete preservation and waterproofing. Our 100% water-based product range replaces the use of solvent borne products in many occasions, offering the opportunity to use safer, easier and more eco-friendly paint systems! We are pioneers in Waterborne Technology with over 60 years of experience in protective coatings and relevant references worldwide. Contact: info@rd-coatings.com. Address: Assesse, Belgium. Web site: www.rd-coatings.com.

REMA Tip Top/North America

Booth 1115

REMA Tip Top is the leading manufacturer of rubber adhesives, conveyor belt repair materials, vulcanizing equipment, sheet rubber linings, skirt rubber, chute linings, rubber and ceramic pulley lagging. REMA Tip Top high quality protective coatings and industrial rubber products for wear and corrosion protection include vinyl ester flake glass coatings, soft and hard rubber lining materials, polyuria coatings, PU coating systems and molded rubber and ceramic linings. REMA Tip Top provides expert factory and field installation of rubber linings, tankage corrosion linings, coating systems (including secondary containment) and wear linings. Address: Northvale, NJ. Web site: www.rematiptop.com.

N Resistotech Industries Pvt Ltd.

Booth 1760

RESISTOTECH one of largest PTFE lined piping manufacturer to have diameters from 1" to 80", lined columns, vessels and tanks are by seamless liners. We have liners in thickness 2 mm to 14 mm depends on applications, process piping and vacuum lines with special heavy duty liners which helps for better permeation resistance. RESISTOTECH has expertise on corrosion solutions with techno-commercial solutions for longer life products, products applicable to oil exploration, crude oil, sea water, refining, chemical process, paper pulp, steel, fertilizers and other corrosive media handling. Address: Nashik Maharashtra, India. Web site: www.resistotech.com.

N Rigaku Analytical Devices

Booth 609

The Rigaku series of KT laser induced breakdown spectroscopy (LIBS) analyzers offer a new handheld solution for positive material identification (PMI) and verification programs that answers many of the issues and concerns presented by current technology. The handheld KT Series provides industry-leading features and accurate analysis wherever needed. Now, metal alloys can be tested quickly and accurately in a ruggedized package without the use of an open beam x-ray device. The included alloy grade library includes most common grades used in refineries and other production environments. Address: Wilmington, MA. Web site: www.rigakuanalytical.com.

RJ Lee Group

Booth 1144

RJ Lee Group is an ISO-accredited industrial forensics analytical laboratory and consulting company with a long history of working with industry to address corrosion-related challenges. Our clients rely on us as a resource to solve problems encountered during the manufacturing process, ensure regulatory compliance, and determine the root cause of product failure. Our full-service materials characterization laboratory and expert staff are the foundation for all the services we provide, including manufacturing and process quality control testing, standardized testing for compliance, product development support including research and development, simulated environment testing, environmental health and safety services and litigation support. Address: Monroeville, PA. Web site: www.rjlg.com.

RMB Products, Inc.

Booth 1241

We help your company increase uptime by providing corrosion and abrasion resistant liners for pipe, vessels and other process equipment. We use thermoplastic resins and a process called rotational lining to create a long-lasting liner inside vessels and pipe with complex geometries, large diameters, and lengths up to 20'. For over 30 years, we have served customers in chemical processing, mining and fracking, oil and gas, water handling, and desalination industries. We install thermoplastic liners in pipe, tanks, pressure vessels, scrubbers, fittings, pumps, valves, filter housings, heat exchangers, and other custom process equipment. We also specialize in corrosion protection for electronic chemical applications and other high purity uses. Address: Fountain, CO. Web site: www.rmbproducts.com.

Roberts Corrosion Services, LLC

Booth 1146

At Roberts Corrosion Services (RCS), we are driven to provide our customers with the highest level of quality products to meet their needs. Our combined experience and variety of NACE certifications allow us to adapt to the changing needs of our clients. Services from RCS include close interval surveys, design and installation of CP systems, coating inspection, maintenance, technical support, and laboratory services. RCS also develops corrosion control programs, procedures, and mitigation plans. Address: Ellenboro, WV. Web site: www.rcswv.com.

● S RockGuard[®] HD

Booth 1247

RockGuard[®] HD Pipeline Protection Mesh is a product of Industrial Fabrics, Inc. - Construction Products and Engineering Solutions. RockGuard[®] HD is an 11 mm, three dimensional bi-planar extruded diamond structured mesh rock shield manufactured from polyethylene. Lightweight and ergonomically correct, RockGuard[®] HD offers a consistent thickness throughout the width of each roll or pad to provide full protection to your pipeline during backfill operations. After installation, RockGuard[®] HD provides long-term protection from rock migration, geologic shifts, pipeline vibrations and excavation damage. The open mesh aperture design is intended to resist wicking, prevent water storage next to the pipe and ensure uninhibited cathodic protection. Address: Baton Rouge, LA. Website: RockGuard.biz

Don't let water take hold of your plant



Combat CUI with our unique WR-Tech

Corrosion under insulation (CUI) is a major issue in the industry. Our next generation ProRox stone wool insulation products with WR-Tech Water Repellency Technology:

- ensures the lowest possible water absorption, also after heating and aging
- lowers the risk of CUI, reduces thermal losses and saves energy
- covers all applications, such as pipes, vessels and columns

Ready to get to grips with CUI?
rti.rockwool.com



MANDREL WOUND PIPE SECTIONS

ProRox PS 960
ProRox PS 980



MATS (BLANKETS) **NEW**

ProRox MA 961



with
**WR
TECH™**



PATENT
PENDING



TECHNICAL INSULATION

ROCKWOOL

Booth 515

ROCKWOOL Technical Insulation, a subsidiary of the international ROCKWOOL Group, is the worldwide market leader in technical insulation. With our comprehensive product lines ProRox and SeaRox we cover the whole industrial market and marine & offshore industry, providing a full range of products and systems for the thermal and firesafe insulation of technical applications. Besides sustainable products we offer reliable expert advice, from documentation to delivery and after sales service. Throughout the whole chain from specifier, through dealer to contractor and installer we aim to add value. We don't just sell products, we supply solutions. It's this total approach that makes us the ideal choice for professionalism, innovation and trust. Address: Milton, ON, Canada. Web site: www.rockwool-rti.com.

Rolled Alloys

Booth 2421

Rolled Alloys is a global supplier of specialty metals to the oil and gas, chemical processing, and power generation industries. Our comprehensive inventory includes a diverse mix of corrosion-resistant alloys, stainless steels, and duplex stainless steels, including our proprietary alloys ZERON® 100, AL-6XN®, and RA 253 MA®. Rolled Alloys' global approach sets the industry standard by offering reliable service, superior materials, and unmatched expertise. We also offer in-depth knowledge of material specifications, supply chain management support, and metallurgical expertise. Rolled Alloys brings your project from concept to delivered product. Address: Temperance, MI. Web site: www.rolledalloys.com.

● ROSEN

Booth 507

ROSEN's products and services support all critical aspects of the integrity management process. This includes preventing failures to keep people and the environment safe, compliance with regulations, and supporting safe operation. We utilize our vast experience to understand how assets deteriorate and propose effective measures to extend safe operating life. We strive to identify ways to improve asset safety, reliability and efficiency. With our specialized multidisciplinary team, you get the expertise you need and the experience you deserve. ROSEN has unrivaled expertise in all in-line and external inspection technologies, as well as profound knowledge of industry best practices, standards and regulations. Address: Houston, TX. Web site: www.rosen-group.com.

S RPS Composites, Inc.

Booth 2209

As a turnkey provider of FRP and Dual Laminate manufacturing, installation, inspection, and maintenance services, we provide piping solutions for your corrosive fluid handling and storage requirements. Our FRP equipment offers significant performance and life cycle cost benefits compared to CS, SS, RLCS, high nickel alloys, and lined steel materials. As one of the first FRP manufacturers to be ASME NM.2 certified, you can put your trust in our HPPE corrosion resistant, abrasion resistant, and high temperature resistant piping systems, now in stock in the USA and Canada. We operate facilities in the northeast, mid-west, and throughout the Gulf Coast. 1-800-343-9355 Address: Mahone Bay, NS, Canada. Web site: www.RPScomposites.com.

Rysco Corrosion Services

Booth 2050

International supplier of internal/external corrosion monitoring equipment with best in class field services. Our primary offerings include Internal Corrosion Monitoring, Cathodic Protection, Pipeline Analysis, Equipment Supply/Specification, and Engineering Services. Rysco's commitment to quality, safety and environmental management can be recognized through our ISO9001, ISO14001 and OH&S18001 certifications. Come see us at booth #2050 to get a demo of our ER Probe Datalogger! Address: Lacombe, AL, Canada. Web site: www.ryscocorrosion.com.

SafeRack

Booth 1158

Improve safety and productivity at truck, railcar and industrial loading terminals. SafeRack manufactures gangways and loading platforms and provides turnkey engineering, procurement and construction (EPC) services to carriers of crude oil, natural gas and liquid products. Manufactured using precision laser technology, the systems support safety compliance and offer fall protection that's durable, easy to operate and requires little maintenance. Visit the SafeRack website or call (866) 761-7225. Address: Andrews, SC. Web site: www.saferack.com.

Safety Lamp of Houston

Booth 2218

The professionals at Safety Lamp of Houston can help with any of your hazardous area and confined space lighting needs. It's all we do! From pneumatic lights, to LED flood and area lighting, tank lighting kits, hand lamps, to torches and mini personal lights, we supply the complete line of Wolf Safety Lamp ATEX and IECEx approved products. Please visit our website, call us, come by our booth #2218, or come by our office, we're always ready to help. Address: Humble, TX. Web site: www.safetylampofhouston.com.

Samuel, Son & Co.

Booth 2038

Samuel Son & Co is the largest privately held Service Center organization in North America. Samuel operates over 100 metal processing, distribution and manufacturing centers throughout North America. A family business with over 160 years of experience, Samuel is uniquely capable to provide a wide range of solutions for users of Steel, Stainless Steel and Aluminum materials. At Samuel, "Your Success is our business". Address: Houston, TX. Web site: www.samuel.com.

● **S** SANDVIK

Booth 735

As a world-leading developer and manufacturer of advanced stainless steels and special alloys for the most demanding environments, we are excited to announce a new austenitic solution during the exhibition as well as discuss new opportunities directly with customers who would benefit the most. By selecting a high-performance, corrosion resistant alloy, you can mitigate pitting, crevice or localized under deposit corrosion due to seawater, heat, H₂S or other destructive forces. Our main objective is to help our customers improve safety, boost performance, and reduce costs while avoiding costly equipment failure and downtime – all with an eye to minimizing environmental risks. Be sure to stop by to find out how Sandvik solutions can bridge the gaps in your own operations. Address: Sandviken, Sweden. Web site: MATERIALS.SANDVIK.

Saudi Aramco

Booth 2306

Saudi Aramco is a fully integrated, global petroleum enterprise, and a world leader in exploration and producing, refining, distribution, marketing and petrochemicals manufacturing. The company manages reserves of 332.9 billion barrels of oil equivalent. In addition to its headquarters in Dhahran, Saudi Arabia, Saudi Aramco has affiliates, joint ventures and subsidiary offices in China, Japan, India, the Netherlands, the Republic of Korea, Singapore, the United Arab Emirates, the United Kingdom and the United States. Web site: www.aramco.jobs/nace.

SAUEREISEN, Inc.

Booth 2629

Sauereisen, Inc., a 121 year old, Pittsburgh-based company and industry leading manufacturer, provides worldwide product distribution of specialty cements and corrosion-resistant materials of construction. The company is dedicated to establishing expertise in the prevention of corrosion and the restoration of structures compromised by corrosion. We manufacture sealants, corrosion barriers and substrate repair materials for protection and rehabilitation. We are proud of what we have accomplished over the past century and look forward to solving challenges with our customers over the next 121 years. Address: Pittsburgh, PA. Web site: www.sauereisen.com.



WORLD PREMIERE – SANICRO® 35 BRIDGING THE GAPS TO NEW OPPORTUNITIES

Good news! We've developed an austenitic new tube material that's easy to fabricate and bridges the gaps between stainless steel and nickel alloys. Why not stop by our stand, have a coffee and see how this breakthrough material can benefit you? You'll find us at **Sandvik Stand 735**.

Scaled Solutions Ltd.

Booth 900

Scaled Solutions is an independent laboratory testing facility, established in 1999 to service the Oil & Gas Production Industry. The company specializes in Flow Assurance, Production Chemistry & Formation Damage issues with particular emphasis on near wellbore treatments, scale & corrosion control, in addition to reservoir simulation & modelling studies. We have invested in state of the art laboratory facilities & high calibre personnel. In response to customer requirements, the company has continually developed its range of production chemistry & formation damage services. Several specialized test protocols have been established together with custom-designed equipment to allow chemical performance tests to be completed in more representative field application conditions for today's ever more challenging production environments. Address: Livingston, West Lothian, UK. Web site: www.scaledsolutions.com.

ScanTech Instruments, Inc.

Booth 941

ScanTech Instruments, Inc. designs, manufactures, and supports ultrasonic and robotic inspection systems. As an industry leader for over two decades, ScanTech provides inspection companies with the most robust and powerful scanners available. We offer turn-key systems for applications such as storage tank corrosion detection and pipeline integrity. ScanTech introduced automated reporting in 1997 with Analyst™ software, which greatly increases efficiency and provides concise information to the end user. Our systems allow users to implement the latest tools while concentrating on their core competency of service. Extensive inventory and dedication to service help us to keep our customers productive during critical inspections. NDT experience allows us to leverage our engineering capabilities to ensure good ideas in the laboratory remain practical in the field. Address: Longview, TX. Web site: www.scanndt.com.

Schlumberger

Booth 2435

Schlumberger integrated production chemical technologies and services provide tangible benefits and assurance to oil and gas operations worldwide. Our global footprint and dedicated service delivery help maximize production safely and reliably, regardless of system complexity or geography. Experienced specialists deliver targeted, integrated strategies that anticipate, address, and decisively remedy production issues in a complex and multifaceted international industry. We use production chemistry technologies—pioneering chemical and process solutions, equipment, and software—aligned under the PREVENT, PERFORM, and CURE segments. Address: Houston, TX. Web site: www.slb.com.

SciAps, Inc.

Booth 641

SciAps is pleased to be the world's only manufacturer of a handheld carbon analyzer – the Z200 C+. The Z is capable of measuring carbon content and CE in steels, carbon in stainless to distinguish L and H grades in seconds. The Z weighs in at less than 4.5 lbs including on-board argon. Complementing the Z is SciAps' new X-550 X-ray gun for PMI. At 2.8 lbs including the battery, it's the lightest alloy analyzer ever made. The X-550 is ergonomically designed for balance, with a long narrow snout to access difficult to reach test locations and welds. Finally, the X-550 was designed for key alloy applications including low silicon (Si) for sulfidic corrosion, residual elements (API 751) and API 5L alloy chemistry requirements. SciAps is a proud sponsor of the Wounded Warrior Project as well as a leading NASCAR sponsor on the Xfinity circuit. Address: Woburn, MA. Web site: www.sciaaps.com.

Seal for Life Industries Anodeflex-STOPAQ-Polyken-Covalence-Powercrete

Booth 1527

Featuring a growing portfolio of industry-leading brands for coating and corrosion protection, Seal For Life Industries offers the broadest and strongest product line-up in the market. Seal For Life Industries combines leading coating, corrosion prevention, sealing, and insulation technologies with direct, easy, time and cost-efficient applications to protect the integrity of critical infrastructure and assets. With a worldwide presence, no matter what or where the project, Seal For Life Industries can provide tailored products to meet your needs. Research and growth programs continue across all technology platforms. Address: Stadskanaal, The Netherlands. Website: www.sealforlife.com.

Sensor Networks, Inc.

Booth 947

Sensor Networks Inc. (SNI) is a US-based technology company which designs, manufactures, and sells industrial wireless ultrasonic-based (UT) sensors which can be permanently or temporarily attached to assets and infrastructure to monitor for internal corrosion and overall thickness. Sensors can be installed in single or multi-point or area configurations and at ultra high or low temperatures. SNI is also an industry leader in designing and manufacturing ultrasonic transducers for conventional or high end phased array applications as well as remote visual inspection cameras and retrieval tooling. Address: Boalsburg, PA. Web site: www.sensornetworksinc.com.

Sensorlink AS

Booth 342

Sensorlink is a world-wide supplier of non-intrusive wall thickness monitoring systems for onshore, offshore and subsea pipelines and pressure systems. The wall thickness monitoring systems are typically used for monitoring of internal corrosion or erosion in pipelines. The corrosion monitoring systems from Sensorlink are all based on the well-known ultrasonic technology and have an accuracy of +/- 2.5 micrometer and are approved for water depths of 3000 meters for subsea use and Ex and non-Ex areas topside. Address: Trondheim, Norway. Web site: www.sensorlink.no.

Sentry Equipment

Booth 1015

With proven sampling expertise since 1924, Sentry products and services provide business operations the critical insights to optimize process control and product quality. We deliver true representative sampling and analysis techniques to customers around the globe, empowering them to accurately monitor and measure processes for improved production efficiency, output and safety. Standing behind our commitments, we are determined to tackle any application, anywhere. Address: Oconomowoc, WI. Web site: www.sentry-equip.com.

Shawcor

Booth 935

Shawcor is a materials science company focused on energy and infrastructure technology. We develop and innovate to build, protect and manage critical customer infrastructure in the most demanding environments. Address: Toronto, ON, Canada. Web site: www.shawcor.com.

Sherwin-Williams

Booth 1735

Sherwin-Williams Protective & Marine delivers asset protection and commercial, technical and specification service to customers in markets including Oil & Gas, Water & Wastewater, Bridge & Highway, Steel Fabrication, Flooring, Mining, Rail, Marine, Power Generation and Fire Protection. We offer a complete line of high-performance coatings to combat corrosion, supported by the largest group of NACE-certified coatings professionals in the industry. Our product portfolio includes a growing line of Global Core products available anywhere in the world and delivered from over 4,900 company-owned locations in North America and across our international distribution footprint. For more information, visit <http://protective.sherwin-williams.com>. Address: Cleveland, OH. Web site: www.sherwin-williams.com/protective.

Simona America, Inc.

Booth 1758

SIMONA AMERICA Industries (SAI), a division of SIMONA AMERICA GROUP, is a leading manufacturer of corrosion resistant and industrial thermoplastic sheet and rod products for fabricating, machining and thermoforming. We offer a wide range of sheet and rod products designed to meet your critical application performance needs. We manufacture high quality PFA-M, E-CTFE, PVDF, PP-C, PP-H, PE100, PVC Type I & II materials. In addition to sheet and rod, we also offer a full line of fabric-backed roll materials, available in PFA-M, E-CTFE, ETFE, PVDF Kynar 740, PVDF Kynar 2850, Kynar 2800, and PP-C. Fabric-backed options include polyester-backed, glass-backed or aramid-backed. SIMONA AMERICA Industries also provides matching weld rod for all fluoropolymers in round shape and cap strip (custom). For more information, please visit our website: www.simona-america.com. Address: Archbald, PA. Web site: www.simona-america.com.

Solmax

Booth 2541

With plants in North America, Europe, Asia, and the Middle East, Solmax is the world's largest geosynthetics manufacturer. Billions of square feet of its engineering products have already been installed in more than 60 countries to protect soils from contamination. Agile and pioneering, Solmax means more than 45 years of creating value through differentiation and thinking outside the box. Setting the standards, Solmax works with governments to draw up industry regulations, collaborates with worldwide stakeholders to raise environmental requirements, and enhances technical design and engineering services to project sites. Serving the mining, oil & gas, waste management, water, and civil engineering sectors, Solmax's engineering products are best suited to critical applications such as some of the largest landfills and heap leach pads in fragile ecosystems. Address: Houston, TX. Web site: www.solmax.com.

● Solvay

Booth 2222

Solvay is a leading global supplier of high-performance polymers for corrosion protection. Our portfolio offers outstanding resistance to chemicals, high temperatures and weathering. These products include Halar® ECTFE, Solef® PVDF, Ryton® PPS, KetaSpire® PEEK, Hyflon® PFA, and Tecnoflon® FKM/FFKM for corrosion-resistant sealing. Our new coating system made from Halar® ECTFE combines a high-adhesion liquid primer and a liquid topcoat that can be applied by standard liquid spray equipment for an easier and faster application without sacrificing uniform coating thickness. It is also possible to coat previously inaccessible surfaces like oversized vessels, long pipe internal diameter (ID) of long pipes, tanks, and containers. Address: Alpharetta, GA. Web site: www.solvay.com.

N Southern Brush Pipeline Services

Booth 307

Southern Brush Pipeline Services has a 35+ year history of providing its customers with exceptional service. We provide a range of Asset Integrity Management, Right of Way Maintenance and custom tailored field service solutions to numerous clients including pipeline operators, integrated oil companies, and large E&P's throughout the U.S. Today we have master service agreements with more than 40 major pipeline operators and energy companies. In past years Southern Brush has been successful in performing over 20,000 miles of surveys as well as maintenance of more than 150,000 miles of pipeline right of way. Stop by the booth today and let's talk about what we can help you accomplish! Address: Spring, TX. Web site: www.southern-brush.com.

Southwest Research Institute

Booth 640

Southwest Research Institute® (SwRI®) is an independent, nonprofit, applied research and development organization headquartered in San Antonio, Texas. We address industrial corrosion problems using extensive test facilities, state-of-the-art instrumentation, and corrosion modeling to assess all aspects of corrosion and materials failure. With more than 25 years of experience in this field, our multidisciplinary groups of engineers, scientists, analysts, and technical staff conduct corrosion research by offering a comprehensive approach to solving corrosion problems through contract work for government and

industrial clients worldwide. Address: San Antonio, TX. Web site: www.swri.org/industries/materials.

Southwestern Paint Panels

Booth 915

Southwestern Paint Panels (SWPP) manufactures a wide array of test panels for the paint and corrosion control industry. Our panels are custom-fabricated to your specifications. SWPP can meet customer requirements for unique shapes and welded designs. Mil Profiles range from sweep blasted to 3-45.5 mil profiles. We manufacture our test panels with a strong emphasis on quality, reliability and consistency. SWPP is a global supplier maintaining a large inventory of raw materials ready to meet your unique production requirements. Address: Houston, TX. Web site: www.swpaintpanels.com.

● Specialty Polymer Coatings, Inc. (SPC)

Booth 635

Specialty Polymer Coatings is a leading formulator, manufacturer, and distributor of state-of-the-art 100% solids (no VOCs) liquid epoxy and polyurethane coatings. SPC has a broad product line of coating systems, which are used extensively in the pipeline industry, as linings for tanks and sewage digesters, various steel structures, as well as marine docks, piling and ship applications. SPC is committed to producing the "coating of choice" for our customers. We are proud of our reputation of providing excellent customer service from the time of project inception to completion. Our hands-on approach to technical support allows the customer to achieve their objectives with confidence. Address: Langley, BC, Canada. Web site: www.spc-net.com.

Speir Hunter Ltd.

Booth 442

Service and equipment provider for remote inspection of oil and gas pipelines using stress concentration tomography developed in partnership with the University of Leeds in the UK. This technology is also capable of providing 3D maps to cm accuracy and therefore can report on lateral and vertical strain in geohazardous regions and can be used to monitor depth of cover where soil erosion is known to occur. Address: Long Bennington, UK. Web site: www.speirhunter.com.

N Spitmaan Group

Booth 2401

SPITMAAN PTFE/PFA Lined Piping Systems are being used by the Chemical/PetroChemical sector since 35 years. SPITMAAN manufactures Paste Extruded PTFE Lined Pipes from NB 25 to NB 800 of up to 6 mtrs. Length. PFA Lined fittings are injection molded. Our SOP's ensure full traceability & 100% Hydro & Spark testing. We have recently executed two projects for PETROFAC as per SHELL Specifications. Our customers in Europe, S. E. Asia & Middle East stand testimony to our quality & technical support. SPITMAAN Gasketing Sheets are ecofriendly, manufactured in a state of art manufacturing facility with. A capacity of 3500 tons p. a. Max. sheet size is 3200mm x 3200mm x 8"thk & confirms to BS 7531. All SPITMAAN products are of the highest quality & in accordance with International standards. Address: Mumbai, India. Web site: www.spitmaan.com.

● Sponge-Jet, Inc.

Booth 1840

Extend the life of industrial coatings by replacing power tool and/or wet surface preparation methods with high-quality, environmental surface preparation. Sponge Media™ abrasive blasting or Sponge Blasting is a dry, low dust, low rebound, recyclable process used in the Oil and Gas, Marine, General Manufacturing, Power Generating and Restoration industries – as well as many others. Sponge-Jet manufactures composite abrasives by bonding conventional abrasives with sponge and manufactures high-production, Sponge-Media blasting and recovery systems. Sponge-Jet's Global Technology and Training Center, north of Boston, MA is also a northeast location for NACE and other training classes. Address: Newington, NH. Web site: www.spongejet.com.

SSPC: The Society for Protective Coatings

Booth 126

SSPC is the leading source of information on surface preparation, coating selection, coating application, environmental regulations, and health and safety issues that affect the protective coatings industry. SSPC sets the industry standard and provides training and certification to professionals around the world who are focused on protecting global infrastructure from the devastating effects of corrosion. Address: Pittsburgh, PA. Web site: www.sspc.org.

N Stanton Cathodic Survey

Booth 957

Close Interval Surveys; DCVG; Interrupted CP Surveys; Depol Surveys; DOC and Submeter GPS; Evaluate Existing Cathodic Protection Systems; Evaluate Stray DC Current CP Systems; Annual CP System Surveys; Pipeline Integrity (External Corrosion Direct Assessment); Pipeline AC Mitigation Evaluation; Soil Resistivity Testing; Compressor Station Surveys; Pipeline Current Mapping; ACVG; Marker Replacement; Hardware Design; Software Development; Graphing Software. Address: Mobile, AL.

N Stark Pipeline Services

Booth 505

Stark Pipeline Services offers quality service to a variety of industries and customers in a professional and timely manner while maintaining safety and integrity. We provide Transportation Services, Crane Services, Project Management, AGM Site Selection & Documentation, Line Locating, Pig Tracking Services, Pipeline Survey, Pipeline Cleaning, Tool Cleaning, NORM Decontamination, Anomaly Locating and Pipeline Repair. The Stark Pipeline services team has well over 100 years of collective In-Line Inspection and pipeline services support experience. Please stop by Booth #505 to discuss your specific requirements. Address: Waller, TX. Web site: www.starkpipelineservices.com.

Step-KoProducts, LLC

Booth 600

Step-Ko Products is a dynamic company offering a range of products to protect assets from the environment. Our product range consists of flange isolation kits, poly coated U-bolts and monolithic insulating joints for Cathodic Protection. We also offer a variety of specialty tapes, primers, heat shrinkable sleeves, stainless steel bands along with insulated enclosures for protecting your equipment from the environment. Our driven success to date and with the commitments of the employees of Step-Ko Products has given us the advantage to offer the high level of service to our customers. This commitment to quality and service has driven us to continue our ISO 9001-2015 certification and to be one of the premier leaders in our industry. Address: Lafayette, LA 70598. Web site: stepko.com

N Stolk Labs, Inc.

Booth 1958

Stolk Labs, Inc. is an ISO/IEC 17025:2017 accredited materials testing lab in Richardson, Texas, USA that offers corrosion product analysis for a variety of industries. Our metallurgical and surface specialists have analytical-grade corrosion analysis equipment to provide maximum data quality and can identify the type of corrosion affecting the appearance or safety of structures. We can find trace levels of corrosion accelerants sourced from the environment, impurities on metal surfaces, or residual liquids; and, determine if cleaning and pre-treatment steps will prevent moisture attraction. Let us help you Fight the Battle of Corrosion and maintain your metal in its processed state! Visit our website www.stollklabs.com today! Address: Richardson, TX. Web site: www.stollklabs.com.

Strategic Materials

Booth 1557

TruAbrasives® product line is manufactured by Strategic Materials. With nearly 50 plants across North America and a more than 100 year history, Strategic Materials is the premier glass recycler on the continent. With a focus on operational excellence and process innovation, Strategic Materials consistently meets customer expectations. Our abrasives were specifically designed to match

performance of its competitors, while protecting workers and the environment. When you work with Strategic Materials, you benefit from our nationwide network bringing high-quality products closer to you. TruAbrasives are available coast-to-coast, and is the industry leading crushed glass abrasive. Address: Houston, TX. Web site: www.strategicmaterials.com.

Stress Engineering Services

Booth 1649

Since 1972, Stress Engineering Services has been a global leader in consulting engineering services and solutions for a variety of industries. Our commitment is to provide the most comprehensive design, analysis and testing services with an unsurpassed level of engineering integrity and skill. At Stress Engineering Services, we specialize in customized corrosion testing in our state of the art corrosion laboratories. We conduct standardized corrosion tests, but our main focus is in duplicating as closely as possible the situations that our customers face in real life. We utilize our extensive corrosion expertise along with highly advanced tools to examine the critical issues to effectively identify the source of the problem. Address: Houston, TX. Web site: www.stress.com.

Stuart Steel Protection Corp.

Booth 1213

Stuart Steel Protection, founded in 1952, provides corrosion control materials and services to the oil, gas, water, power, and marine industries. In addition to exhibiting the most current innovations in cathodic protection products, the company representatives will be featuring 3M epoxy coatings, Front Line FLC 7 environmentally advanced, multi-use, waterborne acrylic polymer coating and discussing the latest company services. Address: S. Bound Brook, NJ. Web site: www.stuartsteel.com.

Sulzer Mixpac USA, Inc.

Booth 1946

Sulzer Mixpac is a global leader in cartridge, mixer and dispensing technology. Sulzer MixCoat brush and spray systems provide the 2-K coating applicator the ability to repair, touch-up and stripe-coat while reducing mixing issues, coating waste, solvent use, set-up times, clean-up times and environmental costs. MixCoat provides an alternative to plural component spray equipment for smaller projects and coatings with quick cures times. Mixcoat is now widely used for marine, offshore, pipeline and water and wastewater coating markets. Address: Salem, NH. Web site: www.sulzer.com/mixcoat.

Superior Products International (SPI Coatings)

Booth 1451

Superior Products International ("SPI Coatings") Booth 1451 is a developer and manufacturer of specialized insulation and corrosion protection coatings. The corrosion protection coatings are designed to be applied directly over existing, firmly bonded paint or rust without sandblasting and without any loss of performance. The two ceramic insulation coatings have been designed to block different forms of heat transfer—one coating can block heat load from solar radiation and a different coating can block conductive heat transfer on hot surfaces up to 1200°F while protecting from CUI. We are a employee owned coating company with a focus on R&D and real world field testing. Address: Shawnee, KS. Web site: www.spicoatings.com.

N S Surehand, Inc.

Booth 605

Surehand® is the on-demand hiring platform that instantly matches employer needs with verified industrial inspectors—NDT, NDE, CWI, API, NACE, and more. Over 8,000 workers across the U.S. and Canada are already on Surehand, adding 1,000+ new signups per month. FREE for Inspectors. Fixed annual subscription fee for Employers. UNLIMITED talent searches, Job Alerts, and hires. ZERO posting fees or recruiter commissions. Founded in 2018, Surehand, Inc. is deeply committed to reducing underemployment in the skilled industrial trades. Address: Morgan Hill, CA. Web site: www.surehand.com.

Swain Meter Company/The

Booth 318

The Swain Meter Co. specializes in direct current (DC) amp clamp meters. Our meters measure current from 5mA to 200 A. This meter shows direction and magnitude of DC. Our sensors are custom built to our customers' requirements regarding size. Sizes range from 2" to 100 inch. Applications include offshore anodes and pipeline current to 2000 meters in depth, direct bury applications, current short troubleshooting, and soft dig applications. See our new products Aqua MER and the Sea Clip on our Web site. Address: Farwell, MI. Web site: www.swainmeter.com.

Sypris Technologies, Inc.

Booth 221

Tube Turns was founded in 1927 in Louisville, Kentucky, as the first American manufacturer of forged seamless pipe fittings. Though we no longer offer these products, our product range remains dynamic to keep pace with changing requirements of the industries we serve. Our engineered products are used globally in applications in the Oil, Gas, Petrochemical and Processing industries, including corrosion control. Our Monolithic Insulated Joints electrically isolate sections of pipeline to prevent corrosion caused by stray electrical currents. Three key features provide multiple levels of protection. Come visit us to learn more! Address: Louisville, KY. Web site: www.sypris.com.

Tantaline CVD

Booth 2122

Tantaline CVD is the world leader in the deposition of tantalum surface layers used for corrosion resistance in harsh environments. The proprietary Tantaline® treatment process produces a uniform, robust and metallurgically bonded tantalum layer on stainless steel parts such as valves, fittings, thermowells, reactors and many others components. With superior corrosion performance and affordability compared to nickel alloys, titanium, and zirconium metals Tantaline® treated products are the preferred choice for extending component life and increasing safety. Durability has been proven in a wide range of industries such as chemical processing, mining, oil & gas energy, and pharmaceutical production. Now part of CVD Materials Corporation, Tantaline CVD offers improved customer service with operations in the US and Denmark. Address: Central Islip, NY. Web site: www.cvdequipment.com.

TEAM Industrial Services

Booth 2307

TEAM, Inc. is a global leading provider of integrated, digitally-enabled asset performance assurance and optimization solutions. We deploy conventional to highly specialized inspection, condition assessment, maintenance and repair services that result in greater safety, reliability and operational efficiency for our client's most critical assets. A professional team of experienced engineers, technicians, and client support personnel backs each service armed with the best on-the-job safety and service training, equipment, and technical support in the industry. Through locations in more than 20 countries, we unite the delivery of technological innovation with over a century of progressive, yet proven integrity and reliability management expertise to fuel a better tomorrow. For more information, please visit TeamInc.com.

Technical Toolboxes

Booth 2123

Technical Toolboxes is an industry leader in pipeline software, online resources and technical training for the midstream energy industry. Founded in 1996, Technical Toolboxes is committed to delivering online tools relevant for the midstream pipeline sector that enable operators to ensure standardized practices as they manage complex projects - both from their office and in the field. Technical Toolboxes provides the most comprehensive software and continuing education solutions, in the presence of an ever-changing regulatory compliance environment. Address: Houston, TX. Web site: www.technicaltoolboxes.com.

Technofink LLC

Booth 2521

eVPBlast, Electronic Vapor Blast - The future of the Dust Free Abrasive Blasting process. Discover the best blasting technologies available in the market that provides high efficiency with automated control, reliable commands, and high confident user-friendly. MAXEPOXY Protection & Repair Technology, High-Performance Polymers against Abrasion, Corrosion, Chemical attack, Cavitation, and fillers for Composite repairs. INDUCTOSENSE - Permanently installed sensor technology - Wireless, battery-free, sensing solutions for asset integrity. TECHNOFINK, an innovative technology company with the know-how for coating protection and corrosion control, providing high quality and high-performance products to protect and extend the equipment life. We aim to provide solutions through products and know-how for our clients' problems with the highest level of quality, reliability, and security while offering the best cost-benefit ratio www.technofink.com.

Teledyne Marine

Booth 1751

Teledyne Marine is an organization comprised of 23 leading-edge undersea technology brands. These technologies span oceanographic instruments, subsea and surface vehicles, imaging sonars, seismic technology, and high-reliability engineered interconnect solutions for power transmission, data transmission, and monitoring applications for operators in the oil and gas exploration and production industry. Address: Daytona Beach, FL. Web site: www.teledynemarine.com.

Temp-Coat Brand Products, LLC

Booth 1155

Our company has been serving the needs of Industry, Commerce and the Home Owner since 1990 with products that are designed to preserve assets and protect expensive, hard to replace property and equipment. We produce our product line in our 3 ISO certified manufacturing facilities, all located in the United States. We are headquartered in Covington, Louisiana and take pride in producing the very finest insulating coatings in the world. Address: Covington, LA. Web site: www.tempcoat.com.

N Tesi Group-Strange Corrosion LLC

Booth 2301

Envirawrap and its derivatives are produced by the Tesi/Strange Corrosion Group for the corrosion protection of inshore and offshore structures in both the splash zone and subsea where seabed erosion of the steel substrate is a concern. Designed to relieve the need for primer, fillers and spiral wound tapes, Envirawrap's elastic memory four and six-layer dedicated composite fabrics provides both active and passive corrosion protection when impregnated with corrosion-inhibiting gel. Closure is achieved via full-length non-metallic flanges factory-drilled to accommodate the use of multiple corrosion resistant fasteners. Our flange design allows for easy and fast installation, removal, and reinstallation of the wraps to facilitate multiple substrate inspections during the service life of the system. Address: Conroe, TX. Web site: www.tesigroup.com.

Tesla Nano Coatings, Inc.

Booth 619

Tesla NanoCoatings, Inc. is the global leader in nanocoatings for corrosion control. Tesla NanoCoatings has developed a new class of corrosion control coatings. Teslan® combines the world's toughest barrier properties with the best available cathodic protection utilizing carbon nanotubes. Teslan® is applied like paint but acts like plating. It is a two-coat system that replaces current three-coat systems. It requires no special training and is compatible with all conventional pain application equipment. Tesla NanoCoatings new 2x1 Wet Edge™ is a wet-on-wet process that delivers major time and cost savings along with technologically advanced corrosion protection advantages. Address: Massillion, OH. Web site: www.teslanano.com.



FRP ASME Section X Pressure Vessel Specialists



Thorpe Plant Services, Inc. is proud to present STRAND® fiberglass reinforced plastic tanks and products. The world's leading manufacturer of custom FRP tanks and products with over 400,000sf of manufacturing space across the USA. Thorpe utilizes state-of-the-art engineering software, materials, equipment, and design principals, as well as industry leading QA/QC procedures, to meet growing process and environmental demands from both public and private industrial clients for the most corrosive environments.

Why FRP Tanks?

- Major components shop fabricated
 - Ring oblation up to 57' diameters
 - Shop controlled conditions for shipping
- Economic benefits over field install alloy tanks
 - Less freight
 - Reduced crane needs
 - Faster to erect/install, shorter turnaround
 - Minimize field crew size and time on site
- Safer to assemble than steel tanks
 - Top down construction, minimal elevated work
 - Minimize on site chemicals, virtually no VOC's
 - Hot work permits are not required
- Less maintenance
 - Corrosion resistant throughout the FRP structure
 - Exterior paint not required – no "UV" derogation
 - Easy to repair if damaged
- Good insulator on temperature and static electricity

Thorpe Service and Product Offerings

- Turnkey FRP Specialists
 - Engineering and Design
 - Field erect/install
 - Manufacture
- Developer of oblation technology (Patented 1978)
- Dually accredited
 - ASME RTP-1
 - ASME Section X, Class II
- Custom designs
- Tanks, pressure vessels, scrubbers, piping, ducts and structural components
- Shop and field erected FRP vessels, piping, ducts and equipment
- Full line of U.S. made FRP flanges, fittings and accessories
- Manufactured with premium grade resins

Visit us at CORROSION 2020 Conference and Expo at Booth 817

www.ThorpePME.com

Thermo Fisher Scientific

Booth 1817

Thermo Fisher Scientific is the world leader in serving science. Our mission is to make the world healthier, cleaner and safer. By helping our customers solve complex analytical challenges, Thermo Scientific™ Niton™ handheld XRF and LIBS analyzers bring your lab to the field. In the power generation industry, inspectors require top confidence in material analysis. Niton elemental analyzers offer superior detection limits and rapid results to ensure confident decision making. Maintain operational safety and regulatory compliance with the all new Thermo Scientific™ Niton™ Apollo handheld LIBS analyzer. Specifically designed to measure carbon, the Niton Apollo offers unmatched speed, performance and portability. To learn more, visit booth #1817 or thermofisher.com/PMI. Address: Tewksbury, MA. Web site: www.thermofisher.com.

thermOweld

Booth 2020

thermOweld® designs and manufactures quality products for the cathodic protection (CP) industry, including thermOweld® exothermic connections, thermOcap, jumper bonds, CP cable, A/C mitigation mats and more. Supporting the global infrastructure in over 55 countries since 1958, we are ISO 9001 compliant and part of Burndy LLC. Address: Tulsa, OK. Web site: www.thermoweld.com.

Thorpe Specialty Services Corporation

Booth 817

Thorpe is the industry leader in non-metallic corrosion resistant equipment and services. With over 400,000sf of manufacturing space for custom designed and engineered STRAND® fiberglass reinforced plastic and dual laminate tanks (dually accredited to ASME's RTP-1 and Section X, class 2 standards), pipe, fittings, flanges, appurtenances, as well as thermoplastic and rubber lined equipment. Thorpe maintains a fleet of trucks and crews at our branches that respond daily on an emergency basis to patch and repair operating or shutdown equipment for all different types of corrosion resistant materials and lining systems. Thorpe's corrosion specialists also perform inspections, equipment demolition, replacement and new green field capital projects. Address: Houston, TX. Web site: www.thorpepme.com.

● **S** Tinker & Raser

Booth 1535

Tinker & Raser, the worldwide leader in corrosion mitigation instrumentation, has manufactured electronic test equipment for the corrosion industry since 1948. Products include Holiday Detectors, Pipe & Cable Locators, Cathodic Protection Instruments, Cathodic Protection Test Stations and Line Markers. Our products help you with coating inspections, pipe to soil surveys, data logging, insulator testing, short locating in distribution systems, leak detecting and locating, soil resistivity measurements, current requirements, instrument accuracy verification, AC voltage monitoring, interrupted surveys, casing shorts, and other common activities all corrosion professionals do on a regular basis. Address: New Braunfels, TX. Web site: www.tinker-rasor.com.

N Titan Metal Fabricators

Booth 801

TITAN Metal Fabricators, Inc. a world leader in the application, design, and fabrication of tantalum, zirconium, titanium, Hastelloy, Nickel, Inconel, and Monel chemical process equipment including tubular heat exchangers, pressure vessels, columns, piping systems and custom fabrications for corrosive applications. TITAN Metal Fabricators, Inc. is certified in ASME, PED, CRN and Chinese Pressure Vessel Code. RAM, A Division of TITAN Metal Fabricators, Inc. is an ASME code fabricator specializing in the fabrication of build to print OEM designed corrosion and heat resistant products. RAM's manufacturing plant is located in Sealy, Tx in the heart of Gulf Coast to support all chemical, petrochemical, oil and gas and OEM's in North America. Address: Camarillo, CA. Web site: www.titanmf.com.

Titanium Electrode Products, Inc.(TELPRO)

Booth 1916

Titanium Electrode Products(TELPRO) is an independent manufacturer specializing in the cost-effective supply of mixed metal oxide (MMO) and platinized titanium anodes for the cathodic

protection and chlorine industries worldwide. TELPRO manufactures MMO tubular anodes, MMO ribbon anodes, MMO wire anodes, MMO rod anodes, MMO plate and disc anodes, and custom anodes per customer requirements. Platinized titanium anodes are also manufactured to customer specifications. Please contact TELPRO for a cost competitive price for your MMO anode requirements. Address: Sugarland, TX. Web site: www.telprocompanies.com.

Tnemec Company, Inc.

Booth 2535

Protective coatings manufacturer since 1921, Tnemec Company, Inc. offers innovative industrial coatings and linings built for aesthetic reliability and long-term corrosion protection. Tnemec provides coatings to a wide variety of projects across the world with products of every type, from 100 percent solids epoxies to waterborne acrylic polyurethanes, and innovative new products, like Tnemec's aerogel-modified thermal insulating coating, Aerolon. Address: Kansas City, MO. Web site: www.tnemec.com.

● **TRC**

Booth 2315

A pioneer in groundbreaking scientific and engineering developments since the 1960s, TRC is a global consulting, engineering and construction management firm that provides technology-enabled solutions to the power, oil and gas, environmental and infrastructure markets. We serve a broad range of public and private clients, steering complex projects from concept to completion to help solve the toughest challenges. Web site: www.trccompanies.com.

S Trenton Corp.

Booth 1823

Since 1949, Trenton has pioneered the development of wax-based anticorrosion products including Wax-Tape® brand anticorrosion wrap systems, with primers, wraps and outerwraps for added mechanical protection. The Wax-Tape® brand anticorrosion wrap system includes Wax-Tape #1 anticorrosion wrap that remains flexible, excelling in underground applications, Wax-Tape #2 anticorrosion wrap firms up, providing added mechanical protection aboveground, while Wax-Tape HT-3000 provides protection for operating temperatures up to 230° F (110°C). Trenton is a leader in the development of casing fillers for pipeline and cable casings. There are many environmental and application benefits to Trenton products. For more information visit our website. Address: Ann Arbor, MI. Web site: www.trentoncorp.com.

N TRI Technology

Booth 2549

TRI Technology is the technology division of TRI Development a minority-owned small business development and management consulting firm with over 20 years of corporate and government experience. TRI Technology is a technology firm that is focused on agile development and innovative solutions to complicated problems. We believe that lonyx, with its nanotechnology corrosion prevention properties, is a game-changer in the world of corrosion prevention. As we help bring the technology to market, we continue to interact with the inventor and brain behind a technology we think will change the world. With our partner's innovative nanotechnology asset protection coating product lonyx, we continue to utilize technology to improve the client experience while protecting the Earth from harsh chemicals. Address: Brookville, MD. Web site: www.TRIDev-tech.com

Tricor Metals

Booth 835

Tricor Metals is a woman-owned, small business serving the world's titanium needs from our facilities in OH, TX, MI, and CA. We stock millions of LBS of TITANIUM mill products for corrosion, aerospace and medical. We supply custom TITANIUM forgings. We fabricate cost-effective corrosion solutions through design and engineering, building ASME code-quality process equipment from corrosion resistant alloys. Our weld repair teams are mobilized globally. We supply Astrolite® welding wire for aerospace and land-based turbines. See tricormetals.com or Astrolite.com. Address: Wooster, OH. Web site: www.tricormetals.com.

Trenton offers three Wax-Tape® brand anticorrosion wrap systems.

High-quality, easy-to-apply wraps that protect irregularly shaped fittings and require minimal surface preparation.



Belowground applications

Wax-Tape® #1

Anticorrosion Wrap:

A very durable wrap that uses a thick, non-stitch bonded synthetic fabric and has no clay fillers, so it stays conformed to irregular profiles. The wrap requires no abrasion blasting, can be backfilled immediately and is compatible with cathodic protection.



Aboveground and belowground applications

Wax-Tape® #2

Self-Firming Anticorrosion Wrap:

A unique, microcrystalline-wax-saturated wrap that slowly firms up to provide excellent aboveground and belowground protection. Comes in a variety of colors and usually requires no outerwrap.



High-temperature applications

Wax-Tape® HT-3000

High-Temperature Anticorrosion Wrap:

Designed for operating temperatures up to 230° F (110° C), Wax-Tape® HT-3000 wrap can be used on high-temperature oil and gas piping, on compressor status discharge piping, beneath thermal insulation and in high ambient temperature conditions.

Only Trenton offers Wax-Tape® brand anticorrosion wrap systems, with primers, fillers, wraps and outerwraps.

TRENTON

ANTICORROSION MATERIALS

www.trentoncorp.com

See us at Booth #1823

● Troy Dualam, Inc.

Booth 343

Troy Dualam is a leader in the fabrication of corrosion resistant FRP (Fiberglass Reinforced Plastic) and Dualam (thermoplastic lined FRP) equipment. Troy Dualam is the result of the acquisition of CPF Dualam and Troy Manufacturing. Troy Dualam proudly provides worldwide industries with corrosion resistant solutions for storage and processing with custom made composite products such as Towers, Scrubbers, Tanks, Hoods, Piping, Duct and other tailor made equipment. Our Company mission is based on employees involvement, team work, training and innovation in total respect for the environment. The company is oriented towards continual improvement and operates according to most respected international standards. Address: Elizabethtown, ON, Canada. Web site: www.troydualam.com.

TruQC

Booth 1143

TruQC has the framework and expertise to quickly deliver the benefits of digitalization to your company. We begin by understanding your current process and configuring our highly secure, cloud-based software to fit the way you work. Immediate gains include enhanced accuracy and improved efficiency across all levels of your business. If your organization has been frustrated by software that fails to address your process, workflow and data collection challenges, TruQC is the solution for you. Our proven technology pays dividends by cutting reporting time, increasing asset availability, and reducing risk – guaranteeing huge ROI. Address: St. Louis, MO. Web site: www.truqcapp.com.

● Tubacex Group

Booth 2404

Tubacex is a multinational group devoted to the manufacturing of seamless tubular solutions in stainless steel and high-nickel alloys and superalloys. With industrial facilities and sales presence worldwide and a global distribution network (Tubacex Service Solutions) the Group is the largest worldwide producer of seamless tubes in stainless steel and high-nickel alloys. The company provides a wide range of value-added solutions to the Group's customers such as Tubacoat, a customized advanced protective coating applied to long steel and nickel alloy products. The main sectors of activity are the exploration and production of oil & gas, refining and petrochemical, fertilizer production and power generation. Website: tubacex.com.

N Tucker

Booth 1156

Tucker is an integrated solution provider for all pipeline and facility maintenance, and our diversified suite of solutions includes integrity maintenance, cathodic protection, measurement and automation, operations and maintenance compliance, GIS, and control room operations. We maintain, repair, and operate pipelines and facilities with a passion for safety and a commitment to building enduring relationships with customers across the United States. Address: Houston, TX. Web site: www.tuckerservices.com.

Tuff-N-Nuff

Booth 1746

Tuff-N-Nuff has been the #1 and "go to" rockshield for owners and contractors constructing new oil & gas pipelines for nearly 30 years. This field installed rockshield is unmatched in impact resistance and within its product class in protecting pipeline coatings from rocky or harsh backfill during construction. The installation of Tuff-N-Nuff is also simple and quick, which reduces the completion time for projects. For more information, please visit our website www.tuff-n-nuff.com or call 800-325-3605. Sika Corporation is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and automotive industry. Address: St. Louis, MO. Web site: www.tuff-n-nuff.com.

TWI, Ltd.

Booth 1060

TWI is a world leading research and technology organisation. Bases in the UK, South East Asia, China, Australia, Central Asia, India and the Middle East see over 700 staff provide technical support in joining and technologies such as material science, structural integrity, NDT, surfacing, electronic packaging and cutting. Services include generic research, contract R&D, technical information, consultancy, standards drafting, training and qualification. TWI offers a single, impartial source of service for joining engineering materials. Address: Cambridgeshire, UK. Web site: www.twi-global.com.

N Txam Pumps

Booth 407

TXAMPumps is a privately held chemical injection pump manufacturer located in North America. Since 1986, we have been an innovator in designing and manufacturing the most rugged and reliable solar, AC, and pneumatic chemical injection pumps in the industry. We are the premier chemical injection pump! Address: Houston, TX. Web site: www.txampumps.com.

● Ulva Insulation Systems, Ltd.

Booth 234

ULVA manufactures non-metallic jacketing systems which are proven to prevent Corrosion Under Insulation with longevity. Benefits have been seen for decades in upstream applications and interest in the technology is now expanding into refinery applications. Address: Telford, Shropshire, UK. Web site: www.ulva.co.uk.

United Pipeline Systems, Inc.

Booth 1435

United Pipeline Systems is the global leader in providing thermoplastic (HDPE) lining systems for internal pipeline protection. United has constructed and internally lined more than 32,000 km (20,000 miles) of pipelines on six continents since 1985. These pipe lining systems can range in size from 2- to 52-in diameter. United can provide complete turnkey pipeline rehabilitation projects that include all phases: planning, procurement, excavation, welding of flanges, pipe lining, lined fittings, and hydrotesting. Our in-house engineering and manufacturing capabilities give us complete control over production scheduling and the quality of specialized pipeline materials and equipment. Address: Durango, CO. Web site: www.unitedpipeline.com.

United Titanium

Booth 1641

Don't let our name fool you. We're not just titanium. United Titanium, Inc. is a world-class manufacturer and supplier of specialty alloy fasteners, precision components, fittings, and mill products. Located in our 135,000 ft² facility in Wooster, Ohio, USA, our dedicated staff of engineers, manufacturing, and sales professionals work closely with our customers as a trusted partner to provide innovative solutions and services. Our customers demand the best and we deliver. United Titanium utilizes more than 90 alloys including 686, 718, and C276 and we are the world's largest stocking distributor of zirconium 702, which we carry in sheet, plate, pipe, bar, and fittings. Address: Wooster, OH. Web site: www.unitedtitanium.com.

N Uniti Titanium

Booth 2420

VSMPO of Russia and ATI of the United States, two industry leading integrated suppliers of titanium to global markets, joined to create Uniti Titanium in 2003. The Uniti joint venture is focused on the marketing and sale of titanium mill products for industrial and consumer markets worldwide. The unmatched capabilities of Uniti Titanium stem from the synergistic combination of raw material, melting, hot rolling, finishing, and research and technology resources of the two parent companies. Address: Pittsburgh, PA. Web site: www.uniti-titanium.com.

● University of Akron - NCERCAMP at the

Booth 920

The National Center for Education and Research on Corrosion and Materials Performance (NCERCAMP) provides solutions to corrosion and materials performance issues in four ways: Analysis, Materials Performance, Materials Development, and Modeling and Simulation. Launched in 2010 with a grant from the Department of Defense, the Center is focused on predicting, preventing, and managing the nation's destructive corrosion and materials degradation problems. The Center also assists The University of Akron in its mission to train Corrosion Engineers. Address: Akron, OH. Web site: www.uakron.edu/ncercamp.

USA Borescopes

Booth 2625

USA Borescopes is a global supplier of world class remote visual inspection equipment. We offer a wide selection of borescopes and videoscope systems that are designed for today's manufacturing and inspection professionals. We keep an inventory of pipe inspection cameras and videoscopes in stock for immediate delivery. In addition, we can perform borescope repairs on any make or model borescope with free repair estimates. All work is guaranteed to meet OEM standards. Address: Clarksville, TN. Web site: www.usaborescopes.com.

UTComp

Booth 2310

UTComp is a leader in reinforced-fiberglass plastic (FRP) testing and engineering for major companies around the world in the chemical, mining, oil & gas, and food processing sectors. We offer safe, accurate, non-destructive FRP testing, saving clients around the world millions of dollars in asset replacement costs with the patented UltraAnalytix™ inspection system. UltraAnalytix™ inspection system ensures the safe performance and maximum lifespan of FRP assets, saving clients millions of dollars in replacement costs. UTComp is also revolutionizing composite manufacturing with their latest technology, QCAlytix™ - the world's first fully automated in-line quality control inspection solution. With QCAlytix™, we ensure the strength and safety of composite industrial materials and products all along the value chain. Address: Cambridge, ON, Canada. Web site: www.utcomp.com.

Utility Technologies International

Booth 2304

UTI was established in 1992 to provide management, engineering, design, construction, operations, maintenance, and operator qualification services to the pipeline industry. Our team of Engineering, O&M, Integrity & Corrosion, and OQ staff can bring you a complete package of services to meet your company's needs. We pride ourselves on being a "One Stop Shop" for the pipeline industry, by maintaining a team that is well rounded in expertise and diverse enough to find solutions to any problem. Address: Groveport, OH. Web site: www.uti-corp.com.

Valbruna Stainless, Inc.

Booth 1550

Valbruna Stainless, Inc. has four production facilities, two in Italy (Vicenza and Bolzano), one in US (Fort Wayne, IN) and one in Canada (Welland, Ontario). We are one of the leaders in the production of stainless, nickel and specialty long products as well as alloy steel. Our extensive worldwide distribution network along with our SCM system, provides a fully integrated approach to strategic production planning, distribution and customer service. We also manufacture hex, square and flats in most of the stainless and nickel alloys. Address: Houston, TX. Web site: www.valbrunastainless.com.

● VDM Metals USA, LLC

Booth 1927

VDM Metals is a major worldwide producer of nickel- and cobalt-based alloys, super-alloys and zirconium. From production sites in the United States and Germany, our materials are used in diverse markets such as oil and gas, marine, aerospace, power generation, chemical processing, automotive, electronics and other applications requiring high temperature and corrosion-resistant materials. Products include plate, sheet, strip, bar, wire, powder, ingot and billet. Innovative new

alloys, such as Alloys 2120, 59, 31, 31 Plus and 33 for wet corrosion and Alloys 602CA and 40B for high-temperature applications, are featured. Address: Florham Park, NJ. Web site: www.vdm-metals.com.

Vecor Pipeline Integrity, Inc.

Booth 2245

With a highly qualified staff of engineers and technicians, some with more than 30 years of experience in the pipeline integrity business, Vecor offers a range of technical and specialty inspection services for pipeline integrity management. Among the services offered are: Aboveground surveys (CIS, DCVG, ACVG, ACCA, SR), Cathodic Protection (Design, Installation, Commissioning, Monitoring, Optimization, Troubleshooting), Pipeline Integrity Studies (ECDA, ICDSA, SCCDA), Induced AC Evaluation & Mitigation. Address: Pearland, TX. Web site: www.vecor-pi.com.

N Versa Integrity Group, Inc.

Booth 210

Versa Integrity Group, Inc. is a leading provider of industrial services which incorporate multiple service lines to provide a truly unified solution. Our versatile services consist of inspection, advanced NDT, asset integrity, heat treatment, rope access, and more. These services are focused on minimizing customer downtime and maximizing facility up-time. Our professional group specializes in evaluating our customer needs and providing them with the most practical and effective solutions available on the market today. Versa works hard to stay on top of all of the latest technology while also developing our own proprietary technologies based on customer and industry demand. Address: Lake Charles, LA. Web site: www.versaintegrity.com.

N ViewTech Borescopes

Booth 2352

ViewTech is North America's top borescope company, founded as RF System Lab in 2008 and renamed in 2018. The VJ-3 mechanical articulating video borescope is a nondestructive visual testing instrument used for the remote visual inspection of machinery, equipment and components. The VJ-3 facilitates the visual recording and photo documentation of an inspection of parts and areas that are otherwise inaccessible or require great effort and expense to access directly. The VJ-3 consists of two modules integrated into one system: the insertion tube (available in a variety lengths and widths) with distally mounted camera/ LEDs, and the base unit with control panel, LCD monitor, power source and all necessary circuitry. Address: Traverse City, MI. Web site: www.viewtech.com.

Villares Metals

Booth 1901

For 75 years, Villares Metals has operated in the industry of steel and specialty alloys. It offers complete solutions with excellent properties for various segments and industries such as automotive, tooling, oil & gas, energy and capital goods - in Brazil and worldwide. Its portfolio includes high-speed steels, tool steels (hot work, cold work, plastic molds), stainless steel, valve steels, specialty alloys and open-die forgings. Its products' success arises from quality, specificity and differential. Address: Sumaré - São Paulo, Brazil. Web site: www.villaresmetals.com.br.

Vivax-Metrotech

Booth 2734

Vivax-Metrotech Corporation headquartered in Santa Clara, California is a worldwide leader in locating technology for more than four decades. Vivax-Metrotech manufactures high-end solutions for locating buried utilities, video pipe inspection, cable fault detection and holiday detection. With our nationwide network of distributors for sales, we offer local support and on-site training free of charge. Visit us on the web at www.vivax-metrotech to see our full line of video inspection systems and buried utility locators. Address: Santa Clara, CA. Web site: www.vivax-metrotech.com.

Exhibitors

N —New Exhibitors **S** —2020 Sponsors ● NACE Corporate Member

● **S** **voestalpine AG**

Booth 1901

voestalpine focuses on product and system solutions based on steel and other metals of the highest quality. It is a reliable partner throughout the entire value chain with a broad range of material grades and products. With 150 production and distribution sites globally voestalpine is able to react quickly and offer individual solutions. voestalpine has decades of experience in steel, special steel and nickel-based alloys production and processing and its products meet the highest demands. Continuous innovation, joint developments and long-term partnerships contribute to the success of the group and ensure its financial independence, stability and security. Address: Linz, Austria. Web site: www.voestalpine.com/oilandgas.

● **S** **voestalpine BÖHLER Bleche**

Booth 1901

voestalpine BÖHLER Bleche, a pioneer in the cross-rolling technology, is manufacturing sheets and plates of special steels, nickel-based alloys and titanium. Through the cross-rolling technology, the products stand out through isotropic mechanical, technological and physical properties. Through continuous investments, the latest technology and quality standards are maintained and ensured, and customer expectations met. To stand out through highest quality and efficient production R&D projects concentrate on continuous improvements of material properties and the development of innovative products and lean production processes. Address: Mürtzschlag, Austria. Web site: www.boehler-bleche.com.

● **S** **voestalpine BÖHLER Edelstahl**

Booth 1901

For generations, voestalpine BÖHLER Edelstahl has developed and produced materials of the highest metallurgical purity for use in extreme environments. We at Böhler have all of the required melting, re-melting facilities and powder atomization on site. New technologies ensure maximum performance and a decisive competitive advantage through innovation. We control every step of production in Kapfenberg, Austria – "One Stop Shop". For you our customer, this means the highest possible degree of consistent quality and safety. A solid international sales and service network ensures that our smart materials and services are available globally. Address: Kapfenberg, Austria. Web site: www.boehler-edelstahl.com.

● **S** **voestalpine Böhler Welding**

Booth 1901

Customers in over 150 countries benefit from voestalpine Böhler Welding expertise. Focused on filler metals, voestalpine Böhler Welding offers extensive technical consultation and individual solutions for industrial welding, wear protection and brazing applications. Customer proximity is guaranteed by 43 subsidiaries in more than 25 countries, with the support of 2,300 employees, and through more than 1,000 distribution partners worldwide. voestalpine Böhler Welding offers three specialized and dedicated brands: Böhler Welding, Fontargen Brazing & UTP Maintenance. Address: Düsseldorf, Germany. Web site: www.voestalpine.com/welding.

● **S** **voestalpine Specialty Metals**

Booth 1901

voestalpine Specialty Metals is a premier Global Supplier to the Oil and Gas Industry. With locations in Houston, United Kingdom, Singapore, Norway, Brazil, Mexico and Canada we feature a full offering of Nickel, Stainless and Carbon Alloy and Copper Based products. voestalpine also has machining capabilities to support first and second stage manufacturing and has invested in Additive Manufacturing with locations in Germany, Singapore, Canada and the USA. Address: Houston, TX. Web site: www.voestalpine.com/specialtymetals/en.

● **S** **voestalpine Tubulars**

Booth 1901

voestalpine Tubulars produces seamless steel pipes for the drilling and completion of both conventional and unconventional (e.g. shale gas) oil and gas wells, available in API or proprietary grades (e.g. sour service), with API or premium thread connections, also available with DryTec® - the lubricant free solution. The rapid progress of technologies in oil and gas drilling creates a greater challenge for thread connections and mechanical properties (steel grades). voestalpine Tubulars is able to perform all the important tests for quality and further development of oil and gas pipes at its own testing facilities. For further information visit www.voestalpine.com/tubulars or contact our representatives at booth 1901. Address: Kindberg-Aumuehl, Austria. Web site: www.voestalpine.com/tubulars.

● **S** **voestalpine Wire Technology**

Booth 1901

voestalpine Wire Technology is the expert for customized wire solutions for highly demanding customers. We combine experience with high-quality manufacturing and leading know-how. Our high quality standards are founded on our integrated production chain, ranging from our own steel base to state-of-the-art rolling mills and wire drawing facilities guaranteeing even the tightest tolerances. Long-standing customer partnerships, customer-oriented research, development and simulation activities, our tailor-made heat and surface treatments as well as logistic solutions are a testimony to our expertise. We are your partner, in particular when it comes to meeting special requirements or providing solutions for challenging applications. Address: Bruck an der Mur, Austria. Web site: www.voestalpine.com/wire.

VRC Metal Systems

Booth 1556

VRC Metal Systems, LLC manufactures Cold Spray equipment that bonds metallic powders to nearly any metal surface. The high-pressure system deposits similar and dissimilar metals on most metallic surfaces even in previously impossible heat sensitive situations. VRC develops custom processes for specific requirements working with metal. VRC's supersonic cold spray equipment enables innovative solutions for repair, additive manufacturing and coatings for many industries. "Cold Spray – Structural Metal Coatings ... without high heat / Additive, Repair, Restoration, and Corrosion Prevention". Address: Box Elder, SD. Web site: www.vrcmetalsystems.com.

Wasser Coatings

Booth 2546

Wasser is industry leader in advanced coating technology, manufacturing a full line of high- performance industrial coating that provide unprecedented levels of protection. Wasser has earned its reputation as the expert in moisture cured urethanes that provide unsurpassed protective qualities employing traditional application methods. Wasser coating meet or exceed industry VOC standards and can be utilized in extreme environmental conditions expanding the "application window. Wasser is also breaking barriers in barrier protection with the Wasser Polyflex polyureas providing both fast set and conventionally applied applications. No matter what the challenge, Wasser has you covered. Address: Auburn, WA. Web site: www.wassercoatings.com.

Western Falcon

Booth 1655

Western Falcon offers a proven solution to corrosion and rod on tubing well failures in environments with very high side loads, gas, temperatures up to 500 F. Our thermoplastic liners have effectively reduced operating expenses by offering a lower cost solution vs high workover history. Address: Humble, TX. Web site: www.westernfalcon.com.

Western Specialties, LLC

Booth 606

Western Specialties, LLC is a technology company that specializes in composite repairs and reinforcements of pipelines and storage tanks. We work side by side with our customers to provide the best solution for their specific application. We pride ourselves with customer service and providing the best quality products and installation. Working alongside our affiliate companies, Western Specialties can offer a turn-key solution from the digs, to the repair, and then backfill. Questions on our products (ComposiSleeve, Ultra-Wrap or SmartSleeve) please contact info@WesternSpecialtiesLLC.com. Address: Dansville, NY. Web site: www.westernspecialtiesllc.com.

● **Wood**

Booth 319

Wood is a global leader in the delivery of project, engineering and technical services in energy, industry and built environment. We operate in more than 60 countries. We provide performance-drive solutions through the asset life cycle, from concept to decommissioning across a broad range of industrial markets. On asset integrity and corrosion management we focus on technical services to minimize failures ensuring safe and reliable assets. Address: Houston, TX. Web site: www.woodplc.com.

WrapMaster, Inc.

Booth 943

WrapMaster, Inc. provides a range of composite products for the repair of piping and structures. The structural reinforcement products developed for the oil and gas industry enable permanent pipeline repair without product interruption. WrapMaster, Inc. manufactures the only magnetically detectable composite repair system designed specifically for smart pig detection, eliminating any post-identification method or procedure. Address: Longview, TX. Web site: www.wrapmaster.us.

● **Zerust Oil & Gas**

Booth 2247

Zerust Oil & Gas, a division of Northern Technologies International Corporation (NTIC), is the world's largest manufacturer of vapor corrosion inhibitors (VCIs). Based in Circle Pines, Minnesota, with offices in 55 countries, they have over 50 years of experience with products and solutions that reduce steel corrosion in multiple industries. VCIs are proven to effectively protect corrosion-prone areas of aboveground storage tank (AST) floors and roofs. In most cases, VCIs can be applied to reduce corrosion and extend the service life of in-service and out-of-service storage tanks. Zerust traditional products focus on the preservation of materials and equipment for storage, shipping, mothballing, and many other applications. Address: Beachwood, OH. Web site: www.zerust-oil-gas.com.

● **Zhejiang Yuxi Corrosion Control Corporation**

Booth 707

Zhejiang Yuxi Corrosion Control Corporation (Former: Ningbo Yuxi Cathodic Protection Materials Co., Ltd.) was founded in 1996, specializing in cathodic protection products including: Sacrificial Anodes, Impressed Current Anodes, CP equipment and other accessories. The full range of the product line, excellent quality & service over the past decades have made us one of the leading companies of its kind in China. YUXI is a manufacturer who can provide and design cathodic protection materials / products / equipment worldwide, and we are an approved vendor by Saudi Aramco, KOC, KNPC, Total, as well as other users in different parts of the world. Address: Ningbo, Zhejiang, China. Web site: www.yuxi-anode.com.

N **Zhejiang Zhongda Special Steel Co., Ltd.**

Booth 919

Since established in 1992 as a manufacturer of stainless steel seamless tube & pipe, Zhongda has gained many good experience in production and working with various companies in Petrochemical Industry, Chemical Industry, Refinery Industry, Offshore Industry Shipbuilding Industry, Power and Nuclear Power Plant. We have many project experience with companies like KNPC, KOC, GASCO, SIPCHEM, SHELL, BP, TOTAL, PETROBRAS, PETRONAS, EXXONMOBI, ARAMCO & SUMITOMO CHEMICAL, SASOL, GS E&C, SK E&C,

SAMSUNG ENGINEERING, DAELIM INDUSTRY, PETROFAC, TECNICAS REUNIDAS, SAIPEM, WORLEYPARSONS, TECHNIP etc. Address: Jiaixing, China. Web site: www.zhongdasteel.com.

ZINCODIC

Booth 2447

Zincodic LLC is a Manufacturing Principal who manufactures ONE AND TWO COMPONENT POLYURETHANE CORROSION PROTECTION SYSTEMS which are Non-Flammable, Isocyanate Free, VOC Free, HAP Free, BPA/F Free. Our stand alone Primers have an ISO 12944 Part 6 & 9 C5VH and CX rating with some primers and systems on test to CX Splash. Zincodic ® is an active cathodic protective zinc rich coating. Zincodic ® can be applied by brush, roller, airless, or gravity feed spray gun. Zincodic ® lifetime expectation is equal to hot dip galvanizing. Zincodic ® can be duplex coated. Address: Sharjah, UAE. Web site: www.zincodic.com.

Additional Exhibitors:

N **3E NDT, LLC**

Booth 2121

3E NDT manufactures and distributes a wide range of NDT equipment and accessories for radiographic testing (RT), magnetic particle (MT), ultrasonic (UT), remote visual inspection (RVI) and miscellaneous applications. The range of equipment includes Agfa film, darkrooms, film viewers, densitometers, X-ray film hangers, film dryers, film processors, IQIs, lead markers & tapes, stainless steel tanks, radiation warning boards, rate alarm meters, survey meters, DR equipment, CR imaging plates, X-ray tubes, X-ray crawlers, real-time radiography systems, pie gauges, calibration blocks, AC/DC yokes, MT and PT testing equipment, consumables, UT gauges, transducers, borescopes, and vacuum boxes. Our sister company, Industrial Nuclear Co. Inc., manufactures gamma ray projectors, IR-100 iridium and selenium sources for all gamma ray projectors: a one-stop shop for NDT. Address: La Porte, TX. Web site: www.3endt.com.

N **Latitude Ltd.**

Booth 501

Corrizon™ is a single component waterborne metal protector that creates an immunity against corrosion. The material penetrates into the metal at a rate of 500 microns per month and as a result the metal becomes immune from rust. It acts as an oxygen scavenger that penetrates metal substrates, replacing oxygen molecules thus prevents corrosion from recurring. Corrizon™ is a green product, ready to use without dilution, odorless, environmentally friendly. Our material penetrates the metal, bleeds out all oxygen and the old rust and protects the metal from rust ever coming back. We are basically taking a simple piece of black metal and turning it chemically into gold. There is no such product on the market today it is a brand new category! Address: Huntington, NY. Web site: www.corrizonusa.com.

N **Plasticos Industriales de Tampico, S.A. de C.V.**

Booth 1104

Plasticos Industriales de Tampico (PITSA) founded in 1965, We currently design and manufacture Industrial FRP Products, tanks, Scrubbers, Piping Systems, duct systems and Custom Fiberglass Fabrication, employing either hand lay-up, the spray-up, and the filament winding process. Strategically built in the thriving port city of Tampico, Mexico, our impressive 200,000 sq. ft. manufacturing facility boasts advanced technology to handle any size job, large or small. Our own loading dock gives us the ease of transportation of huge equipment in one piece, due to be located at a very short distance of the international port of Tampico, Tamaulipas. PITSA exceeds all quality control specifications, applies ultimate design technology for all products. Address: Tampico, Tamaulipas, Mexico. Web site: www.pitsafpr.com.

Exhibitors by Industry

AEROSPACE

COMPANY	BOOTH NUMBER
Advanced Polymer Coatings	1647
Applied Graphene Materials UK Ltd.	1254
Arkema Inc.	1754
Asbury Carbons	1911
Aspen Aerogels	541
BEASY	823
Clemco Industries Corp.	1250
Cold Jet, LLC	207
Cortec Corporation	1715
Creaform	443
Danatronics	1011
DC Voltage Gradient Technology & Supply Ltd	529
Eddyfi Technologies	1947
Elcometer	2127
Element Materials Technology	535
Fischer Technology Inc	2321
Fluoramics, Inc.	1652
Gamry Instruments Inc	1740
Guided Ultrasonics Ltd.	334
Haynes International Inc	1320
Innovative Analytical Solutions	1849
Ionix Advanced Technologies	506
KTA-Tator Inc	1314
Luna Innovations	909
Modumetal Inc	1047
P.A. Inc.	1918
Samuel Son & Company	2038
Sandvik Materials Technology	735
SAUEREISEN Inc.	2629
Southwest Research Institute	640
SSPC: Society for Protective Coatings	126
Stress Engineering Services	1649
Thermo Fisher Scientific	1817
Tinker & Rasor	1535
Tricor Industrial Inc.	835
Tubacex Group	2404
TWI Ltd.	1060
VDM Metals USA, LLC	1927

CATHODIC PROTECTION

COMPANY	BOOTH NUMBER
4Z Elektronik Otom. Ve Kaynak Sist. San Ltd. Sti.	2203
Accurate Corrosion Control Inc	2327
Admiral Instruments	1850
Allied Corrosion Industries, Inc	1815
American Innovations	1341
Anko Group	1008
Anode Systems	129
Anotec Industries	1835
ARK Engineering	2241
Arkema Inc.	1754
Asbury Carbons	1911
Atmospheric Corrosion Specialists	805
Baker Hughes, a GE Company	1335
Bass Engineering	1340
BEASY	823

Beijing BSS Corrosion Protection Industry Co., Ltd.	2121
Brown Corrosion Services Inc	1921
BSS Technologies	335
Carboline Co.	1513
Catholic Protection Co. Ltd.	1443
Catholic Technology Ltd	1716
CerAnode Technologies-Div. of APS Materials, Inc.	1027
Chapman Engineering	523
Coastal Corrosion Control	1014
Cortec Corporation	1715
Curran International	611
Dairyland Electrical Industries	2135
DC Voltage Gradient Technology & Supply Ltd	529
De Nora	1935
DNV GL	1915
Drinkwater Products	727
ECKART GMBH	704
Elecsys Corporation	741
Elemko S.A.	618
Elsyca NV	1043
EN Engineering, LLC	1022
Farwest Corrosion Control Co.	1135
Fischer Technology Inc	2321
GA Galvotec Alloys, Inc.	2235
Gentherm Global Power Technologies	934
GMC Electrical, Inc.	2335
Grillo-Werke AG	2514
HCL Fasteners Ltd	614
HMI Technical Solutions, LLC	1151
Integrated Corrosion Companies	1121
International/Interprovincial Corrosion Control Co. Ltd.	1712
Interplastic Corporation	904
IRT Integrated Rectifier Technologies, Inc.	1934
JA Electronics Mfg. Co.	1542
Jennings Anodes USA	2343
Kantex Industries	1142
KORTEK Corrosion Technologies Co., Ltd.	2415
KTA-Tator Inc	1314
Laiken SA	1040
LineVision	1215
MATCOR, Inc.	1325
McClure Energy Solutions	1852
Mears Group Inc	1814
MESA	2035
MetriCorr	2351
Microbial Analysis	419
Mobiltex Technologies Inc.	721
Norton Corrosion Limited	914
Onyx Services	1042
PDS	1009
Penspen Corporation	1359
Pro-Mark Utility Supply Inc	1943
Proteccion Catodica de Colombia	2547
PureHM	427
Ramco Manufacturing Company	226
Roberts Corrosion Services, LLC	1146
Rockguard	1247

Exhibitors by Industry

Seal for Life Industries	1527
Sensor Networks, Inc.	947
Southwest Research Institute	640
Stuart Steel Protection Corp	1213
Sypris Technologies, Inc.	221
thermOweld	2020
Tinker & Rasor	1535
TWI Ltd.	1060
Vecor Pipeline Integrity, Inc.	2245
Zerust Oil and Gas	2247
ZINCODIC	2447

CHEMICAL INHIBITORS

COMPANY	BOOTH NUMBER
Anko Group	1008
Arista Materials & Consulting	316
Baker Hughes, a GE Company	1335
Borchers CHLOR*RID	1005
CorrMagnet Consulting Inc.	901
Cortec Corporation	1715
Element Materials Technology	535
Fischer Technology Inc	2321
Flexitallic	806
French Creek Software Inc	1214
Gamry Instruments Inc	1740
HoldTight Solutions Inc.	1118
Johns Manville	1551
Lamons	2434
Nalco Water, an Ecolab Company	1035
Parr Instrument Company	2251
Schlumberger	2435
Sensor Networks, Inc.	947
Southwest Research Institute	640
TWI Ltd.	1060
Zerust Oil and Gas	2247

CHEMICAL PROCESS INDUSTRIES

COMPANY	BOOTH NUMBER
HCL Fasteners Ltd	614
Integrity Products	2101
Ionix Advanced Technologies	506
Koch Specialty Plant Services LLC	1004
KTA-Tator Inc	1314
Ramco Manufacturing Company	226
SAUERISEN Inc.	2629
Tantaline CVD	2122
Tricor Industrial Inc.	835
Tubacex Group	2404
TWI Ltd.	1060

COATINGS & LININGS

COMPANY	BOOTH NUMBER
10X Engineered Materials	1154
Admiral Instruments	1850
Advanced Polymer Coatings	1647
Agru America, Inc.	2314
AkzoNobel	2441
Allied Photo Chemical, Inc.	323
Amcorr Products & Service VISCOTAQ	2042
Anko Group	1008

Applied Graphene Materials UK Ltd.	1254
Applied Thin Films Inc.	1859
Aptus	1650
ARK Engineering	2241
Arkema Inc.	1754
Asbury Carbons	1911
Aspen Aerogels	541
Atmospheric Corrosion Specialists	805
Axalta Coating Systems	327
Baker Hughes, a GE Company	1335
Bio-Logic USA, Inc.	2815
Carboline Company	1513
CCB International	2414
CCI Pipeline Systems	2728
Clemco Industries Corp.	1250
Cold Jet, LLC	207
Cortec Corporation	1715
Cosmos Metallizing Co., Ltd.	235
Curran International	611
Danatronics	1011
DC Voltage Gradient Technology & Supply Ltd	529
DeFelsco Corporation	1227
Dehumidification Technologies	923
Denso North America	1623
E2G The Equity Engineering Group	959
ECKART GmbH	704
Elcometer	2127
Element Materials Technology	535
Elsyca NV	1043
EMD Performance Materials	907
EN Engineering, LLC	1022
EnerClear Services, Inc.	2253
Enviropeel USA	525
Evonik Corp.	622
Farwest Corrosion Control Co.	1135
Fischer Technology Inc	2321
Fisher Company	1756
Fluoramics, Inc.	1652
Gamry Instruments Inc	1740
Girard Industries	2034
Greenman-Pedersen Inc	1223
Grillo-Werke AG	2514
Harsco Minerals	1152
HoldTight Solutions Inc	1118
HydraTech Engineered Products	306
IBIX North America	2023
InduMar Products Inc	115
InnoTech Alberta	1657
Integrated Global Services	1053
International/Interprovincial Corrosion Control Co. Ltd.	1712
Interplastic Corporation	904
Kantex Industries	1142
Kennametal	921
KTA-Tator Inc	1314
Laiken SA	1040
Laserline, Inc.	905
Luna Innovations	909
MATCOR, Inc.	1325

Exhibitors by Industry

Mears Group Inc	1814
Modumetal Inc	1047
NOV Tuboscope / NOV Fiberglass Systems	827
Onyx Services	1042
Ovolifts, LLC	2737
Polycorp Protective Linings	1240
Polyguard Products, Inc.	1841
PPG Protective & Marine Coatings	1235
Praxair Surface Technologies	1021
Pro-Surve Technical Services, LLC	1052
RD Coatings - Dothee S.A.	1759
Resistotech Industries Pvt Ltd.	1760
RMB Products Inc	1241
Roberts Corrosion Services, LLC	1146
Sauereisen	2629
Seal for Life Industries	1527
Shanghai Tianyang Steel Tube Co., Ltd.	1104
SHAWCOR	935
Sherwin-Williams	1735
Solmax	2541
Solvay	2222
Southwest Research Institute	640
Southwestern Paint Panels	915
Sponge-Jet Inc	1840
SSPC: Society for Protective Coatings	126
Stolk Labs, Inc.	1958
Stuart Steel Protection Corp	1213
Sulzer Mixpac USA Inc	1946
Tantaline CVD	2122
Technofink, LLC	2521
Temp-Coat Brand Products, LLC	1155
Thermo Fisher Scientific	1817
Tinker & Rasor	1535
Tnemec Company Inc	2535
Trenton Corporation	1823
TruQC	1143
TWI Ltd.	1060
Voestalpine AG	1901
Western Falcon	1655
WrapMaster, Inc.	943
Zerust Oil and Gas	2247
ZINCODIC	2447

COMPOSITES

COMPANY	BOOTH NUMBER
Advanced Polymer Coatings	1647
AOC	519
Altair	2516
Andronaco Industries	543
Applied Graphene Materials UK Ltd.	1254
Arkema Inc.	1754
Asbury Carbons	1911
Bedford Reinforced Plastics	2620
ClockSpring /NRI	625
Cold Jet, LLC	207
Comsol, Inc.	441
Element Materials Technology	535
Evonik Corp.	622
Fischer Technology Inc	2321

Fisher Company	1756
HydraTech Engineered Products	306
Inductosense Limited	2519
INEOS Composites	927
InnoTech Alberta	1657
Interplastic Corporation	904
NOV Tuboscope	827
Owens Corning	2515
RPS Composites, Inc.	2209
Sandvik Materials Technology	735
Shanghai Tianyang Steel Tube Co., Ltd.	1104
SHAWCOR	935
Southwest Research Institute	640
Stress Engineering Services	1649
Tantaline CVD	2122
Technofink, LLC	2521
TWI Ltd.	1060
UT Comp	2310
Western Specialites, LLC	606
WrapMaster, Inc.	943

DEPARTMENT OF DEFENSE

COMPANY	BOOTH NUMBER
Accurate Corrosion Control Inc	2327
Advanced Polymer Coatings	1647
Arkema Inc.	1754
Asbury Carbons	1911
Aspen Aerogels	541
BEASY	823
Bedford Reinforced Plastics	2620
Clemco Industries Corp.	1250
Cold Jet, LLC	207
Cortec Corporation	1715
Curran International	611
DeFelsko Corporation	1227
Dehumidification Technologies	923
DNV GL	1915
Elecsys Corporation	741
Element Materials Technology	535
Enviropeel USA	525
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
GA Galvotec Alloys, Inc.	2235
Gamry Instruments Inc	1740
Goebel Fasteners Inc.	2103
Greenman-Pedersen Inc	1223
HoldTight Solutions Inc	1118
Innovative Analytical Solutions	1849
International/Interprovincial Corrosion Control Co. Ltd.	1712
KTA-Tator Inc	1314
Luna Innovations	909
Modumetal Inc	1047
Northrop Grumman	1050
Norton Corrosion Limited	914
Ramco Manufacturing Company	226
Samuel Son & Company	2038
SAUERISEN Inc.	2629

Exhibitors by Industry

Southwest Research Institute	640
Sponge-Jet Inc	1840
SSPC: Society for Protective Coatings	126
Stuart Steel Protection Corp	1213
Sulzer Mixpac USA Inc	1946
Tinker & Rasor	1535
TruQC	1143
TWI Ltd.	1060
VDM Metals USA, LLC	1927

ENERGY GENERATION, TRANSMISSION, AND DISTRIBUTION

COMPANY	BOOTH NUMBER
Accurate Corrosion Control Inc	2327
Advanced Polymer Coatings	1647
Amcorr Products & Service VISCOTAQ	2042
American Innovations	1341
Applied Thin Films Inc.	1859
Arkema Inc.	1754
Aspen Aerogels	541
Bass Engineering	1340
BEASY	823
Bedford Reinforced Plastics	2620
Catholic Technology Ltd	1716
CerAnode Technologies-Div. of APS Materials, Inc.	1027
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
Cold Jet, LLC	207
Cortec Corporation	1715
CTI Industries Inc	2101
Curran International	611
Denso North America	1623
DNV GL	1915
Eddyfi Technologies	1947
Elecsys Corporation	741
Element Materials Technology	535
Elemko S.A.	618
EN Engineering, LLC	1022
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
Gamry Instruments Inc	1740
Gentherm Global Power Technologies	934
GMC Electrical, Inc.	2335
Goebel Fasteners Inc.	2103
Guided Ultrasonics Ltd.	334
HoldTight Solutions Inc	1118
Innovative Analytical Solutions	1849
Integrated Global Services	1053
Integrity Products	2101
International/Interprovincial Corrosion Control Co. Ltd.	1712
Ionix Advanced Technologies	506
IRT Integrated Rectifier Technologies, Inc.	1934
JA Electronics	1542
Kantex Industries	1142
Koch Specialty Plant Services LLC	1004
KTA-Tator Inc	1314

Lamons	2434
LineVision	1215
Magnetic Products and Services, Inc.	2200
McClure Energy Solutions	1852
MetriCorr	2351
Microbial Analysis	419
MTS	2207
NDT Seals, Inc.	843
Norton Corrosion Limited	914
OneBridge Solutions, Inc.	1001
Outokumpu Stainless Inc.	1114
Owens Corning	2515
P.A. Inc.	1918
Penspen Corp.	1359
Polycorp Protective Linings	1240
PureHM	427
Radiodetection	1914
Ramco Manufacturing Company	226
RPS Composites Inc.	2209
Samuel Son & Company	2038
Sandvik Materials Technology	735
SAUEREISEN Inc.	2629
Sensor Networks, Inc.	947
Sponge-Jet Inc	1840
SSPC: Society for Protective Coatings	126
Stress Engineering Services	1649
Stuart Steel Protection Corp	1213
thermOweld	2020
Tinker & Rasor	1535
Trenton Corporation	1823
TruQC	1143
Tubacex Group	2404
TWI Ltd.	1060
VDM Metals USA, LLC	1927
WrapMaster, Inc.	943

HIGHWAYS AND BRIDGES

COMPANY	BOOTH NUMBER
AOC	519
Abrasives, Inc.	1256
Aptus	1650
Arkema Inc.	1754
Asbury Carbons	1911
BEASY	823
Carboline Company	1513
Catholic Protection Co. Ltd.	1443
CCI Piping Systems	2728
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Cortec Corporation	1715
Danatronics	1011
DC Voltage Gradient Technology & Supply Ltd	529
DeFelsko Corporation	1227
Denso North America	1623
DNV GL	1915
ECKART GMBH	704
Elcometer	2127
Elecsys Corporation	741
Element Materials Technology	535

Exhibitors by Industry

Enviropeel USA	525
Fischer Technology Inc	2321
Gamry Instruments Inc	1740
Greenman-Pedersen Inc	1223
Grillo-Werke AG	2514
Guided Ultrasonics Ltd.	334
Harsco Minerals	1152
HCL Fasteners Ltd	614
HoldTight Solutions Inc	1118
InduMar Products Inc	115
INEOS Composites	927
Innovative Analytical Solutions	1849
Integrated Corrosion Companies	1121
Interplastic Corporation	904
IRT Integrated Rectifier Technologies, Inc.	1934
KTA-Tator Inc	1314
Microbial Analysis	419
MISTRAS Group, Inc.	715
Modumetal Inc	1047
Norton Corrosion Limited	914
Outokumpu Stainless Inc.	1114
Owens Corning	2515
PPG Protective & Marine Coatings	1235
RD Coatings - Dothee S.A.	1759
Samuel Son & Company	2038
Sensor Networks, Inc.	947
Southwest Research Institute	640
SSPC: Society for Protective Coatings	126
Sulzer Mixpac USA Inc	1946
Tinker & Rasor	1535
Themec Company Inc	2535
Trenton Corporation	1823
TruQC	1143
TWI Ltd.	1060
UT Comp	2310
Western Specialites, LLC	606

MARITIME

COMPANY	BOOTH NUMBER
10X Engineered Materials+B488:D555	1154
BEASY	823
Advanced Polymer Coatings	1647
Anotec Industries	1835
Arkema Inc.	1754
Aspen Aerogels	541
BEASY	823
Carboline Company	1513
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
Cold Jet, LLC	207
Cortec Corporation	1715
Dakota Ultrasonics	1217
DeFelsko Corporation	1227
Dehumidification Technologies	923
Denso North America	1623
DNV GL	1915
Droycon Bioconcepts Inc.	2627

ECKART GMBH	704
Elcometer	2127
Element Materials Technology	535
EMD Performance Materials	907
Enviropeel USA	525
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
GA Galvotec Alloys, Inc.	2235
Gamry Instruments Inc	1740
GMC Electrical, Inc.	2335
Goebel Fasteners Inc.	2103
Greenman-Pedersen Inc	1223
Grillo-Werke AG	2514
Harsco Minerals	1152
Haynes International Inc	1320
HCL Fasteners Ltd	614
HoldTight Solutions Inc	1118
IBIX North America	2023
InduMar Products Inc	115
Innovative Analytical Solutions	1849
International/Interprovincial Corrosion Control Co. Ltd.	1712
IRT Integrated Rectifier Technologies, Inc.	1934
Jennings Anodes USA	2343
KTA-Tator Inc	1314
Lamons	2434
MATCOR, Inc.	1325
Microbial Analysis	419
Modumetal Inc	1047
Northrop Grumman	1050
Norton Corrosion Limited	914
Outokumpu Stainless Inc.	1114
Owens Corning	2515
Penspen Corporation	1359
PPG Protective & Marine Coatings	1235
Rockguard	1247
RPS Composites Inc.	2209
Safety Lamp of Houston	2218
Samuel Son & Company	2038
Sponge-Jet Inc	1840
SSPC: Society for Protective Coatings	126
Sulzer Mixpac USA Inc	1946
Technofink, LLC	2521
Tinker & Rasor	1535
Trenton Corporation	1823
Tricor Industrial Inc.	835
TruQC	1143
TWI Ltd.	1060
VDM Metals USA, LLC	1927

Exhibitors by Industry

MATERIALS SELECTION AND DESIGN

COMPANY	BOOTH NUMBER
Abrasives, Inc.B557:C619	1256
Accurate Corrosion Control Inc	2327
Admiral Instruments	1850
Advanced Polymer Coatings	1647
Allied Corrosion Industries, Inc	1815
Altair	2516
Amcorr Products & Service VISCOTAQ	2042
Anko Group	1008
ARK Engineering	2241
Arkema Inc.	1754
Armacell Energy	2520
Bass Engineering	1340
BEASY	823
Coastal Corrosion Control	1014
Comsol, Inc.	441
CTI Industries Inc	2101
Curran International	611
Danatronics	1011
DNV GL	1915
Drinkwater Products	727
Droycon Bioconcepts Inc.	2627
Element Materials Technology	535
Elementar Americas	2646
EN Engineering, LLC	1022
Fischer Technology Inc	2321
Flexitallic	806
GA Galvotec Alloys, Inc.	2235
Gamry Instruments Inc	1740
GMC Electrical, Inc.	2335
Goebel Fasteners Inc.	2103
Greenman-Pedersen Inc	1223
HoldTight Solutions Inc	1118
InnoTech Alberta	1657
Innovative Analytical Solutions	1849
Johns Manville	1551
KTA-Tator Inc	1314
MATCOR, Inc.	1325
McClure Energy Solutions	1852
MESA	2035
Metallurgical Engineering Services	711
Microbial Analysis	419
Modumetal, Inc.	1047
OLI Systems Inc	2119
Outokumpu Stainless Inc.	1114
Owens Corning FOAMGLAS Insulation	2515
Pacific Sensor	1019
Parr Instrument Company	2251
Penspen Corporation	1359
Polycorp , Ltd.	1240
Princeton Applied Research	1543
RJ Lee Group	1144
RPS Composites Inc.	2209
Samuel Son & Company	2038
Sandvik Materials Technology	735
Solvay	2222

Southwest Research Institute	640
Stress Engineering Services	1649
Tantaline CVD	2122
Tricor Industrial Inc.	835
TWI Ltd.	1060
VDM Metals USA, LLC	1927
Voestalpine AG	1901
WrapMaster, Inc.	943

OIL AND GAS EXPLORATION & PRODUCTION

COMPANY	BOOTH NUMBER
10X Engineered Materials+B621:C744	1154
Advanced Polymer Coatings	1647
Agru America, Inc.	2314
Amcorr Products & Service VISCOTAQ	2042
American Innovations	1341
Arkema Inc.	1754
Armacell Energy	2054
Asbury Carbons	1911
Aspen Aerogels	541
Baker Hughes, a GE Company	1335
Bass Engineering	1340
BEASY	823
Bedford Reinforced Plastics	2620
Biosan Laboratories Inc	1018
Biotechnology Solutions	940
Brown Corrosion Services Inc	1921
Carboline Company	1513
Catholic Technology Ltd	1716
CCI Pipeline Systems	2728
ClampOn	936
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
Cold Jet, LLC	207
CorrMagnet Consulting Inc.	901
Cosasco	1635
Creaform	443
CTI Industries Inc	2101
Curran International	611
Curran International	611
Danatronics	1011
DeFelsko Corporation	1227
Denso North America	1623
DNV GL	1915
Droycon Bioconcepts Inc.	2627
Eddyfi Technologies	1947
Elecsys Corporation	741
Element Materials Technology	535
Elsyca NV	1043
Emerson	1721
EN Engineering, LLC	1022
Enviropeel USA	525
Evonik Corp.	622
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
French Creek Software Inc	1214

Exhibitors by Industry

GA Galvotec Alloys, Inc.	2235
Gamry Instruments Inc	1740
Gentherm Global Power Technologies	934
Girard Industries	2034
GMC Electrical, Inc.	2335
Goebel Fasteners Inc.	2103
Guided Ultrasonics Ltd.	334
Harsco Minerals	1152
Haynes International Inc	1320
HCL Fasteners Ltd	614
HoldTight Solutions Inc	1118
Inductosense Limited	2519
InnoTech Alberta	1657
Innovative Analytical Solutions	1849
Integrated Corrosion Companies	1121
Integrated Global Services	1053
Integrity Products	2101
ION Science, Inc.	422
IRISNDT	1819
IRT Integrated Rectifier Technologies, Inc.	1934
JA Electronics Mfg. Co.	1542
Jennings Anodes USA	2343
Kantex Industries	1142
Koch Specialty Plant Services LLC	1004
KTA-Tator Inc	1314
Lamons	2434
MATCOR, Inc.	1325
McClure Energy Solutions	1852
Microbial Analysis	419
Modumetal Inc	1047
Nalco Water, an Ecolab Company	1035
NDT Global, LLC	321
NDT Seals, Inc.	843
Norton Corrosion Limited	914
NOV Tuboscope / NOV Fiberglass Systems	827
OLI Systems Inc	2119
Outokumpu Stainless Inc.	1114
Owens Corning	2515
P.A. Inc.	1918
Pacific Sensor	1019
Parr Instrument Company	2251
PLIDCO	406
Polycorp Protective Linings	1240
Pro-Surve Technical Services, LLC	1052
PureHM	427
Radiodetection	1914
Ramco Manufacturing Company	226
RD Coatings - Dothee S.A.	1759
RMB Products Inc	1241
Rockguard	1247
Samuel Son & Company	2038
Sandvik Materials Technology	735
SAUERISEN Inc.	2629
Schlumberger	2435
Schmolz + Bickenbach USA	1858
Sensor Networks, Inc.	947
Southwest Research Institute	640
Sponge-Jet Inc	1840

SSPC: Society for Protective Coatings	126
Stark Pipeline Services	505
Stress Engineering Services	1649
Sulzer Mixpac USA Inc	1946
Sypris Technologies, Inc.	221
Tantaline CVD	2122
Technofink, LLC	2521
Teledyne Marine	1751
Thermo Fisher Scientific	1817
thermOweld	2020
Tinker & Rasor	1535
Tnemec Company Inc	2535
Tubacex Group	2404
TWI Ltd.	1060
VDM Metals USA, LLC	1927
ViewTech Borescopes	2352
Western Falcon	1655
Western Specialites, LLC	606
ZINCODIC	2447

PETROCHEMICAL

COMPANY	BOOTH NUMBER
Bass Engineering	1340
thermOweld	2020
KTA-Tator Inc	1314
SAUERISEN Inc.	2629

PETROLEUM REFINING

COMPANY	BOOTH NUMBER
Accurate Corrosion Control Inc+B751:C845	2327
Advanced Polymer Coatings	1647
AkzoNobel	2441
Amcorr Products & Service VISCOTAQ	2042
Applied Thin Films Inc.	1859
Arkema Inc.	1754
Armacell Energy	2520
Aspen Aerogels	541
Bass Engineering	1340
Bedford Reinforced Plastics	2620
Beijing BSS Corrosion Protection Industry Co., Ltd.	2121
Carboline Company	1513
Cathodic Technology Ltd	1716
ClampOn	936
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
Cold Jet, LLC	207
CTI Industries Inc	2101
Curran International	611
Danatronics	1011
Dehumidification Technologies	923
Denso North America	1623
DNV GL	1915
E2G The Equity Engineering Group	959
Eddyfi Technologies	1947
Element Materials Technology	535
Emerson	1721
EN Engineering, LLC	1022
Enviropeel USA	525

Exhibitors by Industry

Evonik Corp.	622
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
Girard Industries	2034
Goebel Fasteners Inc.	2103
Guided Ultrasonics Ltd.	334
Harsco Minerals	1152
Haynes International Inc	1320
HoldTight Solutions Inc	1118
Inductosense Limited	2519
InduMar Products Inc	115
InnoTech Alberta	1657
Innovative Analytical Solutions	1849
Integrated Corrosion Companies	1121
Integrated Global Services	1053
Integrity Products	2101
Ionix Advanced Technologies	506
IRISNDT	1819
IRT Integrated Rectifier Technologies, Inc.	1934
JA Electronics Mfg. Co.	1542
Johns Manville	1551
Kantex Industries	1142
Kennametal	921
Koch Specialty Plant Services LLC	1004
KTA-Tator Inc	1314
Lamons	2434
MATCOR, Inc.	1325
Metal Samples	1519
Microbial Analysis	419
MISTRAS Group, Inc.	715
Modumetal Inc	1047
Nalco Water, an Ecolab Company	1035
NDT Seals, Inc.	843
NDT Spot, Inc.	421
Norton Corrosion Limited	914
OLI Systems Inc	2119
Outokumpu Stainless Inc.	1114
P.A. Inc.	1918
Parr Instrument Company	2251
PLIDCO	406
Ramco Manufacturing Company	226
Rigaku Analytical Devices	609
RMB Products Inc	1241
Safety Lamp of Houston	2218
Samuel Son & Company	2038
Sandvik Materials Technology	735
SAUERISEN Inc.	2629
Schlumberger	2435
Sensor Networks, Inc.	947
Sponge-Jet Inc	1840
Stress Engineering Services	1649
Sulzer Mixpac USA Inc	1946
Tantaline CVD	2122
Technofink, LLC	2521
thermOweld	2020
Tinker & Rasor	1535
Tnemec Company Inc	2535

Trenton Corporation	1823
Tricor Industrial Inc.	835
Tubacex Group	2404
TWI Ltd.	1060
VDM Metals USA, LLC	1927
Western Specialites, LLC	606
WrapMaster, Inc.	943

PIPELINES, TANKS, AND UNDERGROUND SYSTEMS

COMPANY	BOOTH NUMBER
Abrasives, Inc.	1256
Accurate Corrosion Control Inc	2327
Advanced Polymer Coatings	1647
Agru America, Inc.	2314
Allied Corrosion Industries, Inc	1815
Amcorr Products & Service VISCOTAQ	2042
American Innovations	1341
Andronaco Industries	543
Anko Group	1008
Anode Systems	129
Anotec Industries	1835
AOC	519
ARK Engineering	2241
Arkema Inc.	1754
Armaceil Energy	2520
Asbury Carbons	1911
Aspen Aerogels	541
Atmospheric Corrosion Specialists	805
Axalta Coating Systems	327
Bass Engineering	1340
BEASY	823
Beijing BSS Corrosion Protection Industry Co., Ltd.	2121
Biosan Laboratories Inc	1018
Biotechnology Solutions	940
Brown Corrosion Services, Inc.	1921
Carboline Company	1513
Cathodic Protection Co. Ltd.	1443
Cathodic Technology Ltd	1716
CCB International	2414
CCI Pipeline Systems	2728
CerAnode Technologies-Div. of APS Materials, Inc.	1027
ClampOn	936
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
CorrMagnet Consulting Inc.	901
Cortec Corporation	1715
Cosasco	1635
Creaform	443
Curran International	611
Cypress Energy	2300
Dairyland Electrical Industries	2135
Danatronics	1011
DC Voltage Gradient Technology & Supply Ltd	529
DeFelsko Corporation	1227
Dehumidification Technologies	923
Denso North America	1623
DNV GL	1915
Drinkwater Products	727

Exhibitors by Industry

E2G The Equity Engineering Group	959	Microbial Analysis	419
ECKART GMBH	704	MISTRAS Group, Inc.	715
Eddyfi Technologies	1947	Mobiltext Technologies Inc.	721
Elcometer	2127	Modumetal Inc	1047
Elecsys Corporation	741	MTS	2207
Element Materials Technology	535	NDT Global, LLC	321
Elementar Americas	2646	NDT Seals, Inc.	843
Elemko S.A.	618	NDT Spot, Inc.	421
Elsyca NV	1043	Norton Corrosion Limited	914
Emerson	1721	NOV Tuboscope / NOV Fiberglass Systems	827
EN Engineering, LLC	1022	OneBridge Solutions, Inc.	1001
EnerClear Services, Inc.	2253	Onyx Services	1042
Enviropeel USA	525	Outokumpu Stainless Inc.	1114
Evonik Corp.	622	Ovolifts, LLC	2737
Farwest Corrosion Control Co.	1135	Owens Corning	2515
Fischer Technology Inc	2321	P.A. Inc.	1918
Flexitallic	806	Parr Instrument Company	2251
Fluoramics, Inc.	1652	Penspen Corporation	1359
Gamry Instruments Inc	1740	PLIDCO	406
Girard Industries	2034	Polycorp Protective Linings	1240
GMC Electrical, Inc.	2335	Pro-Mark Utility Supply Inc	1943
Goebel Fasteners Inc.	2103	Pro-Surve Technical Services, LLC	1052
Greenman-Pedersen Inc	1223	PureHM	427
Grillo-Werke AG	2514	Radiodetection	1914
Guided Ultrasonics Ltd.	334	Ramco Manufacturing Company	226
Harsco Minerals	1152	Resistotech Industries Pvt Ltd.	1760
HCL Fasteners Ltd	614	RMB Products, Inc.	1241
HoldTight Solutions Inc	1118	Roberts Corrosion Services, LLC	1146
HydraTech Engineered Products	306	Rockguard	1247
IBIX North America	2023	RPS Composites Inc.	2209
InduMar Products Inc	115	Safety Lamp of Houston	2218
INEOS Composites	927	Samuel Son & Company	2038
InnoTech Alberta	1657	Sandvik Materials Technology	735
Innovative Analytical Solutions	1849	SAUEREISEN Inc.	2629
Integrated Corrosion Companies	1121	Seal for Life Industries	1527
Integrity Products	2101	Sensor Networks, Inc.	947
International/Interprovincial Corrosion Control Co. Ltd.	1712	SHAWCOR	935
Interplastic Corporation	904	Solmax	2541
ION Science, Inc.	422	Solvay	2222
Ionix Advanced Technologies	506	Southwest Research Institute	640
IRISNDT	1819	Speir Hunter Ltd	442
IRT Integrated Rectifier Technologies, Inc.	1934	Sponge-Jet Inc	1840
JA Electronics Mfg. Co.	1542	SSPC: Society for Protective Coatings	126
Japan System Planning Co., Ltd.	2416	Stark Pipeline Services	505
Jennings Anodes USA	2343	Stolk Labs, Inc.	1958
Johns Manville	1551	Stress Engineering Services	1649
Kantex Industries	1142	Stuart Steel Protection Corp	1213
Koch Specialty Plant Services LLC	1004	Sulzer Mixpac USA Inc	1946
KTA-Tator Inc	1314	Sypris Technologies, Inc.	221
Lamons	2434	Technical Toolboxes	2123
LineVision	1215	Technofink, LLC	2521
Magnetic Products and Services, Inc.	2200	Thermo Fisher Scientific	1817
MATCOR, Inc.	1325	thermOweld	2020
McClure Energy Solutions	1852	Tinker & Rasor	1535
MESA	2035	Tnemec Company Inc	2535
Metal Samples	1519	Trenton Corporation	1823
MetriCorr	2351	TruQC	1143
		Tubacex Group	2404

Exhibitors by Industry

Tuff-N-Nuff	1746
TWI Ltd.	1060
UT Comp	2310
Vecor Pipeline Integrity, Inc.	2245
ViewTech Borescopes	2352
Western Specialites, LLC	606
WrapMaster, Inc.	943
Zerust Oil and Gas	2247
Zhejiang Zhongda Special Steel Co., Ltd.	919

POWER GENERATION

COMPANY	BOOTH NUMBER
Admiral Instruments	1850
Advanced Polymer Coatings	1647
Anko Group	1008
ArmaceLL Energy	2520
Bass Engineering	1340
Biotechnology Solutions	940
Cortec Corporation	1715
Creaform	443
Curran International	611
DC Voltage Gradient Technology & Supply Ltd	529
DNV GL	1915
Droycon Bioconcepts Inc.	2627
ECKART GMBH	704
Element Materials Technology	535
Elemko S.A.	618
Elsyca NV	1043
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
French Creek Software Inc	1214
Gamry Instruments Inc	1740
Goebel Fasteners Inc.	2103
Greenman-Pedersen Inc	1223
Guided Ultrasonics Ltd.	334
Haynes International Inc	1320
InnoTech Alberta	1657
Ionix Advanced Technologies	506
Ivium Technologies	1847
Jennings Anodes USA	2343
Johns Manville	1551
Koch Specialty Plant Services LLC	1004
KTA-Tator Inc	1314
Mears Group Inc	1814
MetriCorr	2351
Microbial Analysis	419
OLI Systems Inc	2119
Outokumpu Stainless Inc.	1114
Owens Corning	2515
Pacific Sensor	1019
Parr Instrument Company	2251
Penspen Corporation	1359
Pine Research Instrumentation	434
PureHM	427
Samuel Son & Company	2038
Sensor Networks, Inc.	947
Southwest Research Institute	640

SSPC: Society for Protective Coatings	126
Tantaline CVD	2122
TWI Ltd.	1060
Western Specialites, LLC	606
Zerust Oil and Gas	2247

PROCESS INDUSTRIES

COMPANY	BOOTH NUMBER
Andronaco Industries	543
Cold Jet, LLC	207
Laserline, Inc.	905
Owens Corning FOAMGLAS Insulation	2515
Polycorp , Ltd.	1240
Ramco Manufacturing Company	226
Resistotech Industries Pvt Ltd.	1760
RMB Products, Inc.	1241
RPS Composites, Inc.	2209

SCIENCE OF CORROSION

COMPANY	BOOTH NUMBER
Admiral Instruments	1850
Applied Graphene Materials UK Ltd.	1254
Aptus	1650
Arista Materials & Consulting	316
Bio-Logic USA, LLC	2815
Creaform	443
Droycon Bioconcepts Inc.	2627
ECKART GmbH	704
HoldTight Solutions Inc.	1118
HORIBA Scientific	2637
International/Interprovincial Corrosion Control. Co. Ltd.	1712
Kennametal	921
Metallurgical Engineering Services	711
Modumetal, Inc.	1047
OneBridg Solutions, Inc.	1001
Outokumpu Stainless USA, LLC	1114
Princeton Applied Research	1543
Rigaku Analytical Devices	609
RJ Lee Group	1144
Sandvik Materials Technology	735
Southwest Research Institute	640

TESTING

COMPANY	BOOTH NUMBER
Access Plug Flange Inc.B1105:C1194	1126
Accurate Corrosion Control Inc	2327
Admiral Instruments	1850
Advanced Polymer Coatings	1647
Altair	2516
Anko Group	1008
Arista Materials & Consulting	316
ARK Engineering	2241
ArmaceLL Energy	2520
Bass Engineering	1340
Bio-Logic USA, Inc.	2815
Biosan Laboratories Inc	1018
Biotechnology Solutions	940
Borchers CHLOR*RID	1005

Exhibitors by Industry

Brown Corrosion Services Inc	1921
Carboline Co.	1513
Coastal Corrosion Control	1014
Comsol, Inc.	441
Cortec Corporation	1715
Cypress Energy	2300
Dakota Ultrasonics	1217
Danatronics	1011
DC Voltage Gradient Technology & Supply Ltd	529
DeFelsko Corporation	1227
DNV GL	1915
Droycon Bioconcepts Inc.	2627
Eddyfi Technologies	1947
Elcometer	2127
Element Materials Technology	535
Elementar Americas	2646
EN Engineering, LLC	1022
Fischer Technology Inc	2321
Flexitallic	806
French Creek Software Inc	1214
Gamry Instruments Inc	1740
GMC Electrical, Inc.	2335
Goebel Fasteners Inc.	2103
Greenman-Pedersen Inc	1223
Guided Ultrasonics Ltd.	334
HMI Technical Solutions, LLC	1151
HoldTight Solutions Inc	1118
HORIBA Scientific	2637
InnoTech Alberta	1657
Innovative Analytical Solutions	1849
Integrated Corrosion Companies	1121
International/Interprovincial Corrosion Control Co. Ltd.	1712
ION Science, Inc.	422
Ionix Advanced Technologies	506
IRISNDT	1819
Ivium Technologies	1847
Jentek Sensors, Inc.	2202
Kantex Industries	1142
Koch Specialty Plant Services LLC	1004
KORTEK Corrosion Technologies Co., Ltd.	2415
KTA-Tator Inc	1314
Magnetic Products and Services, Inc.	2200
MATCOR, Inc.	1325
McClure Energy Solutions	1852
Mears Group, Inc.	1814
Metal Samples	1519
Metallurgical Engineering Services	711
Microbial Analysis	419
Modern Water, Inc.	821
NDT Global, LLC	321
NDT Seals, Inc.	843
NDT Spot, Inc.	421
Norton Corrosion Limited	914
Outokumpu Stainless Inc.	1114
Pacific Sensor	1019
Parr Instrument Company	2251
Penspen Corporation	1359

Point of Instant Need Technologies	215
Princeton Applied Research	1543
Q-Lab Corp.	906
Rigaku Analytical Devices	609
RJ Lee Group	1144
RPS Composites Inc.	2209
Samuel Son & Company	2038
Southwest Research Institute	640
Southwestern Paint Panels	915
SSPC: Society for Protective Coatings	126
Stolk Labs, Inc.	1958
Stress Engineering Services	1649
Technofink, LLC	2521
Thermo Fisher Scientific	1817
Tinker & Rasor	1535
TWI Ltd.	1060
UT Comp	2310
Vecor Pipeline Integrity, Inc.	2245
ViewTech Borescopes	2352

TRANSPORTATION

COMPANY	BOOTH NUMBER
AkzoNobel	2441
EMD Performance Materials	907
Stark Pipeline Services	505

WATER AND WASTE WATER

COMPANY	BOOTH NUMBER
Accurate Corrosion Control Inc+B1200:C1291	2327
Advanced Polymer Coatings	1647
Agru America, Inc.	2314
Amcorr Products & Service VISCOTAQ	2042
American Innovations	1341
Anode Systems	129
AOC	519
ARK Engineering	2241
Arkema, Inc.	1754
Asbury Carbons	1911
Axalta Coating Systems	327
Baker Hughes, a GE Company	1335
BEASY	823
Bedford Reinforced Plastics	2620
Biosan Laboratories Inc	1018
Biotechnology Solutions	940
Carboline Company	1513
CCI Pipeline Systems	2728
CerAnode Technologies-Div. of APS Materials, Inc.	1027
Clemco Industries Corp.	1250
ClockSpring /NRI	625
Coastal Corrosion Control	1014
Cortec Corporation	1715
Cosasco	1635
Curran International	611
Cypress Energy	2300
DeFelsko Corporation	1227
Denso North America	1623
DNV GL	1915
Droycon Bioconcepts Inc.	2627
Elcometer	2127

Exhibitors by Industry

Elecsys Corporation	741
Element Materials Technology	535
EN Engineering, LLC	1022
EnerClear Services, Inc.	2253
Enviropeel USA	525
Evonik Corp.	622
Fischer Technology Inc	2321
Flexitallic	806
Fluoramics, Inc.	1652
French Creek Software Inc	1214
Gamry Instruments Inc	1740
Girard Industries	2034
GMC Electrical, Inc.	2335
Greenman-Pedersen Inc	1223
Grillo-Werke AG	2514
Harsco Minerals	1152
Haynes International Inc	1320
HoldTight Solutions Inc	1118
Integrated Corrosion Companies	1121
International/Interprovincial Corrosion Control Co. Ltd.	1712
Interplastic Corporation	904
IRT Integrated Rectifier Technologies, Inc.	1934
Japan System Planning Co., Ltd.	2416
Jennings Anodes USA	2343
Kantex Industries	1142
KTA-Tator Inc	1314
Lamons	2434
MATCOR, Inc.	1325
Microbial Analysis	419
Modern Water, Inc.	821
Modumetal Inc	1047
Nalco Water, an Ecolab Company	1035
Norton Corrosion Limited	914
OLI Systems Inc	2119
Outokumpu Stainless Inc.	1114
Pacific Sensor	1019
Point of Instant Need Technologies	215
Polycorp Protective Linings	1240
Pro-Mark Utility Supply Inc	1943
Radiodetection	1914
RMB Products Inc	1241
RPS Composites Inc.	2209
Samuel Son & Company	2038
Sandvik Materials Technology	735
SAUERISEN Inc.	2629
Sponge-Jet Inc	1840
SSPC: Society for Protective Coatings	126
Stuart Steel Protection Corp	1213
Sulzer Mixpac USA Inc	1946
thermOweld	2020
Tinker & Rasor	1535
Tnemec Company Inc	2535
Trenton Corporation	1823
Tricor Industrial Inc.	835
TruQC	1143
Tubacex Group	2404
TWI Ltd.	1060

UT Comp	2310
VDM Metals USA, LLC	1927
Western Falcon	1655
Western Specialites, LLC	606

NIICAP is the Choice You've Been Looking For!

Industrial coating contractors and owners now have an option in their accreditation and specification.

Each step of the audit process from the initial application through the audit, and ultimately the issuance of the NACE International Institute Contractor Accreditation Program (NIICAP) accreditation is completely transparent. NIICAP also provides marketing support and visibility for accredited contractors along with personalized service to help them grow their business.

Benefits for contractors and owners include:

- Choice for your industrial contractor accreditation
- Transparent and confidential auditing process
- More coatings successes and less re-work
- Asset longevity
- Support from a global industry leader

Visit niicap.net to get started.



NACE
INTERNATIONAL

New to coatings?
In need of a refresher?
Looking to advance your career?

Industrial Coating Application (ICA) e-Course

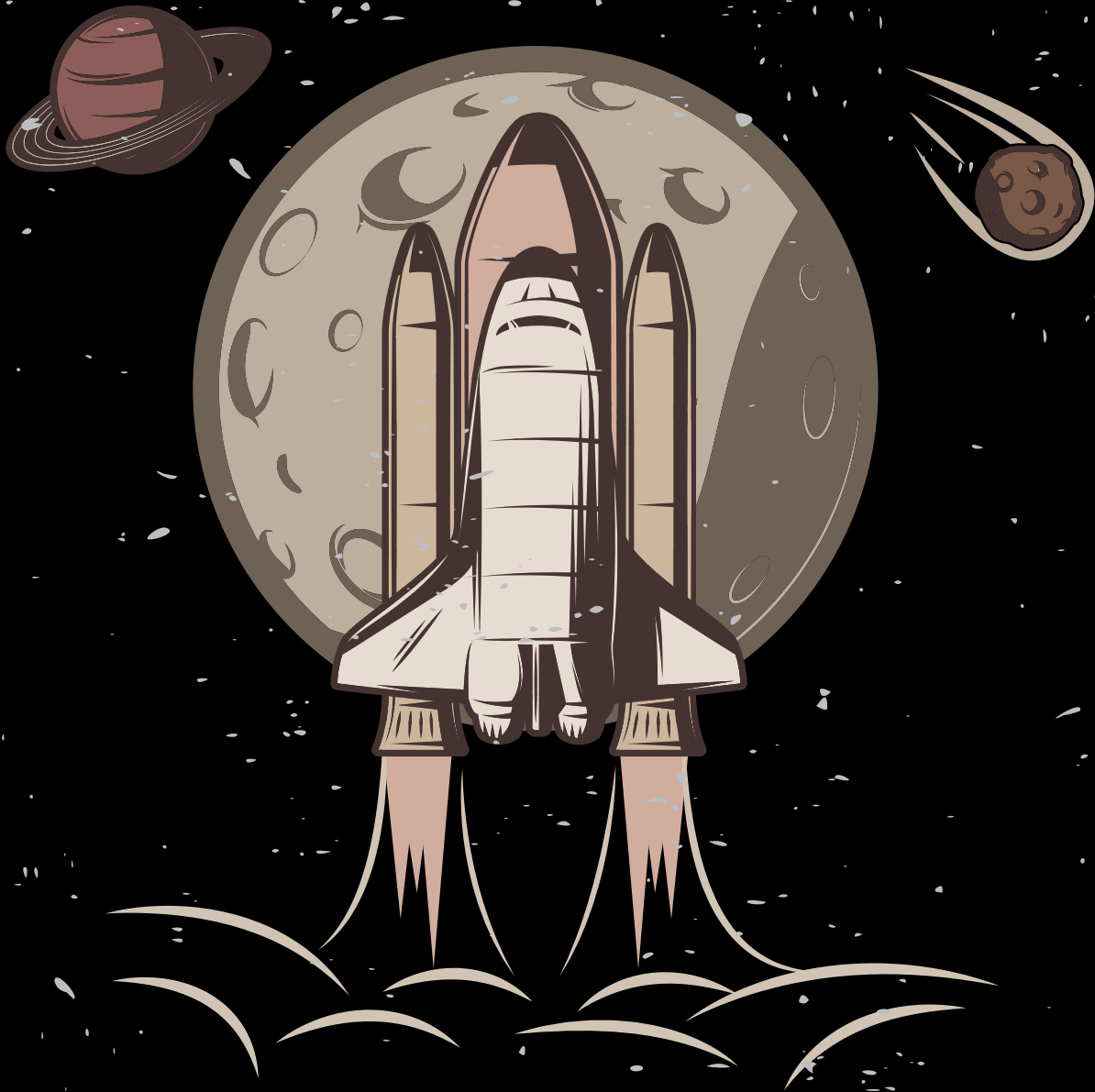
A 5-module training program that benchmarks best practices in:

- ▶ Safety
- ▶ Surface Preparation
- ▶ Liquid Coating Application
- ▶ Math for the Coatings Professional
- ▶ Process Control

*e-Learning lets you learn on your time.
Modules let you take only what you need.*

Visit www.nace.org/ica

HOUSTON, WE'VE SOLVED THE PROBLEM.



PCR^X

EXTREME DECOUPLER PERFORMANCE

BY  **DAIRYLAND**
ELECTRICAL INDUSTRIES

LEARN MORE: VISIT BOOTH 2135 | DAIRYLAND.COM/PCR^X

Author Index

Abas, Ahmad Zaki.....	49	Barker, Tod.....	70	Charpentier, Thibaut.....	36, 40, 58	Dodge, Michael.....	35
Abbas, Ridha.....	50	Barman, Sanjoy.....	91	Chawla, Sandeep.....	32, 33, 41, 63	Dolley, Evan.....	74
Abbasi Asl, Yousef.....	45	Barnes, Paul.....	75	Chen, Bingzhi.....	40	Dominguez Olivo, Juan.....	39, 62
Abdulwahhab, Yousuf.....	63	Barr, Micah.....	60	Chen, Jian.....	38, 71	Dong, Zheng.....	46
Abe, Masaru.....	56	Bartos, Milan.....	39	Chen, Kelei.....	69	Donikowski, Greg.....	77
Abedi Esfahani, Erfan.....	72	Bäßler, Ralph.....	76	Chen, Larry.....	36	Dorman, Sarah Galyon.....	56
Adapala, Priyanka.....	90	Bastidas, David.....	46, 61, 62	Chen, Le.....	60	Draper, Russell.....	69
Addington, Fred.....	53	Bastos, Alexandre C.....	62	Chen, Lin.....	90	Drelich, Vanessa.....	37
Adewale, Moshood.....	63	Bataller, Román.....	46, 47	Chen, Mai.....	36	Du, Jincheng.....	70
Adey, Robert.....	32, 74	Battocchi, Dante.....	54, 68, 70	Chen, Simon.....	60	Du, Yanxia.....	62
Agilan, Perumal.....	90	Bauer-Partenheimer, Knut.....	51	Chen, Tao.....	40, 57, 66	Duan, Yuxi.....	45
Agnew, Liam.....	32, 64	Bauer, Stephen.....	51	Chen, Wei-Feng.....	73	Duffly, Ravindra.....	71
Agnew, Sean.....	66	Bavarian, Behzad.....	24, 53, 66	Chen, Yongxu.....	56	Duffy, Timothy.....	56
Agrawal, Madhusuden.....	42	Baxter, Amy.....	76	Chen, Ziguang.....	20, 56	Dugarte, Margareth.....	66
Aguirre, Luis.....	53	Bayer, George.....	70	Chidambaram, Rajaram.....	49	Dugstad, Arne.....	49, 64, 76
Ahuja, Nitesh.....	72	Baynham, John.....	32, 39, 74	Chien, Szu-Chia.....	59	Dukeman, David.....	88
Akinci, Onder.....	54	Beamish, Michael.....	69	Chikkam, Anil.....	33, 72	Duncan, Kristen.....	34
Akrasi, Ito.....	70	Beans, Gina.....	36	Chikosha, Lynn.....	68	Duncan, Matthew.....	61, 67
Al Attar, Aqeel.....	92	Beavers, John.....	32, 33	Chimbi, Sri Krishna.....	50, 64, 73	Duran, Jesse.....	65, 90
Al Hajri, Zaher.....	34	Becerra Arandeda, Abraham.....	37, 72	Chinthalha, Sai Prasanna.....	59, 91	Duret-Thual, Claude.....	30
Al Hinai, Ashraf.....	50	Begley, James.....	69	Chitwood, Greg.....	44	Durnie, William.....	62, 63
Al Kharusi, Amjad.....	41, 44, 57, 64	Behrens, Rainer.....	73	Chkolny, Nikita.....	37	Eber, William.....	32, 33
Al Mawali, Mohammed Ibrahim.....	50	Belarbi, Zineb.....	75	Cho, Seongkoo.....	89	Echeverria Boan, Mayrén.....	67
Al Nabhani, Talal.....	41, 44, 64	Bendouha, Brian.....	53	Chochua, Gocha.....	42	Eckert, Richard.....	34, 68, 70
Al Sadoon, Omar.....	74	Beno, Jacob.....	31, 51, 81	Choi, Yoon-Seok.....	42, 48	Edwards, Jeremy.....	42
Al Sharyani, Dawood.....	34	Berbel, Larissa.....	31	Chowdhury, Tonoy.....	89	Efrid, Killian.....	58
Al Sultan, Fouad.....	66	Beretta, Silvia.....	53	ChristopherBall, J.....	61	Ehrensberger, Mark.....	31
Al Yaarubi, Mohammed.....	92	Bergseth, Zachary.....	54, 68	Christudasjustus, Jijo.....	38, 88	Ehsani, Hoda.....	63
Al-Abbas, Faisal.....	50, 70, 74	Bernsten, Tonje.....	64	Cilluffo, Graig.....	33, 72	Eidhagen, Josefín.....	41
Al-Ahmad, Abdul Wahab.....	34, 58, 64	Bertasi, Federico.....	32, 55	Ciolkowski, Michal.....	62	Eiselstein, Lawrence.....	31
Al-Ajmi, Hamad.....	34, 41	Bestetti, Massimiliano.....	55	Clark, Brandi.....	32, 64	Ellis, Peter.....	31
Al-Ajwad, Hassan.....	62	Bestgen, Daniel.....	36	Clark, Caelen.....	38	Ellor, James.....	32, 53
Al-Behlani, Nasser.....	34, 50	Betancourt, Daniel.....	37, 41, 62	Clark, Ronald.....	48	Emeh, Kelly.....	88
Al-Borno, Amal.....	76	Bhamji, Imran.....	77	Co, Noelle Easter.....	68	Erickson, Laura.....	38
Al-Dakheel, Hussain.....	74	Bidrawn, Fred.....	48	Cocke, Carly.....	89	Eriksen, Kristen.....	58
Al-Ghafri, Mohamed.....	34, 57	Bieri, Timothy.....	45, 69	Colahan, Martin.....	59	Eriksen, Morten.....	76
Al-Ghamdi, Abdul Rahman.....	34, 41	Birkenfeld, Craig.....	65, 66	Collins, Anthony.....	37, 45	Ernst, Petra.....	39
Al-Ghamdi, Sami.....	34, 74	Birkel, Nick.....	41	Collis, Gavin.....	53	Ermazun-Vignal, Paulina.....	58
Al-Hamaqi, Mohammed.....	74	Biswas, Avijit.....	74	Collison, Andrew.....	67	Eslamimanes, Ali.....	73
Al-Hammad, Hassan.....	74	Björke, Benjamin.....	62	Conesa, Cayetano.....	37	Esmacher, Mel.....	34
Al-Hashem, Abdul Hameed.....	67, 68	Blackwood, D.....	29	Cong, Hongbo.....	55	Esmaeely Saba Navabzadeh.....	38, 55
Al-Helal, Mohammed.....	74	Blessman, Edward.....	41	Conjan, Dimitri.....	51	Esquevil, Javier.....	65
Al-Muaisub, Mohammed.....	69	Blumhagen, Levi.....	45, 72	Connatser, Raynella.....	59, 65, 76	Esteves, Luiza.....	38
Al-Mutahhar, Faisal.....	34, 62	Bobaru, Florin.....	20, 56	Connolly, Brian.....	29, 71	Evans, Kenneth.....	32, 33, 41
Al-Mutairi, Adel.....	58	Bocher, Florent.....	49, 59	Constantineau, Pierre.....	75	Eván, Harold.....	35, 44
Al-Qahtani, Salem.....	41	Bodington, Andy.....	69, 76	Cook, Anthony.....	71	Ezeh, Chiamaka.....	39
Al-Shajii, Mohammed.....	64	Boissy, Clement.....	58	Correa, Otávio.....	75	Fahimi, Behrang.....	74, 77
Al-Shajii, Mohammed.....	58	Boluk, Fatih.....	45	Coryell, Stephen.....	77	Fahimi, Bryan.....	77
Al-Sulaiman, Saleh.....	43, 48	Bonab, Peyman Taheri.....	72, 77	Cosso, Gianluigi.....	49	Fairuz, Doug.....	30
Al-Wakaa, B.....	41	Bond, Steven.....	76	Costa, Isolda.....	31	Fairuzov, Victor.....	36, 70
Alaasmi, Ashraf.....	45	Bonifanti, Andrea.....	32, 55	Costa, Ricardo.....	74	Fairuzov, Yuri.....	36, 70
Alazemi, Rashed.....	41	Bonis, Michel.....	54	Coyle, Timothy.....	32	Fan, Yuermin.....	67, 68
Albrechtas, Katarina.....	59	Boneau, Alexandre.....	55	Craister, Bernadette.....	67	Fanica, Annelise.....	54
Alexander, Christopher.....	46, 47, 61	Borkar, Tushar.....	38	Crosby, Tamer.....	54	Farah, Mohamad.....	34
Alexander, Graham.....	40, 47	Bosch Giner, Juan.....	46, 62, 88	Crowe, David.....	65	Faraj, Christopher.....	51
Alexandrov, Boian.....	77	Bosch, Christoph.....	30	Cruz de Faria, Victor.....	65, 91	Farelas-Valencia, Fernando.....	49
Alharbi, Bader.....	40, 66	Bota, Gheorghie.....	76	Cudic, Dinko.....	69	Farelas, Fernando.....	49, 62, 75
Aljadani, Sami.....	55	Botinha, Julia.....	72, 73, 77	Cuervo, Bernardo.....	50	Farhat, Zoheir.....	34, 54
Aljeban, Norah.....	40, 43, 66	Bouaffre, Romuald.....	45	Cullin, Matt.....	70	Farnes, Knut-Arill.....	64
Aljohani, Talal.....	55	Boudreaux, Jean-Patrick.....	60	Curry, Kristen.....	66	Farrell, Andrew.....	40
Alkemper, Jens.....	66	Bracke, Koen.....	44	Curtin, Thomas.....	32	Fatima, Tasnia.....	91
Alkhalidi, Mohammed.....	43	Brady, Michael.....	38, 65	Cutright, Adam.....	44	Febbrari, Andrea.....	44
Almakini, Abdullah.....	70	Braithwaite, Lindsay.....	59, 90	Cyders, Timothy.....	51	Felipe, Mary Jane.....	66
Almutairi, Adel.....	34, 64	Brandolin, Gustavo.....	37	D'Souza, Hadrian.....	42	Feng, Zhili.....	38
Alotabi, Fares.....	43	Brandon, Mark.....	69	Dai, Chong.....	36, 40	Fenske, Jamey.....	30
Alotabi, Nasser.....	70	Brasher, Jon.....	72	Daijo, Yuzo.....	51	Ferguson, Robert.....	58
Alshabel, Rakan.....	62	Breedon, Michael.....	52	Dakwar, Naim.....	52	Fernandez, Monica.....	34, 45, 50
Altabbakh, Farah.....	43, 47	Brenna, Andrea.....	45, 53	Dalgleish, Andrew.....	69	Ferrara, Mario.....	62, 75
Alves, Fabio.....	37, 44	Bretherton, Neil.....	62	Dan, Etsuo.....	50	Fieltsch, Wolfgang.....	60
Alves, Helena.....	72, 73, 77	Brogna, Colette.....	70	Dane, C.....	48	Filho, Waldek Bose.....	77
Alyami, Bakheet.....	34, 41	Brognoli, Elena.....	44	Dante, James.....	30, 56	Findley, Kip.....	77
Alyouf, Osama.....	73	Brooks, Johnathon.....	36	Darcis, Philippe.....	35	Fingas, Daniel.....	45
Amaya, Herman.....	55, 74, 77	Broussard, Zach.....	68	Darihaki, Farzin.....	42	Firlotte, Clem.....	67
Amaya, Hisashi.....	23, 30, 42	Brown, Bruce.....	36, 39, 42, 43, 62, 64, 76	Daru, Kuntak.....	49	Fleury, Elisabeth.....	45
Ambaj, Hiromu.....	48	Brown, Erika.....	36, 72	Daub, Kevin.....	56	Floria, Robert.....	74
Ambat, Rajan.....	62	Bruckner, Selina.....	72	Davenport, Alison.....	43	Fluch, Rainer.....	44
Amesty, Roque.....	61	Bruemmer, Stephen.....	48	Davies, Jake.....	50, 74	Focht, Eric.....	33
Amir Ajmervala, Hamza.....	34, 64	Buck, Robert.....	41	Davis, Joshua.....	59	Folena, Mariana.....	64
Amjad, Zaid.....	40, 57	Buckingham, Kathy.....	45, 70	De Araujo Abilio, Andre.....	89	Fonseca, Ana.....	31, 39
Anders, Andre.....	73	Budigian, Noah.....	31	de Guzman, Lloyd Oscar.....	49	Fontaine, Sylvain.....	45
Anders, Adam.....	29	Burgardner, Jacob.....	61	de Marco, Marco.....	49	Forbes, Christina.....	70, 80
Anderson, Rachel.....	38	Buntain, Ryan.....	77	de Miera, Mirmaly Saenz.....	69	Forsyth, Brian.....	69
Anderson, Ted.....	74	Burgess, Brian.....	70	De Oliveira, Jefferson.....	69	Franco, Sinesio.....	77
Anderson, Timothy.....	30	Burke, Grace.....	29	De Paula, Renato.....	68	Franczak, Agnieszka.....	62
Andrade, Carmen.....	61	Burnett, Timm.....	76	de Rincon, Oladis.....	61, 79	Frankel, Gerald.....	55, 59, 66, 72
Andrade, Gessie.....	63	Burns, Joseph.....	37	De Servins, Tristan.....	70	Fraser, Darren.....	51
Andrews, Brian.....	62	Burns, Madison.....	51	de Sousa, Flávio.....	37, 92	Free, Brandon.....	56, 89
Anosike, Kelechi.....	89	Butaleb, Hassan.....	43, 48	De Souza, Valdir Araujo.....	52	Freeman Adane, Kofi.....	42, 54
Anyanwu, Ezechukwu.....	43	Buxton, David.....	39	De Turris, Antonio.....	61	Friedersdorf, Fritz.....	32, 64, 75
Arabnejad Khanouki, Hadi.....	42	Cabrini, Marina.....	51	Debruy, Hendrik.....	34, 50, 74	Frigo, Dario.....	60
Arai, Yuji.....	30, 42	Cain, Taylor.....	29	Deffo, Martien.....	35, 44	Fritz, James.....	41
Aristodimou, Giannis.....	57	Calderon, David.....	88	Deible, Michael.....	73	Froom, Tim.....	39, 74
Armstrong, Charles.....	47	Calignano, Flavia.....	51	Delaney, Dennis.....	72	Fuentes, Karen.....	58
Armstrong, David.....	62	Campburn, Nathan.....	61	Delblanc, Anna.....	33	Fuentes, Roderick.....	33
Arroyave, Carlos.....	34	Campbell, Shawn.....	33	Delgado, Jose.....	36	Fulhi, Aaron.....	42
Artnak, Edward.....	55	Canto Ibanez, Jorge.....	50	Delorme, Jeffrey.....	45	Fujieda, Tadashi.....	51
Arumugam, Sridhar.....	52	Canto Maya, Christian.....	74	Demadis, Kostas.....	40, 57	Fujishiro, Taishi.....	30
Asgharpour, Alireza.....	42	Cao, Hang.....	63	Demarest, Charles.....	65, 71	Fujita, Kazuhisa.....	40
Asim, Umair.....	35	Cao, Shuyun.....	62	Demo, Jeff.....	75	Fukaya, Yuichi.....	48
Asiri, Abdulaziz.....	64	Capewell, Matthew.....	74	Deng, Guannan.....	36	Fuqua, Sam.....	75
Assmusen, Matthew.....	55	Cardwell, Brett.....	63	Dequick, Anthony.....	71	Gabai, Yshai.....	92
Asrar, Nausha.....	76	Carpenter, Ashleigh.....	92	Desai, Jigneshkumar.....	49	Gad, Shadrack.....	92
Asselin, Edouard.....	69	Carpenter, Ian.....	62	Desch, Paul.....	40	Gaggiano, Roberto.....	33
Assis, Kioshy.....	44	Carpenter, Jacob.....	71, 90	Despas, Christelle.....	68	Gagne, Martin.....	43, 61, 67
Attarchi, Mehdi.....	45	Carranza, Ricardo.....	37, 53	Devallee, Matthieu.....	49	Gajdaci, Attila.....	50, 74
Attila Palencsar, Iozsef.....	39	Carreno, Javier Alejandro.....	37	Dhanadapani, Nalini.....	53	Gallecos, Logan.....	90
Atz Dick, Pedro.....	72	Carrillo Salgado, Irene.....	50	Dhanadapani, Dhandabani.....	33	Galvão, Tiago.....	75
Ayaldines, Die Gilje.....	63	Carugo, Francesco.....	61	Dhulipala, Prasad.....	51	Gamble, Audrey.....	72
Avanesian, Aline.....	53, 66	Carvalho, Mariana.....	37, 44	Di Bonaventura, Maria.....	36	Garcia-Romero, Jose Manuel.....	46, 47
Avendano, Freddy.....	72	Case, Raymundo.....	35, 37	Di Prima, Matthew.....	31	Ganjian, Eshmiel.....	66
Ayyagari, Sahithi.....	92	Cassagne, Thierry.....	44, 74	Diaz, Joshua.....	42	Gantner, Wayne.....	53
Ayyar, Sameer.....	70	Castaneda-Lopez, Homero.....	46, 70	Dickinson, Edmund.....	44	Ganvir, Ashish.....	43
Bae, Jaewan.....	31	Castillo, Angel.....	47	Didierjean, Laura.....	68	Gao, Ming.....	68
Baete, Christophe.....	60	Cavagnola, Matteo.....	33	Diehl, Bruno.....	37, 63	Gao, Qiuying.....	52
Bagaria, Hitesh.....	47, 63	Cavalcante, Daniela.....	37, 44	Diemler, Nathan.....	57	Gao, Shujun.....	43
Bahbahani, Yousef.....	41	Chaitra, M.N.....	58	Dimmick, Evan.....	88	Garber, David.....	61
Bahgat, Hycem.....	60	Chakraborty, Purnendu.....	66	Ding, Hongbo.....	45	Garcia, Alfonso.....	74
Balharth, Salem.....	66	Chakraborty, Soma.....	34, 43	Ding, Yuan.....	62	Garcia, Daniela.....	35, 44
Baltross, John.....	57	Chalfoun, Danissa.....	53	Dinh, Dominic.....	90	Gareau, Frank.....	76
Baltzersen, Øystein.....	56	Chambers, Brian.....	53	Disci-Zayed, Duygu.....	57	Gariñas, Luis.....	72
Bandeira, Merlin.....	63	Chanda, Ashwini.....	14, 30	Dittmar, Christoph.....	35	Gaston, Maury.....	50
Bandiera, Marco.....	32, 55	Chang, Benjamin.....	69, 76	DiTucci, Matthew.....	69	Gattu, Vineeth Kumar.....	32, 33, 48
Bang, Henrik.....	58	Chang, Frank.....	66	Divi, Suresh.....	50, 67	Geddy, Katie.....	31
Bangaru, Murali.....	33	Chang, Kuo-Hsiang.....	59	Doan, Thi.....	67	Gelfi, Marcello.....	44
Baniha, Bidyut.....	52	Changfeng, Chen.....	69	Dobkowska, Anna.....	91	Genesca Llongueras, Juan.....	32
Barker, Richard.....	37, 64, 71	Charlton, William.....	55	Dockery, Michael.....	45	Gerard, Angela.....	66

Author Index

Ghanbari, Elmira.....	29,46	Iijima, Hironari.....	75	Koch, Gerhardus.....	34	Lorenzi, Sergio.....	51
Gharaibah, Emad.....	42	Ikeda, Hiroshi.....	67	Kogler, Robert.....	38	Lonusso, Massimo.....	51
Gholami, Shayan.....	46	Ilbagi, Arash.....	76	Koh, Carolyn.....	36	Lou, Xiaoyuan.....	48,65
Giacomi, Jacob.....	73	Indacochea, J.....	32,33	Kohandehghan, Alireza.....	73	Loukidimou, Adamantini.....	43
Gibson, Stephen.....	34,45	Inman, Samuel.....	66,90	Kondo, Keiichi.....	30,42	Loureiro, Susana.....	54
Gieg, Lisa.....	47	Intiso, Luciana.....	31	Kop, Alan.....	37	Lu, Fei.....	57
Gilbert, François.....	49	Ishiguro, Yasuhide.....	44	Korber, Darre.....	68	Lu, Haiping.....	36,57
Gilbert, Jeremy.....	31	Ishikawa, Nobuyuki.....	71	Koronfil, Mohamed.....	30	Lu, Jun.....	36
Gillensen, Christoph.....	74	Islam, Aminul.....	54	Kotu, Susmitha Purnima.....	68,70	Lu, Minxu.....	60,63
Gin, Stephane.....	72	Islam, Md Mayeedul.....	64	Koutsoukos, Petros.....	40,57	Lu, Ping.....	55,57,66
Girardot, Crystal.....	32,53	Ito, Takashi.....	75	Kowalski, Paul.....	41	Lu, Yi-Tsung.....	36,40
Gittos, Michael.....	35	Iyer, Parth.....	60	Krager, Steven.....	58	Lun Chan, Ho.....	51,67
Gleeson, Brian.....	73	Izquierdo, Javier.....	59	Kramer, Jeffrey.....	47	Lun, Kentaro.....	38
Glover, Carol.....	29,31,66	Jackson, Tracey.....	62,63	Krantz, Matthew.....	54	Luo, Jingli.....	65
Glover, William.....	58	Jacy, Easterday.....	38	Krishnamurthy, Ravi.....	39,68	Lvov, Serguei.....	56
Goebel, Jacalyn.....	54	Jafarzadeh, Siavash.....	20,56	Krishnan, Ajay.....	35	Ma, Lei.....	63
Golovesov, Vladimir.....	58	Jain, Vinay.....	75	Krissa, Len.....	45,50,77	Ma, Zheng.....	64,89
Gomes, José.....	62,64,75	Jaithiya, Akhil.....	47	Kroon, David.....	45	Maas, Peter.....	73
Gomez, Rogine.....	90	Jalique, Daphne.....	68	Kuchma, Daniel.....	59	Macdonald, Digby.....	29,46,55,62,79
Gonçalves, Arthur.....	37	James, Joshua.....	38	Kulprathipanja, Ames.....	59	Macdonald, Gillian.....	39,50
Gonzalez Nunez, Miguel.....	56	James, Ryder.....	92	Kumar, Dharmendr.....	75	McKay, Fiona.....	39,50
Gonzalez-Garcia, Yaiza.....	29	Jani, Jagrut.....	34	Kumar, Subhalakshmi Suresh.....	90	Madan, Rajni.....	66
Gonzalez, Manuel.....	39	Janke, Christopher.....	65,76	Kumar, Vikas.....	43	Madani Sani, Fazlollah.....	64,92
Goodwin, Neil.....	57	Janoff, Dwight.....	67,73	Kumseranee, Sith.....	48,69	Madhu, Kalayarasan.....	92
Goulden, Wanda.....	34	Janco, Steven G.....	44	Kuraz, Steven.....	41	Madhura, B.....	43
Goyal, Arpit.....	64	Jaragh, Amer.....	43,47,48	Kurihara, Shirotsuke.....	44	Mahajanam, Sudhakar.....	13,50,58,63,64,76
Graham, Gordon.....	40,57	Jarjura, George.....	34	Kursten, Bruno.....	33,46,62	Maia, Frederico.....	54,62
Granville, Utibe Eno Charles.....	38,88	Jarragh, Amer.....	34	Kurtz, Michael.....	31	Malamoudis, R.....	40
Green, Warren.....	61,67	Jawed, Mill.....	52,70,77	Kus, Slawomir.....	75	Maley, Darren.....	37
Greenwood, Annamaria.....	63	Jee, Youngseok.....	57	Kuthe, Sandip.....	47	Manchestor, Tristan.....	29,71
Gribi, Mitch.....	56	Jelani Usman, Bashir.....	89	Kuwabara, Kosuke.....	51	Mancini, Alessandro.....	32,55
Griffiths, David.....	35	Jenkins, Alyn.....	63,75	Kuznetsova, Alena.....	75	Manfredi, Diego.....	51
Grigoryan, Alexander.....	68	Jenneman, Gary.....	47	Kvarekval, Jon.....	42,43	Mankar, Deepak.....	49
Grinon-Echaniz, Rosa.....	43	Jensen, Andreas.....	56	Ky, Khoa.....	63	Mansfeld, Andrea.....	65,72
Groll, Kevin.....	72	Jensen, Michael.....	48	Labuda, Ewa.....	52	Mansoori, Hamed.....	64
Grover, Harry.....	39,50	Jeremiah, Oludare Abiodun.....	39,77	Ladha, Chetan.....	56	Martin, Willem-Louis.....	43
Gu, Tingyue.....	48,69	Jessup, Ben.....	72	Ladeuille, Laurent.....	30,44,74	Marchebois, Herve.....	30,44,74
Gu, XinZhu.....	69	Jiang, Jieren.....	54	Iage, Marcella.....	44	Marino, Gabriella.....	55
Gu, Zhenming.....	36,57	Jiang, Jun.....	72	Lakkasattler Chandrashekar, Bhuvana.....	31	Marinou, Eugenia.....	52
Gubner, Rolf.....	64	Jiang, Ruijing.....	44	Lam, Catherine.....	69	Markfoged, Rikke.....	48
Gudino, Ernesto.....	60	Jiang, Xiu.....	49	Lams, Laurent.....	30	Marmillo, Jonathan.....	60
Gullberg, Daniel.....	44,58	Jiang, Youwen.....	45	Landsberger, Sheldon.....	55	Marquardt, Tom.....	67
Gunawan, Stanley.....	62	Jim-George, Tekena.....	77	Langill, Thomas.....	61	Marsh, Jonathan.....	70
Guo, Bingbing.....	57	Jin, Peng.....	39	Lanterman, Robert.....	50	Martin, Benjamin.....	40
Guo, Dan.....	71	Jin, Ying.....	63	Lasa, Ivan.....	61	Martin, Chad.....	61
Guo, Jing.....	73	Jiryaee Sharahi, Hossein.....	70	Lasebikan, Daley.....	34,56	Martin, T.....	77
Guo, Kevin.....	67,91	Jo Jun, Hyun.....	30	Lathabai, Sri.....	51	Martinez Gomez, Lorenzo.....	50
Guo, Mengnan.....	71,91	Joana, Figueiredo.....	54	Latino, Mauricio.....	69	Matez, Isabel.....	46,47
Guo, Xiaolei.....	72	John, Gareth.....	39	Latipov, Rifnur.....	69	Martiniano, Guilherme.....	77
Guo, Yuelie.....	52	Johnsen, Roy.....	19,21,35,39,58,74	Lau, Kingsley.....	61,67	Martino, Taylor.....	71
Gupta, Rajeev.....	38,65	Johnson, Robert.....	70	Laughorn, Tyler.....	92	Martinussen, Hanne.....	34,56
Haase, Thomas.....	55	Jokar, Mahdi.....	89	Lauppe, Dean.....	31	Maruthamuthu, Ganesh.....	33
Habib, Khaleed.....	57	Jones, Marybeth.....	59	Laustad, Gro.....	39	Marya, Manuel.....	35,41,52
Hackel, Lloyd.....	48,64	Jonsson, Jan Y.....	58	Leadbeater, Garry.....	37,74	Masia, Shannen.....	61
Haebler, Tim.....	74	Jorand, Frédéric.....	68	Leal, José.....	77	Masi, Zada, Fadi.....	34,50
Haider, Ghulam.....	42	Joseph, Jiju.....	71	Lee, Dong.....	36	Massie-Schuh, Ella.....	47
Halle, Tesfaalem.....	56	Joshi, Gaurav.....	55	Lee, Jong Yeon.....	48	Matar, Basel.....	73
Hall, Derek.....	56	Joshi, Sachin.....	38	Lee, Minh.....	92	Mateen, Sana.....	36
Hallopeau, Xavier.....	61	Joshi, Shrikant.....	43	Legat, Andraz.....	52	Mateer, Mark.....	77
Ham, Jeffrey.....	76	Jun, Jiheon.....	38,59,65	Lehman, Rose.....	57	Math, Sujay.....	45
Hamilton, David.....	34	Jungert, David.....	45	Lehmann, Marc.....	63	Matheis, Juergen.....	57
Hammoud, Abdullah M.....	52	Junker Olesen, Andreas.....	60	Lehrer, Scott.....	34,43	Mathew, Asok.....	58,64
Handa, Sheetal.....	29,71	Kacher, Josh.....	67	Lei, Penghui.....	72	Matsumoto, Tsuyoshi.....	69
Hangarter, Carlos.....	38	Kaczerewska, Olga.....	54	Leidensdorf, Jeremy.....	43	Mattos, Oscar.....	44,63
Hansen, Douglas.....	30	Kagarise, Christopher.....	68,70	Leishgar, Robert.....	79	Mattson, Robert.....	41,58
Hansen, Yang.....	43	Kappes, Mariano.....	37,53,72	Leiva-Garcia, Rafa.....	21	Mauri, Andrea.....	55
Hara, Takuya.....	30	Karim, Soroor.....	42	Lemieux, Edward.....	38	Maximova, Natalia.....	59
Hari, Mohiedin Bagheri.....	88	Kartal, Mehmet.....	35	Lencka, Malgorzata.....	73	May, Mark.....	59
Hari, Oduru.....	43	Kasraei, John.....	42	Leng, Douglas.....	61	Mazumder, Mohammad Jafar.....	66
Hart, William.....	61	Kass, Michael.....	65,76	Leonard, Donovan.....	38	Mazzella, Joseph.....	77
Harvey, Dave.....	43,80	Kasumu, Adebola.....	52	Lepine, Sean.....	45	McCaffery, John.....	60
Hater, Wolfgang.....	57	Katen, Jack.....	61,67	Lewis, Samuel.....	65,76	McCartney, Tom.....	67
Hathloul, Tawfiq.....	70	Katona, Ryan.....	71	Li, Bingtao.....	72,73	McCoy, Steve.....	77
Hattendorf, Heike.....	73	Kaur, Amarpreet.....	57	Li, Chao.....	37	McCurry, Patrick.....	90
Hau, Jorge.....	50	Keasler, Vic.....	68	Li, Hong-Nan.....	37,56	McDonnell, Shamus.....	52,70,77
Hauffman, Tom.....	29	Keech, Peter.....	68	Li, Jinxu.....	52	McDonnell, Stephen.....	66
Hauger, Stian.....	58	Keiser, James.....	59,65,76	Li, Mi.....	88	McDonnell, William.....	37
Hausler, Rudolf.....	39,68	Kelly, Robert.....	38,71,72	Li, Mingli.....	54	McKelvie, Jennifer.....	68
Hayden, Thomas.....	77	Kembaiyan, Kumar.....	41	Li, Shimin.....	72	McMurdie, Samuel.....	89
Haynes, Gerald.....	63	Keplinger, Andreas.....	35	Li, Shunshu.....	42	McMurray, Neil.....	20
Hazarabedian, Maria Sofia.....	70	Kerrion, Samuel.....	73	Li, Tianshi.....	36	McQueen, Mark.....	50
Hazlett, Randy.....	36	Kesavan, Sathees.....	58,63	Li, Xiang.....	36	Meekins, Ryan.....	64
He, Xihua.....	52	Kessler, Sylvia.....	47,61	Li, Xiaogang.....	24,67	Mehrazi, Shirin.....	71
He, Yi.....	89	Kesterson, Ronald.....	33	Li, Xiaoji.....	35,63	Meillier, Arnaud.....	61
Heath, Stephen.....	36,57	Key, Jordan.....	67	Li, Xue.....	31	Mejia, Osvaldo.....	45
Hefferan, Christopher.....	73	Kha, Christopher.....	74	Li, Xuejie.....	29	Melia, Michael.....	65
Heidersbach, Krista.....	14,41,58	Khan, Mohammad Umar Farooq.....	89	Li, Yi.....	76	Melville, John.....	76
Heilig, Meredith.....	66	Khattar, Chad.....	60	Li, Ying.....	68	Mendez, Conchita.....	39
Helsel, Jayson.....	50	Khera, Ashish.....	52	Li, Yingchao.....	69	Mendibide, Christophe.....	30
Henderson, Jeffrey.....	92	Khondker, Raihan.....	45	Li, Ziyu.....	72	Mendonca de Lima, Marilia.....	37
Henry, Laurent.....	45	Khullar, Piyush.....	31	Lian, Jie.....	76	Menendez, Carlos.....	39
Hernandez Montiel, Juan.....	50	Khuraibut, Yousef.....	43,48	Liang, Jiajun.....	72	Mesbah, Hossam.....	34
Hernandez, Edidison.....	46	Kiesman, Danielle.....	47	Liang, Yi.....	60	Messquita, Thiago.....	44,74
Hernandez, Monica.....	34	Kijika, Bruch.....	92	Lich, Tyler.....	70	Messenger, Brian.....	63
Herrera, Juan.....	60	Kim, Changyeul.....	46,81	Lieboherr, Martin.....	53	Micheli, Ana.....	31
Heuring, Casey.....	53,66	Kim, Dong-Jin.....	48	Liew, Yan Han.....	29	Michel, Bruno.....	53
Hidreth, Owen.....	66	Kim, Hyun-Su.....	54	Lillard, Jennifer.....	71	Millier, Carl.....	47
Hilton, Zachary.....	51	Kim, Mark.....	75	Lillard, Robert.....	60,71	Miksic, Boris.....	53,66
Hinds, Gareth.....	44,79	Kim, Seong.....	72	Lim, Sue.....	62	Millano Gonzalez, Valentina.....	61
Hirano, Susumu.....	44,75	Kim, Sung Woo.....	48	Lim, Yong Chae.....	38	Miller, Brandon.....	45,72
Hoekstra, Menno.....	77	Kim, Yong-Rak.....	46	Lim, Yun Soo.....	48	Miller, Michael.....	30
Hoffard, Theresa.....	38	Kimura, Mitsuo.....	30	Lima, Luciana.....	37,54,70	Miller, Robert.....	59
Hoffman, Robert.....	66	King, Barnaby.....	64	Lin, Zhibin.....	37,54,70	Millet, Cecile.....	35,37,44
Hoffmann, Kristi.....	63	Kish, Joseph.....	69	Lison-Pick, Michael.....	73	Millet, Julien.....	53
Honda, Hiroshi.....	60	Kittel, Jean.....	55	Liu, Chenxi.....	88	Milligan, Ryan.....	68
Honima, Yuta.....	74	Kivakk, Ulf.....	23,41,44	Liu, Hongshen.....	72	Mir, Zhaid.....	62
Horne, Michael.....	70	Klechka, Ernest.....	60	Liu, Huijing.....	72	Misra, Eji.....	67
Hornus, Edgar.....	37	Klink, Artur.....	42	Liu, Lianlian.....	92	Mitchell, Anthony.....	47
Horton, Derek.....	38	Kloesel, Michael.....	74	Liu, Minkang.....	65,89	Mitzihr, Maria.....	64
Hoshowski, Jody.....	63,75	Knudsen, Ole.....	43	Liu, Shujie.....	54	Mizuno, Daisuke.....	30
Hosking, Niamh.....	65	Ko, Saebom.....	36,40	Liu, Wei.....	67,68	Mizuno, Yusuke.....	40
Houston, Eric.....	33	Kobayashi, Atsushi.....	75	Liu, Xiang.....	65	Mohammad, Israa.....	58
Howe, Jenni.....	50			Liu, Yuxiu.....	47	Mohammed Nor, Azmi.....	49
Hu, Jialiang.....	56			Liu, Zhengwei.....	36,39	Mohammed, Sikiru.....	59,71
Hua, Yong.....	31,49,59,63,71,72			Locke, Jenifer.....	55,56,59,71	Mohanty, Kishore.....	36
Huang, Qindan.....	47			Lodato, Eduardo.....	92	Mol, Arjan.....	29
Huang, Weiji.....	30,41			Loken, Andreas.....	55,69	Molholm, Jakob.....	58
Huard, Martin.....	42,54			Lomasney, Christina.....	12,76,78,79	Momen Nejad, Boshra.....	45,72
Huggins, Angeline.....	72			Lombardi, Mariangela.....	42	Monks, Charles.....	57
Huguenin, Pauline.....	58			Long, Fei.....	56	Montani, Raimondo.....	44
Huizinga, Sylze.....	44			Long, Xin.....	92	Montoya, Rodrigo.....	59
Hutcherson, Justin.....	31			Loofz, Signe.....	74	Monty, Chelsae.....	59
Hutchison, Michael.....	68			Lopez-Garrity, Aida.....	52	Moore, Joseph.....	47
Iannuzzi, Mariano.....	37,51,53,63,73,74			Lopez-Garrity, Meng.....	52	Moore, Makensie.....	47
Ibe, Brielle.....	90			Lopitau, Aymeric.....	45	Moore, Nicole.....	70
Iezzi, Erick.....	38						

Author Index

Moosavi, Ali.....	48	Panindre, Anup.....	91	Ricci, Andrea.....	37,73	Shukla, Pavan.....	33,45
Moradighadi, Negar.....	92	Pannell, Jared.....	45,75	Richards, Leo.....	47,70	Shurway, Andrew.....	90
Morai, Jason.....	75	Paolone, Luciano.....	49	Richard, John.....	51	Siddiq, Muhammad.....	35
Morales Rosat, Raquel.....	69	Parakeva, Christakis.....	40	Rickard, William.....	51	Siddiqui, Daryal.....	31
Morales, Ivan.....	49	Paravicini Bagliani, Emanuele.....	35	Rincon Troconis, Brendy.....	30,56	Siegl, Wolfgang.....	35
Moran, Andrew.....	60	Paredes Méndez, Virginia.....	31	Riojas, Luis.....	88	Siestma, Jill.....	29
Morana, Roberto.....	31	Parey, Alana.....	55,92	Ritchie, David.....	51	Siew, Leong Wai.....	49
Moreira, Rogaciano.....	63	Parker, Mary.....	38	Rizzo, Riccardo.....	62	Silva, Fulvio.....	75
Mori, Gregor.....	35	Parsi, Mazdak.....	42	Roberto, Martins.....	54	Smith, Philip.....	60
Morland, Bjorn.....	49	Parthenios, John.....	40	Roberts, David.....	52	Sindelar, Robert.....	33
Morris, Walter.....	47	Parvathaneni, Krishna.....	54	Robles, Kevin.....	91	Singer, Lauren.....	60
Morton, David.....	69	Parvez, Md Anwar.....	64	Rocha, Claudia.....	54,62	Singer, Marc.....	21,36,42,43,51,59,62,64,75,76
Moschona, Argyri.....	40	Pastore, Tommaso.....	51	Rodelas, Jeffrey.....	65	Singh, Binder.....	59
Mosher, Winston.....	70	Patel, Ishan.....	48	Rodoni, Esteban.....	74	Singh, Himanshu.....	75,90
Mubarak, Arif.....	69	Pathania, Rajeshwar.....	91	Rodriguez, Daniell C.....	31	Singh, Jaymin.....	91
Mukeshvashan, Venkatesan.....	69	Paudyal, Samridhhi.....	36	Rodriguez, Martin.....	37,72	Singla, Kushal.....	92
Muren, Jan.....	75	Paul, Shiladitya.....	43,49,64,80	Rosen, Timna.....	48	Skidmore, Melissa.....	53
Murugesan, Sankaran.....	36,39,66	Paul, Turner.....	31	Rogowska, Magdalena.....	62	Skilbred, Anders W.B.....	55,69
Muryu, Christopher.....	29	Payne, Nicholas.....	71	Rollins, Brandon.....	32,33	Skilbred, Ellen.....	74
Myhr, Magnus.....	39	Pearson, Matthew.....	70	Romero Echeto, Nathalie.....	92	Skjervek, Ingun.....	47
Nagaraja, Srinidhi.....	31	Pearson, William.....	29,71	Romney, Matthew.....	77	Skordalou, Georgia.....	57
Naimul Hoque, Kazi.....	88	Pejot, Thomas.....	55	Ross, Thomas.....	23,47,68,70	Skovhus, Teren Lund.....	57
Nakamura, Jun.....	30,42	Penkala, Joseph.....	36	Rossi, Jesualdo.....	31	Sleire, Harald.....	34,56
Nakao, Kazuki.....	53	Peratta, Andres.....	32	Rossiter, Marcus.....	63	Smerdon, Andy.....	39
Nakatsuka, Matthew.....	72	Perdomo, Jorge.....	49	Rothwell, John.....	64	Smit, Johan.....	44
Nakazato, Yoko.....	50	Perea, Daniel.....	55	Roumeau, Xavier.....	49	Smith, Ali.....	30,35
Nasif, Mahmoud.....	57	Pereyra, Alessandro.....	92	Roy, Indranil.....	59	Smith, Derick.....	62
Nasr-El-Din, Hisham.....	67	Perez Pineiro, Rolando.....	75	Roy, Ting.....	59	Smith, Jared.....	56
Natale, Terry.....	45	Perez, Teresa.....	53	Rozo, Wilson.....	39	Smith, Lee.....	31
Nats, Panagiota.....	40,57	Perfect, Emma.....	39	Ruiz, Allan.....	32,89	Smith, Michael.....	74
Nauman, Mubshaid.....	34	Perneth, Samanbar.....	61,67,71	Rule, Jantam.....	77	Solter, Boyle, David.....	49
Navarro, Luis.....	61	Perricone, Matthew.....	56	Rummel, Raihan.....	64	Solar Arango, Juliana.....	47
Nazari, Mehdi Honarvar.....	88	Persaud, Suraj.....	56	Rusk, David.....	64	Solntsev, Pavlo.....	53
Néel, Guillaume.....	35,44	Persson, Katarina.....	44,73	Russek, Jeff.....	57	Solomon, Ethan.....	47
Nelson, Erin.....	67	Pervov, Alexei.....	58	Ryan, Joseph.....	72	Sonawane, Rutambara.....	61,88
Nesic, Srdjan.....	36,39,42,43,49,62,64,76	Pesinis, Konstantinos.....	74	Ryan, Mary.....	71	Song, Miao.....	65
Neuman, William.....	48	Pessu, Frederick.....	37,42,64	Saal, James.....	55,66	Song, Seungmin.....	44
Neville, Anne.....	31,36,37,40,58,59,64,71,72	Petersen, Todd.....	70	Saatchi, Alireza.....	46	Sonke, Johannes.....	54
Newbauer, Theresa.....	38	Peterson, Newton.....	73	Saavedra, Albert.....	47	Sopkow, Lisa.....	57
Newbury, Brian.....	30	Petratos, Georgios.....	57	Sabesan, Manickavasagan.....	41	Soraghi, Ahmad (Benjamin).....	47
Newkirk, Joseph.....	51	Pfeiffer, Josefine.....	35	Saboonchi, Hossain.....	56	Sorbie, Ken.....	51
Ngo, Dien.....	72	Phillon, Russell.....	67	Sadeghi Pouya, Homayoon.....	46	Sørensen, Kirsten.....	51
Nguyen, Thu.....	73	Pichlova, Marketa.....	71	Sadek, Anwar.....	59,89	Soto, Juan.....	46
Nichols, David.....	57	Pickarts, Marshall.....	36	Saedou, Saghi.....	58	Sotoudeh, Kasra.....	35,52,77
Nichols, Mark.....	65	Picott, Juan.....	63	Safiri, Shahab.....	52,77	Souza, Isabel.....	54
Nick, Hamidreza.....	47	Pifer, Montgomery.....	66	Sagues, Alberto.....	47,61	Souza, Lucas.....	54
Nicolino, Miguel.....	35	Pikas, Joseph.....	46	Sahu, Sarita.....	91	Souto, Ricardo.....	29
Nidhi, Monika.....	43	Pillai, Radhakrishna.....	60	Saithala, Janardhan.....	41,44,64	Souza, Danilo.....	77
Niebuhr, Jason.....	56	Pin, Sonia.....	32	Sakamoto, Kan.....	48	Souza, Walter.....	37
Nielsen, Johan.....	51	Pineda, Yaneth.....	31	Sakamura, Tetsuro.....	40	Spinelli, Carlo.....	30
Nielsen, Lars.....	60	Pinney, Nathan.....	60	Sakata, Mikihiko.....	58	Spinthaki, Argyro.....	57
Niespodziany, Daniela.....	73	Pinnock, Tijan.....	47	Salasi, Mobin.....	37,51	Sprayberry, Casey.....	45
Nigri, Federico.....	31	Place, Trevor.....	47,63	Saleem, Eiman.....	37	Sridhar, Narasi.....	32,33,72
Nimmervoll, Manuela.....	90	Platt, Kyle.....	60	Saleem, Qasim.....	70	Srinivasan, Jayendran.....	55,59,71,72
Ning, Jing.....	31	Plientincx, Sven.....	29	Salehpour, Somaieh.....	69	Srinivasan, Raghv.....	70,83
Ningshen, S.....	43	Plesiutchnig, Ernst.....	44	Sampaio, Rui.....	62	Srinivasan, Sridhar.....	14,31,50,75
Nisbet, William.....	77	Plesniak, Nicoleta.....	40	Samusawa, Itaru.....	67	St-Pierre, Godfrey.....	61
Nishida, Ikuko.....	60	Pojanabuntoeng, Thunyaluk.....	51,63,64	Sanchez, Lizeth.....	55,88	Stafford, Philip.....	31
Nikou, Demian.....	41	Pola, Annalisa.....	47	Sanchez, Nuria.....	47	Stal, Fabian.....	51
Noaimi, Khalid.....	59	Polar-Rosas, Alberto.....	73	Sanders, Christine.....	32,38	Stahl, Michael.....	58
Noble, Catherine.....	58,65	Policastro, Steve.....	38	Sanders, John.....	51	Standish, Chelsea.....	58
Noel, James.....	59,71	Ponnappati, Ramakrishna.....	66	Sanders, Laura.....	45	Stec, Marian.....	45
Noens, Joachim.....	53	Poon, Joseph.....	66	Sandquist, Fredrik.....	56	Steidel, Kourtney.....	90
Nordvik, Tore.....	75	Popelar, Carl.....	51	Sanghavi, Kushang.....	76	Steiner, Kimberly.....	37
Novell-Leruth, Gerard.....	75	Popov, Konstantin.....	40,58	Sanni, Olujide.....	36,40,58	Stevenson, Craig.....	69
Nyhus, Bård.....	35	Portillo-Llamas, Manuel.....	47	Sano, Yuichi.....	48	Storm, Malte.....	29
O'Brien, Sean.....	38,88	Pöttsch, Sina.....	76	Santana, Juan.....	20	Stott, James.....	70
O'Hearn, Perry.....	47	Poursae, Amir.....	46	Santos, Fabricio.....	64	Strachan, Steve.....	66
Oberndorfer, Markus.....	35	Powell, Patrick.....	47	Santucci, Raymond.....	38	Stroes-Gascoyne, Sirmcha.....	68
Obeyesekere, Nihal.....	36	Pozniak, Eric.....	52,70,77	Sargent, Jennifer.....	47,63	Strom, Matthew.....	38
Odeyemmi, Nurudeen.....	66	Prakash, Surya.....	34,58,64	Sariikhan, Kaveh.....	69	Sun, Jin.....	60
Ogawa, Kazuhiro.....	41	Presuel, Moreno, Francisco.....	37	Sarmiento, Klapper, Helmut.....	51,52,72	Sun, Paul.....	24,66
Ogiso, Hironori.....	53	Prieto, Antoni.....	69	Sasaya, Kazuyuki.....	73	Suarez, Wilfredo.....	51
Ogle, Kevin.....	29	Prieto, Claudia.....	42,51	Satake, Nozomi.....	58	Sudevan, Anoop.....	58,64
Ogosi, Eugene.....	35	Prueter, Phillip.....	41	Saul, Alexander.....	40	Suhor, Muhammad.....	49
Ogunbode, Adenike.....	77	Pugh, John.....	50	Scanarotti, Nicolas.....	63	Sulejmanovic, Dino.....	59
Ohe, Taro.....	42	Pulagam, Sunil.....	33	Schaller, Rebecca.....	29,55,65,71	Sullivan, Stacey.....	31
Ohodnicki, Paul.....	57	Punpruk, Suchada.....	48,69	Schapiro, Simon.....	70	Sulman, Elizabeth.....	68
Ojeda Macedo, Antonio.....	41,44,64	Puolamaa, Milla.....	71	Schindelholz, Eric.....	55,65,71	Sun, Hejian.....	47,62
Okabe, Nobuo.....	56	Pustode, Mangesh D.....	66	Schreiber, Daniel.....	55,66,72	Sun, Jiailin.....	89
Okada, Hirokazu.....	50	Puupponen, Salla.....	57	Schrock, David.....	55,89	Sun, Jiangming.....	71,91
Ok, Mekanjuola.....	59	Pyo Kim, Hong.....	48	Schruff, Christian.....	55	Sun, Zongteng.....	67
Okonkwo, Bright.....	39	Qi, Jie.....	66	Scully, John.....	29,31,38,55,65,66,71	Sunaba, Toshiyuki.....	44,75
Okstad, Jonas.....	39	Qi, Xiaoning.....	54,68,70	Sedrez, Thiana.....	42	Suresh, Seethalakshmi.....	58,63
Oliden, Vigdis.....	35	Qian, Jiong.....	62	Segali, Sorin.....	60	Suryanarayana, Manoj Gonuguntla.....	41,44,64
Oliva, Chatalein, Brittany.....	50	Qiu, Chao.....	62	Selersen, Marion.....	63	Sutton, Nathaniel.....	41
Olivera, Jefferson.....	63	Qiu, Jie.....	29,62	Seki, Akira.....	41	Suzuki, Yuhei.....	41,50
Olivera, Jonathas.....	53	Qiu, Yao.....	65	Selene, Jorge.....	75	Svenningsen, Gaute.....	49,76
Olivier, Lesieutre.....	61	Qu, Jun.....	65	Seravaraj, John Samuel.....	63	Swar, Derrick.....	41
Olsen, Jim Stian.....	35	Quadr, Zakaria.....	37,51,73,74	Sen, Milan.....	50	Swartzbaugh, Spencer.....	42,74
Olthof, Sarah.....	32	Queiros, Yure.....	63	Sena, Graziela.....	31,91	Sygoni, Varvara.....	40
Ommundsen, Espen.....	76	Radovcich, Sarah.....	49	Serate, Duane.....	54	Syrek-Gerstenkorn, Berenika.....	43
Oneyd, Pierre.....	48	Raheem, Kabir.....	36,58	Shah, Mazlan.....	42	Tachibana, Shunichi.....	67
Onuoha, Chukwuma.....	52,70,77	Rahm Yhr, Andreas.....	58,73	Shahinas, Fatim.....	40	Tada, Eiji.....	30
Onyeji, Lawrence.....	59	Rahman, Mohammad Mizanur.....	67	Shakouri, Mahmoud.....	46	Takahatake, Yoko.....	48
Ormellese, Marco.....	45,53	Rahman, Shaikh.....	39	Shamso, Ahmed.....	71	Takeuchi, Masayuki.....	48
Ormiston, Randy.....	50	Rahmani, Mohammad.....	46	Shank, Roxanne.....	13,66,67	Taleb, Wassim.....	37
Ornek, Cem.....	29	Rahng, Philip.....	61	Shank, Vignesh.....	52,70,77	Tan, Eric.....	63
Orzoco, Nelly.....	89	Rai, Beena.....	75	Shanmugam, Jeevanandam.....	33	Tan, Yung Jun.....	33,69
Orta, David.....	63	Raja, V.S.....	35,43,64	Shargay, Cathleen.....	69	Tanabe, Hiroyuki.....	69
Ortiz Gonzalez, Xavier.....	63	Rakers, Nicole.....	69	Sharifi Abdar, Payman.....	92	Tang, Dezhi.....	60
Ortiz, Alma.....	32	Ralston, Kevin.....	62	Sharma, Mohita.....	47	Tang, Fujian.....	37,54,56
Oshchepkov, Maxim.....	40,58	Ramachandran, Sunder.....	23,34,39,43	Sharma, Sumit.....	75	Tang, Lone.....	48
Osnowski, Andy.....	39,50	Ramakrishnan, Balaji.....	68	Sharp, Matthew.....	68	Tanji, Yasunori.....	68
Osuki, Takahiro.....	41,50	Ramanathan, Raja.....	67	Sharp, Sandy.....	52	Tanjim Totini, Asfia.....	90
Osvoll, Harald.....	39	Ramgopal, Thodla.....	24,74	Shayr Bahadori, Kasra.....	92	Tanoli, N.....	41,68
Otaki, Nao.....	50	Rankin, Jon.....	48	Shearer, Melinda.....	69	Tansel, Bernin.....	67
Ozekcin, Adnan.....	30	Rankin, Scott.....	39,50	Shehi, Armando.....	90	Tatarov, Alex.....	76
Pabbruwe, Moreica.....	37	Rashidi, Sedigheh.....	39	Shen, Ming.....	53,66	Taylor, Christopher.....	55,59
Pacheco, Jorge.....	39	Rau, Christoph.....	29	Shen, Yin.....	47	Taylor, James.....	64
Padekar, Bharat.....	66	Rausch, Justin.....	56	Shenoy, Ram.....	59	Tebball, Saadedine.....	39
Paes, Marcelo Piza.....	77	Ravi, Vilupanur.....	31,42,51,67,73,74	Sherar, Brent.....	31	Tedim, Joao.....	54,62,75
Paez, Carolina.....	48	Ravindranath, K.....	68	Sherer, Katie.....	32,33	Telesens, Patrick.....	47,52,77
Pagliariacci, Maria Clara.....	47	Raza Khan Rana, Ahmad.....	34,54,90	Sherman, Douglas.....	65	Teh, Lay Seong.....	34,74
Pailletier, Alain.....	39	Rebak, Raul.....	21,37,48,79	Shi, Wei.....	36	Terosky, Justin.....	89
Palacios, Carlos.....	47	Reed, Carl.....	32	Shields, Daniel.....	49	Testa, Cristian.....	51
Palencar, Simona.....	76	Reed, Mark.....	68	Shin, Youn Gyeong.....	71,91	Thapa, Sumil.....	72
Palencsar, Simona.....	64	Reid, Mike.....	63	Shinagawa, Kazuya.....	51	Theault, Florian.....	30,53
Palmeri Baptista, Iلسon.....	37,63	Reiner, Lisa.....	53,66	Shinde, Vipul.....	35	Thierry, Dominique.....	29,32
Palombo, Marco.....	49	Ren, Liang.....	56	Shiotani, Kazuhiko.....	67	Thirumalai, Neeraj.....	30
Pan, Hong.....	39	Ren, Shuai.....	91	Shirani, Ali.....	77	Thodla, Ramgopal.....	35
Pan, Jinshan.....	29	Ress, Jacob.....	46,62,89	Shirazi, Siamack.....	42	Thomas, Andrew.....	40
Pan, Mengqiu.....	91	Restelli, Blake.....	73	Shoesmith, David.....	59,71	Thomas, Gareth.....	48
Panchalingam, Vaithilingam.....	43	Reynolds, Michael.....	89	Suangs, Shuo.....	66,90	Thomas, Sebastian.....	29,65
Pandey, Abhishek.....	65	Ribeiro, Vinicius.....	37				

Thomson, Hunter	40,57	Vieira Aoki, Idalina	43	Wigen, Svernn Magne	39	Yeon Kim, Jae	91
Thoppil, Benjamin	76	Vieira, Fabiana	54	Wiggins, Chris	37,66	Yi-Tsung Lu, Alex	36
Thorton, Rob	43	Vieira, Ronald	42	Wilksinghe, Sudesh	73	Yilmaz, Aytaç	29,89
Thual, Marc-Antoine	44,53	Vienna, John	72	Wilkinson, Christian	59	Yin, Zhongzhang	40
Tian, Xianka	69	Viereckl, Andreas	74	Will, Geoffrey	67	Ynciarde, Vinicio	30,56
Tiano, Laura	48	Vignal, Vincent	58	Williams, Desmond	56,88	Yogitha, G.	58
Tjelta, Morten	42,43,49	Vincent, Shubha	52	Williams, Geraint	29,48	Yoon, Yuhchae	50
Tkachenko, Sergey	58	Viroulaud, Rémi	29	Williams, Thomas	37,41,45	Yoshino, Takano	70
Togo, Takaki	40	Virtanen, Sannakaisa	24,29	Williamson, Alexander	34	Young, David	42,43,51,59,62,64,75,76
Toivonen, Susanna	57	Viswanathan, Gopal	35,72	Wilms, Marc	44	Young, Kaylie	58
Toloczko, Mychalio	48	Vouri, Vesa	57	Wilson, Brian	73	Young, Natalie	32,33
Tomson, Mason	36,40	Wadsworth, Garrett	30	Wilson, Stuart	76	Young, Walter	67
Torbatisarraf, Seyedhamidreza	46	Wagner, Keith	73	Windl, Wolfgang	55,59,66	Yu, Yuxin	73
Torrescano Alvarez, Jeanette	29	Walter, Matt	48	Wint, Natalie	29	Yuan, Xun	49,60
Toschini, David	71	Walters, William	48	Wischnusen, Mark	66	Yue, Xiaoli	31,49,63
Toussaint, Patrick	58	Walunj, Ganesh	38	Witharamage, Chathuranga	38,91	Yue, Xin	30
Traka, Konstantina	29	Wan, Eileen	76	Withers, Philip	29,71	Zhang, Masao	44
Trautmann, Anton	35	Wang, Chun	72	Wols, Martin	44	Zahedi, Peyman	46
Trillo, Elizabeth	14,31,51	Wang, Di	48,69,92	Wolfaardt, Gideon	68	Zajec, Bojan	52
Truschner, Mathias	35	Wang, Haoyu	65	Wolke, David	63	Zamanzadeh, Mehrooz	32,33,70,72,77
Tsapralis, Haralampous	76,77	Wang, Huiru	39	Wolodko, John	56	Zamojski, Thomas	71
Tsuda, Takahiro	32	Wang, Jianxin	36	Wong, Bassy	62	Zamora, Jose Ramon	46,47
Tylczak, Joseph	35	Wang, Junlei	91	Wong, Dennis	69	Zeng, Wenguang	52
Tzachristas, Andreas	40	Wang, Qiwei	40,57,66	Wooliam, Richard	37,42,62,63	Zeng, Yimin	65
Ueyama, Masaki	41,50	Wang, Xin	36,40	Wrangham, Jodi	48	Zermout, Zinedine	53
Ulaeto, Sarah	91	Wang, Xingyu	54,70	Wren, Clara	71	Zesut, Ronald	30
Underwood, Tim	57	Wang, Xiu Yun	52,68	Wright, Jacob	32,64	Zezhou, Wen	49
Unsal, Tuba	48,89	Wang, Xuejun	40	Wright, Ruishu	57	Zhai, Ziqing	32,48
Upadhyay, Vinod	54,68	Wang, Yutao	68	Wu, Han	50	Zhang, Chunxia	53
Ury, Nicholas	68	Wang, Zhengtao	67	Wu, Yongjun	67	Zhang, Dadi	59,90
Valcende, Manuel	46	Wangenheim, Christoph	51	Wulterkens, John	53	Zhang, Jiangjiang	52
Valerioti, Bill	41	Warrington, Gavin	59	Wunch, Kenneth	47	Zhang, Jun	42
van de Camp, Peter	77	Wasson, Andrew	30	Wylde, Jonathan	36	Zhang, Lei	31,49,52,63
van Haften, Willem Maarten	44	Watanabe, Masayuki	48	Xie, Yongsong	54	Zhang, Tianyi	67
van Oostendorp, Dirk	45,52,60	Watanabe, Seiichi	51	Xing, Xijin	44	Zhang, Wei	76,92
Vanama, Raghava Kumar	68	Watanabe, Shinya	53	Xu, Aoni	46	Zhang, Yongli	42
Vand, Peyman Derik	56	Watanabe, Shunji	53	Xu, Min (Mina)	69	Zhang, Zhihua	62
Varela, Bob	69	Watanabe, Yutaka	48	Xu, Tong	73	Zhang, Zhonghua	53
Vargas, Jonathan	62,63	Weaver, William	68	Xue, Yanyang	63	Zhang, Ziru	13,45,63,76
Vargas, Silvia	29,71	Weg, Sebastian	42	Yaakob, Najmiddin	42	Zhao, Bo	73
Vargas, Walter	47	Weichel, Steven	34	Yabumi, Naoki	69	Zhao, Jiangming	56
Vaulteury, Maxime	68	Weirich, Tim	55	Yakata, Kazuki	48	Zhao, Lizhi	37
Vaz, Gustavo	63	Weiss, Noah	63	Yamada, Ryo	56	Zhao, Mifeng	63
Veder, Jean-Pierre	63	Weitschev, Margit	76	Yamaguchi, Akihisa	53	Zhao, Qi	52
Veedu, Vinod	36,65,72	Wen, Jie	41	Yamamoto, Satoru	56	Zhao, Yue	46
Vega, Leo	73	Wen, Lei	63	Yamashita, Shinichiro	48	Zhao, Zinan	92
Venez, Ted	32,33	Wen, ZeZhou	72	Yamauchi, Kenichiro	69	Zheng, Yougui	57
Venkatesan, Kishore	51,53	Wentworth, Christy	47	Yang, Meng	53	Zhou, Jing	79
Venkateswaran, Sai Prasanth	31,69	Weston, David	43	Yang, Jingfan	65	Zhou, Tianyu	73
Vera, Enrique	39	Wewer, Thomas	39	Yang, Muye	43	Zhou, Xiang	68
Vera, Jose	62,63	White, Paul	53	Yang, Tongsong	36	Zhou, Yanliang	67
Veronesi, Chiara	44	Whited, Tim	53	Yang, Yong	66	Zhu, Dongkai	31
Verst, Christopher	33	Whitehead, Sam	68	Yang, Zhiwen	52,68	Zhu, Jinyang	63
Veshareh, Moein Jahanbani	47	Whitmore, David	61	Yao, Tiankai	72	Ziomek-Moroz, Margaret	35,56,57
Vetrivendan, E	43	Wickramarachchi, Thusitha	36	Yap, Kwei Meng	75		
Vicente Moraes, Carolina	38	Wiering, Luke	68,90	Yasuda, Kyono	30		
Victoria de Viveiros, Bárbara	31	Wiersma, Bruce	33	Ye, Rong	68		

Subject Index

15th Annual Silent Auction	
Networking Activities	119
25th Annual NACE Race	
Networking Activities	118
2020 NACE Association Awards	
A.B. Campbell Award	20
CORROSION Best Paper Award	20
Distinguished Organization Award	22
Distinguished Service Award	23
F.N. Speller Award	21
H.H. Uhlig Award	21
NACE 50-Year Members	25
NACE Fellow Honor	24
NACE Foundation Founders Award	25
R.A. Brannon Award	20
Technical Achievement Award	23
T.J. Hull Award	21
W.R. Whitney Award	22
A	
A.B. Campbell Award	
2020 NACE Association Awards	20
AC Interference, AC Induced Corrosion, AC Risk Assessment, Monitoring and Mitigation	
Technical Program, Symposia	
Testing and Monitoring	
AC Corrosion at Other Frequencies Part A: Field Investigation and Mitigation	60
AC Corrosion at Other Frequencies Part B: Laboratory Investigations	60
AC Corrosion of Cathodically Protected Pipelines - Summary	60
A Non-Contact Remote Monitoring System for Measurement of AC Transmission Line Power Flows	60
A Pipeline Operator's Experience with AC Induced Corrosion	60
Case Analysis of Electromagnetic Interference of AC Substation on Pipeline	60
Case Study of AC-Induced Corrosion on Buried Pipeline: Field Test and Mitigation Design	60
Challenges in Implementing SP21424-2018 AC Corrosion Criteria	60
Design Considerations for Induced AC Mitigation: Induced Voltage vs. Current Density	60
Discussion on AC Corrosion Mechanism and Risk Assessment for Cathodically Protected Pipelines	60
Excavation, Removal and Evaluation of Coupons Exposed to AC Interference While Connected to an Operating Product Transmission Pipeline	60
Laboratory and Field Testing for the AC Corrosion of Pipeline Steel	60
Reflection of an AC Mitigation Project Modeled 12 Years Ago versus Today	60
Unmasking AC Threats on Petrochemical Pipelines	60
ACPC Session I	
Meetings, Administrative	110
ACPC Session II	
Meetings, Administrative	111
ACPC Symposium Officer Training	
Meetings, Other	112
Additive Manufactured Materials	
Meetings, Technical Committees	
Corrosion Mechanisms - STG 60	
Additive Manufacturing Corrosion Issues	109
Technical Program, Symposia	
Corrosion of Additively Manufactured Materials	51
Correlation Between Microstructure and Corrosion Resistance for Am Products in Stainless Steel and Light Metals 51	
Corrosion and Mechanical Properties of Additively Manufactured CoCrFeNi-Based Multi-Principal Element Alloy	51
Corrosion Behavior of 304L Stainless Steel Produced by Laser Powder Bed Fusion	51
Corrosion Behavior of Ti6Al4V Alloy Produced by LPBF for Biomedical Applications	51
Corrosion Studies of Additive Manufactured Alpha-Beta Ti Alloys	51
Electrochemical Testing of Additive Manufactured Ti6Al4V and NiTi Materials in a Biological Fluid Environment	51
Influence of the Surface Condition on the Pitting and SCC Resistance of Alloy UNS N07718 Produced via Selective Laser Melting	51
Optimization of Filler Metals and Process Parameters for the Waam Fabrication Components from Corrosion Resistant Ni-Base Alloys	51
Pitting and Crevice Corrosion Resistance of a Direct Metal Laser Sintered (DMLS) 316L Stainless Steel in Artificial Seawater	51
Three-Body Tribocorrosion Behaviour of Additively Manufactured 316L Stainless Steel	51
Workshops and Other Learning Opportunities NACE Consortia Additive Manufacturing Roundtable	86
Adjustable Atmospheric Corrosion Test Rack	
Corrosive Chronicles and MP Innovation Theater	
Atmospheric Corrosion	83
Advances in Materials for Oil and Gas Production - Day 1	
Technical Program, Symposia	
Oil and Gas Production	
An Investigation on the Sulfide Stress Cracking of Tmpc Pipeline Steels	30
A Review of Fit-for-Purpose Sour Tests of Low Alloy Steels: Effects of Buffer Chemistry and Purge Gas Composition	30
Case Study on the Downhole Materials Selection and Sour Service Qualification for a High Pressure, High Temperature Gas Field	31
Crack Propagation Behavior and K1ssc During DCB Test with a Proposed U-Type Side Groove Specimen Geometry	30
Effect of Test Conditions on the Discrepancies in Ssc Test Results and Groove Formation on Low-Alloy Steel	30
Micrographic Acceptance Criteria for SSC Testing	30
Qualification Of Seamless X60qps And X65qps Linepipe Grades For Extreme Sour Service Conditions With Partial Pressure Of H ₂ S Beyond 1 Bar	30
Sour Environmental Severity Based on Equal Hydrogen Content and HIC/SSC Susceptibilities	30
SSC Limits of TMCP Line Pipes	30
Surface Hard Zone Phenomenon in TMCP Line Pipe for Sour Service: A State of the Art Review	30
The Effect of Mill Scale on OCTG Sour Cracking Resistance	30
The Implications and Practicality of Adopting the Dissolved H ₂ S Concentration in Brine as the Sour Service Severity Scalable Parameter	31
The Tmpc Process of C-Steel Grades and the Control of Key Parameters to Avoid Local Hard Surface Areas	30
Advances in Materials for Oil and Gas Production - Day 2	
Technical Program, Symposia	
Oil and Gas Production	
Alloy 975 (UNS N09975) Resistant to Severe Sour Environments	44
Application of Super 13Cr Steel in Oil and Gas Wells with High Temperature and Small Amounts of H ₂ S	44
Corrosion Resistance of Stainless Steels and Nickel Alloys in Seawater	45
Development of a New High Interstitial Non-Magnetic Stainless Steel for Oil and Gas Applications	45
Development of High Strength Grade and Cost Effective Super Martensitic Stainless Steel Solution for high CO ₂ /H ₂ S Environment	44
Effect of Nb Addition and Processing Path on the K _{ISCC} of a Low Alloyed OCTG Steel	44
Environmentally-Assisted Cracking (SSC and SCC) of Martensitic Stainless Steel OCTG Material in Sour Environment in 5%NaCl and 20%NaCl Solution	44

Subject Index

Evaluation of SCC, SSC, GHSC and HE Resistance of Aged UNS N06625 Forged Bars.....	44
Flow Forming as a Manufacturing Technique for Building Critical Pressure Housings: Considerations and Case Study.....	45
Implications of Failure of Alloy 718 (UNS N07718) Tubing Hanger in Sour Well.....	44
Reduction of Conservatism in Ssc Testing for Well Tubulars.....	44
Sour Service Limit of 17% Cr Stainless Steels Grades for OCTG.....	44
The Effect of Low Temperature Diffusional Heat Treatments on the Corrosion Resistance of Nickel Alloys.....	44
UNS N08935 – a New Versatile Grade for O&G.....	44
Advancing Cathodic Protection Testing Through Integration and Automation Corrosive Chronicles and MP Innovation Theater Anodic and Cathodic Protection.....	82
Advertising Index Alphabetical listing.....	228
African Corrosion Professionals Meeting Meetings, Other.....	113
Alcohol Consumption Policy General Information.....	10
Annual Conference Program Committee General Information.....	14
Anodic and Cathodic Protection Corrosive Chronicles and MP Innovation Theater Advancing Cathodic Protection Testing Through Integration and Automation.....	82
Meetings, Technical Committees Cathodic/Anodic Protection - STG 05.....	99
-850 mV Potential Criterion.....	100
AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring.....	99
Cathodic Protection and Corrosion Control Research Development.....	99
Cathodic Protection Coupon Technology.....	100
Cathodic Protection Monitoring: Use of Coupons.....	100
Cathodic Protection of Metallic Structures Submerged in Fresh Water.....	99
Cathodic Protection: Pipe-Type Cable.....	100
Cathodic Protection Rectifier Safety.....	100
Corrosion Control Coordinating Committee.....	99
Corrosion Probes for Soil and Concrete.....	99
DC and AC Transit Stray Current Problems.....	100
Direct Current (DC) Operated Rail Transit and Mine Railroad Stray Current Mitigation—Review 10B189.....	100
Field Procedures Relating to Pipeline AC Interference Detection, Monitoring & Mitigation.....	99
Galvanic Anode CP of Internal Submerged Surfaces of Steel Water Storage Tanks.....	99
ICCP of Internal Submerged Surfaces of Steel Water Storage Tanks; Galvanic Anode CP of Internal.....	99
Interference Problems.....	100
Steel, Structural: Corrosion Control of Piliings in Nonmarine Applications.....	99
STG 05/35.....	100
Technical Program, Symposia Anodic and Cathodic Protection.....	45
Cathodic Polarization Characteristics of Carbon Steel in Alberta Soils.....	45
Cathodic Protection of Structures in a Confined Area Using Remote Anodes.....	45
Challenging the European Standard Nf En 50182 Regarding the Evaluation of Corrosion Risk by DC Stray Currents.....	45
Circuit Resistance Determination in Impressed Current Cathodic Protection System for Above Grade Storage Tank Bottoms Using A Grid System.....	45
Coupon Interpretation in Multi-Line Corridors.....	45
Design and Operation of Cathodic Protection System for Duplex Stainless-Steel Pipeline: Protection Criteria and Stray Current Management.....	45
FEM Simulation of New Generation of Buried Vessels Cathodic Protection.....	45
Intelligent Remote Monitoring and Control System of Cathodic Protection for Long-Distance Pipelines.....	45
Mass Transit Track-To-Earth Resistance Measurements.....	45
Metallurgical Testing of Drawn Arc Silver Braze (DASB) and Thermo Welded Connections for Cathodic Protection.....	45
Oxygen Evolution from the MMO Anode Cathodic Protection System and its Effect on the Corrosion of the Soil-Side Bottom Plate of an Aboveground Storage Tank.....	45
Stray Current Interference Simulation and Mitigation Associated with Light Rail Transit (LRT) Systems and Adjacent Metallic Pipelines – A Case Study.....	45
The Effect of Inductive Loading on Rectifier Interruption.....	45
The Grid System for AST Bottom Protection: 30 Years Later.....	45
Use of Solid State Decouplers to Eliminate Stray Current Corrosion in Isolation Joints.....	45
Anti-Harassment Policy General Information.....	10
APPEAL Consortia Other Meetings.....	112
Area Coordination Committee Meetings, Administrative.....	110
Atmospheric Corrosion Corrosive Chronicles and MP Innovation Theater Adjustable Atmospheric Corrosion Test Rack.....	83
Meetings, Technical Committees Corrosion Mechanisms - STG 60.....	109
Atmospheric Corrosion.....	109
Technical Program, Symposia Combined-Effects Material Degradation under Atmospheric Conditions.....	32
Acidification of the Electrolyte in the Carbon Steel/ Aluminum Alloys Galvanic Couple: Modeling and Experimental Study.....	32
A Review of Combined Effects Testing in Corrosion Science: The Contribution of Mechanical and Environmental Stress Factors.....	32
Atmospheric Corrosion: GIS Corrosion Mapping and Materials Selection for Electrical Transmission Lines and Solar Systems.....	32
Atmospheric Corrosion Through the Eyes of a Computer Simulation.....	32
Continuous Measurement of Aerospace Coating Degradation due to Environmental and Mechanical Stressors.....	32
Corrosion Resistance by Design.....	32
Corrosivity Study of De-Icing Salts.....	32
Methods to Evaluate Atmospheric Coating Degradation to Wet-Dry Cycles using Real-Time Monitoring.....	32
Mitigation of Flange Face Corrosion during Plant Construction.....	32
Physico-Chemical Characterization of Corrosion Scales in Braking Systems.....	32
Simultaneous Fatigue and Corrosion of Joined Materials for Automotive Applications.....	32
Using a Computational Galvanic Model in a Fracture Mechanics Framework to Improve Material Degradation Prediction.....	32
A Tour to West Asia and Africa: Corrosion Management Challenges and Opportunities in the Most Fascinating Area in the World Technical Program, Forums Coatings and Linings.....	80
Author Index See listing starting on.....	202
Awards Committee Meetings, Administrative.....	110

B

Baggage Check General Information.....	7
Barrier and Anti-Corrosion Properties of Graphene Enhanced Coatings Technical Program, Forums Coatings and Linings.....	78
Battle Against Corrosion in Latin America Technical Program, Forums Corrosion Management.....	79
Biomedical Materials Meetings, Technical Committees Corrosion Mechanisms - STG 60.....	109
Biomedical Implant Device Corrosion.....	109
Technical Program, Symposia Research in Progress Cathodic Voltage Controlled Electrical Stimulation for Orthopedic Implant Infection Control.....	31
Characterization of the Passive Film Formed on Selective Laser Melting 316L SS in the Phosphate-Buffered Saline Solution.....	31
Corrosion and Repassivation Behavior of Freshly Exposed Nitinol Surfaces in Simulated Body Fluids.....	31
Corrosion of Dental Implants Made of Titanium Alloy Connected to Stainless Steel.....	31
Demonstration of a Tribo-Corrosion Model by Using Single Asperity Tribo-Corrosion Test on CoCrMo Alloy.....	31
Development of New Biodegradable Metal Alloys That Can Be Used as a Fixation Element in Patients Who Have Suffered Bone Fractures.....	31
Electrochemical Characterization of Titanium Alloys for Dental Implants.....	31
Performance of an Anti-Microbial Copper-Base Alloy for High-touch Surfaces.....	31
Selective Dissolution of β -Phase in Ti-6Al-4V in Presence of Inflammatory Species.....	31
Synergistic Effects of Bacterial Contamination and Citric Acid Detoxification on Titanium Surface Oxide.....	31
The Effect of Decontamination Solution on Implant Grade Ti6Al4V and CoCrMo.....	31
The Effects of Purity and Surface Finish on Corrosion and Oxide Layer Composition of Nitinol.....	31

C

Career Fair Meetings, Other.....	112
Networking Activities.....	119
Cathodic/Anodic Protection - STG 05 Meetings, Technical Committees Anodic and Cathodic Protection -850 mV Potential Criterion.....	100
AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring.....	99
Cathodic Protection and Corrosion Control Research Development.....	99
Cathodic Protection Coupon Technology.....	100
Cathodic Protection Monitoring: Use of Coupons.....	100
Cathodic Protection of Metallic Structures Submerged in Fresh Water.....	99
Cathodic Protection: Pipe-Type Cable.....	100
Cathodic Protection Rectifier Safety.....	100
Corrosion Control Coordinating Committee.....	99
Corrosion Probes for Soil and Concrete.....	99
DC and AC Transit Stray Current Problems.....	100
Direct Current (DC) Operated Rail Transit and Mine Railroad Stray Current Mitigation—Review 10B189.....	100
Field Procedures relating to Pipeline AC Interference Detection, Monitoring & Mitigation.....	99
Galvanic Anode CP of Internal Submerged Surfaces of Steel Water Storage Tanks.....	99
ICCP of Internal Submerged Surfaces of Steel Water Storage Tanks; Galvanic Anode CP of Internal.....	99
Interference Problems.....	100
Steel, Structural: Corrosion Control of Piliings in Nonmarine Applications.....	99
STG 05/35.....	100
Cathodic Protection (CP) Subcommittee Meetings, Administrative.....	111
Cathodic Protection Field Exhibition.....	124
Cathodic Protection, Offshore Technical Program, Symposia Offshore Cathodic Protection - Case Studies of New or Novel Designs or Subsea Inspection Techniques.....	39
Can Anodes Interfere when they are Mounted on Electrically Separate Structures?.....	39
Cathodic Protection Within Narrow Gaps of Offshore Wind Turbine Foundations.....	39
If Sacrificial Cathodic Protection Works Inside a Tank, Why Won't it Work in a Pipe?.....	39
Modelling and Analysis of Electrical Field Gradients Over Offshore Pipelines with Cathodic Protection – Impact of Drain to Wells.....	39
Retrofit Cathodic Protection for a Norwegian FPSO: New Challenges and Solutions.....	39
Cathodic Protection of Reinforced Concrete and Steel Frame Structures: A Retrospective on Technology Technical Program, Symposia Cathodic Protection, Reinforced Concrete Burlington Skyway Electrochemical Chloride Extraction - 30 Years Later.....	61
Exploring Cathodic Protection of Strands in Post Tensioned Tendons.....	61
Field Application of Cathodic Prevention on a Marine Viaduct.....	61
Forensic Evaluation of Long-Term Galvanic Cathodic Protection of Bridge Piliings in a Marine Environment.....	61
Hot-Dip Galvanized Rebar Performance in Bridge Decks.....	61
Long Term (20 Years) In-Service Performance of Concrete ICCP of Marine Wharf Structures in Australia.....	61
Projection of Onset and Subsequent Failure Rate of Bridge Post-Tensioned Tendons Considering Time Dependence of Stress.....	61
Protecting Reinforced Concrete Structures with Thermal Sprayed Zinc Anodes.....	61
Test Methods to Identify Robustness of Grout Materials to Resist Corrosion.....	61
The Determination of the Chloride Threshold of Stainless Steel in Concrete – A Review.....	61
Cathodic Protection, Reinforced Concrete Cathodic Protection of Reinforced Concrete and Steel Frame Structures: A Retrospective on Technology.....	61
Burlington Skyway Electrochemical Chloride Extraction - 30 Years Later.....	61
Exploring Cathodic Protection of Strands in Post Tensioned Tendons.....	61
Field Application of Cathodic Prevention on a Marine Viaduct.....	61
Forensic Evaluation of Long-Term Galvanic Cathodic Protection of Bridge Piliings in a Marine Environment.....	61
Hot-Dip Galvanized Rebar Performance in Bridge Decks.....	61
Long Term (20 Years) In-Service Performance of Concrete ICCP of Marine Wharf Structures in Australia.....	61
Projection of Onset and Subsequent Failure Rate of Bridge Post-Tensioned Tendons Considering Time Dependence of Stress.....	61
Protecting Reinforced Concrete Structures with Thermal Sprayed Zinc Anodes.....	61
Test Methods to Identify Robustness of Grout Materials to Resist Corrosion.....	61
The Determination of the Chloride Threshold of Stainless Steel in Concrete – A Review.....	61
Central Area Board of Trustees Meetings, Other.....	112
Certification Corrosive Chronicles and MP Innovation Theater NACE Institute Certification Exam Development.....	81, 82
CIP Subcommittee Meetings, Administrative.....	110
cKit™ Training for Sections Meetings, Other.....	113
Networking Activities.....	120
What's New at CORROSION 2020.....	13

Subject Index

Cleaning, Chemical and Mechanical

Meetings, Technical Committees	
Cleaning, Chemical and Mechanical - STG 06	100
Chemical Cleaning Test Methods - Low-Temperature Solutions	100
Cleaning: Chemical and Mechanical Cleaning	100
Pre-Job Determination for the Decontamination of Refinery and Pipeline Equipment	100

Cleaning, Chemical and Mechanical - STG 06

Meetings, Technical Committees	
Cleaning, Chemical and Mechanical	
Chemical Cleaning Test Methods - Low-Temperature Solutions	100
Cleaning: Chemical and Mechanical Cleaning	100
Pre-Job Determination for the Decontamination of Refinery and Pipeline Equipment	100

Coatings and Linings

Corrosive Chronicles and MP Innovation Theater	
Contractor Awards Program	82
Does Your Daily Inspection Report Tell the Story?	82
Shifting the Paradigm of Protective Materials Design Via Self-Healing Functionality	82

Meetings, Technical Committees

Coatings and Linings, Protective: Atmospheric - STG 02	98
Coatings, Thermal-Spray for Corrosion Protection	98
Liquid-Applied Thermal Insulative Coating for Atmospheric Service at 0 to 375 °F	98
Measurement of Leachable Chloride Content of Coatings Applied to Stainless Steel in High Temperature	98
Offshore Coatings: Laboratory Testing Criteria	98
Standard Practice for Application and Inspection of Intumescent Fireproofing	98
STG 02,03,04	98
TG 260/263/264/312/313 JOINT [02/03]	98
Threaded Fasteners: Coatings and Methods of Protection for Threaded Fasteners Used with Structural	98

Coatings and Linings, Protective: Immersion and Buried Service - STG 03	98
Advances in Corrosion Under Insulation (CUI) Technologies	98
Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating	99
Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection	99
Coating Bending Test Method	99
Coating, Polyolefin Resin Systems: Review of NACE SP0185-2007	99
Coatings and Linings, Protective: Immersion and Buried Service	99
Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines	98
External Repair, Rehabilitation, and Weld Joints on Buried Steel Pipelines	99
Field-Applied Fusion-Bonded Epoxy (FBE) Pipe Coating Systems for Girth Weld Joints: Application, Performance, and Quality Control	98
Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance, and Quality	99
Plural Component Spray Standard Method	99
Pregualification of Flow Efficiency Pipeline Coatings	99
Review of ISO 21809, for NACE National Adoption of "Petroleum and natural gas industries - External"	99
Standard Practice for Evaluating Protective Coatings for Use Under Insulation	99
STG 02,03,04	99
TG 260/263/264/312/313 JOINT [02/03]	98, 99

Coatings and Linings, Protective: Surface Preparation - STG 04	99
Nonvisible, Nonwater-Soluble Contaminants Affecting Corrosion Protection	99
STG 02,03,04	99
Surface Preparation Issues	99

Technical Program, Forums	
A Tour to West Asia and Africa: Corrosion Management Challenges and Opportunities in the Most Fascinating Area in the World	80
Barrier and Anti-Corrosion Properties of Graphene Enhanced Coatings	78
Premature Coating Failures - Common and Uncommon Causes and How to Investigate	
Coating Failures When They Occur	79
Selecting the Right Surface Preparation for Performance	78
Thermal and Cold Spray Coatings - Processes, Applications and Challenges	80
What Does a Facility Owner Look for in a Quality Coating Contractor?	80

Technical Program, Symposia	
Nanomaterials and Coatings Technologies	54
Corrosion Phenomena in Braking Systems	55
Corrosion Properties of Anodized Mg Alloys by Micro-Arc Oxidation (MAO)	55
Differentiation of Coating Performance for Corrosion Protection by EIS	55
Hexaazoferrate-Intercalated Layered Double Hydroxides as Nano-Additives for Detection of Early-Stage Corrosion of Steel	54
High-Performance Anti-Corrosion Coatings Based on the Inclusion of Nanomaterials	54
Lithium Salts as Active Corrosion Inhibitors for Aluminum Substrates	54
Preparation & Tribological Characterization of Graphene Enriched Ni-P Coatings on X70 Pipeline Steel	54
Range of Nanostructured Materials as a Toolbox for Incorporation of New Functionalities in Protective Coatings	54
Silica Nanocapsules Based on Gemini Surfactant as Environmentally Friendly Nanocontainers for Corrosion Protection in Seawater	54

Oil & Gas Coating Technology - Day 1	69
Comparison of Offshore Maintenance Coating Performance Using Two Industry Standards - NACE SP 0108 and ISO 12944-9	69
Corrosion Behavior of Weldment With and Without Coatings	70
Cut-Back Edge Cathodic Disbondment Susceptibility of Exposed Bare Field Joints in Offshore Pipelines	69
Durability of Fluoropolymer Top Coat Systems Related to Standards	69
Effect of Surface Roughness on Cathodic Delamination and Corrosion Creep	69
Isocyanate Free Water Repellent Top Coat for Offshore Corrosion Protection	69
Modified Cathodic Disbondment Test Methods for Comparing The Performance of HPPC and FBE Coatings	69
Multi-Functional New Coating System for Extending the Life Time of Onshore and Offshore Infrastructure	69
Overview of Latest Advances in Measuring and Understanding Cathodic Protection	69
Current Permeability by Organic Coatings	69
Properties of Splash Zone and Immersion Coatings	69
The Importance of Surface Preparation Method on the Corrosion Resistance and Mechanical Properties of Zinc Rich Primers	69
The Influence of Corrosion Preventing Inhibitors on the Performance of Corrosion Protective Coatings	69
Oil & Gas Coating Technology - Day 2	76
Comparative Evaluation of Four Viscoelastic Materials for Coating Patch Repairs	76
Diamond Like Carbon Coating for Long IDs of Drill Collars	76
Qualification and Application Programs of Linings for Hydrocarbon Aboveground Storage Tanks	76

Thermal and Cold Spray Coatings	43
Corrosion Resistance and Deterioration Behavior of Overlapping Layer Between Thermal Spray Coating and Heavy Duty Coating	43
Determination of the Corrosion Rate of Thermally Spayed Aluminum (TSA) in Simulated Marine Service	43
Development of Novel Coating Systems for Mitigating Corrosion of Offshore Wind Turbines	43
Hot Corrosion Behavior of Suspension Plasma Sprayed Yttria Stabilized Zirconia Thermal Barrier Coating	43
Interlayer Coatings on Graphite for Improving the Durability of Plasma Sprayed Yttria Coating for High-Temperature Applications	43
Prediction of Thermal Spray Aluminum Coatings Performance in Marine Environments by Combination of Laboratory and Field Tests	43
Protecting Steel Structures from Corrosion with Thermal Sprayed Zinc Duplex Coatings	43

The Influence of Temperature on the Performance of Sacrificial Metallic Coatings Operating in Seawater	43
Workshops and Other Learning Opportunities	
NSRP Surface Preparation and Coatings (SP&C) Panel Meeting	86
Protective Coatings Workshop	84
A Look at the Industrial Painting and Coatings Trade in 10 Years	84
Architectural and Industrial Maintenance (AIM) VOC Regulations and PCBTF (Oxsol 100) VOC Exemption Update	84
Augmented Reality in Coatings Inspection	84
CoatingsPro Contractor Awards	84
From the Sublime to the Ridiculous: Life in the Fast Coatings Lane	84
Passive Fire Protection	84
Protective Coatings in Infrastructure: Attributes, Structure Requirements and Case Studies	84
Regulatory Update / Overview	84
Robotics in Coatings Inspection	84
Shop and Field Applications for Metallic Zinc Coatings	84
Surface Preparation	84
The Misconceptions of Chemically Grouping Coatings	84
Using Dry Film Thickness Measurement Equipment Effectively	84

Coatings and Linings, Protective: Atmospheric - STG 02	98
Meetings, Technical Committees	
Coatings and Linings	
Coatings, Thermal-Spray for Corrosion Protection	98
Liquid-Applied Thermal Insulative Coating for Atmospheric Service at 0 to 375 °F	98
Measurement of Leachable Chloride Content of Coatings Applied to Stainless Steel in High Temperature	98
Offshore Coatings: Laboratory Testing Criteria	98
Standard Practice for Application and Inspection of Intumescent Fireproofing	98
STG 02,03,04	98
TG 260/263/264/312/313 JOINT [02/03]	98
Threaded Fasteners: Coatings and Methods of Protection for Threaded Fasteners Used with Structural	98

Coatings and Linings, Protective: Immersion and Buried Service - STG 03	98
Advances in Corrosion Under Insulation (CUI) Technologies	98
Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating	99
Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection	99
Coating Bending Test Method	99
Coating, Polyolefin Resin Systems: Review of NACE SP0185-2007	99
Coatings and Linings, Protective: Immersion and Buried Service	99
Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines	98
External Repair, Rehabilitation, and Weld Joints on Buried Steel Pipelines	99
Field-Applied Fusion-Bonded Epoxy (FBE) Pipe Coating Systems for Girth Weld Joints: Application, Performance, and Quality Control	98
Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance, and Quality	99
Plural Component Spray Standard Method	99
Pregualification of Flow Efficiency Pipeline Coatings	99
Review of ISO 21809, for NACE National Adoption of "Petroleum and natural gas industries - External"	99
Standard Practice for Evaluating Protective Coatings for Use Under Insulation	99
STG 02,03,04	99
TG 260/263/264/312/313 JOINT [02/03]	98, 99

Coatings and Linings, Protective: Surface Preparation - STG 04	99
Nonvisible, Nonwater-Soluble Contaminants Affecting Corrosion Protection	99
STG 02,03,04	99
Surface Preparation Issues	99

Code of Ethics	
General Information	10

Combined-Effects Material Degradation under Atmospheric Conditions	
Atmospheric Corrosion	
Technical Program, Symposia	
A Review of Combined Effects Testing in Corrosion Science: The Contribution of Mechanical and Environmental Stress Factors	32
Technical Program, Symposia	
Atmospheric Corrosion	
Acidification of the electrolyte in the Carbon Steel/ Aluminum Alloys galvanic couple: Modeling and experimental study	32
Atmospheric Corrosion: GIS Corrosion Mapping and Materials Selection for Electrical Transmission Lines and Solar Systems	32
Atmospheric Corrosion Through the Eyes of a Computer Simulation	32
Continuous Measurement of Aerospace Coating Degradation due to Environmental and Mechanical Stressors	32
Corrosion Resistance by Design	32
Corrosivity Study of De-Icing Salts	32
Methods to Evaluate Atmospheric Coating Degradation to Wet-Dry Cycles using Real-Time Monitoring	32
Mitigation of Flange Face Corrosion during Plant Construction	32
Physico-Chemical Characterization of Corrosion Scales in Braking Systems	32
Simultaneous Fatigue and Corrosion of Joined Materials for Automotive Applications	32
Using a Computational Galvanic Model in a Fracture Mechanics Framework to Improve Material Degradation Prediction	32

Concrete	
Meetings, Technical Committees	
Reinforced Concrete - STG 01	98
Cathodic Protection for Masonry Buildings Incorporating Steel Frames - SOA Report	98
Electrochemical Realization of Steel-Reinforced Concrete - A State of the Art Report	98
Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars	98
Inspection Methods for Corrosion Evaluation of Prestressed Concrete Structures	98
Reinforced Concrete: Design, Evaluation, and Remediation	98
Reinforced Concrete: Sacrificial Cathodic Protection of Reinforced Concrete Elements	98
Sacrificial Cathodic Protection of Reinforced Concrete Elements	98
State of the Art Report: Criteria for Corrosion Control of Steel in Concrete	98
STG 01 Reinforced Concrete	98
STG 01 Strategic Planning	98
Stray Current Corrosion in Reinforced and Prestressed Concrete Structures-SOA Report	98
Testing and Evaluation of Corrosion on Steel-Framed Buildings	98
Test Procedure for Embeddable Impressed Current Anodes for Atmospherically Exposed Structures	98

Technical Program, Symposia	
Concrete and Architecture - Research in Progress - Day 1	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46

Concrete and Architecture - Research in Progress - Day 1	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46

Concrete and Architecture - Research in Progress - Day 1	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46

Concrete and Architecture - Research in Progress - Day 1	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46

Concrete and Architecture - Research in Progress - Day 1	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46

Subject Index

Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion	46	Effect of Steel Microstructure and Corrosion Product Characteristics on Inhibition	75
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete	46	Performance of Decanethiol Against TLC	75
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown	46	Two Way Application of Corrosion Inhibitor in Gas and Condensate Field	75
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides	46	Understanding Synergistic Effects between Corrosion Inhibitor Molecules using Density Functional Theory ...	75
Pitting of Carbon Steel in Synthetic Concrete Pore Solution	46	Control of Problematic Microorganisms in Oil and Gas Field Operations	
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode	47	Technical Program, Symposia	
Towards a Physically Significant Model of the Impedance of Steel in Concrete	47	Microbiologically Influenced Corrosion	
Training of Non-Destructive Detection of Reinforcement Corrosion	47	A Field Study into the Mitigation of Severe Downhole Microbiologically Influenced Corrosion of Oxygen Contaminated Hydro-Fracked Shale Oil Reservoirs	47
Concrete and Architecture - Research in Progress - Day 1		An Evaluation of Cessation of Nitrate Treatment of High-Volume Seawater Injection Systems	47
Technical Program, Symposia		A New High Performance Biguanide Polyammonium-Based Blend for Control of Microbiological Fouling in Oil and Gas Stimulation	47
Concrete		A Novel Method for the Enhanced Kill of Sulfate Reducing Microorganisms	47
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47	Biocide Evaluation and Optimization For Pw Pipelines by Testing on System-Specific High-Risk Microorganism	48
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46	Development of an Efficient Mic Mitigation and Control Strategy in Pipeline Pigging Operations	47
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46	Enhanced Biocide Treatment Using D-Tyrosine Against Desulfovibrio Vulgaris Corrosion of Carbon Steel ...	48
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46	Managing the Internal Corrosion of Oil Producing Well Flowlines	47
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46	Microbiologically Influenced Corrosion by General Aerobic and Anaerobic Bacteria in Oil & Gas Separators	48
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46	Novel Screening Method to Optimize Biocide Strategies Under Model Field Conditions	48
Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion	46	Remediation of Microbially Contaminated Horizontal Wells with Acrolein	47
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete	46	SourMit, a novel Thermal-Hydraulic-bioChemical (THbC) Model for Prediction of Reservoir Souring	47
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown	46	Synergistic Effect of Biocide and Biocides to Mitigate Microbiologically Influenced Corrosion in Crude Oil Transmission Pipelines	47
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides	46	The 1000's Microbial Genus Belonging to the O&G Fields from Argentina	47
Pitting of Carbon Steel in Synthetic Concrete Pore Solution	46	Convention Center Accessibility	
Towards a Physically Significant Model of the Impedance of Steel in Concrete	47	General Information	8
Training of Non-Destructive Detection of Reinforcement Corrosion	47	Corporate Lounge	
Research in Progress		General Information	7
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47	CORROSION 2020 Information Kiosk	
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46	General Information	5
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46	CORROSION Best Paper Award	
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46	2020 NACE Association Awards	20
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46	Corrosion Control and Ecosystems Enhancement for Offshore Monopiles	
Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion	46	Corrosive Chronicles and <i>MP</i> Innovation Theater	
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete	46	Offshore Corrosion	81
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown	46	CORROSION Crew Social Brew	
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides	46	Networking Activities	118
Pitting of Carbon Steel in Synthetic Concrete Pore Solution	46	Corrosion Impacts in Renewable Energy	
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode	47	Workshops and Other Learning Opportunities	
Towards a Physically Significant Model of the Impedance of Steel in Concrete	47	Power Industry Corrosion	85
Training of Non-Destructive Detection of Reinforcement Corrosion	47	Corrosion Inhibitors	
Concrete and Architecture - Research in Progress - Day 2		Meetings, Technical Committees	
Technical Program, Symposia		Inhibition—Corrosion and Scaling - STG 61	109
Research in Progress		Inhibition - Corrosion and Scaling	109
Effect of Waste Clay from a Polyol Production Process as a partial Substitute for the Cement in Reinforced Concrete	61	State-of-the-Art Research on Corrosion Inhibitors	109
General Corrosion of Carbon Steel in Synthetic Concrete Pore Solution	62	Top-of-Line Corrosion	109
Generic Relations Between Degree Of Saturation Of Concrete, Resistivity And Corrosion Rate	61	Underdeposit Corrosion - Testing and Mitigation	109
Next Generation Reinforced Concrete Corrosion Modeling with Interdependent Initiation and Propagation Stages	61	Vapor Corrosion Inhibitors and Rust Preventives for Interim (Temporary) Corrosion Protection	109
Smart Controlled Release Corrosion Inhibitors for Reinforced Concrete	62	Vapor-transported Corrosion Inhibitors & Rust Preventives for Interim (Temporary) Corrosion Protection ..	109
The Effect of Zinc Aluminum Layered Double Hydroxide Intercalated With NO ₂ - (ZnAl-NO ₂ -Ldh) on the Corrosion Protection of Reinforced Concrete	62	Technical Program, Symposia	
Conference Papers		Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP)	53
General Information	7	Comparison of VCI and CP Performance Using Floor Scan Data from Several 10-Year Old AST Floors	53
Conferences and Exposition Activities Committee (CEAC)		Efficiency of Organic Compounds as Vois for the Packaging of Carbon Steel Engine Elements in Automotive ...	53
Meetings, Administrative	111	Evaluating Corrosion Inhibitors for Hydrostatic Testing	53
Conference Terminology		Evaluation of Mono-Layered Imidazole Based Adsorbed Material for Corrosion Control of Mild Steel in Acid Chloride Environment with Hypothetical Evidence	53
Conference Terminology Key	14	Four Year Exposure and Monitoring Data of VCIs for Corrosion Protection of AST Tank Bottoms; Effects of Salt Contamination	53
Forums	14	Improving the Durability of Packaging Materials Using Vapor Phase Corrosion Inhibitors	53
Meetings	14	Protect and Prolong- A New Multi-functional Diesel Fuel Additive	53
Technical Symposia	14	Screening and Studying Novel Corrosion Inhibitors in Solution by High-Throughput Techniques	53
Training Sessions and Workshops	14	Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation	66
Conference Terminology Key		Buried Ultrasonic Corrosion Monitoring Sensors for Midstream Asset Integrity	66
Conference Terminology	14	Chelating Agents for Iron Sulfide Scale Removal at 300°F	67
Continental Breakfast		Closed Loop Systems: Electrochemical Studies on Nitrite/Molybdate Corrosion Inhibitors	66
Guest Program	116	Development of a New Vapor Corrosion Inhibitor for Corrosion Under Insulation at Elevated Temperatures ..	66
Contractor Awards Program		Investigation of Acid Corrosion Inhibition Using N,N'-(1,4-phenylenebis(methyl))bis(N,N-dimethylalkan-1-aminium) Chloride Corrosion Inhibitors	66
Corrosive Chronicles and <i>MP</i> Innovation Theater		Non-acidic Iron Sulfide Scale Dissolver: from Lab Development to Field Application	66
Coatings and Linings	82	Smoke Corrosivity Evaluation for Data Center Components	67
Control of Corrosion in Oil and Gas with Inhibitors - day 1		Ultrasonic Chemical Cleaning: Development of Chemical Blends for Industrial Applications	66
Technical Program, Symposia		USDA-certified Biobased, Low VOC and Biodegradable Paint Stripper and Graffiti Remover	66
Oil and Gas, Inhibitors		Progress in Laboratory Testing of Corrosion Inhibitors for Oil Field Applications	39
Analysis of Corrosion Inhibitor Performance Curves Using Langmuir Adsorption Kinetics	62	An Improved Methodology Used to Assess the Performance of Organic Corrosion Inhibitors	39
Closed Cooling Loop Corrosion – a Laboratory Based Investigation of Possible Causes	62	Can Micelles be Used to Expedite and Enhance Lab Qualification Testing?	39
Corrosion Inhibition of C-Steel Pipeline Transporting Natural Gas at High Temperature	62	Evaluation of N-Furfuryl Nitrona Molecule as a Corrosion Inhibitor for Carbon Steel Using EIS	39
Corrosion Inhibitor Deliverability – A Corrosion Inhibitor Residual Success Story	62	High Pressure Corrosion Testing: A Distressing Case History with a Successful Resolution	39
Corrosion Inhibitors for Jet Pump Applications	63	Impact of CO ₂ Partial Pressure on Electrochemical Measurements at High Temperature	39
Corrosion Inhibitors in O&G industry: A Review of Current Application Challenges and Research Gaps	62	Investigation of an Organic Inhibitor on Mild Steel by In Situ Atomic Force Microscopy Coupled with Electrochemical Measurements	39
Corrosion Mitigation of Deepwater, 143km Long Multiphase Pipelines	63	Nanotechnology Based Field Method for Detection and Monitoring Corrosion Inhibitors	39
Development of a Concentrated Corrosion Inhibitor Compatible with Produced Water Brine and Scale Inhibitor ..	63	Surface Preparation of Test Specimens and Its Impact on Localized Corrosion	39
Effect of Corrosion Inhibitor Head Group on the Electrochemical Processes Governing CO ₂ Corrosion	62	Under Deposit Corrosion Testing under Inhibited and pH Stabilized Conditions	39
Electrochemical Investigation of a Commercial Corrosion Inhibitor: Mechanism, Efficiency and Influence of Mg ₂₊ and Ca ₂₊ Ions	62	Corrosion Initiation and Propagation of Carbon Steel Rebar Embedded in Binary and Ternary Concrete	
Elucidating the Influence of Calcium Ion Concentration on Corrosion Inhibitor Performance	62	Student Poster Session	
High Temperature Corrosion Inhibition Performance and Thermal Stability of Nitrite	63	Mars Fontana Category	88
Monitoring Change of a Low-PPM Dosage Corrosion Inhibitor Over Time in a Long-Distance Pipeline Carrying Very Light Hydrocarbons	63	Corrosion in Marine Exhaust Gas Cleaning Systems (Scrubbers)	
On the Adsorption Properties of Non-Surfactant Corrosion Inhibitors: Pyridine, Quinoline and Acridine	62	Workshops and Other Learning Opportunities	
Selective Loss of Bulk Corrosion Inhibitor Species when Exposed to Glass, Plastic, and Steel	63	Marine Corrosion	85
The Effect of Temperature and Critical Micelle Concentrations (CMC) on the Inhibition Performance of a Quaternary Ammonium-Type Corrosion Inhibitor	62	Corrosion in Mining and Mineral Processing - STG 47	
Utilization of Adsorption Kinetics Rate Constants to Better Define Corrosion Inhibitor Availability	62	Meetings, Technical Committees	
Control of Corrosion in Oil and Gas with Inhibitors - Day 2		Mining	
Technical Program, Symposia		Concrete and Structural Steel in Mining	109
Oil and Gas, Inhibitors		Corrosion in Mining and Mineral Processing	109
Adsorption and Self-Assembly of Corrosion Inhibitors on Metallic Surfaces Studied Using Molecular Simulations ...	75	Materials Selection and Corrosion Control in the Mineral Processing Industries	109
Adsorption Free Energy of Corrosion Inhibitor Molecules at Metal-Water and Air-Water Interfaces: A Computational Investigation	75	Sturry Pipeline Corrosion Management	109
Development of Novel Corrosion Inhibitors for High Temperature Sour Gas Environments, The	75	The Mitigation of Internal Corrosion in Non-Lined, Non-Coated Pipelines Carrying Seawater for the Mining Industry	109
		Corrosion in Nuclear Systems - Day 1	
		Technical Program, Symposia	
		Nuclear Systems	
		Analysis of the Pitting Factor for Predicting Localized Corrosion of Liquid Radioactive Waste at Elevated Temperatures	33
		An Overview of Recent Progresses in Monitoring, Understanding and Protecting Localized Corrosion on Buried Pipelines	33

Subject Index

Effect of Chloride on the SCC Behavior of Carbon Steel Welds Exposed to Concrete Pore Water Under Anoxic Conditions.....	33	Corrosion Assessment of Candidate Construction Alloys under Hydrothermal Liquefaction Biorefining Conditions.....	65
Effects of Surface Conditions and Chemistry on Evolution of Open-Circuit Potential of Carbon Steel in Nuclear Waste Stimulants.....	33	Corrosion in Sulfuric Acid in Pulp and Paper Mills.....	65
Electrochemical Corrosion Behaviors of Waste Package Materials.....	33	Corrosion of Candidate Alloys for Hydrothermal Liquefaction (HTL) Reactor under Batch-mode Operation.....	65
Electrochemical Corrosion Evaluation of Boral® Panels from the Decommissioned Zion Nuclear Power Plant Spent Fuel Pool.....	33	Evaluation of Corrosion Susceptibility of Structural Steels in Biomass Derived Pyrolysis Oils.....	65
Electrochemical Studies of Stainless Steels in Hanford Effluent Treatment Facility Environments.....	33	CORROSION Journal Editorial Board	
Evaluation of SCC Susceptibility of Steels Used in Nuclear Waste Storage Tanks in Caustic Stimulants.....	33	Meetings, Administrative.....	110
Field Metallography and Replication on Natural Gas Processing Facility: Non-Destructive Metallurgical Testing to Complement other Regular NDT.....	33	Corrosion Management	
Laboratory Studies Related to External Corrosion of Hanford's Double-Shell Tanks.....	32	Meetings, Technical Committees	
Localized Weld Repairs Increase Corrosion Rates at Nuclear Plants.....	33	Corrosion Management - STG 08.....	100
Performance of Vapor Corrosion Inhibitors on Mitigating Corrosion of Secondary Liner in Double Shell Storage Tanks at Hanford.....	33	Corrosion Prevention and Control Planning Standard.....	100
Reference-Electrode Evaluations and Potential-Distribution Modelling in Nuclear Waste Environments.....	33	Economics of Corrosion: Standard.....	100
Corrosion in Nuclear Systems - Day 2		Labeled Corrosion Images for Computer Vision Applications.....	100
Technical Program, Symposia		Material Sustainability.....	100
Nuclear Systems		Standard Framework for Establishing Corrosion Management Systems.....	100
An Electrochemical Corrosion Study into 20Cr-25Ni-Nb Advanced Gas-cooled Reactor Fuel Cladding.....	48	STG 08.....	100
Contribution of Cathodic Reaction Inside Crevice on Propagation of Crevice Corrosion of 304L SS in Sodium Chloride Solution.....	48	The Role of Corrosion in Materials Stewardship and Sustainability.....	100
Corrosion Behavior of 12%Cr-6%Al Oxide Dispersion Strengthened Steels for New Fuel Cladding in Nitric Acid Solutions Containing V and Ru.....	48	Technical Program, Forums	
Corrosion Resistance in Water and Steam of Monolithic FeCrAl Alloys and Zirconium Alloy Coatings.....	48	Battle Against Corrosion in Latin America.....	79
Deployment of Laser Peening to Prevent SCC of Nuclear Fuel Dry Storage Canisters.....	48	The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation.....	78
FAC Assessment for 2 Inch Diameter SA106 Pipe With Elbow and Weld.....	48	Technical Program, Symposia	
Influence of Dissolved Hydrogen on the Internal and Intergranular Oxidation of Ni-Base Alloys in Simulated PWR Primary Water.....	48	Corrosion Management - Implementation & Progress - Day 1	34
Role of Material Condition on Precursor Corrosion Damage and Stress Corrosion Crack Initiation Behavior of Alloy 600 in PWR Primary Water.....	48	Chemical & Enhanced Preservation Methodologies - Endeavors to Maintain The Integrity of Joint Operation (JO) Surface Facilities.....	34
SCC Growth Behavior of Stainless Steels and Nickel Base Alloys during Chemical Transients in BWR Environments.....	48	Corrosion and Protection Challenges and Opportunities in the Frame of a Circular Economy.....	34
Corrosion in Supercritical Systems		Corrosion Effects of Municipal Anti-Icing and De-Icing Programs.....	34
Technical Program, Symposia		Corrosion Management as Part of an Integrated Management System.....	34
Supercritical Systems		Corrosion Management Framework (CMF) and Challenges for Implementation in High Sour and High Pressure Pipelines.....	34
Corrosion of 3Cr Low-alloyed Steel in Supercritical CO ₂ Environments.....	49	Corrosion Management Implementation in a New Subsea Development Based on Innovative Subsea Corrosion Monitoring in the Caspian Region.....	34
Corrosion Reactions in Simulated CO ₂ Ship Transport Conditions.....	49	Corrosion Management - The Smartest Tool in the Box.....	34
Corrosion Testing in Supercritical CO ₂	49	Corrosion Risk Assessment of Aging Plant in the Down Stream Petroleum Sector.....	34
Effect of H ₂ S on the Corrosion of Mild Steel at HPHT Condition.....	49	Fit-for-Purpose Hydrogen Sulfide Management for Mixed-Production.....	34
Impact of O ₂ Content on Corrosion Behavior of X65 Mild Steel in Gaseous, Liquid and Supercritical CO ₂ Environments.....	49	Neighborhood Watch - Right Step Towards Asset Integrity.....	34
Pitfalls and Artefacts in Corrosion Experiments with Dense Phase CO ₂	49	O&G Asset Integrity Assessment with Increase in Water Cut.....	34
Corrosion in Sweet and Slightly Sour Production Conditions - day 1		The Role of the Corrosion Engineer in Contributing Towards the United Nations Sustainable Development Goals.....	34
Technical Program, Symposia		Three-Step Corrosion Management Model.....	34
Sour Corrosion		Corrosion Management - Implementation & Progress - Day 2	50
A New System of Corrosion Flow Loops and Some Experimental Results.....	63	Estimating the Financial Risk Reductions Associated with Cathodic Protection Programs.....	50
Carbon Steel Corrosion on Production Environment, Evaluating the Impact of CO ₂ Partial Pressure, Bsw and Oil Characteristics on Tubular Life Extend.....	63	Holding Water - A Corrosion Management Program in a Vast Seawater Injection System.....	50
Correlation Between Concentration of Maximum Adsorption on Platinum and CO ₂ Corrosion Inhibition Efficiency of Nitrogen Heterocyclic Aromatic Compound.....	63	Importance of Corrosion Monitoring to Ensure Effective Corrosion Management of Carbon Steel Pipelines.....	50
Corrosion of Mild Steel in Concentrated Monoethylene Glycol (MEG).....	63	Managing a Full Life Cycle Digital Coating/FM Program.....	50
Corrosion of Steel Armour Wires in Flexible Pipes - Effect of Small Amounts of H ₂ S.....	64	On-site Corrosion Inhibitor Detection for Improved Corrosion Management.....	50
Effect of Aggressive Substance on the Nature of Corrosion Scales Formation on Super 13Cr Stainless Steel in Formate Completion Fluid.....	63	The Everglades as Host to Zinc Coated Iron Pipe.....	50
Effect of CaCO ₃ Aqueous Saturation on CO ₂ Corrosion of Mild Steel.....	64	Update for Expected Service Life and Cost Considerations for Maintenance and New Construction Protective Coating Work.....	50
Effect of Salt Concentration on Corrosion Rate of Pipeline Steel at Low Temperature in Acidic Aqueous Environments.....	64	Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management, The Aggregating and Standardizing Disjointed Integrity Management Data.....	74
Electrochemical Investigation into the Influence of Monoethylene Glycol on CO ₂ Corrosion in Presence of Acetic Acid.....	64	Artificial Neural Networks on Predicting Internal Localized Corrosion.....	74
Exploring High Pressure CO ₂ Annular Corrosion in Flexible Pipes.....	64	Bayesian Network for Data-Driven Inspection Planning of Oil and Gas Pipelines.....	74
Exposure of Various Polymer-lined Pipe Sections to a Sour Liquid Hydrocarbon Fluid at a Maximum Service Temperature: Methodology and Observations.....	64	Challenges in Developing, Deploying, and Transforming Online Corrosion Management Dashboards.....	74
Failure Studies of Pipe Fittings Retrieved from a Shale Production Field.....	64	Corrosion Data Management Using 3D Visualisation and a Digital Twin.....	74
Flowline Material Performance and Challenges in Oil and Gas Sweet and Sour Environment.....	64	Digital Asset Transformation by Continuous Corrosion (Metal Thickness) Monitoring: Case Studies from European Refineries.....	74
Internal Corrosion in Tank Vapor Gas Piping - Case Study.....	64	Machine Learning to Find Corrosion Inhibitors for Aeronautical Aluminium Alloys.....	75
Precipitation Kinetics of FeCO ₃ in Non-Ideal Solutions.....	64	Real-Time Process Monitoring and Predictive Corrosion Analytics: Applications and Case Studies.....	75
Role of Acetic Acid on the Kinetics and Mechanism of Carbon Steel Dissolution Under CO ₂ Top of Line Corrosion.....	64	Remote, Visual Inspection and Digital Analysis for External Corrosion Assessment in Refining Unit Applications.....	75
Corrosion in Sweet and Slightly Sour Production Conditions - Day 2		Statistical Analysis for Grounded Life Estimation.....	75
Technical Program, Symposia		The Maturation and Deployment of Autonomous Corrosion and Coating Evaluation Systems to Enable Condition Based Maintenance.....	75
Sour Corrosion		Using 3D Model And AI to Predict Atmospheric Corrosion - a Smart Tool for Decision Makers.....	75
The Combined Effect of O ₂ and CO ₂ on Corrosion Of Flexible Armour Wires.....	76	The Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management.....	74
The Effect of Minor Oxygen Ingress on Initiation and Propagation of Localized Corrosion of X65 Mild Steel in Marginally Sour Environments.....	76	Digitization Aspects in Modern Corrosion Management System.....	74
Corrosion in Sweet and Slightly Sour Production Conditions Symposium		Workshops and Other Learning Opportunities Corrosion Management In FPSOs.....	86
What's New at CORROSION 2020.....	13	Corrosion Management - Implementation & Progress - Day 1	
Corrosion in the Refining Industry		Technical Program, Symposia	
Technical Program, Symposia		Corrosion Management	
Refining		Chemical & Enhanced Preservation Methodologies - Endeavors to Maintain The Integrity of Joint Operation (JO) Surface Facilities.....	34
317 Piping Stress Corrosion Cracking After Unit Unexpected Shutdown Recovery.....	49	Corrosion and Protection Challenges and Opportunities in the Frame of a Circular Economy.....	34
Air Coolers in Wet Sour Services - Plug Gaskets Leakage During Start-up.....	49	Corrosion Effects of Municipal Anti-Icing and De-Icing Programs.....	34
Case Study: Weld Repair of Aged Hydrogen Reformer Bull Tee.....	49	Corrosion Management as Part of an Integrated Management System.....	34
Double Jeopardy in a Refinery Setting: How to Successfully Inspect an Insulated Pipeline for Corrosion Under Insulation (CUI).....	50	Corrosion Management Framework (CMF) and Challenges for Implementation in High Sour and High Pressure Pipelines.....	34
Effect of Corrosion Inhibitors in the Refining Process of Crude Oil Contaminated with Organic Chlorides.....	50	Corrosion Management Implementation in a New Subsea Development Based on Innovative Subsea Corrosion Monitoring in the Caspian Region.....	34
Electrochemical Corrosion Behavior of Carbon Steel With and Without Residual Elements.....	50	Corrosion Management - The Smartest Tool in the Box.....	34
Fitness for Purpose Evaluation of Hydrogen Production Unit Centrifugally Cast Tubes: "Post Exposure" Metallographic and Mechanical Test.....	49	Corrosion Risk Assessment of Aging Plant in the Down Stream Petroleum Sector.....	34
HTHA in Low-Carbon Steel Occurring at Temperatures Recently Thought to be Not Possible.....	50	Fit-for-Purpose Hydrogen Sulfide Management for Mixed-Production.....	34
Hydrogen Embrittlement of SS 316L Instrument Tubing in Hydroprocessing Unit.....	49	Neighborhood Watch - Right Step Towards Asset Integrity.....	34
Low H ₂ S High Temperature Sulfur Attack in Refining Hydrotreating Processes.....	50	O&G Asset Integrity Assessment with Increase in Water Cut.....	34
Naphthenic Acid Corrosion and Sulfidic Corrosion in Crude Oil Fractions.....	50	The Role of the Corrosion Engineer in Contributing Towards the United Nations Sustainable Development Goals.....	34
Permasense Wireless Non-Intrusive Corrosion Monitoring System Case Studies at Equinor Refining Denmark.....	50	Three-Step Corrosion Management Model.....	34
Polythionic Acid Stress Corrosion Cracking of Type 347LN Containing Higher Cu for Improvement of Creep Strength.....	50	Corrosion Management - Implementation & Progress - Day 2	
Qualification of a Single Pass Weld Overlay using NiCrMo-14 as an Alternative to Multi-pass NiCrMo-4 to Mitigate Crude Tower OVHD Corrosion.....	49	Technical Program, Symposia	
Review and Recommendations on PWHT Exemptions for 2014 Edition of ASME B31.3.....	49	Corrosion Management	
Corrosion Issues in Military Equipment and Facilities		Estimating the Financial Risk Reductions Associated with Cathodic Protection Programs.....	50
Technical Program, Symposia		Holding Water - A Corrosion Management Program in a Vast Seawater Injection System.....	50
Military Corrosion		Importance of Corrosion Monitoring to Ensure Effective Corrosion Management of Carbon Steel Pipelines.....	50
Lifetime Enhancement of Propulsion Shafts Against Corrosion-Fatigue by Laser Peening.....	64	Managing a Full Life Cycle Digital Coating/FM Program.....	50
Statistical Modeling of Weather Data for Representative Environmental Severity Testing.....	64	On-site Corrosion Inhibitor Detection for Improved Corrosion Management.....	50
Surface Treatment to Mitigate Exfoliation Corrosion of 5XXX Series Aluminum Alloys.....	65	The Everglades as Host to Zinc Coated Iron Pipe.....	50
Corrosion Issues in the Pulp, Paper and Biomass Industries		Update for Expected Service Life and Cost Considerations for Maintenance and New Construction Protective Coating Work.....	50
Technical Program, Symposia		Corrosion Management In Fpsos	
Pulp, Paper, Biomass Industries		Workshops and Other Learning Opportunities	
Corrosion and Chemical Characterization of Bio-Oils from Biomass with Varying Ash and Moisture Contents.....	65	Corrosion Management.....	86
Corrosion Assessment of Candidate Construction Alloys under Hot Dilute Acidic Pre-hydrolysis Biorefining Conditions.....	65	Corrosion Management In Water/Wastewater	
		Workshops and Other Learning Opportunities	
		Water and Wastewater.....	85
		Corrosion Management - STG 08	
		Corrosion Management	
		Meetings, Technical Committees	
		Corrosion Prevention and Control Planning Standard.....	100
		Meetings, Technical Committees	
		Corrosion Management	
		Economics of Corrosion: Standard.....	100
		Labeled Corrosion Images for Computer Vision Applications.....	100

Subject Index

Material Sustainability.....	100	Bayesian Network for Data-Driven Inspection Planning of Oil and Gas Pipelines.....	74
Standard Framework for Establishing Corrosion Management Systems.....	100	Challenges in Developing, Deploying, and Transforming Online Corrosion Management Dashboards.....	74
STG 08.....	100	Corrosion Data Management Using 3D Visualisation and a Digital Twin.....	74
The Role of Corrosion in Materials Stewardship and Sustainability.....	100	Digital Asset Transformation by Continuous Corrosion (metal thickness) Monitoring: Case Studies from European Refineries.....	74
Corrosion Mechanisms		Digitization Aspects in Modern Corrosion Management System.....	74
Meetings, Technical Committees		Machine Learning to Find Corrosion Inhibitors for Aeronautical Aluminium Alloys.....	75
Corrosion Mechanisms - STG 60.....	109	Real-Time Process Monitoring and Predictive Corrosion Analytics: Applications and Case Studies.....	75
Additive Manufacturing Corrosion Issues.....	109	Remote, Visual Inspection and Digital Analysis for External Corrosion Assessment in Refining Unit Applications.....	75
Atmospheric Corrosion.....	109	Statistical Analysis for Groundbed Life Estimation.....	75
Biodegradable Magnesium Alloys.....	109	The Maturation and Deployment of Autonomous Corrosion and Coating Evaluation Systems to Enable Condition Based Maintenance.....	75
Biomedical Implant Device Corrosion.....	109	Using 3D Model And AI to Predict Atmospheric Corrosion - a Smart Tool for Decision Makers.....	75
Corrosion Mechanisms.....	109	Direct Assessment	
Environmentally Assisted Cracking.....	109	Technical Program, Symposia	
Localized Corrosion.....	109	Testing and Monitoring	
Microbiologically Influenced Corrosion.....	109	Application of Direct Assessment Methods in Arid and "Sabkha" Environments.....	52
Nanotechnology and Corrosion.....	109	Application of ICDA Methodologies to Twenty-Two (22) Oil & Gas Production and Transport Pipelines - A Case Study.....	52
Corrosion Mechanisms - STG 60		Application of NACE Multi-phase Internal Corrosion Direct Assessment Standard SP0116.....	52
Meetings, Technical Committees		Implantation of Probability Modeling to Stress Corrosion Cracking Direct Assessment (SCDA) Methodology... ..	52
Additive Manufactured Materials		Material Selection Methodology Using Halite Tendency Indicators for Gas Wells: A Case Study.....	52
Additive Manufacturing Corrosion Issues.....	109	Process Improvements in Direct Assessment Programs.....	52
Atmospheric Corrosion		The Use of MP-ICDA/CPM to Evaluate Design Implications for a New Kuwait Crude Oil Pipeline.....	52
Atmospheric Corrosion.....	109	Distinguished Organization Award	
Biomedical Materials		2020 NACE Association Awards.....	22
Biomedical Implant Device Corrosion.....	109	Distinguished Service Award	
Corrosion Mechanisms		2020 NACE Association Awards.....	23
Additive Manufacturing Corrosion Issues.....	109	Does Your Daily Inspection Report Tell the Story?	
Atmospheric Corrosion.....	109	Corrosive Chronicles and MP Innovation Theater	
Biodegradable Magnesium Alloys.....	109	Coatings and Linings.....	82
Biomedical Implant Device Corrosion.....	109	Dress Code	
Corrosion Mechanisms.....	109	General Information.....	5
Environmentally Assisted Cracking.....	109	E	
Localized Corrosion.....	109	East Asia & Pacific Area Board of Trustees	
Microbiologically Influenced Corrosion.....	109	Meetings, Other.....	112
Nanotechnology and Corrosion.....	109	Eastern Area Board of Trustees	
Metals & Alloys		Other Meetings.....	112
Biodegradable Magnesium Alloys.....	109	Education Subcommittee	
Microbiologically Influenced Corrosion		Meetings, Administrative.....	110
Microbiologically Influenced Corrosion.....	109	Electric Utility Generation, Transmission, and Distribution - STG 41	
Corrosion Monitoring and Measurement—Science and Engineering Applications - STG 62		Meetings, Technical Committees	
Meetings, Technical Committees		Power Industry	
Testing and Monitoring		Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures.....	108
Acoustic Emission Testing and Measurement.....	109	Electric Utility Generation, Transmission, and Distribution.....	108
Corrosion Monitoring and Measurement - Science and Engineering Applications.....	109	Electric Utility Transmission and Distribution Corrosion and Grounding: Discussion of Issues.....	108
Electrochemical Measurements.....	109	Geothermal System Corrosion.....	108
Electrochemical Measurements Information Exchange.....	109	Nondestructive Evaluation (NDE) Technologies to Evaluate Buried Pipe in Nuclear Power Plants.....	108
Hydrogen Permeation Technology - Online.....	109	Nuclear Buried Piping.....	108
Sensors: Corrosion and Corrosiveness Sensor Technology.....	109	Nuclear System Corrosion.....	108
Techniques for Monitoring Corrosion - Field Experience.....	109	Power Generation and Delivery Education Roadmap.....	108
Test Method for Monitoring Atmospheric Corrosion Rate by Electrochemical Measurements.....	109	Renewable Energy Facilities Design, Construction and Commissioning.....	108
Corrosion of Additively Manufactured Materials		Emergent Materials - Research Topical Symposium	
Technical Program, Symposia		Technical Program, Symposia	
Additive Manufactured Materials		Research Topical Symposium	
Corrosion and Mechanical Properties of Additively Manufactured Coorfeniti-Based Multi-Principal Element Alloy.....	51	Corrosion Characteristics of 316L Manufactured by Selective Laser Melting.....	65
Corrosion Behavior of 304L Stainless Steel Produced by Laser Powder Bed Fusion.....	51	Corrosion Resistant Nanostructured Eutectic High Entropy Alloy.....	66
Corrosion Behavior of Ti6Al4V Alloy Produced by LPBF for Biomedical Applications.....	51	Design of Low Cost, Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance... ..	66
Corrosion Studies of Additive Manufactured Alpha-Beta Ti Alloys.....	51	Dissolvable Supports for 3D Printed Copper and GRCo Alloys.....	66
Electrochemical Testing of Additive Manufactured Ti6Al4V and NiTi Materials in a Biological Fluid Environment... ..	51	Evaluating Corrosion Behavior of Additively Manufactured Al-10 wt. %Si-0.3 wt. %Mg Alloy for Automotive Applications.....	65
Influence of the Surface Condition on the Pitting and SCC Resistance of Alloy UNS N07718 Produced via Selective Laser Melting.....	51	Hot Salt Stress Corrosion Cracking and Electrochemical Corrosion Behaviour of Additively Manufactured Ti-6Al-4V.....	66
Optimization of Filler Metals and Process Parameters for the Waam Fabrication Components from Corrosion Resistant Ni-Base Alloys.....	51	Hydrogen Trapping and Transport Behavior in Additively Manufactured Stainless Steels.....	65
Pitting and Crevice Corrosion Resistance of a Direct Metal Laser Sintered (DMLS) 316L Stainless Steel in Artificial Seawater.....	51	ICME Design of Corrosion Resistant HEA and AM Materials.....	66
Three-Body Tribocorrosion Behaviour of Additively Manufactured 316L Stainless Steel.....	51	Localized Corrosion of Additively Manufactured Stainless Steels.....	66
CORROSION: Opportunities Realized Mini-Camp		On the Dynamic Passivity of a Low Cost and Lightweight Compositionally Complex Alloy.....	66
Networking Activities.....	120	Passivation Phenomena of Compositionally Complex Alloy Ni38Fe20Cr22Mn10Co10 and the Nature of its Electrochemical Oxide.....	66
Meetings, Other.....	113	Sensitization and Carbide Formation in the Complex Microstructure by Laser Additive Manufacturing.....	65
Corrosion Under Insulation: Materials, Fundamental, Identification and Mitigation		Environmentally Assisted Cracking	
Technical Program, Forums.....	80	Technical Program, Symposia	
CUI (Corrosion Under Insulation).....	80	Environmentally Assisted Cracking- Day 1	
Corrosive Chronicles and MP Innovation Theater		Constant Load Tests and Hydrogen Uptake of Various Steel Grades in High Pressure H ₂ Gas and Acidified H ₂ S-saturated Aqueous Brine Solution.....	35
Anodic and Cathodic Protection		Correlation of Hydrogen Diffusion and Trapping Behaviour with Hydrogen Embrittlement Resistance in Line Pipe Steels.....	35
Advancing Cathodic Protection Testing Through Integration and Automation.....	82	Domain Diagrams for the Sulfide Stress Cracking Resistance of High Strength Low Alloy Steel 41xx Bar Stocks.....	35
Atmospheric Corrosion		Experimental Corrosion-Fatigue Assessment of Different OCTG Grades Exposed to Contaminated Drilling Mud... ..	35
Adjustable Atmospheric Corrosion Test Rack.....	83	Fast Screening of Sulfide Stress Corrosion Resistance of Supermartensitic Stainless Steel Thought Alternative Test Methods.....	35
Certification		Fatigue and Static Crack Growth Rate Study of X-65 Line Pipe Steel in Gas Transmission Pipeline Applications.....	35
NACE Institute Certification Exam Development.....	81, 82	Hydrogen Charging of Armo Iron and L80 Steel in Various Electrolytes.....	35
Coatings and Linings		Hydrogen Effect on Plastic Deformation and Fracture in Austenitic Stainless Steel.....	35
Contractor Awards Program.....	82	Hydrogen Embrittlement Study of Two Heats of UNS N07725 in Sea Water Under Cathodic Polarization Conditions.....	35
Does Your Daily Inspection Report Tell the Story?.....	82	Hydrogen Induced Stress Cracking Of Ni-Alloy 625 (UNS N06625).....	35
Shifting the Paradigm of Protective Materials Design Via Self-Healing Functionality.....	81	Role of Precipitation on the Hydrogen Embrittlement Behavior of Inconel 718.....	35
CUI (Corrosion Under Insulation)		The Influence of Stress Concentration and Plastic Strain on the Resistance of Precipitation-Hardened Nickel Alloys to Hydrogen Embrittlement.....	35
Leveraging Water Repellency Technology to Mitigate Corrosion Under Insulation Challenges.....	82	Theoretical and Experimental justification for a Novel Approach for the Evaluation of Sulfide Stress Cracking Susceptibility in High Strength Low Allo.....	35
Exhibition.....	123	Environmentally Assisted Cracking - Day 2.....	52
Mechanical Insulation		Comparison of Stress Corrosion Cracking Behavior of Fe13Cr5Ni- and Fe17Cr5Ni-Based High Chromium Stainless Steels in H ₂ O, Environments.....	53
The Importance and Value for Inspection of Mechanical Insulation Systems.....	81	Fitness-For-Purpose Research of Octg for Underground Gas Storage Applications in H ₂ /CO ₂ Environments.....	53
NACE-SSPC		Fracture Failure Analysis of Type HL Sucker Rod in H ₂ S-CO ₂ Environment.....	52
NACE-SSPC Discussions Town Hall.....	82	Influence of Pitting Susceptibility on the Nucleation of Stress Corrosion Cracking in High Strength Austenitic Stainless Steel at Elevated Temperature.....	52
Offshore Corrosion		Possibility of Zinc Embrittlement in Fire.....	53
Corrosion Control and Ecosystems Enhancement for Offshore Monopiles.....	81	Practical Environmentally-Assisted Cracking Threshold Stresses for the Safe Use of Stainless Steels in Service Equipment.....	52
Pipelines, Tanks, and Well Casings		Stress-Assisted Corrosion of a Superheater Tube: The Role of Thermal Fatigue Cracking and Crevice Corrosion in the Failure Mechanism.....	52
Hexacorder Pro Digital Combined CIPS/DCVG Pipeline Integrity Surveys.....	81	Sulfide Stress Cracking of Low Alloy Steels for Oil and Gas Production: Revisiting the Effect of Ni as an Alloying Element.....	53
CUI (Corrosion Under Insulation)			
Corrosive Chronicles and MP Innovation Theater			
Leveraging Water Repellency Technology to Mitigate Corrosion Under Insulation Challenges.....	81		
Technical Program, Forums			
Corrosion Under Insulation: Materials, Fundamental, Identification and Mitigation.....	80		
D			
Dairyland Lounge			
Exhibition.....	124		
Darrel D. Byerley Memorial Golf Tournament			
Networking Activities.....	118		
Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management, The			
Technical Program, Symposia			
Corrosion Management			
Aggregating and Standardizing Disjointed Integrity Management Data.....	74		
Artificial Neural Networks on Predicting Internal Localized Corrosion.....	74		

Subject Index

Test Protocol for Assessing the Sulfide Stress Cracking Resistance of Low Alloyed Steels in High Temperature High Pressure Sour Environments.....	53
Understanding of the Sour Resistance Improvement of an Industrial X52 Linepipe Through Ni Addition.....	53
Environmentally Assisted Cracking - Day 1	
Technical Program, Symposia	
Environmentally Assisted Cracking	
Constant Load Tests and Hydrogen Uptake of Various Steel Grades in High Pressure H ₂ Gas and Acidified H ₂ S-saturated Aqueous Brine Solution.....	35
Correlation of Hydrogen Diffusion and Trapping Behaviour with Hydrogen Embrittlement Resistance in Line Pipe Steels.....	35
Domain Diagrams for the Sulfide Stress Cracking Resistance of High-Strength Low Alloy Steel 41xx Bar Stocks.....	35
Experimental Corrosion-Fatigue Assessment of Different OCTG Grades Exposed to Contaminated Drilling Mud....	35
Fast Screening of Sulfide Stress Corrosion Resistance of Supermartensitic Stainless Steel Thought Alternative Test Methods.....	35
Fatigue and Static Crack Growth Rate Study of X-65 Line Pipe Steel in Gas Transmission Pipeline Applications.....	35
Hydrogen Charging of Armco Iron and L80 Steel in Various Electrolytes.....	35
Hydrogen Effect on Plastic Deformation and Fracture in Austenitic Stainless Steel.....	35
Hydrogen Embrittlement Study of Two Heats of UNS N07725 in Sea Water Under Cathodic Polarization Conditions.....	35
Hydrogen Induced Stress Cracking Of Ni-Alloy 625 (UNS N06625).....	35
Role of Precipitation on the Hydrogen Embrittlement Behavior of Inconel 718	35
The Influence of Stress Concentration and Plastic Strain on the Resistance of Precipitation-Hardened Nickel Alloys to Hydrogen Embrittlement.....	35
Theoretical and Experimental justification for a Novel Approach for the Evaluation of Sulfide Stress Cracking Susceptibility in High Strength Low Alloys.....	35
Environmentally Assisted Cracking - Day 2	
Technical Program, Symposia	
Environmentally Assisted Cracking	
Comparison of Stress Corrosion Cracking Behavior of Fe13Cr5Ni- and Fe17Cr5.5Ni- Based High Chromium Stainless Steels in H ₂ O ₂ Environments.....	53
Fitness-For-Purpose Research of OCTG for Underground Gas Storage Applications in H ₂ /CO ₂ Environments....	53
Fracture Failure Analysis of Type HL Sucker Rod in H ₂ S-CO ₂ Environment.....	52
Influence of Pitting Susceptibility on the Nucleation of Stress Corrosion Cracking in High Strength Austenitic Stainless Steel at Elevated Temperature.....	52
Possibility of Zinc Embrittlement in Fire.....	53
Practical Environmentally-Assisted Cracking Threshold Stresses for the Safe Use of Stainless Steels in Service Equipment.....	52
Stress-Assisted Corrosion of a Superheater Tube: The Role of Thermal Fatigue Cracking and Crevice Corrosion in the Failure Mechanism.....	52
Sulfide Stress Cracking of Low Alloy Steels for Oil and Gas Production: Revisiting the Effect of Ni as an Alloying Element.....	53
Test Protocol for Assessing the Sulfide Stress Cracking Resistance of Low Alloyed Steels in High Temperature High Pressure Sour Environments.....	53
Understanding of the Sour Resistance Improvement of an Industrial X52 Linepipe Through Ni Addition.....	53
Erosion-Corrosion	
Technical Program, Symposia	
Solid Particle Erosion and Erosion-Corrosion.....	42
Adhesion of Corrosion Product Layers Formed in Dewatering Conditions.....	42
A Discussion on Modeling Abrasive Wear in Slurry Systems.....	42
A Review of Various Guidelines for Predicting Solid Particle Erosion with Computational Fluid Dynamics Codes....	42
Computational Study on the Erosive Surface Degradation in Generic Pipe Conduits Used in Internal Combustion Engine Cooling Systems.....	42
Corrosion and Erosion Studies of Ceramic and Metal Matrix Composites.....	42
The Effects of Distance Between Two Elbows in Series on Erosion of the Second Elbow.....	42
The Effects of Particle Size on Solid Particle Erosion of Elbows in Low Liquid and Annular Multiphase Flows....	42
European Area Board of Trustees	
Meetings, Other.....	112
Exhibit Hours	
General Information.....	5
Exhibition	
Catholic Protection Field.....	124
Corrosive Chronicles and MP Innovation Theater.....	123
Dairyland Lounge.....	124
Expo Events.....	123
Expo Schedule.....	123
Harley Giveaway.....	124
Product Showcase.....	124
Protective Coatings Workshop.....	124
Student Poster Display.....	123
The Coatings Experience.....	124
Exhibitors	
See listing starting on.....	143
Exhibitors by Industry	
See listing starting on.....	188
Exhibits Committee	
Meetings, Administrative.....	111
Expo Events and Schedule	
Exhibition.....	123
F	
Featured Speaker	
Special Lectures.....	18
What's New at CORROSION 2020.....	12
Fellows Breakfast	
Other Meetings.....	112
First Aid Office	
General Information.....	7
FirstService "How To" Mini-Sessions	
What's New at CORROSION 2020.....	12
Flow Assurance in Oil and Gas from Inland to Subsea	
Technical Program, Symposia	
Oil and Gas, Inland to Subsea	
An Intelligent Flushing System For Oil or Gas Gathering Systems.....	36
Deposition and Corrosion Mitigation using Surface Treatments.....	36
Experimental Investigation and Numerical Modeling of Barium Sulfate Scaling in Porous Media.....	36
High Temperature Stable Corrosion Inhibitor Development for Deepwater Applications.....	36
Impact of Surface Conditions on Calcium Carbonate (CaCO ₃) Scaling Kinetics in a Once-Through Capillary Flow Rig.....	36
Nanotechnology Based Detection Method for Speciation and Differentiation of Phosphonate Scale Inhibitors.....	36
New Approach on Iron Sulfide Scale Modeling and Prediction at pH 4-7.....	36
Removal of Iron Carbide in Turbulent Conditions and Influence on Iron Carbonate Formation.....	36
Strontium Effect on Sulfate Scale Precipitation: Kinetics and Inhibition.....	36
The Development of Novel Laboratory Test Method for Scale Inhibitor Evaluation in the Presence of Ferrous Iron.....	36
F.N. Speller Award	
2020 NACE Association Awards.....	21

Forums	
NACE International Water Forum.....	12
Frank Newman speller AWARD LECTURE	
Special Lectures.....	19
Future Robotic Technologies In Confined Spaces	
Workshops and Other Learning Opportunities	
Testing and Monitoring.....	85
G	
General Information	
Alcohol Consumption Policy.....	10
Annual Conference Program Committee.....	14
Anti-Harassment Policy.....	10
Baggage Check.....	7
Code of Ethics.....	10
Conference Papers.....	7
Convention Center Accessibility.....	8
Corporate Lounge.....	7
CORROSION 2020 Information Kiosk.....	5
Dress Code.....	5
Exhibit Hours.....	5
First Aid Office.....	7
Guest Program.....	8
Headshot Station.....	7
Meeting Rooms.....	5
Minor Policy for NACE International Conferences.....	11
Mobile App.....	5
Mother's Room.....	8
NACE Board of Directors.....	8
NACE Booth.....	6
NACE Business Center.....	6
NACE Institute Booth.....	6
NACE Sales Office.....	6
New at the CORROSION 2020 Info Kiosk.....	6
Official Conference Language.....	5
On-Site Press Room.....	8
PAC Kiosk.....	6
Prayer Room.....	8
Professional Development Hours (PDHs) Station.....	5
Publication Bins.....	7
Registration Hours.....	5
Right to Deny or Remove.....	5
Shuttle Service.....	4
Shuttle Transportation Desk.....	7
Social Media.....	5
Speaker Ready Room.....	6
The NACE Store.....	6
WiFi-Wireless Internet.....	5
General Membership	
Meetings, Other.....	112
General NACE International Technical Committees Information	
Technical Committee Information.....	97
GenNEXT Bash	
Networking Activities.....	119
Guest Program	
Continental Breakfast.....	116
Guest Program Registration.....	116
Guest Reception.....	116
Guest Tours	
Galveston Island/Tree Sculptures/Sunflower Bakery.....	117
Houston Art and Architecture Tour.....	116
Old Town Spring.....	117
Ongoing Attractions, Exhibits, and Tours.....	116
Space Center Houston.....	116
Opening Reception.....	116
Guest Program Registration	
Guest Program.....	116
Guest Reception	
Guest Program.....	116
Guest Tours	
Guest Program	
Galveston Island/Tree Sculptures/Sunflower Bakery.....	117
Houston Art and Architecture Tour.....	116
Old Town Spring.....	117
Ongoing Attractions, Exhibits, and Tours.....	116
Space Center Houston.....	116
H	
Harley Giveaway	
Exhibition.....	124
Headshot Station	
General Information.....	7
Networking Activities.....	119
Hexcorder Pro Digital Combined CIPS/DCVG Pipeline Integrity Surveys	
Corrosive Chronicles and MP Innovation Theater	
Pipelines, Tanks, and Well Casings.....	81
H.H. Uhlig Award	
2020 NACE Association Awards.....	21
Hydrogen Embrittlement	
Technical Program, Symposia	
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 1.....	74
A Fracture Mechanics Approach to Characterizing Hydrogen Embrittlement of Fasteners.....	74
A Review of Hydrogen Embrittlement of Nickel-Based Alloys for Oil and Gas Applications.....	74
Development of a Master Curve to Characterize the Susceptibility of Fastener Materials to Hydrogen Embrittlement.....	74
Effect of Different Strength Levels, Coatings and Cathodic Charging Levels on the Hydrogen Embrittlement Resistance of AISI 4340 Bolting Material.....	74
High-Strength Nickel Low Alloy Steels for Oil and Gas Equipment: ASTM A508 Grade 4N Under Cathodic Protection and Simulated Sour Environments.....	74
Hydrogen Embrittlement Susceptibility of Steel Armour Wires for Flexible Pipes.....	74
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2.....	77
Comparison of Hydrogen Embrittlement Testing Methods of Alloy 718.....	77
Evaluation of HAC Susceptibility in DMWs for Subsea Service under Cathodic Protection.....	77
Heat Treatment and Notch Severity Effects on the Inconel® 718 Susceptibility to Hydrogen Embrittlement Evaluated by the RSL Method.....	77
Influence of the Hardening Phases on the Hydrogen Embrittlement Susceptibility of Ni-Alloys based on UNS N07718.....	77

Subject Index

The Effect of Interactions between Cathodic Protection Potential and Stress Concentration on Hydrogen Embrittlement of Precipitation-Hardened Nickel A	77
The Role of Cathodic Protection Simulation in Assessing Hydrogen Embrittlement Risks for CRAs and Other Materials - Subsea Gasket Case	77

I	
IMPACT PLUS	
Technical Program, Forums	
IMPACT PLUS: A Blueprint for Improved Corrosion Management Practices and Sustainability	80

Inhibition—Corrosion and Scaling - STG 61	
Meetings, Technical Committees	
Corrosion Inhibitors	
Inhibition - Corrosion and Scaling	109
State-of-the-Art Research on Corrosion Inhibitors	109
Top-of-Line Corrosion	109
Underdeposit Corrosion - Testing and Mitigation	109
Vapor-transported Corrosion Inhibitors & Rust Preventives for Interim (Temporary) Corrosion Protection	109

Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP)	
Technical Program, Symposia	
Corrosion Inhibitors	
Comparison of VCI and CP Performance Using Floor Scan Data from Several 10-Year Old AST Floors	53
Efficiency of Organic Compounds as Vcis for the Packaging of Carbon Steel Engine Elements in Automotive	53
Evaluating Corrosion Inhibitors for Hydrostatic Testing	53
Evaluation of Mono-Layered Imidazole Based Adsorbed Material for Corrosion Control of Mild Steel in Acid Chloride Environment with Hypothetical Eviden	53
Four Year Exposure and Monitoring Data of VCIs for Corrosion Protection of AST Tank	
Bottoms; Effects of Salt Contamination	53
Improving the Durability of Packaging Materials Using Vapor Phase Corrosion Inhibitors	53
Protect and Prolong - A New Multi-Functional Diesel Fuel Additive	53
Screening and Studying Novel Corrosion Inhibitors in Solution by High-Throughput Techniques	53

Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation	
Technical Program, Symposia	
Corrosion Inhibitors	
Buried Ultrasonic Corrosion Monitoring Sensors for Midstream Asset Integrity	66
Chelating Agents for Iron Sulfide Scale Removal at 300°F	67
Closed Loop Systems: Electrochemical Studies on Nitrite/Molybdate Corrosion Inhibitors	66
Development of a New Vapor Corrosion Inhibitor for Corrosion Under Insulation at Elevated Temperatures	66
Investigation of Acid Corrosion Inhibition Using N,N-(1,4-phenylenebis(methyl))bis(N,N-dimethylalkyl-1-aminium) Chloride Corrosion Inhibitors	66
Non-acidic Iron Sulfide Scale Dissolver: from Lab Development to Field Application	66
Smoke Corrosivity Evaluation for Data Center Components	66
Ultrasonic Chemical Cleaning: Development of Chemical Blends for Industrial Applications	67
USDA-certified Biobased, Low VOC and Biodegradable Paint Stripper and Graffiti Remover	66

Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation Symposium	
What's New at CORROSION 2020	13

Internal Corrosion Subcommittee	
Meetings, Administrative	110

International Education Partner Meeting	
Other Meetings	112

ISO Meetings	
ISO TC 35 U.S. TAG	111
ISO TC 156 U.S. TAG	111
NACE MRO 175/ISO 15156 Maintenance Agency	111
NACE MRO 175/ISO 15156 Maintenance Panel	111
ISO TC 35 U.S. TAG	
ISO Meetings	111
ISO TC 156 U.S. TAG	
ISO Meetings	111

K	
Keynote	
Other Meetings	112
Keynote Session	
Special Lectures	17

L	
Latin American Area Board of Trustees	
Meetings, Other	112

Leadership: Activate the Leader Within	
Technical Program, Forums	78
Leadership Training	
Be a Leader	78
Establish Your Brand	78
Everyone At The Table (Diversity and Inclusion)	78
Seven Enduring Truths of Knowledge Management Workshop	78

Leadership Training	
Technical Program, Forums	
Leadership: Activate the Leader Within	78
Be a Leader	78
Establish Your Brand	78
Everyone At The Table (Diversity and Inclusion)	78
Seven Enduring Truths of Knowledge Management Workshop	78

Leveraging Water Repellency Technology to Mitigate Corrosion Under Insulation Challenges	
Corrosive Chronicles and MP Innovation Theater	
CUI (Corrosion Under Insulation)	81

Localized Corrosion	
Technical Program, Symposia	
Localized Corrosion - Mechanisms, Research Methods, Modelling and Control	
Alternative Sensitization Test Method for Austenitic Stainless Steels used as Non-Magnetic Drill Collars	37
Development of Unified & Methodology Examining the Critical Pitting/Repassivation Potential and Temperature	37
Dynamic Crevice Tribocorrosion Behavior of Surgical Grade 316L Stainless Steel in Ringer's solution	37
Effect of H ₂ S in the Passivity Breakdown of Austenitic Stainless-Steel, Point Defect Model Perspective	37
Electrochemical Behavior Under Artificial Seawater and Intergranular Corrosion Performance of 6XXX Aluminum Alloys Series	37
Evaluation of Corrosion of Copper Drinking Water Pipes Exposed to Sulfurous Well Water and Ozone Treatment	37
Influence of Buffer Solution on Supermartensitic Stainless Steel Localized Corrosion and Oxide Layer Formation	37
Investigating the Interaction of Brine Solutions and Diluted Inhibited HCl Acid Corrosion on Coiled Tubing Steel	37
Investigation of Pitting Corrosion of Carbon Steel in CO ₂ Saturated Corrosion Environment	
Using Artificial Pits Designs	37
Localized Corrosion Resistance of Ferritic FeCrAl ATF Cladding in Cooling Pools	37
Pitting Corrosion of a Ni-Cr-Fe Alloys in Chloride and Thiosulfate Solutions:	
One-Dimensional Artificial Pit Electrode Studies	37
Statistical Analysis on the Spatial Distribution of Localized Corrosion on Corroded Steel Bars	37

Localized Corrosion - Mechanisms, Research Methods, Modelling and Control	
Technical Program, Symposia	
Localized Corrosion	
Alternative Sensitization Test Method for Austenitic Stainless Steels used as Non-Magnetic Drill Collars	37
Dynamic Crevice Tribocorrosion Behavior of Surgical Grade 316L Stainless Steel in Ringer's solution	37
Electrochemical Behavior Under Artificial Seawater and Intergranular Corrosion Performance of 6XXX	37
Aluminum Alloys Series	37
Evaluation of Corrosion of Copper Drinking Water Pipes Exposed to Sulfurous Well Water and Ozone Treatment	37
Influence of Buffer Solution on Supermartensitic Stainless Steel Localized Corrosion and Oxide Layer Formation	37
Investigating the Interaction of Brine Solutions and Diluted Inhibited HCl Acid Corrosion on Coiled Tubing Steel	37
Investigation of Pitting Corrosion of Carbon Steel in CO ₂ Saturated Corrosion Environment	
Using Artificial Pits Designs	37
Localized Corrosion Resistance of Ferritic FeCrAl ATF Cladding in Cooling Pools	37
Pitting Corrosion of a Ni-Cr-Fe Alloys in Chloride and Thiosulfate Solutions: One-Dimensional	
Artificial Pit Electrode Studies	37
Statistical Analysis on the Spatial Distribution of Localized Corrosion on Corroded Steel Bars	37

M	
Marine Corrosion	
Meetings, Technical Committees	
Marine Corrosion: Ships and Structures - STG 44	108
Citric Acid-Based Stainless Steel Passivation of Tankers and Storage Tanks	108
Corrosion Protection of Offshore Wind Power Units	108
Corrosion Protection of Wind Energy Equipment and Facilities	108
Discussion on Ecological Risks of Biofouling	108
Dry Docking Hull Surface Maintenance and Repair Standard Practice	108
Marine Corrosion of Copper Alloys	108
Marine Corrosion: Ships and Structures	108
Splash Zone Site-Applied Corrosion Protection System	108
Technical Program, Symposia	
Marine Corrosion - Research in Progress	
Oxygen Reduction Catalysis on Stainless Steel Oxides	38
Marine Corrosion - Ships and Structures	67
Biodegradable SPC Polyurethane Coating	67
Cathodic Protection at a Nuclear Facility	67
Characterization of Corrosion Resistance on Ni-Advanced Weathering Steel Exposed to Tropical Marine Atmosphere	67
Correlating Pitting Susceptibility to Local Microstructure in Aa5083 Using Automated Image Analysis and Data Science Frameworks	67
Corrosion Evaluation and Mechanism Analysis of Welded Joints of Low Alloy and High Strength Structural Steel Under Tropical Marine Atmospheric Environment Exposure	67
Corrosion of Open Cell Aluminum Foams in Simulated Marine Environments	67
Corrosion Sensors Led In-Service Performance Assessment of Steel Pile Wrapping/Jacketing Systems on Marine Structures in Australia	67
Development of Corrosion Resistant Steel for Cargo Oil Tank of Crude Oil Tanker	67
Duplex Zinc Corrosion Protection for Marine Structures	67
Effectiveness of Epoxy and Moisture-Cure Polyurethane Coatings in Corrosion Mitigation of Embedded Rebar—an Experimental Study	68
Effect of Blocking Compound on Electrochemical Corrosion Behavior of Wire Rope at Gulf of Mexico Surface and Subsea Temperatures	67
Effect of Fouling on Cathodic Protection Current on Steel Submerged in Natural Waters	67
Galvanic Corrosion Investigation of Structural Transition Joints	68
Improvements in Anti-Corrosion Performance through the Integration of Graphene Nano-Platelets (GNPs) into Coating Systems for C4/C5 Environments	68
Short-Term Corrosion Behavior of New Low Alloy Steel Bars in Tropical Marine Atmosphere of Thailand	68
Subsequent Mounting of Brackets to Coated Surfaces Using Adhesives	67
The Role of Alloy Microstructure on The Cavitation Erosion Behavior of Aluminum-Based, Iron-Based and Nickel-Based Alloys in Seawater	68
Workshops and Other Learning Opportunities	
Corrosion In Marine Exhaust Gas Cleaning Systems (Scrubbers)	85

Marine Corrosion - Research in Progress	
Research in Progress	
Technical Program, Symposia	
Comparison of a Novel Cerium-based Corrosion Inhibitor with Commercially Available Inhibition Additives	38
Corrosion Behavior and Galvanic Compatibility of Selected Materials in Natural Seawater	38
Cyclic vs. Non-Cyclic Accelerated Corrosion Methods - a Comparative Study	38
Effect of V Content on Corrosion Behavior and Hardness of High-Energy Ball Milled AA5083	38
Hydration Testing of Developed Corrosion Resistant Topcoats for U.S. Marine Corps Ground Vehicles	38
Modeling of MgRP Protection Considering Chemical Inhibition, Electrochemistry, and Mass Transport	38
Sea Spray Aerosol Assessment of Atmospheric Corrosion in a Marine Environment	38
Sustainable High-Performance Protective Coatings for Aggressive Corrosion Conditions	38

Technical Program, Symposia	
Marine Corrosion	
Oxygen Reduction Catalysis on Stainless Steel Oxides	38
Research in Progress	
A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions	38
Comparison of a Novel Cerium-based Corrosion Inhibitor with Commercially Available Inhibition Additives	38
Cyclic vs. Non-Cyclic Accelerated Corrosion Methods - a Comparative Study	38
Effect of V Content on Corrosion Behavior and Hardness of High-Energy Ball Milled AA5083	38
Galvanic Corrosion Investigation of Structural Transition Joints	38
Hydration Testing of Developed Corrosion Resistant Topcoats for U.S. Marine Corps Ground Vehicles	38
Modeling of MgRP Protection Considering Chemical Inhibition, Electrochemistry, and Mass Transport	38
Sea Spray Aerosol Assessment of Atmospheric Corrosion in a Marine Environment	38
Sustainable High-Performance Protective Coatings for Aggressive Corrosion Conditions	38

Marine Corrosion - Ships and Structures	
Technical Program, Symposia	
Marine Corrosion	
Biodegradable SPC Polyurethane Coating	67
Cathodic Protection at a Nuclear Facility	67
Characterization of Corrosion Resistance on Ni-Advanced Weathering Steel Exposed to Tropical Marine Atmosphere	67
Correlating Pitting Susceptibility to Local Microstructure in Aa5083 Using Automated Image Analysis and Data Science Frameworks	67
Corrosion Evaluation and Mechanism Analysis of Welded Joints of Low Alloy and High Strength Structural Steel Under Tropical Marine Atmospheric Environment Exposure	67
Corrosion of Open Cell Aluminum Foams in Simulated Marine Environments	67
Corrosion Sensors Led In-Service Performance Assessment of Steel Pile Wrapping/Jacketing Systems on Marine Structures in Australia	67
Development of Corrosion Resistant Steel for Cargo Oil Tank of Crude Oil Tanker	67
Duplex Zinc Corrosion Protection for Marine Structures	67
Effectiveness of Epoxy and Moisture-Cure Polyurethane Coatings in Corrosion Mitigation of Embedded Rebar—an Experimental Study	68
Effect of Blocking Compound on Electrochemical Corrosion Behavior of Wire Rope at Gulf of Mexico Surface and Subsea Temperatures	67
Effect of Fouling on Cathodic Protection Current on Steel Submerged in Natural Waters	67
Galvanic Corrosion Investigation of Structural Transition Joints	68
Improvements in Anti-Corrosion Performance through the Integration of Graphene Nano-Platelets (GNPs) into Coating Systems for C4/C5 Environments	68
Short-Term Corrosion Behavior of New Low Alloy Steel Bars in Tropical Marine Atmosphere of Thailand	68
Subsequent Mounting of Brackets to Coated Surfaces Using Adhesives	67

Subject Index

The Role of Alloy Microstructure on The Cavitation Erosion Behavior of Aluminum-Based, Iron-Based and Nickel-Based Alloys in Seawater.....	68	Corrosion Probes for Soil and Concrete.....	99
Marine Corrosion: Ships and Structures - STG 44		DC and AC Transit Stray Current Problems.....	100
Meetings, Technical Committees		Direct Current (DC) Operated Rail Transit and Mine Railroad Stray Current Mitigation - Review 10B189.....	100
Marine Corrosion		Field Procedures relating to Pipeline AC Interference Detection, Monitoring & Mitigation.....	99
Citric Acid-Based Stainless Steel Passivation of Tankers and Storage Tanks.....	108	Galvanic Anode CP of Internal Submerged Surfaces of Steel Water Storage Tanks.....	99
Corrosion Protection of Offshore Wind Power Units.....	108	ICCP of Internal Submerged Surfaces of Steel Water Storage Tanks; Galvanic Anode CP of Internal.....	99
Corrosion Protection of Wind Energy Equipment and Facilities.....	108	Interference Problems.....	100
Discussion on Ecological Risks of Biofouling.....	108	Steel, Structural: Corrosion Control of Piling in Nonmarine Applications.....	99
Dry Docking Hull Surface Maintenance and Repair Standard Practice.....	108	STG 05/35.....	100
Marine Corrosion of Copper Alloys.....	108	Atmospheric Corrosion	
Marine Corrosion: Ships and Structures.....	108	Corrosion Mechanisms - STG 60	
Splash Zone Site-Applied Corrosion Protection System.....	108	Atmospheric Corrosion.....	109
Materials and Integrity in Oil Sands		Biomedical Materials	
Technical Program, Symposia		Corrosion Mechanisms - STG 60	
Oil Sands		Biomedical Implant Device Corrosion.....	109
50 Years of Oil Sands Operation: Comprehensive Review of Wear Materials.....	54	Cleaning, Chemical and Mechanical	
Environmental Limits and Susceptibility of UNS S30403 to Environmentally Assisted Cracking in Thermal Oil Sands Operations.....	54	Cleaning, Chemical and Mechanical - STG 06.....	100
Passive Fire Protection Considerations for Oil Sands Applications.....	54	Cleaning: Chemical and Mechanical Cleaning.....	100
Slurry Pot Erosion-Corrosion Assessment of Cr White Cast Irons.....	54	Pre-Job Determination for the Decontamination of Refinery and Pipeline Equipment.....	100
Validation of SlurryWearSimTM - A Dense Slurry Pipeline Erosion-Corrosion Model.....	54	Cleaning, Chemical and Mechanical - STG 06	
Mechanical Insulation		Cleaning, Chemical and Mechanical	
Corrosive Chronicles and MP Innovation Theater		Chemical Cleaning Test Methods - Low-Temperature Solutions.....	100
The Importance and Value for Inspection of Mechanical Insulation Systems.....	81	Coatings and Linings	
Meeting Rooms		Coatings and Linings, Protective: Atmospheric - STG 02.....	98
General Information.....	5	Coatings, Thermal-Spray for Corrosion Protection.....	98
Meetings, Administrative		Liquid-Applied Thermal Insulative Coating for Atmospheric Service at 0 to 375 °F.....	98
ACPC Session I.....	110	Measurement of Leachable Chloride Content of Coatings Applied to Stainless Steel in High Temperature ..	98
ACPC Session II.....	111	Offshore Coatings: Laboratory Testing Criteria.....	98
Area Coordination Committee.....	110	Standard Practice for Application and Inspection of Intumescent Fireproofing.....	98
Awards Committee.....	110	STG 02,03,04.....	98
Catholic Protection (CP) Subcommittee.....	111	TG 260/263/264/312/313 JOINT [02/03].....	98
CIP Subcommittee.....	110	Threaded Fasteners: Coatings and Methods of Protection for Threaded Fasteners Used with Structural	
Conferences and Exposition Activities Committee (CEAC).....	111	Coatings and Linings, Protective: Immersion and Buried Service - STG 03.....	98
CORROSION Journal Editorial Board.....	110	Advances in Corrosion Under Insulation (CUI) Technologies.....	98
Education Subcommittee.....	110	Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External	
Exhibits Committee.....	111	Pipe Coating.....	99
Internal Corrosion Subcommittee.....	110	Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection.....	99
MP Editorial Advisory Board.....	110	Coating Bending Test Method.....	99
NACE Board of Directors.....	110	Coating, Polyolefin Resin Systems: Review of NACE SP0185-2007.....	99
NACE Foundation Board of Directors.....	110	Coatings and Linings, Protective: Immersion and Buried Service.....	99
NACE Institute Board of Directors.....	111	Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines.....	98
NACE Institute Certification Commission.....	110	External Repair, Rehabilitation, and Weld Joints on Buried Steel Pipelines.....	99
NACE Institute Policy and Practices Committee.....	110	Field-Applied Fusion-Bonded Epoxy (FBE) Pipe Coating Systems for Girth Weld Joints:	
NACE Institute - Specialty Board for Pipeline Certifications.....	110	Application, Performance, and Quality Control.....	98
NACE Institute - Specialty Board of Protective Coatings Certifications.....	110	Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance,	
NIICAP Oversight Board.....	110	and Quality.....	99
Past Presidents Council.....	110	Plural Component Spray Standard Method.....	99
Pipeline Subcommittee.....	110	Prequalification of Flow Efficiency Pipeline Coatings.....	99
Policy Committee.....	110	Review of ISO 21809, for NACE National Adoption of "Petroleum and natural gas industries -	
Publications Activities Committee.....	110	External.....	99
Research Committee.....	111	Standard Practice for Evaluating Protective Coatings for Use Under Insulation.....	99
Standards Committee Informational Meeting.....	111	STG 02,03,04.....	99
TCC Advisory Committee on Operations.....	110	TG 260/263/264/312/313 JOINT [02/03].....	98, 99
TCC Planning Committee.....	110	Coatings and Linings, Protective: Surface Preparation - STG 04.....	99
TCC Reference Publications Committee.....	111	Nonvisible, Nonwater-Soluble Contaminants Affecting Corrosion Protection.....	99
TCC Session I.....	110	STG 02,03,04.....	99
Technical and Research Activities Committee (TRAC).....	111	Surface Preparation Issues.....	99
Meetings, Other		Concrete	
ACPC Symposium Officer Training.....	112	Reinforced Concrete - STG 01.....	98
African Corrosion Professionals Meeting.....	113	Catholic Protection for Masonry Buildings Incorporating Steel Frames - SOA Report.....	98
APPEAL Consortia.....	112	Electrochemical Realization of Steel-Reinforced Concrete - A State of the Art Report.....	98
Career Fair.....	112	Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars.....	98
Central Area Board of Trustees.....	112	Inspection Methods for Corrosion Evaluation of Prestressed Concrete Structures.....	98
ckit™ Training for Sections.....	113	Reinforced Concrete: Design, Evaluation, and Remediation.....	98
CORROSION: Opportunities Realized		Reinforced Concrete: Sacrificial Cathodic Protection of Reinforced Concrete Elements.....	98
Mini-Camp.....	113	Sacrificial Cathodic Protection of Reinforced Concrete Elements.....	98
East Asia & Pacific Area Board of Trustees.....	112	State of the Art Report: Criteria for Corrosion Control of Steel in Concrete.....	98
Eastern Area Board of Trustees.....	112	STG 01 Reinforced Concrete.....	98
European Area Board of Trustees.....	112	STG 01 Strategic Planning.....	98
Fellows Breakfast.....	112	Stray Current Corrosion in Reinforced and Prestressed Concrete Structures-SOA Report.....	98
General Membership.....	112	Testing and Evaluation of Corrosion on Steel-Framed Buildings.....	98
International Education Partner Meeting.....	112	Test Procedure for Embeddable Impressed Current Anodes for Atmospherically Exposed Structures.....	98
Keynote.....	112	Corrosion Inhibitors	
Latin American Area Board of Trustees.....	112	Inhibition—Corrosion and Scaling - STG 61.....	109
Mini-Keynote.....	112	Inhibition - Corrosion and Scaling.....	109
NACE Consortia Additive Manufacturing Roundtable.....	113	State-of-the-Art Research on Corrosion Inhibitors.....	109
NACE/SSPC Town Hall.....	112, 113	Top-of-Line Corrosion.....	109
NACE U Student Meeting.....	112	Underdeposit Corrosion - Testing and Mitigation.....	109
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 1.....	112	Vapor Corrosion Inhibitors and Rust Preventives for Interim (Temporary) Corrosion Protection.....	109
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 2.....	113	Vapor-transported Corrosion Inhibitors & Rust Preventives for Interim (Temporary)	
Northern Area Board of Trustees.....	112	Corrosion Protection.....	109
Plenary.....	112	Corrosion Management	
Section Officer Meeting on Elections.....	113	Corrosion Management - STG 08.....	100
Speakers Breakfast.....	112, 113	Corrosion Prevention and Control Planning Standard.....	100
Speller Lecture.....	113	Economics of Corrosion: Standard.....	100
Standards Committee Informational Meetings.....	112	Labeled Corrosion Images for Computer Vision Applications.....	100
Standards Committee Officer Orientation.....	113	Material Sustainability.....	100
Student Poster Orientation.....	112	Standard Framework for Establishing Corrosion Management Systems.....	100
TCC 101 Session I.....	112	STG 08.....	100
TCC 101 Session II.....	112	The Role of Corrosion in Materials Stewardship and Sustainability.....	100
TCC Officer Training.....	113	Corrosion Mechanisms	
West Asia & Africa Area Board of Trustees.....	112	Corrosion Mechanisms - STG 60.....	109
Western Area Board of Trustees.....	112	Additive Manufacturing Corrosion Issues.....	109
Whitney Lecture.....	112	Atmospheric Corrosion.....	109
Meetings, Technical Committees		Biodegradable Magnesium Alloys.....	109
Additive Manufactured Materials		Biomedical Implant Device Corrosion.....	109
Corrosion Mechanisms - STG 60		Corrosion Mechanisms.....	109
Additive Manufacturing Corrosion Issues.....	109	Environmentally Assisted Cracking.....	109
Anodic and Cathodic Protection		Localized Corrosion.....	109
Cathodic/Anodic Protection - STG 05.....	99	Microbiologically Influenced Corrosion.....	109
-850 mV Potential Criterion.....	100	Nanotechnology and Corrosion.....	109
AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring.....	99	Marine Corrosion	
Cathodic Protection and Corrosion Control Research Development.....	99	Marine Corrosion: Ships and Structures - STG 44.....	108
Cathodic Protection Coupon Technology.....	100	Citric Acid-Based Stainless Steel Passivation of Tankers and Storage Tanks.....	108
Cathodic Protection Monitoring: Use of Coupons.....	100	Corrosion Protection of Offshore Wind Power Units.....	108
Cathodic Protection of Metallic Structures Submerged in Fresh Water.....	99	Corrosion Protection of Wind Energy Equipment and Facilities.....	108
Cathodic Protection: Pipe-Type Cable.....	100	Discussion on Ecological Risks of Biofouling.....	108
Cathodic Protection Rectifier Safety.....	100	Dry Docking Hull Surface Maintenance and Repair Standard Practice.....	108
Corrosion Control Coordinating Committee.....	100	Marine Corrosion of Copper Alloys.....	108
		Marine Corrosion: Ships and Structures.....	108
		Splash Zone Site-Applied Corrosion Protection System.....	108

Subject Index

Metals & Alloys	
Corrosion Mechanisms - STG 60	
Biodegradable Magnesium Alloys.....	109
Microbiologically Influenced Corrosion	
Corrosion Mechanisms - STG 60	
Microbiologically Influenced Corrosion.....	109
Military and Aerospace	
Military and Aerospace Systems and Facilities - STG 40	108
Corrosion Under Paint (CUP) Test Standards for Equipment Used in the Nondestructive Evaluation (NDE).....	108
Military and Aerospace Systems and Facilities.....	108
Mining	
Corrosion in Mining and Mineral Processing - STG 47.....	109
Concrete and Structural Steel in Mining.....	109
Corrosion in Mining and Mineral Processing.....	109
Materials Selection and Corrosion Control in the Mineral Processing Industries.....	109
Slurry Pipeline Corrosion Management.....	109
The Mitigation of Internal Corrosion in Non-Lined, Non-Coated Pipelines Carrying Seawater for the Mining Industry.....	109
Nonmetals	
Nonmetallic Materials of Construction - STG 10.....	100
Corrosion Solutions for the Chemical Process Industry with Polymer Based Materials.....	100
Non-Metallic Materials Basic Education.....	100
Nonmetallic Materials of Construction: Expert Panel Discussion.....	100
STG 10.....	100
Oil and Gas Production	
Oil and Gas Production—Cathodic Protection - STG 30.....	102
Cathodic Protection in Seawater - Discussion of Current Topics.....	102
Cathodic Protection Systems, Retrofit, for Offshore Platforms.....	102
Corrosion Control of Submerged Areas of Offshore Steel Structures.....	102
Metallurgical and Inspection Requirements for Cast Galvanic Anodes for Offshore Applications.....	102
Petroleum, Petrochemical, and Natural Gas Industries - Cathodic Protection of Pipeline Transportation.....	102
STG 30.....	102
Oil and Gas Production—Corrosion and Scale Inhibition - STG 31	102
Bacterial Growth in Oilfield Systems—Field Monitoring: Review of NACE Standard TM0194-2014	102
Black Powder in Gas Pipelines.....	102
Downhole Corrosion and Scale Inhibitor Application via Capillary Tubing.....	102
Flow Assurance in Oil and Gas Production: Information Exchange.....	102
Internal Corrosion Monitoring of Subsea Production and Injection Systems.....	102
Oil and Gas Exploration Corrosion: Information Exchange.....	102
Oil and Gas Production - Corrosion and Scale Inhibition.....	102
Oil and Gas Production, Corrosion Inhibitors - Laboratory Evaluations: Information Exchange.....	102
Oil and Gas Production, Erosion Management.....	102
Oil and Gas Production, Sour Corrosion: Information Exchange.....	102
Oil & Gas End-User Experience with Molecular Microbiological Methods (MMM) and Problem Solving.....	102
Selecting Inhibitors for use as sucker-rod thread lubricants.....	102
Summary of Knowledge and Experience on Internal Corrosion of Pipeline Under Dewing Conditions: Top of the Line (TOL) Corrosion.....	102
TEG 059X/TEG201X Joint Meeting.....	102
Underdeposit Corrosion.....	102
Oil and Gas Production—Metallurgy - STG 32.....	102
Computerized Environmental Cracking Database.....	102
Cracking, Stepwise: Pipeline Steels.....	104
Environmental Prediction for Material Selection in Oil and Gas Production.....	104
Evaluation of Carbon and Low-Alloy Steels for Resistance to Stress-Oriented Hydrogen-Induced Cracking.....	104
Four-Point Bend Test Method.....	104
Joint Meeting IOGP 15156 (ISO/TC 67/WG 7) + TG 299.....	102
Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments.....	104
Oil and Gas Production Materials Information Exchange.....	102
Oil and Gas Production Test Methods Learning.....	102
Ripple Load Test for Evaluation of Sour Service Cracking Resistance.....	104
Slow Strain Rate Test Method for Screening Corrosion-Resistant Alloys for SCC in Sour Oilfield Service.....	104
STG 32.....	104
STG 32 Officers Meeting.....	104
Sulfide Corrosion Cracking: Metallic Materials Testing Techniques.....	102
Test Method for Resistance to Environmentally-Induced Hydrogen Stress Cracking in Welds.....	104
Oil and Gas Production—Nonmetallics and Wear Coatings (Metallic) - STG 33	104
Coating and Lining Technology for Oil and Gas.....	104
Insulation for Upstream and Downstream Oil and Gas Operations.....	104
Nonmetallic Materials for Onshore and Offshore Facilities.....	104
RP0191 Worksheet for Selection of Oilfield Nonmetallic Seal System.....	104
STG 33.....	104
Pipelines, Tanks, and Well Casings	
Pipelines, Tanks, and Well Casings - STG 35.....	106
3D Laser and Structured Light.....	107
Application of Cathodic Protection for External Surfaces of Steel Well Casings.....	106
Best Practice of Carbon Steel HDD Design, Construction and Management.....	107
Control of External Corrosion on Underground or Submerged Metallic Piping Systems.....	106
Corrosion Management of Aboveground Storage Tanks.....	106
Determining Corrosive Properties of Water-Soluble Liquid Hydrocarbon Pipeline Cargoes.....	106
Direct Assessment Methodology Application.....	106
External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms.....	106
External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX).....	107
Hydrotesting and Long-Term Wet Storage of Pipelines, Risers, and Subsea Equipment.....	106
Internal Corrosion Direct Assessment.....	106
Internal Corrosion Direct Assessment Methodology for Liquid Petroleum Pipelines.....	106
Internal Corrosion of Pipelines: Review of NACE Standard TM0172.....	106
Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metal Tank Systems.....	106
Microbiologically Influenced Corrosion on External Surfaces of Buried Pipelines: Detection, Testing, Mitigation and Prioritization Strategies for Casings.....	106
Molecular Microbiological Methods - Sample Handling and Laboratory Processing.....	106
Monitoring of Pipeline Casing Using CP Coupons, ER Probes, Permanent Reference Electrodes, etc. with the Annular Space of the Casing.....	106
Multiphase Flow - ICDA.....	106
Pipeline Coating: Aboveground Techniques for the Underground Evaluation of Condition.....	107
Pipeline Corrosion Management.....	106
Pipeline Crossings: Steel-Cased, Thrust-Bored, and HDD.....	107
Pipeline Direct Assessment Methodology.....	106
Pipeline External Corrosion Confirmatory Direct Assessment.....	106
Pipeline Integrity Assessment: Corrosion Defect Prioritization for Risk Based Management Implementation.....	106
Pipelines: In-Line Inspection.....	106
Pipelines, Steel-Cased.....	106
Report on Underdeposit Corrosion (UDC) of Pipelines.....	106
Standard for External Corrosion Control of On-Grade Carbon Steel Storage Tank Bottoms.....	106
Standard Practice for the Drone Inspection for Corrosion under Insulation of Pipelines.....	107
Steel Pipelines and Piping Systems: Internal Corrosion Control.....	106
STG 05/35.....	107
Stress Corrosion Cracking Direct Assessment, External Technical Guidance for Using Self-Propelled In-Line Inspection Devices in the Direct Examination Phase of External Corrosion Direct Assessment.....	107
Techniques for Evaluating the Corrosiveness of Onshore Structures External Environment.....	106
Underground Storage Tank Systems: Corrosion Control by Cathodic Protection.....	106
Well Casings: Corrosion Control: Information Exchange.....	106
Pollution Control	
Pollution Control, Waste Incineration, and Process Waste - STG 45.....	108
Pollution Control, Waste Incineration, and Process Waste.....	108
White Paper: Corrosion Prevention and Control for Marine Scrubbers.....	108
Power Industry	
Electric Utility Generation, Transmission, and Distribution - STG 41.....	108
Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures.....	108
Electric Utility Generation, Transmission, and Distribution.....	108
Electric Utility Transmission and Distribution Corrosion and Grounding: Discussion of Issues.....	108
Geothermal System Corrosion.....	108
Nondestructive Evaluation (NDE) Technologies to Evaluate Buried Pipe in Nuclear Power Plants.....	108
Nuclear Buried Piping.....	108
Nuclear System Corrosion.....	108
Power Generation and Delivery Education Roadmap.....	108
Renewable Energy Facilities Design, Construction and Commissioning.....	108
Process Industries—Materials Applications	
Process Industries—Materials Applications and Experiences - STG 39.....	107
Metals: Reactive.....	107
Stainless Steels: Austenitic and Nickel Alloys.....	107
Stainless Steels, Duplex and Ferritic: Application.....	107
Process Industry—High Temperature.....	107
Process Industry - High Temperature - STG 37.....	107
STG 37.....	107
TEG 123X/126X/128X/270X Joint Meeting.....	107
Process Industry—Materials Performance.....	107
Process Industry—Materials Performance in Chemicals - STG 36.....	107
Control of Corrosion Under Thermal Insulation and Fireproofing Materials - A Systems Approach.....	107
Design, Fabrication, and Inspection of Tanks for Storage of Concentrated H ₂ SO ₄ and Oleum.....	107
Failure Prevention Case Histories.....	107
Hydrochloric Acid and Chlorine: Materials and Experiences.....	107
Hydrofluoric Acid and Hydrogen Fluoride: Review of NACE Publication 5A171.....	107
Hydrofluoric Acid: Materials for Receiving, Handling, and Storing.....	107
Materials for Handling Concentrated Sulfuric Acid at Ambient Temperatures.....	107
Stress Corrosion Cracking of Carbon and Low-Alloy Steels in Anhydrous Ammonia Service.....	107
Sulfuric Acid - Material and Experiences.....	107
Process Industry—Pulp, Paper, and Biomass Conversion.....	107
Process Industry—Pulp, Paper, and Biomass Conversion - STG 38.....	107
Process Industry—Pulp, Paper, and Biomass Conversion.....	107
Refining	
Petroleum Refining and Gas Processing - STG 34.....	104
Carbonate Stress Corrosion Cracking in Refinery Alkaline Sour Waters.....	104
Detection, Repair, and Mitigation of Cracking in Refinery Equipment in Wet H ₂ S Environments.....	104
Joint API/NACE Advisory Committee - API 751 Safe Operation of HF Alkylation Units - Corrosion and Materials Sections.....	104
Materials and Fabrication Practices for New Pressure Vessels Used in Wet H ₂ S Refinery Service.....	104
Petroleum Refinery Corrosion Specialist Certification and Oversight of Refining Industry Corrosion Control Course Content.....	104
Petroleum Refining Sulfide Stress Cracking (SSC): Review of NACE Standard MR0103.....	104
Refineries, Environmental Cracking: Review of NACE SP0403 (Formerly RP0403).....	104
Refinery Injection and Process Mixing Points.....	104
Refining Industry Information Exchange.....	104
STG 34.....	104
Weldments, Carbon Steel: Prevention of Environmental Cracking in Refining Environments.....	104
Testing and Monitoring	
Corrosion Monitoring and Measurement—Science and Engineering Applications - STG 62.....	109
Acoustic Emission Testing and Measurement.....	109
Corrosion Monitoring and Measurement - Science and Engineering Applications.....	109
Electrochemical Measurements.....	109
Electrochemical Measurements Information Exchange.....	109
Hydrogen Permeation Technology - Online.....	109
Sensors: Corrosion and Corrosiveness Sensor Technology.....	109
Techniques for Monitoring Corrosion - Field Experience.....	109
Test Method for Monitoring Atmospheric Corrosion Rate by Electrochemical Measurements.....	109
Transportation	
Transportation, Land - STG 43.....	108
Land Transportation: Information Exchange on Corrosion and Coating-Related Issues.....	108
STG 43 Day 1.....	108
STG 43 Day 2.....	108
Water and Wastewater	
Water Treatment Systems - STG 11.....	100
Biocide Application/Misapplication.....	100
Boiler Waterside Failure Analysis.....	100
Building Fire Protection Systems: Corrosion and Deposit Control.....	100
Fire Protection Systems.....	100
STG 11.....	100
Metals & Alloys	
Meetings, Technical Committees	
Corrosion Mechanisms - STG 60	
Biodegradable Magnesium Alloys.....	109
Technical Program, Symposium	
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 1.....	41
After 30 Years of Duplex Stainless Steel Experience in Oil & Gas - Do we still face challenges?.....	41
Alloy 35Mo- A New Alloy for Seawater Applications.....	41
Analysis of Corrosion Pitting in a 317L-Stainless Steel Surface Condenser Tube Bundle.....	41
Bolts and Nuts (Fasteners) Failure of In-Service Stainless Steel Chemical Storage Tanks at Wafra Joint Operation—A Case Study.....	41
Development of an Advanced Carburizing and Nitriding Stainless Steel.....	41
Evaluating the Flaw Tolerance and Ductile Tearing Resistance of Austenitic Stainless-Steel Welds.....	41
In Situ Electrochemical Testing Of Stainless Steel Surfaces.....	41
Lessons Learned from New Stainless Steel Fabrication.....	41
Materials Selection for Seawater Injection Service - Crevice Corrosion Evaluation of Stainless Steels Under Controlled Oxygen Conditions.....	41
On Comparing and Predicting the Crevice Corrosion Resistance of Austenitic Drilling Alloys with Typical Downhole Production Alloys.....	41
Optimization of FGD Operating Conditions by Electrochemical Laboratory Testing Applied to Alloy UNS S32205.....	41
Polythionic Acid Stress Corrosion Cracking on Proprietary UNS S34751 Similar Welded Joint.....	41
Stress Corrosion Cracking of Austenitic Grade 347 and Duplex Grade 2205 Stainless Steels in Refinery Simulated Media Containing Hydrogen Sulfide and C.....	41
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 2.....	58
A Recent Case of Intermetallic Precipitations in Super Duplex.....	58
Considerations Performing Ferrite Measurements with Focus on Point Counting According ASTM E562.....	58
Corrosion of Stainless Steels: Effects of Finishing.....	58
Corrosion Properties of Alloy 35Mo, New Pren 52 Alloy for Refinery and Chemical Industry.....	58
Influence of Centerline Intermetallic Stringers on Pitting Corrosion Resistance of Superduplex Stainless Steels.....	58
Negative Effects of Welding on Corrosion Resistance of Austenitic and Duplex Stainless Steel.....	58
Study on Ferrite Measurement Methods for Duplex Stainless Steel Part 2: Focus on Measurement by Ferrite Scope.....	58
Welding of Cra with Insufficient Purging Gas - Impact on Mechanical Properties and Corrosion Resistance.....	58
Recent Experiences with Nickel, Titanium, Zirconium and other Corrosion Resistant Alloys.....	73

Subject Index

Alloy UNS N06058: A Solution for Demanding Corrosive Applications Where Common Members of The Ni-Cr-Mo Alloys Experience Their Limits.....	73
Analysis of Intergranular Corrosion of UNS N10276 Pipe Longitudinal Welding Seam.....	73
A Novel High Entropy Alloy Possessing Excellent Corrosion Resistance Manufactured by Standard Cast and Wrought Processing.....	73
Corrosion Behavior of Zirconium-based Composites.....	74
Crevice Corrosion of Alloy 625 Strake Bands in Sea Water.....	73
Crevice Corrosion Resistance of New Alloy 35Mo Compared to UNS N06625 and UNS N10276.....	73
Detecting Grain Boundary Precipitation on the Precipitation-Hardened Nickel Alloy UNS N07725: Double-loop Electrochemical Potentiokinetic Reactivation.....	73
Effects of Minor Alloying Elements on the Metal-Dusting Behavior of Ni-Based Alloys.....	73
Electrochemical Evaluation of Novel Titanium Alloys.....	73
Grain Boundary Corrosion in Welded UNS N10276 Microstructures.....	73
Hydrogen-Induced Cracking of Pure Titanium in Sulphuric Acid and Hydrochloric Acid Solutions Using Constant Load Method.....	73
Modeling Corrosion of Corrosion Resistant Alloys in Chemical Processes Environments including Mixed Acids and Salts.....	73
Nickel Based Alloy Casting Failure in Potash Production Mill.....	73
Response of Alloy UNS N08825 to the Variation of Ni Content and Annealing Temperatures in Terms of Its Corrosion Resistance.....	73
Understanding Mu Phase Precipitation Impact on Sensitization Behavior of UNS N10276 and Its Detection Using ASTM Standard Methods.....	73
Microbiologically Influenced Corrosion	
Meetings, Technical Committees	
Corrosion Mechanisms - STG 60	
Microbiologically Influenced Corrosion.....	109
Technical Program, Symposia	
Control of Problematic Microorganisms in Oil and Gas Field Operations.....	47
A Field Study into the Mitigation of Severe Downhole Microbiologically Influenced Corrosion of Oxygen Contaminated Hydro-Fracked Shale Oil Reservoirs.....	47
An Evaluation of Cessation of Nitrate Treatment of High-Volume Seawater Injection Systems.....	47
A New High Performance Biguanide Polyammonium-Based Blend for Control of Microbiological Fouling in Oil and Gas Stimulation.....	47
A Novel Method for the Enhanced Kill of Sulfate Reducing Microorganisms.....	47
Biocide Evaluation and Optimization For Pw Pipelines by Testing on System-Specific High-Risk Microorganism.....	48
Development of an Efficient MIC Mitigation and Control Strategy in Pipeline Pigging Operations.....	47
Enhanced Biocide Treatment Using D-Tyrosine Against Desulfovibrio Vulgaris Corrosion of Carbon Steel.....	48
Managing the Internal Corrosion of Oil Producing Well Flowlines.....	47
Microbiologically Influenced Corrosion by General Aerobic and Anaerobic Bacteria in Oil & Gas Separators.....	48
Novel Screening Method to Optimize Biocide Strategies Under Model Field Conditions.....	47
Remediation of Microbially Contaminated Horizontal Wells with Acrolein.....	48
SourMit, a novel Thermal-Hydraulic-bioChemical (THbC) Model for Prediction of Reservoir Souring.....	47
Synergistic Effect of Biocide and Biodespersant to Mitigate Microbiologically Influenced Corrosion in Crude Oil Transmission Pipelines.....	47
The 1000's Microbial Genus Belonging to the O&G Fields from Argentina.....	47
Microbiologically Influenced Corrosion.....	68
Baseline Distribution and Diversity of MIC-Relevant Microorganisms in Compacted Bentonites after Incubation for 1 Year.....	68
Evaluation and Monitoring of the Biocorrosion of Metallic Pipes.....	68
Is it MIC or Pitting Corrosion? An Insight in a Common Overlapping.....	69
Laboratory Investigation of Biocide Treated Waters to Inhibit Biofilm Growth and Reduce the Potential for MIC.....	68
MIC Pitting Mechanism Concerning Ion Selectivity of Biofilm and Symbiosis.....	69
Microbially Influenced Corrosion Perforation Failure Analysis of L80 Tubing in Water Injection Wells in a Middle East Oilfield.....	68
Microbiologically Influenced Production Casing Corrosion.....	68
Nitrate Addition for Controlling Microbiological Souring Triggers Formation of Pitting Corrosion of Carbon Steel.....	68
Novel Primer Sets for Field Based qPCR Testing Allows On-Site Detection of High-Risk Organisms Associated with MIC and H ₂ S Production.....	68
Rapid Microbial Detection, Quantification and Control.....	68
Severe Microbiologically Influenced Corrosion (MIC) of Pure Zinc and Galvanized Steel in the Presence of Desulfovibrio Vulgaris.....	69
Military and Aerospace	
Meetings, Technical Committees	
Military and Aerospace Systems and Facilities - STG 40.....	108
Corrosion Under Paint (CUP) Test Standards for Equipment Used in the Nondestructive Evaluation (NDE).....	108
Military and Aerospace Systems and Facilities.....	108
Military and Aerospace Systems and Facilities - STG 40	
Meetings, Technical Committees	
Military and Aerospace	
Corrosion Under Paint (CUP) Test Standards for Equipment Used in the Nondestructive Evaluation (NDE).....	108
Military and Aerospace Systems and Facilities.....	108
Military Corrosion	
Technical Program, Symposia	
Corrosion Issues in Military Equipment and Facilities.....	64
Lifetime Enhancement of Propulsion Shafts Against Corrosion-Fatigue by Laser Peening.....	64
Measurement and Prediction of Aerospace Corrosion Rate Using Real Time Sensor Measurements and Machine Learning Approaches.....	64
Statistical Modeling of Weather Data for Representative Environmental Severity Testing.....	64
Surface Treatment to Mitigate Exfoliation Corrosion of 5XXX Series Aluminum Alloys.....	65
Mineral Scale and Deposits	
Technical Program, Symposia	
Recent Developments in Mineral Scales and Deposits Control Technologies - Day 1.....	40
A New Look on the Scale Inhibition Mechanisms and Some Refinement of the Scale Inhibition Theory.....	40
Application of Aluminum Alloy and its Corrosion Control Challenges in Water Treatment Industry.....	40
Calcium Carbonate Biofouling in the Presence of Heavy Metals.....	40
Calcium Carbonate Scale Deposition and Inhibition: Effects of Corrosion Inhibitors.....	40
Carbonate and Sulfide Scale Formation in Multiphase Conditions.....	40
Corrosion Control Using Inhibitor Systems Based on Phosphonates and Metal Phosphonate Materials.....	40
Critical Review on Sulphide Scale Formation, Removal and Inhibition.....	40
Deposition Prevention of Complex Mineral Scales Such As Iron Sulfide on Pipelines Using Water Soluble Polymers.....	40
Designing Laboratory Test Protocols for Asphaltenes Deposition.....	40
Gypsum Scale Inhibitors Performance in the Presence of Impurities.....	40
Iron Carbonate (FeCO ₃) SLIPS (Slippery Liquid Infused Porous Surfaces) for Enhanced Scale Resistance.....	40
Non-Phosphorus Treatment Technology for Cooling Water Systems.....	40
Scale Formation and Wetting of Surfaces: A Microfluidics Investigation.....	40
Recent Developments in Mineral Scales and Deposits Control Technologies - Day 2.....	57
Distinct Mechanisms of Silica Scale Formation: Silicic Acid Polycondensation and Silica Particle Growth.....	57
Effective Laboratory Test Method for Quick Screening and Selection of Halite Inhibitors using Field Brine Composition.....	58
Erosion Corrosion of Oilfield Piping and Equipment due to Calcite Scales - Case Study.....	58
Evaluation of Scale and Corrosion Inhibitors using a Jet Impingement Method.....	57
Improving Scale Management - Combining Advanced Detection Techniques with Novel Tagged Polymeric Scale Inhibitors.....	57
Inhibition of Calcium Carbonate Scale Formation In Water-Mono Ethylene Glycol Solutions by Water Soluble Polymers.....	57
Inhibition of Formation of Magnesium Hydroxide by Polymers: The Role Molecular Architecture.....	57
In Search of Synergy: Inhibitor Synergy and Antagonism in Scale Control.....	58
Metal Sulfide Scale Inhibitors.....	57
New Insight into the Mechanisms of Iron Carbonate Formation in Sweet Carbonate Reservoir during Acid Stimulation.....	57
Pilot Rig Scale Testing: Hydrodynamics and Scale Deposition.....	57
Surface Precipitation and Growth Kinetics of Calcium Carbonate (CaCO ₃) Scale Using a Novel Capillary Flow Rig.....	58
Synthesis and Applications of Novel Fluorescent-Tagged Scale Inhibitors in Water Treatment.....	58
The Development of Novel Laboratory Test Method on Evaluation of Scale Inhibition and Dispersancy for Cooling Water Applications.....	57
The Impact of Temperature Increases Upon Calcite Saturation and Rigorously Calculated Indices.....	58
Mini-Keynote	
Meetings, Other.....	112
Mining	
Meetings, Technical Committees	
Corrosion in Mining and Mineral Processing - STG 47.....	109
Concrete and Structural Steel in Mining.....	109
Corrosion in Mining and Mineral Processing.....	109
Materials Selection and Corrosion Control in the Mineral Processing Industries.....	109
Slurry Pipeline Corrosion Management.....	109
The Mitigation of Internal Corrosion in Non-Lined, Non-Coated Pipelines Carrying Seawater for the Mining Industry.....	109
Miner Policy for NACE International Conferences	
General Information.....	11
Mobile App	
General Information.....	5
Mother's Room	
General Information.....	8
MP Editorial Advisory Board	
Meetings, Administrative.....	110
N	
NACE 50-Year Members	
2020 NACE Association Awards.....	25
NACE Board of Directors	
General Information.....	8
Meetings, Administrative.....	110
NACE Booth	
General Information.....	6
NACE Business Center	
General Information.....	6
NACEcares Volunteer Day	
Networking Activities.....	118
NACE Consortia Additive Manufacturing Roundtable	
Meetings, Other.....	113
Workshops and Other Learning Opportunities	
Additive Manufactured Materials.....	86
NACE Fellow Honor	
2020 NACE Association Awards.....	24
NACE Foundation Board of Directors	
Meetings, Administrative.....	110
NACE Foundation Founders Award	
2020 NACE Association Awards.....	25
NACE Honoree Night	
Networking Activities.....	120
NACE Institute Board of Directors	
Meetings, Administrative.....	111
NACE Institute Booth	
General Information.....	6
NACE Institute Certification Commission	
Meetings, Administrative.....	110
NACE Institute Certification Exam Development	
Corrosive Chronicles and MP Innovation Theater	
Certification.....	81, 82
NACE Institute Policy and Practices Committee	
Meetings, Administrative.....	110
NACE Institute - Specialty Board for Pipeline Certifications	
Meetings, Administrative.....	110
NACE Institute - Specialty Board of Protective Coatings Certifications	
Meetings, Administrative.....	110
NACE International Water Forum	
Forums.....	12
What's New at CORROSION 2020.....	12
NACE MR0175/ISO 15156 Maintenance Agency	
ISO Meetings.....	111
NACE MR0175/ISO 15156 Maintenance Panel	
ISO Meetings.....	111
NACE Sales Office	
General Information.....	6
NACE-SSPC	
Corrosive Chronicles and MP Innovation Theater	
NACE-SSPC Discussions Town Hall.....	82
NACE-SSPC Discussions Town Hall	
Corrosive Chronicles and MP Innovation Theater	
NACE-SSPC.....	82
What's New at CORROSION 2020.....	12, 13
NACE/SSPC Town Hall	
Meetings, Other.....	112, 113
NACE U Student Meeting	
Networking Activities.....	119
Other Meetings.....	112
NACE Water Forum: Sharing Best Practices in the Water and Wastewater Industries	
Technical Program, Forums.....	78
Water and Wastewater.....	78
Nanomaterials and Coatings Technologies	
Technical Program, Symposia	
Coatings and Linings.....	

Subject Index

Corrosion Phenomena in Braking Systems.....	55
Corrosion Properties of Anodized Mg Alloys by Micro-Arc Oxidation (MAO).....	55
Differentiation of Coating Performance for Corrosion Protection by EIS.....	55
Hexacyanoferrate-Intercalated Layered Double Hydroxides as Nano-Additives for Detection of Early-Stage Corrosion of Steel.....	54
High-Performance Anti-Corrosion Coatings Based on the Inclusion of Nanomaterials.....	54
Lithium Salts as Active Corrosion Inhibitors for Aluminum Substrates.....	54
Preparation & Tribological Characterization of Graphene Enriched Ni-P Coatings on X70 Pipeline Steel.....	54
Range of Nanostructured Materials as a Toolbox for Incorporation of New Functionalities in Protective Coatings.....	54
Silica Nanocapsules Based on Gemini Surfactant as Environmentally Friendly Nanocontainers for Corrosion Protection in Seawater.....	54
National Shipbuilding Research Program (NSRP) Surface Preparation and Coatings (SP&C) Panel Meeting	
What's New at CORROSION 2020.....	13
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 1	
Other Meetings.....	112
National Shipbuilding Research Program Surface Preparation and Coatings Panel - Day 2	
Meetings, Other.....	113
Networking Activities	
15th Annual Silent Auction.....	119
25th Annual NACE Race.....	118
Career Fair.....	119
eKit™ Training for Sections.....	120
CORROSION Crew Social Brew.....	118
CORROSION: Opportunities Realized.....	120
Darrel D. Beyerle Memorial Golf Tournament.....	118
GenNEXT Bash.....	119
Headshot Station.....	119
NACEcares Volunteer Day.....	118
NACE Honoree Night.....	120
NACE U Student Meeting.....	119
Opening Reception.....	119
New at the CORROSION 2020 Info Kiosk	
General Information.....	6
NIICAP Forum	
What's New at CORROSION 2020.....	13
NIICAP Oversight Board	
Meetings, Administrative.....	110
Nonmetallic Materials of Construction - STG 10	
Meetings, Technical Committees	
Nonmetals	
Corrosion Solutions for the Chemical Process Industry with Polymer Based Materials.....	100
Non-Metallic Materials Basic Education.....	100
Nonmetallic Materials of Construction: Expert Panel Discussion.....	100
STG 10.....	100
Non-Metallics for Chemical and Mineral Processing and Oil and Gas Production	
Technical Program, Symposia	
Oil and Gas Production	
A Novel Gasket Design for an Isolating Gasket to Solve Common Sealing Problems.....	76
Compatibility of Polymers Exposed to Heating Oil Blends with 10 % and 20 % Biodiesel (FAME).....	76
Elastomer Compatibility with a Pyrolysis-derived Bio-oil.....	76
Experiences and Opportunities for Continuous Improvement with Spoolable Composite Pipelines.....	76
Long-Term Performance of a Subsea Wet Insulation Material at 180 °C Continuous Operation Temperature.....	76
Nanolaminated Alloys to Diminish Corrosion and Wear on Artificial Lift Components.....	76
Nonmetals	
Meetings, Technical Committees	
Nonmetallic Materials of Construction - STG 10.....	100
Corrosion Solutions for the Chemical Process Industry with Polymer Based Materials.....	100
Non-Metallic Materials Basic Education.....	100
Nonmetallic Materials of Construction: Expert Panel Discussion.....	100
STG 10.....	100
Northern Area Board of Trustees	
Other Meetings.....	112
NSRP Surface Preparation and Coatings (SP&C) Panel Meeting	
Workshops and Other Learning Opportunities	
Coatings and Linings.....	86
Nuclear Systems	
Technical Program, Symposia	
Corrosion in Nuclear Systems - Day 1.....	32
Analysis of the Pitting Factor for Predicting Localized Corrosion of Liquid Radioactive Waste at Elevated Temperatures.....	33
An Overview of Recent Progresses in Monitoring, Understanding and Protecting Localized Corrosion on Buried Pipelines.....	33
Effect of Chloride on the SCC Behavior of Carbon Steel Welds Exposed to Concrete Pore Water Under Anoxic Conditions.....	33
Effects of Surface Conditions and Chemistry on Evolution of Open-Circuit Potential of Carbon Steel in Nuclear Waste Stimulants.....	33
Electrochemical Corrosion Behaviors of Waste Package Materials.....	33
Electrochemical Corrosion Evaluation of Boral® Panels from the Decommissioned Zion Nuclear Power Plant Spent Fuel Pool.....	33
Electrochemical Studies of Stainless Steels in Hanford Effluent Treatment Facility Environments.....	33
Evaluation of SCC Susceptibility of Steels Used in Nuclear Waste Storage Tanks in Caustic Simulants.....	33
Field Metallography and Replication on Natural Gas Processing Facility: Non-Destructive Metallurgical Testing to Complement other Regular NDT.....	33
Laboratory Studies Related to External Corrosion of Hanford's Double-Shell Tanks.....	32
Localized Weld Repairs Increase Corrosion Rates at Nuclear Plants.....	33
Performance of Vapor Corrosion Inhibitors on Mitigating Corrosion of Secondary Liner in Double Shell Storage Tanks at Hanford.....	33
Reference-Electrode Evaluations and Potential-Distribution Modelling in Nuclear Waste Environments.....	33
Corrosion in Nuclear Systems - Day 2.....	48
An Electrochemical Corrosion Study into 20Cr-25Ni-Nb Advanced Gas-cooled Reactor Fuel Cladding.....	48
Contribution of Cathodic Reaction Inside Crevice on Propagation of Crevice Corrosion of 304L SS in Sodium Chloride Solution.....	48
Corrosion Behavior of 12%Cr-6%Al Oxide Dispersion Strengthened Steels for New Fuel Cladding in Nitric Acid Solutions Containing V and Ru.....	48
Corrosion Resistance in Water and Steam of Monolithic Fe/Cr/Al Alloys and Zirconium Alloy Coatings.....	48
Deployment of Laser Peening to Prevent SCC of Nuclear Fuel Dry Storage Canisters.....	48
FAC Assessment for 2 Inch Diameter SA 106 Pipe With Elbow and Weld.....	48
Influence of Dissolved Hydrogen on the Internal and Intergranular Oxidation of Ni-Base Alloys in Simulated PWR Primary Water.....	48
Role of Material Condition on Precursor Corrosion Damage and Stress Corrosion Crack Initiation Behavior of Alloy 600 in PWR Primary Water.....	48
SCC Growth Behavior of Stainless Steels and Nickel Base Alloys during Chemical Transients in BWR Environments.....	48

O

Official Conference Language	
General Information.....	5
Offshore Cathodic Protection - Case Studies of New or Novel Designs or Subsea Inspection Techniques	
Technical Program, Symposia	
Cathodic Protection, Offshore	
Can Anodes Interfere when they are Mounted on Electrically Separate Structures?.....	39
Cathodic Protection Within Narrow Gaps of Offshore Wind Turbine Foundations.....	39
If Sacrificial Cathodic Protection Works Inside a Tank, Why Won't it Work in a Pipe?.....	39
Modelling and Analysis of Electrical Field Gradients Over Offshore Pipelines with Cathodic Protection - Impact of Drain to Wells.....	39
Retrofit Cathodic Protection for a Norwegian FPSO: New Challenges and Solutions.....	39
Offshore Corrosion	
Corrosive Chronicles and MP Innovation Theater	
Corrosion Control and Ecosystems Enhancement for Offshore Monopiles.....	81
Oil and Gas, Inhibitors	
Technical Program, Symposia	
Control of Corrosion in Oil and Gas with Inhibitors - Day 1.....	62
Analysis of Corrosion Inhibitor Performance Curves Using Langmuir Adsorption Kinetics.....	62
Closed Cooling Loop Corrosion - a Laboratory Based Investigation of Possible Causes.....	62
Corrosion Inhibition of C-Steel Pipeline Transporting Natural Gas at High Temperature.....	62
Corrosion Inhibitor Deliverability - A Corrosion Inhibitor Residual Success Story.....	62
Corrosion Inhibitors for Jet Pump Applications.....	63
Corrosion Inhibitors in O&G Industry: A Review of Current Application Challenges and Research Gaps.....	62
Corrosion Mitigation of Deepwater, 143km Long Multi-phase Pipelines.....	63
Development of a Concentrated Corrosion Inhibitor Compatible with Produced Water Brine and Scale Inhibitor.....	63
Effect of Corrosion Inhibitor Head Group on the Electrochemical Processes Governing CO ₂ Corrosion.....	62
Electrochemical Investigation of a Commercial Corrosion Inhibitor: Mechanism, Efficiency and Influence of Mg, and Ca, Ions.....	62
Elucidating the Influence of Calcium Ion Concentration on Corrosion Inhibitor Performance.....	62
High Temperature Corrosion Inhibition Performance and Thermal Stability of Nitrite.....	63
Monitoring Change of a Low-PPM Dosage Corrosion Inhibitor Over Time in a Long-Distance Pipeline Carrying Very Light Hydrocarbons.....	63
On the Adsorption Properties of Non-Surfactant Corrosion Inhibitors: Pyridine, Quinoline and Acridine.....	62
Selective Loss of Bulk Corrosion Inhibitor Species when Exposed to Glass, Plastic, and Steel.....	63
The Effect of Temperature and Critical Micelle Concentrations (CMC) on the Inhibition Performance of a Quaternary Ammonium-Type Corrosion Inhibitor.....	62
Utilization of Adsorption Kinetics Rate Constants to Better Define Corrosion Inhibitor Availability.....	62
Control of Corrosion in Oil and Gas with Inhibitors - Day 2.....	75
Adsorption and Self-Assembly of Corrosion Inhibitors on Metallic Surfaces Studied Using Molecular Simulations.....	75
Adsorption Free Energy of Corrosion Inhibitor Molecules at Metal-Water and Air-Water Interfaces: A Computational Investigation.....	75
Development of Novel Corrosion Inhibitors for High Temperature Sour Gas Environments, The.....	75
Effect of Steel Microstructure and Corrosion Product Characteristics on Inhibition Performance of Decanethiol Against TLC.....	75
Two Way Application of Corrosion Inhibitor in Gas and Condensate Field.....	75
Understanding Synergistic Effects between Corrosion Inhibitor Molecules using Density Functional Theory.....	75
Oil and Gas, Inland to Subsea	
Technical Program, Symposia	
Flow Assurance in Oil and Gas from Inland to Subsea.....	36
An Intelligent Flushing System For Oil or Gas Gathering Systems.....	36
Deposition and Corrosion Mitigation using Surface Treatments.....	36
Experimental Investigation and Numerical Modeling of Barium Sulfate Scaling in Porous Media.....	36
High Temperature Stable Corrosion Inhibitor Development for Deepwater Applications.....	36
Impact of Surface Conditions on Calcium Carbonate (CaCO ₃) Scaling Kinetics in a Once-Through Capillary Flow Rig.....	36
Nanotechnology Based Detection Method for Speciation and Differentiation of Phosphonate Scale Inhibitors.....	36
New Approach on Iron Sulfide Scale Modeling and Prediction at pH 4-7.....	36
Removal of Iron Carbide in Turbulent Conditions and Influence on Iron Carbonate Formation.....	36
Strontium Effect on Sulfate Scale Precipitation: Kinetics and Inhibition.....	36
The Development of Novel Laboratory Test Method for Scale Inhibitor Evaluation in the Presence of Ferrous Iron.....	36
Oil and Gas Production	
Meetings, Technical Committees	
Oil and Gas Production—Cathodic Protection - STG 30.....	102
Cathodic Protection in Seawater - Discussion of Current Topics.....	102
Cathodic Protection Systems, Retrofit, for Offshore Platforms.....	102
Corrosion Control of Submerged Areas of Offshore Steel Structures.....	102
Metallurgical and Inspection Requirements for Cast Galvanic Anodes for Offshore Applications.....	102
Petroleum, Petrochemical, and Natural Gas Industries - Cathodic Protection of Pipeline Transportation.....	102
STG 30.....	102
Oil and Gas Production—Corrosion and Scale Inhibition - STG 31.....	102
Bacterial Growth in Oilfield Systems—Field Monitoring: Review of NACE Standard TM0194-2014.....	102
Black Powder in Gas Pipelines.....	102
Downhole Corrosion and Scale Inhibitor Application via Capillary Tubing.....	102
Flow Assurance in Oil and Gas Production: Information Exchange.....	102
Internal Corrosion Monitoring of Subsea Production and Injection Systems.....	102
Oil and Gas Exploration Corrosion: Information Exchange.....	102
Oil and Gas Production - Corrosion and Scale Inhibition.....	102
Oil and Gas Production, Corrosion Inhibitors - Laboratory Evaluations: Information Exchange.....	102
Oil and Gas Production, Erosion Management.....	102
Oil and Gas Production, Sour Corrosion: Information Exchange.....	102
Oil & Gas End-User Experience with Molecular Microbiological Methods (MMM) and Problem Solving.....	102
Selecting Inhibitors for use as sucker-rod thread lubricants.....	102
Summary of Knowledge and Experience on Internal Corrosion of Pipeline Under Dewing Conditions: Top of the Line (TOL) Corrosion.....	102
TEG 059X/TEG201X joint meeting.....	102
Underdeposit Corrosion.....	102
Oil and Gas Production—Metallurgy - STG 32.....	102
Computerized Environmental Cracking Database.....	102
Cracking, Stepwise: Pipeline Steels.....	104
Environmental Prediction for Material Selection in Oil and Gas Production.....	104
Evaluation of Carbon and Low-Alloy Steels for Resistance to Stress-Oriented Hydrogen-Induced Cracking.....	104
Four-Point Bend Test Method.....	104
Joint Meeting IOGP 15156 (ISO/TC 67/WG 7) + TG 299.....	102
Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments.....	104
Oil and Gas Production Materials Information Exchange.....	102
Oil and Gas Production Test Methods Learning.....	102
Ripple Load Test for Evaluation of Sour Service Cracking Resistance.....	104
Slow Strain Rate Test Method for Screening Corrosion-Resistant Alloys for SCC in Sour Oilfield Service.....	104
STG 32.....	104
STG 32 Officers Meeting.....	104
Sulfide Corrosion Cracking: Metallic Materials Testing Techniques.....	102
Test Method for Resistance to Environmentally-Induced Hydrogen Stress Cracking in Welds.....	104
Oil and Gas Production—Nonmetallics and Wear Coatings (Metallic) - STG 33.....	104
Coating and Lining Technology for Oil and Gas.....	104

Subject Index

Control of External Corrosion on Underground or Submerged Metallic Piping Systems	106	Well Casings, Corrosion Control: Information Exchange.....	106
Corrosion Management of Aboveground Storage Tanks	106	Pipelines, Tanks, and Well Casings	
Determining Corrosive Properties of Water-Soluble Liquid Hydrocarbon Pipeline Cargoes.....	106	Meetings, Technical Committees	
Direct Assessment Methodology Application.....	106	Pipeline Crossings: Steel-Cased, Thrust-Bored, and HDD	106
External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms.....	106	Pipeline Subcommittee	
External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX).....	107	Meetings, Administrative.....	110
Hydrotesting and Long-Term Wet Storage of Pipelines, Risers, and Subsea Equipment	106	Pits, Cracks and Crevices	
Internal Corrosion Direct Assessment.....	106	Technical Program, Symposia	
Internal Corrosion Direct Assessment Methodology for Liquid Petroleum Pipelines.....	106	Pits, Cracks and Crevices - Research in Progress - Day 1.....	55
Internal Corrosion of Pipelines: Review of NACE Standard TMO172.....	106	A Systematic Investigation on the Occurrence of Stress-Induced Pits and Grooves in SSC	
Measurement Techniques Related to Criteria for Cathodic Protection on Underground or		Four-Point Bend Testing of Pipeline Steel.....	55
Submerged Metal Tank Systems.....	106	Atmospheric Corrosion and Cracking of 304 Stainless Steel in Controlled Marine Atmospheres	55
Microbiologically Influenced Corrosion on External Surfaces of Buried Pipelines: Detection, Testing.....	106	Effect of AC Interference on the Stress Corrosion Cracking Susceptibility and Pitting Behavior of	
Mitigation and Prioritization Strategies for Casings.....	106	Low Carbon Steels Under Cathodic Protection.....	55
Molecular Microbiological Methods - Sample Handling and Laboratory Processing.....	106	Failure Analysis of Alloy C-276 Using Modern Characterization Techniques.....	56
Monitoring of Pipeline Casing Using CP Coupons, ER Probes, Permanent Reference Electrodes,		Measurement of the Effect of Complex Aerospace Environments on Corrosion Fatigue Crack Growth of AA7.....	56
etc. with the Annular Space of the Casing.....	106	On the Deterministic Prediction of Crack Growth in Engineering Alloys.....	55
Multiphase Flow - ICDA.....	106	On the Evaluation of Hydrogen-Induced Cracking Test Results in Sour Media Using H-Probes.....	55
Pipeline Coating: Aboveground Techniques for the Underground Evaluation of Condition	107	Peridynamic Modeling of Pits, Cracks, and Crevices.....	56
Pipeline Corrosion Management.....	106	Prompt Gamma Activation Analysis Measurements of Hydrogen Absorption in Subsea Oil & Gas Materials	
Pipeline Crossings: Steel-Cased, Thrust-Bored, and HDD.....	106	Under Cathodic Protection.....	55
Pipeline Direct Assessment Methodology.....	107	Study of the Cracking Mechanism of Carbon Steel in Presence of H ₂ S/CO ₂ and H ₂ S Scavenger	
Pipeline External Corrosion Confirmatory Direct Assessment.....	106	Utilizing In-Situ Surface Enhanced Raman Spectroscopy.....	56
Pipeline Integrity Assessment: Corrosion Defect Prioritization for Risk Based Management Implementation	106	The Effect of Laboratory Atmospheric Corrosion Conditions and Corrosion Inhibitors on	
Pipelines: In-Line Inspection.....	106	Environmental Fatigue Damage.....	56
Pipelines, Steel-Cased.....	106	The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on	
Report on Underdeposit Corrosion (UDC) of Pipelines.....	106	Corrosion Fatigue of AA5456-H116 in 3.5 wt.% NaCl.....	55
Standard for External Corrosion Control of On-Grade Carbon Steel Storage Tank Bottoms.....	106	Towards Incorporations of H Embrittlement into a Grain Boundary Decohesion Model.....	55
Standard Practice for the Drone Inspection for Corrosion under Insulation of Pipelines	107	Pits, Cracks and Crevices - Research in Progress - Day 2.....	71
Steel Pipelines and Piping Systems: Internal Corrosion Control.....	106	A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential	
STG 05/35.....	107	Non-Iterative Approach.....	71
Stress Corrosion Cracking Direct Assessment, External.....	106	A One Dimensional Crevice Experiment for Determining the Critical Factors Contributing to	
Technical Guidance for Using Self-Propelled In-Line Inspection Devices in the Direct Examination Phase of External		Crevice Corrosion Repassivation.....	71
Corrosion Direct Assessment.....	107	Assessing the Influence of Calcium on X65 Carbon Steel Pitting Using an Artificial Pit.....	71
Techniques for Evaluating the Corrosiveness of Onshore Structures External Environment.....	106	Corrosion of Carbon Steel under Used Nuclear Fuel Container Condition.....	71
Underground Storage Tank Systems: Corrosion Control by Cathodic Protection.....	106	Determination of Key Marine Environment Effects on Maximum Pit Size Predictions.....	71
Well Casings, Corrosion Control: Information Exchange.....	106	Evaluation of 304L Pit Chemistry in Methanol/Water Mixtures.....	72
Technical Program, Forums		Identifying, Predicting and Preventing Localized Corrosion in Kr-85 Storage Canisters.....	71
PHMSA Pipeline Safety Forum.....	79	In-situ Electrochemical Examinations on UNS N07718	
Technical Program, Symposia		Exposed to Acidified Chloride Solution at High Temperature - Role of Intermetallic Particles on	
Pipeline Integrity.....	70	Pit Initiation.....	72
Advances in Coupon Analysis for Improved Corrosion Management.....	70	Investigating Localized Corrosion Chemistry during Dissolution of Carbon Steel in CO ₂ -containing	
Best Practices to Ensure Effective Pipeline Corrosion Management and Mistakes That Can be Avoided.....	70	Environments via Synchrotron X-ray Methods and the Pencil-Electrode Technique.....	71
Corrosion Control in Water Injection Pipelines.....	70	Localized and Uniform Corrosion of UNS N06022 in Aprotic Solvents at Room Temperature.....	72
Datascience to Enhance Pipeline Maintenance.....	71	Pitting Corrosion of Ni-Cr-Fe Alloys in Thiou sulfate and Chloride Solutions.....	72
Detecting and Preventing Internal Corrosion Damage in Unpigging, Intermittently-Operated,		Self-accelerated Corrosion of Nuclear Waste Forms at Material Interfaces.....	72
Crude-Oil Pipelines.....	70	Study of the Nucleation and Propagation of Open and Covered Pits in 2205 Duplex Stainless Steels	72
Detection and Location of Coating Delamination and Anomalies on Buried Pipelines by Using Electromagnetic		The Role of MnS Inclusions in Stainless Steel Pit Initiation and Propagation.....	71
Reflectometry.....	70	The Susceptibility of Copper to Pitting Corrosion in the Chloride and Sulphide-Containing Environment	
Development of a Low-Power Wireless Sensor Network of Conductivity Probes for the Detection of Corrosive Fluids in		Anticipated in a Deep Geologic Repository for the Permanent Disposal of Used Nuclear Fuel.....	71
Pipelines.....	70	Pits, Cracks and Crevices - Research in Progress - Day 1	
Extending the Life of an Ageing Forty Two Years Old Offshore Wet Crude Pipeline.....	70	Technical Program, Symposia	
Failure Analysis of a Composite Polyester-Fiberglass Pipe Support Sleeve - A Case Study.....	70	Pits, Cracks and Crevices	
Field Experience on Why Pipeline In-Line Inspection (ILI) Fails.....	70	A Systematic Investigation on the Occurrence of Stress-Induced Pits and Grooves in SSC	
In-line Inspection of Hydrogen Pipelines.....	70	Four-Point Bend Testing of Pipeline Steel.....	55
Methodology for the Evaluation of Batch Corrosion Inhibitor Films and their Integrity.....	70	Atmospheric Corrosion and Cracking of 304 Stainless Steel in Controlled Marine Atmospheres	55
Multi-Stage Commissioning and Concurrent Survey Work on a New Pipeline: A Case Study in Converging and		Effect of AC Interference on the Stress Corrosion Cracking Susceptibility and Pitting Behavior	
Diverging Corrosion Interests.....	70	Low Carbon Steels Under Cathodic Protection.....	55
Use of Large Standoff Magnetometry in Pipeline Integrity Investigations.....	70	Failure Analysis of Alloy C-276 Using Modern Characterization Techniques.....	56
Use of Piezoelectric and M/S Guided Wave Ultrasonic Monitoring Technologies on Underground Piping.....	70	Measurement of the Effect of Complex Aerospace Environments on Corrosion Fatigue Crack Growth of AA7.....	56
Using Failure Analysis to Optimize Corrosion Mitigation Costs.....	70	On the Deterministic Prediction of Crack Growth in Engineering Alloys.....	55
Water Hammer and Fatigue Strength Reduction from Grit Blasting for Coatings.....	71	On the Evaluation of Hydrogen-Induced Cracking Test Results in Sour Media Using H-Probes.....	55
Pipeline Integrity - Day 2.....	71	Peridynamic Modeling of Pits, Cracks, and Crevices.....	56
Estimating Corrosion Rate Risk Distributions using Machine Learning and Geospatial Analytics.....	77	Prompt Gamma Activation Analysis Measurements of Hydrogen Absorption in Subsea Oil & Gas Materials	
Reliable, Traceable, Verifiable and Complete Pipeline Records.....	77	Under Cathodic Protection.....	55
Pipeline Integrity - Day 2		Study of the Cracking Mechanism of Carbon Steel in Presence of H ₂ S/CO ₂ and H ₂ S Scavenger	
Deepwater Riser Repair Systems.....	77	Utilizing In-Situ Surface Enhanced Raman Spectroscopy.....	56
Mandatory Integrity Reassessment of Gravity-Fed Crude Oil Pipelines Using MP-ICDA in Kuwait.....	77	The Effect of Laboratory Atmospheric Corrosion Conditions and Corrosion Inhibitors on	
Monitoring and Assessing Pipeline Water Crossings in the Face of Severe Flooding, River Scour, and River Channel		Environmental Fatigue Damage.....	56
Migration.....	77	The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on	
Pipeline and Subsea Integrity Assessment Using Corrosion Direct Assessment and Local Area Inspection.....	77	Corrosion Fatigue of AA5456-H116 in 3.5 wt.% NaCl.....	55
Successful Application of MP-ICDA to Assess and Confirm Crude Oil Pipeline Corrosion Threats in Kuwait using ILI.....	77	Towards Incorporations of H Embrittlement into a Grain Boundary Decohesion Model.....	55
Pipelines, Tanks, and Well Casings - STG 35		Pits, Cracks and Crevices - Research in Progress - Day 2	
Meetings, Technical Committees		Technical Program, Symposia	
Pipelines, Tanks, and Well Casings		Pits, Cracks and Crevices	
3D Laser and Structured Light.....	107	A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential	
Application of Cathodic Protection for External Surfaces of Steel Well Casings.....	106	Non-Iterative Approach.....	71
Best Practice of Carbon Steel HDD Design, Construction and Management.....	107	A One Dimensional Crevice Experiment for Determining the Critical Factors Contributing	
Control of External Corrosion on Underground or Submerged Metallic Piping Systems	106	to Crevice Corrosion Repassivation.....	71
Corrosion Management of Aboveground Storage Tanks	106	Assessing the Influence of Calcium on X65 Carbon Steel Pitting Using an Artificial Pit.....	71
Determining Corrosive Properties of Water-Soluble Liquid Hydrocarbon Pipeline Cargoes.....	106	Corrosion of Carbon Steel under Used Nuclear Fuel Container Condition.....	71
Direct Assessment Methodology Application.....	106	Determination of Key Marine Environment Effects on Maximum Pit Size Predictions.....	71
External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms.....	106	Evaluation of 304L Pit Chemistry in Methanol/Water Mixtures.....	72
External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX).....	107	Identifying, Predicting and Preventing Localized Corrosion in Kr-85 Storage Canisters.....	71
Hydrotesting and Long-Term Wet Storage of Pipelines, Risers, and Subsea Equipment	106	In-situ Electrochemical Examinations on UNS N07718 Exposed to Acidified Chloride Solution	
Internal Corrosion Direct Assessment.....	106	at High Temperature - Role of Intermetallic Particles on Pit Initiation.....	72
Internal Corrosion Direct Assessment Methodology for Liquid Petroleum Pipelines.....	106	Investigating Localized Corrosion Chemistry during Dissolution of Carbon Steel in CO ₂ -containing	
Internal Corrosion of Pipelines: Review of NACE Standard TMO172.....	106	Environments via Synchrotron X-ray Methods and the Pencil-Electrode Technique.....	71
Measurement Techniques Related to Criteria for Cathodic Protection on Underground or		Localized and Uniform Corrosion of UNS N06022 in Aprotic Solvents at Room Temperature.....	72
Submerged Metal Tank Systems.....	106	Pitting Corrosion of Ni-Cr-Fe Alloys in Thiou sulfate and Chloride Solutions.....	72
Microbiologically Influenced Corrosion on External Surfaces of Buried Pipelines: Detection, Testing.....	106	Self-accelerated Corrosion of Nuclear Waste Forms at Material Interfaces.....	72
Mitigation and Prioritization Strategies for Casings.....	106	Study of the Nucleation and Propagation of Open and Covered Pits in 2205 Duplex Stainless Steels	72
Molecular Microbiological Methods - Sample Handling and Laboratory Processing.....	106	The Role of MnS Inclusions in Stainless Steel Pit Initiation and Propagation.....	71
Monitoring of Pipeline Casing Using CP Coupons, ER Probes, Permanent Reference Electrodes,		The Susceptibility of Copper to Pitting Corrosion in the Chloride and Sulphide-Containing Environment	
etc. with the Annular Space of the Casing.....	106	Anticipated in a Deep Geologic Repository for the Permanent Disposal of	
Multiphase Flow - ICDA.....	106	Used Nuclear Fuel.....	71
Pipeline Coating: Aboveground Techniques for the Underground Evaluation of Condition	107	Plenary	
Pipeline Corrosion Management.....	106	Other Meetings.....	112
Pipeline Direct Assessment Methodology.....	107	Plenary Lecture	
Pipeline External Corrosion Confirmatory Direct Assessment.....	106	Special Lectures.....	18
Pipeline Integrity Assessment: Corrosion Defect Prioritization for Risk Based Management Implementation	106	Policy Committee	
Pipelines: In-Line Inspection.....	106	Meetings, Administrative.....	110
Pipelines, Steel-Cased.....	106	Pollution Control	
Report on Underdeposit Corrosion (UDC) of Pipelines.....	106	Meetings, Technical Committees	
Standard for External Corrosion Control of On-Grade Carbon Steel Storage Tank Bottoms.....	106	Pollution Control, Waste Incineration, and Process Waste - STG 45.....	108
Standard Practice for the Drone Inspection for Corrosion under Insulation of Pipelines	107	Pollution Control, Waste Incineration, and Process Waste.....	108
Steel Pipelines and Piping Systems: Internal Corrosion Control.....	106	White Paper: Corrosion Prevention and Control for Marine Scrubbers.....	108
STG 05/35.....	107		
Stress Corrosion Cracking Direct Assessment, External.....	106		
Technical Guidance for Using Self-Propelled In-Line Inspection Devices in the Direct Examination			
Phase of External Corrosion Direct Assessment.....	107		
Techniques for Evaluating the Corrosiveness of Onshore Structures External Environment.....	106		
Underground Storage Tank Systems: Corrosion Control by Cathodic Protection.....	106		

Subject Index

Pollution Control, Waste Incineration, and Process Waste - STG 45

Meetings, Technical Committees	
Pollution Control	
Pollution Control, Waste Incineration, and Process Waste.....	108
White Paper: Corrosion Prevention and Control for Marine Scrubbers.....	108

Power Industry

Meetings, Technical Committees	
Electric Utility Generation, Transmission, and Distribution - STG 41.....	108
Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures.....	108
Electric Utility Generation, Transmission, and Distribution.....	108
Electric Utility Transmission and Distribution Corrosion and Grounding: Discussion of Issues.....	108
Geothermal System Corrosion.....	108
Nondestructive Evaluation (NDE) Technologies to Evaluate Buried Pipe in Nuclear Power Plants.....	108
Nuclear Buried Piping.....	108
Nuclear System Corrosion.....	108
Power Generation and Delivery Education Roadmap.....	108
Renewable Energy Facilities Design, Construction and Commissioning.....	108
Technical Program, Symposia	
Power Industry Corrosion.....	72
Corrosion Risk Assessment of Galvanized T&D Structures and GIS Mapping.....	72
Field Application of Corrosion Resistant Weld Overlay in Ultra-Supercritical Coal-Fired Boiler Waterwalls.....	72
Inductive and DC Stray Current Interference from Different HVDC Transmission Line Systems on Metallic Pipelines.....	72
Novel Anti-Fouling Surface treatments for Heat Exchangers.....	72
Stray Current Corrosion Risks and Case Histories in Communication Tower and Electric Transmission Applications.....	72
Use of Halophytes to Manage Soil Characteristics In Joint Use Environments.....	72

Power Industry Corrosion

Technical Program, Symposia	
Power Industry	
Corrosion Risk Assessment of Galvanized T&D Structures and GIS Mapping.....	72
Field Application of Corrosion Resistant Weld Overlay in Ultra-Supercritical Coal-Fired Boiler Waterwalls.....	72
Inductive and DC Stray Current Interference from Different HVDC Transmission Line Systems on Metallic Pipelines.....	72
Novel Anti-Fouling Surface treatments for Heat Exchangers.....	72
Stray Current Corrosion Risks and Case Histories in Communication Tower and Electric Transmission Applications.....	72
Use of Halophytes to Manage Soil Characteristics In Joint Use Environments.....	72
Workshops and Other Learning Opportunities	
Corrosion Impacts In Renewable Energy.....	85

Prayer Room

General Information.....	8
--------------------------	---

Premature Coating Failures - Common and Uncommon Causes and How to Investigate Coating Failures When They Occur

Technical Program, Forums	79
Coatings and Linings.....	79

Process Industries—Materials Applications

Meetings, Technical Committees	
Process Industries—Materials Applications and Experiences - STG 39.....	107
Metals: Reactive.....	107
Stainless Steels: Austenitic and Nickel Alloys.....	107
Stainless Steels, Duplex and Ferritic: Application.....	107

Process Industries—Materials Applications and Experiences - STG 39

Meetings, Technical Committees	
Process Industries—Materials Applications	
Metals: Reactive.....	107
Stainless Steels: Austenitic and Nickel Alloys.....	107
Stainless Steels, Duplex and Ferritic: Application.....	107

Process Industry—High Temperature

Meetings, Technical Committees	
Process Industry - High Temperature - STG 37.....	107
STG 37.....	107
TEG 123X/126X/128X/270X Joint Meeting.....	107

Process Industry - High Temperature - STG 37

Meetings, Technical Committees	
Process Industry—High Temperature	
STG 37.....	107
TEG 123X/126X/128X/270X Joint Meeting.....	107

Process Industry—Materials Performance

Meetings, Technical Committees	
Process Industry—Materials Performance in Chemicals - STG 36.....	107
Control of Corrosion Under Thermal Insulation and Fireproofing Materials - A Systems Approach.....	107
Design, Fabrication, and Inspection of Tanks for Storage of Concentrated H ₂ SO ₄ and Oleum.....	107
Failure Prevention Case Histories.....	107
Hydrochloric Acid and Chlorine: Materials and Experiences.....	107
Hydrofluoric Acid and Hydrogen Fluoride: Review of NACE Publication 5A171.....	107
Hydrofluoric Acid: Materials for Receiving, Handling, and Storing.....	107
Materials for Handling Concentrated Sulfuric Acid at Ambient Temperatures.....	107
Stress Corrosion Cracking of Carbon and Low-Alloy Steels in Anhydrous Ammonia Service.....	107
Sulfuric Acid - Material and Experiences.....	107

Process Industry—Materials Performance in Chemicals - STG 36

Meetings, Technical Committees	
Process Industry—Materials Performance	
Control of Corrosion Under Thermal Insulation and Fireproofing Materials - A Systems Approach.....	107
Design, Fabrication, and Inspection of Tanks for Storage of Concentrated H ₂ SO ₄ and Oleum.....	107
Failure Prevention Case Histories.....	107
Hydrochloric Acid and Chlorine: Materials and Experiences.....	107
Hydrofluoric Acid and Hydrogen Fluoride: Review of NACE Publication 5A171.....	107
Hydrofluoric Acid: Materials for Receiving, Handling, and Storing.....	107
Materials for Handling Concentrated Sulfuric Acid at Ambient Temperatures.....	107
Stress Corrosion Cracking of Carbon and Low-Alloy Steels in Anhydrous Ammonia Service.....	107
Sulfuric Acid - Material and Experiences.....	107

Process Industry—Pulp, Paper, and Biomass Conversion

Meetings, Technical Committees	
Process Industry—Pulp, Paper, and Biomass Conversion - STG 38.....	107
Process Industry-Pulp, Paper, and Biomass Conversion.....	107

Process Industry—Pulp, Paper, and Biomass Conversion - STG 38

Meetings, Technical Committees	
Process Industry—Pulp, Paper, and Biomass Conversion	
Process Industry-Pulp, Paper, and Biomass Conversion.....	107

Product Showcase

Exhibition.....	124
-----------------	-----

Professional Development Hours (PDHs) Station

General Information.....	5
--------------------------	---

Progress in Laboratory Testing of Corrosion Inhibitors for Oil Field Applications

Technical Program, Symposia	
Corrosion Inhibitors	
An Improved Methodology Used to Assess the Performance of Organic Corrosion Inhibitors.....	39
Can Micelles be Used to Expedite and Enhance Lab Qualification Testing?.....	39
Evaluation of N-Furfuryl Nitrona Molecule as a Corrosion Inhibitor for Carbon Steel Using EIS.....	39
High Pressure Corrosion Testing: A Distressing Case History with a Successful Resolution.....	39
Impact of CO ₂ Partial Pressure on Electrochemical Measurements at High Temperatures.....	39
Investigation of an Organic Inhibitor on Mild Steel by In Situ Atomic Force Microscopy Coupled with Electrochemical Measurements.....	39
Nanotechnology Based Field Method for Detection and Monitoring Corrosion Inhibitors.....	39
Surface Preparation of Test Specimens and Its Impact on Localized Corrosion.....	39
Under Deposit Corrosion Testing under Inhibited and pH Stabilized Conditions.....	39

Protective Coatings Workshop

Exhibition.....	124
Workshops and Other Learning Opportunities	
Coatings and Linings	
A Look at the Industrial Painting and Coatings Trade in 10 Years.....	84
Architectural and Industrial Maintenance (AIM) VOC Regulations and PCBTF (Oxsol 100) VOC Exemption Update.....	84
Augmented Reality in Coatings Inspection.....	84
CoatingsPro Contractor Awards.....	84
From the Sublime to the Ridiculous: Life in the Fast Coatings Lane.....	84
Passive Fire Protection.....	84
Protective Coatings in Infrastructure: Attributes, Structure Requirements and Case Studies.....	84
Regulatory Update / Overview.....	84
Robotics in Coatings Inspection.....	84
Shop and Field Applications for Metallic Zinc Coatings.....	84
Surface Preparation.....	84
The Misconceptions of Chemically Grouping Coatings.....	84
Using Dry Film Thickness Measurement Equipment Effectively.....	84

Publication Bins

General Information.....	7
--------------------------	---

Publications Activities Committee

Meetings, Administrative.....	110
-------------------------------	-----

Pulp, Paper, Biomass Industries

Technical Program, Symposia	
Corrosion Issues in the Pulp, Paper and Biomass Industries.....	65
Corrosion and Chemical Characterization of Bio-Oils from Biomass with Varying Ash and Moisture Contents.....	65
Corrosion Assessment of Candidate Construction Alloys under Hot Dilute Acidic Pre-hydrolysis Biorefining Conditions.....	65
Corrosion Assessment of Candidate Construction Alloys under Hydrothermal Liquefaction Biorefining Conditions.....	65
Corrosion in Sulfuric Acid in Pulp and Paper Mills.....	65
Corrosion of Candidate Alloys for Hydrothermal Liquefaction (HTL) Reactor under Batch-mode Operation.....	65
Evaluation of Corrosion Susceptibility of Structural Steels in Biomass Derived Pyrolysis Oils.....	65

R

R.A. Brannon Award

2020 NACE Association Awards.....	20
-----------------------------------	----

Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies

Technical Program, Symposia	
Testing and Monitoring	
Anodization-Emission Spectroscopy of Metals by White Light Interferometry.....	57
A Novel Corrosion Probe Design that Provides Long Life and High Sensitivity.....	56
A Novel Corrosion Rate Monitoring Method for Steel in Soil Based on Tafel Extrapolation Method.....	56
Detection of Biofilm Forming Microbes Using Electrochemical Methods.....	56
Heat Recovery Steam Generation Corrosion Monitoring and Inspection Challenges.....	57
High Resolution Ultrasound Alarm System for Subsea Corrosion Detection - Comparing Intrusive and Non-Intrusive Performance.....	56
Installed UT Sensors for Continuous Corrosion Monitoring: Understanding How Process Changes Influence Corrosion Rates.....	56
Monitoring Localized and General Corrosion using Advanced Electrochemical Sensors.....	56
Monitoring Spatial Variation of Localized Corrosion in Concrete Slab Based on Ordr Distributed Optical Fiber.....	56
Optical Fiber-based Sensor for Corrosion Monitoring at Elevated Temperatures.....	57
Passive Magnetometry for Monitoring Integrity and Flow Diagnostics of Subsea Pipelines.....	56

Recent Developments in Mineral Scales and Deposits Control Technologies - Day 1

Technical Program, Symposia	
Mineral Scale and Deposits	
A New Look on the Scale Inhibition Mechanisms and Some Refinement of the Scale Inhibition Theory.....	40
Application of Aluminum Alloy and its Corrosion Control Challenges in Water Treatment Industry.....	40
Calcium Carbonate Biofouling in the Presence of Heavy Metals.....	40
Calcium Carbonate Scale Deposition and Inhibition: Effects of Corrosion Inhibitors.....	40
Carbonate and Sulfide Scale Formation in Multiphase Conditions.....	40
Corrosion Control Using Inhibitor Systems Based on Phosphonates and Metal Phosphonate Materials.....	40
Critical Review on Sulfide Scale Formation, Removal and Inhibition.....	40
Prevention of Complex Mineral Scales Such As Iron Sulfide on Pipelines Using Water Soluble Polymers.....	40
Designing Laboratory Test Protocols for Asphaltene Deposition.....	40
Gypsum Scale Inhibitors Performance in the Presence of Impurities.....	40
Iron carbonate (FeCO ₃) SLIPS (Slippery Liquid Infused Porous Surfaces) for Enhanced Scale Resistance.....	40
Non-Phosphorus Treatment Technology for Cooling Water Systems.....	40
Scale Formation and Wetting of Surfaces: A Microfluidics Investigation.....	40

Recent Developments in Mineral Scales and Deposits Control Technologies - Day 2

Technical Program, Symposia	
Mineral Scale and Deposits	
Distinct Mechanisms of Silica Scale Formation: Silicic Acid Polycondensation and Silica Particle Growth.....	57
Effective Laboratory Test Method for Quick Screening and Selection of Halite Inhibitors using Field Brine Composition.....	58
Erosion Corrosion of Oilfield Piping and Equipment due to Calcite Scales - Case Study.....	58
Evaluation of Scale and Corrosion Inhibitors using a Jet Impingement Method.....	57
Improving Scale Management - Combining Advanced Detection Techniques with Novel Tagged Polymeric Scale Inhibitors.....	57
Inhibition of Calcium Carbonate Scale Formation in Water-Mono Ethylene Glycol Solutions by Water Soluble Polymers.....	57
Inhibition of Formation of Magnesium Hydroxide by Polymers: The Role Molecular Architecture.....	57
In Search of Synergy: Inhibitor Synergy and Antagonism in Scale Control.....	58
Metal Sulfide Scale Inhibitors.....	57
New Insight into the Mechanisms of Iron Carbonate Formation in Sweet Carbonate Reservoir during Acid Stimulation.....	57
Pilot Rig Scale Testing: Hydrodynamics and Scale Deposition.....	57
Surface Precipitation and Growth Kinetics of Calcium Carbonate (CaCO ₃) Scale Using a Novel Capillary Flow Rig.....	58
Synthesis and Applications of Novel Fluorescent-Tagged Scale Inhibitors in Water Treatment.....	58
The Development of Novel Laboratory Test Method on Evaluation of Scale Inhibition and Dispensancy for Cooling Water Applications.....	57
The Impact of Temperature Increases Upon Calcite Saturation and Rigorously Calculated Indices.....	58

Recent Experiences with Austenitic and Duplex Stainless Steels - Day 1

Technical Program, Symposia	
Metals & Alloys	
After 30 Years of Duplex Stainless Steel Experience In Oil & Gas - Do We Still Face Challenges?.....	41
Alloy 35Mo- A New Alloy for Seawater Applications.....	41
Analysis of Corrosion Pitting in a 317L-Stainless Steel Surface Condenser Tube Bundle.....	41

Subject Index

Bolts and Nuts (Fasteners) Failure of In-Service Stainless Steel Chemical Storage Tanks at Wafra Joint Operation - A Case Study	41
Development of an Advanced Carburizing and Nitriding Stainless Steel	41
Evaluating the Flaw Tolerance and Ductile Tearing Resistance of Austenitic Stainless-Steel Welds	41
In Situ Electrochemical Testing Of Stainless Steel Surfaces	41
Lessons Learned from New Stainless Steel Fabrication	41
Materials Selection for Seawater Injection Service - Crevice Corrosion Evaluation of Stainless Steels Under Controlled Oxygen Conditions	41
On Comparing and Predicting the Crevice Corrosion Resistance of Austenitic Drilling Alloys with Typical Downhole Production Alloys	41
Optimization of FGD Operating Conditions by Electrochemical Laboratory Testing Applied to Alloy UNS S32205	41
Polythionic Acid Stress Corrosion Cracking on Proprietary UNS S34751 Similar Welded Joint	41
Stress Corrosion Cracking of Austenitic Grade 347 and Duplex Grade 2205 Stainless Steels in Refinery Simulated Media Containing Hydrogen Sulfide and O_2	41
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 2	
Technical Program, Symposia	
Metals & Alloys	
A Recent Case of Intermetallic Precipitations in Super Duplex	58
Considerations Performing Ferrite Measurements with Focus on Point Counting According ASTM E562	58
Corrosion of Stainless Steels: Effects of Finishing	58
Corrosion Properties of Alloy 35Mo, New Pre 52 Alloy for Refinery and Chemical Industry	58
Influence of Centerline Intermetallic Strainers on Pitting Corrosion Resistance of Superduplex Stainless Steels	58
Negative Effects of Welding on Corrosion Resistance of Austenitic and Duplex Stainless Steel	58
Study on Ferrite Measurement Methods for Duplex Stainless Steel Part 2: Focus on Measurement by Ferrite Scope	58
Welding of Cr with Insufficient Purging Gas - Impact on Mechanical Properties and Corrosion Resistance	58
Recent Experiences with Nickel, Titanium, Zirconium and other Corrosion Resistant Alloys	
Technical Program, Symposia	
Metals & Alloys	
Alloy UNS N06058: A Solution for Demanding Corrosive Applications Where Common Members of The Ni-Cr-Mo Alloys Experience Their Limits	73
Analysis of Intergranular Corrosion of UNS N10276 Pipe Longitudinal Welding Seam	73
A Novel High Entropy Alloy Possessing Excellent Corrosion Resistance Manufactured by Standard Cast and Wrought Processing	73
Corrosion Behavior of Zirconium-based Composites	74
Crevice Corrosion of Alloy 625 Strake Bands in Sea Water	73
Crevice Corrosion Resistance of New Alloy 35Mo Compared to UNS N06625 and UNS N10276	73
Detecting Grain Boundary Precipitation on the Precipitation-Hardened Nickel Alloy UNS N07725: Double-loop Electrochemical Potentiokinetic Reactivation	73
Effects of Minor Alloying Elements on the Metal-Dusting Behavior of Ni-Based Alloys	73
Electrochemical Evaluation of Novel Titanium Alloys	73
Grain Boundary Corrosion in Welded UNS N10276 Microstructures	73
Hydrogen-Induced Cracking or Pure Titanium in Sulphuric Acid and Hydrochloric Acid Solutions Using Constant Load Method	73
Modeling Corrosion of Corrosion Resistant Alloys in Chemical Processes Environments Including Mixed Acids and Salts	73
Nickel Based Alloy Casting Failure in Potash Production Mill	73
Response of Alloy UNS N08825 to the Variation of Ni Content and Annealing Temperatures in Terms of Its Corrosion Resistance	73
Understanding Mu Phase Precipitation Impact on Sensitization Behavior of UNS N10276 and Its Detection Using ASTM Standard Methods	73
Refining	
Meetings, Technical Committees	
Petroleum Refining and Gas Processing - STG 34	104
Carbonate Stress Corrosion Cracking in Refinery Alkaline Sour Waters	104
Detection, Repair, and Mitigation of Cracking in Refinery Equipment in Wet H ₂ S Environments	104
Joint API/NACE Advisory Committee - API 751 Safe Operation of HF Alkylation Units - Corrosion and Materials Sections	104
Materials and Fabrication Practices for New Pressure Vessels Used in Wet H ₂ S Refinery Service	104
Petroleum Refinery Corrosion Specialist Certification and Oversight of Refining Industry Corrosion Control Course Content	104
Petroleum Refining Sulfide Stress Cracking (SSC): Review of NACE Standard MR0103	104
Refineries, Environmental Cracking: Review of NACE SP0403 (Formerly RP0403)	104
Refinery Injection and Process Mixing Points	104
Refining Industry Information Exchange	104
STG 34	104
Weldments, Carbon Steel: Prevention of Environmental Cracking in Refining Environments	104
Technical Program, Symposia	
Corrosion in the Refining Industry	49
317 Piping Stress Corrosion Cracking After Unit Unexpected Shutdown Recovery	49
Air Coolers in Wet Sour Services - Plug Gaskets Leakage During Startup	49
Case Study: Weld Repair of Aged Hydrogen Reformer Bull Tee	49
Double Jeopardy in a Refinery Setting: How to Successfully Inspect an Insulated Pipeline for Corrosion Under Insulation (CUI)	50
Effect of Corrosion Inhibitors in the Refining Process of Crude Oil Contaminated with Organic Chlorides	50
Electrochemical Corrosion Behavior of Carbon Steel With and Without Residual Elements: Fitness for Purpose Evaluation of Hydrogen Production Unit Centrifugally Cast Tubes: "Post Exposure" Metallographic and Mechanical Test	49
HTHA in Low-Carbon Steel Occurring at Temperatures Recently Thought to be Not Possible	50
Hydrogen Embrittlement of SS 316L Instrument Tubing in Hydroprocessing Unit	49
Low H ₂ S High Temperature Sulfur Attack in Refining Hydrotreating Processes	50
Naphthenic Acid Corrosion and Sulfidic Corrosion in Crude Oil Fractions	50
Permasense Wireless Non-Intrusive Corrosion Monitoring System Case Studies at Equinor Refining Denmark	50
Polythionic Acid Stress Corrosion Cracking of Type 347LN Containing Higher Cu for Improvement of Creep Strength	50
Qualification of a Single Pass Weld Overlay using NiCrMo-14 as an Alternative to Multi-pass NiCrMo-4 to Mitigate Crude Tower OVHD Corrosion	49
Review and Recommendations on PWHT Exemptions for 2014 Edition of ASME B31.3	49
Registration Hours	
General Information	5
Reinforced Concrete - STG 01	
Meetings, Technical Committees	
Concrete	98
Cathodic Protection for Masonry Buildings Incorporating Steel Frames - SOA Report	98
Electrochemical Realization of Steel-Reinforced Concrete - A State of the Art Report	98
Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars	98
Inspection Methods for Corrosion Evaluation of Prestressed Concrete Structures	98
Reinforced Concrete: Design, Evaluation, and Remediation	98
Reinforced Concrete: Sacrificial Cathodic Protection of Reinforced Concrete Elements	98
Sacrificial Cathodic Protection of Reinforced Concrete Elements	98
State of the Art Report: Criteria for Corrosion Control of Steel in Concrete	98
STG 01 Reinforced Concrete	98
STG 01 Strategic Planning	98
Stray Current Corrosion in Reinforced and Prestressed Concrete Structures-SOA Report	98
Testing and Evaluation of Corrosion on Steel-Framed Buildings	98
Test Procedure for Embeddable Impressed Current Anodes for Atmospherically Exposed Structures	98
Research Committee	
Meetings, Administrative	111

Research in Progress	
Technical Program, Symposia	
Advanced Electrochemical Methods - Research in Progress	29
A Combinatorial Study into the Role of Magnesium in Preventing Organic Coating Cathodic Delamination from Zinc Galvanized Steel	29
Application of Localized Electrochemical Techniques to Study the Effect of Crystallographic Orientation on Passive Layer and Corrosion Behavior of Ferritic Steels	29
Chemical Imaging of Reactive Surfaces Using Microsensors as Tips in Scanning Electrochemical Microscopy: Applications in Corrosion Research and Protection	29
Delineation of Partial Anodic and Cathodic Reactions in Corrosion Processes Using Electrochemical Impedance Spectroscopy	29
Development of a Calibration Electrode to Facilitate Non-Destructive Coating Evaluation using a Scanning Kelvin Probe	30
How do Alloy Components Interact? Measuring In Situ the Kinetics of Passive Film Formation and Dissolution with Elemental Resolution	29
In-situ Time-lapse Scanning Kelvin Probe Force Microscopy - A Novel Approach towards Understanding Localized Corrosion of Aluminum Alloys	29
Local Electrochemical Methods to Study the Correlation Between Microstructure and the Corrosion of Metals	29
Mg-Sn Primer Coatings for the Protection of AA2024 Aerospace Alloys	29
Novel In-Situ Methods for Real-Time Monitoring of Corrosion Processes	29
Spectroelectrochemical Evaluation of Carbon Steel in Slightly Sour Environments Under the Presence of Triazine-Based H ₂ S Scavenger Byproducts utilizing In-Situ Confocal Surface Enhanced Raman Spectroscopy	30
The Reactivity of Aluminum Alloys During Pre-Treatment Processes by Atomic Emission Spectroelectrochemistry (AESEC)	29
Utilising a Bespoke In situ X-ray Tomography Cell to Characterise In Real Time the Formation, Evolution and Breakdown of Corrosion Scales on X-65 Pipeline Steel in CO ₂ Saturated Environments	29
Biomedical Materials	31
Cathodic Voltage Controlled Electrical Stimulation for Orthopedic Implant Infection Control	31
Characterization of the Passive Film Formed on Selective Laser Melting 316L SS in the Phosphate-Buffered Saline Solution	31
Corrosion and Repassivation Behavior of Freshly Exposed Nitinol Surfaces in Simulated Body Fluids	31
Corrosion of Dental Implants Made of Titanium Alloy Connected to Stainless Steel	31
Demonstration of a Tribo-corrosion Model by Using Single Asperity Tribo-corrosion test on CoCrMo Alloy	31
Electrochemical Characterization of Titanium Alloys for Dental Implants	31
Performance of an Anti-Microbial Copper-Base Alloy for High-touch Surfaces	31
Selective Dissolution of β -Phase in Ti-6Al-4V in Presence of Inflammatory Species	31
Synergistic Effects of Bacterial Contamination and Citric Acid Detoxification on Titanium Surface Oxide	31
The Effect of Decontamination Solution on Implant Grade Ti6Al4V and CoCrMo	31
Concrete and Architecture - Research in Progress - Day 1	
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures	46
Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Concrete	46
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete	46
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown	46
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides	46
Pitting of Carbon Steel in Synthetic Concrete Pore Solution	46
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode	47
Towards a Physically Significant Model of the Impedance of Steel in Concrete	47
Training of Non-Destructive Detection of Reinforcement Corrosion	47
Concrete and Architecture - Research in Progress - Day 2	61
Effect of Waste Clay from a Polyol Production Process as a partial Substitute for the Cement in Reinforced Concrete	61
General Corrosion of Carbon Steel in Synthetic Concrete Pore Solution	62
Generic Relations Between Degree Of Saturation Of Concrete, Resistivity And Corrosion Rate	61
Next Generation Reinforced Concrete Corrosion Modeling with Interdependent Initiation and Propagation Stages	61
Smart Controlled Release Corrosion Inhibitors for Reinforced Concrete	62
The Effect of Zinc Aluminum Layered Double Hydroxide Intercalated With NO ₂ -(ZnAl-NO ₂ -Ldh) on the Corrosion Protection of Reinforced Concrete	62
Marine Corrosion - Research in Progress	
A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions	38
Comparison of a Novel Cerium-based Corrosion Inhibitor with Commercially Available Inhibition Additives	38
Corrosion Behavior and Galvanic Compatibility of Selected Materials in Natural Seawater	38
Cyclic vs. Non-Cyclic Accelerated Corrosion Methods - a Comparative Study	38
Effect of V Content on Corrosion Behavior and Hardness of High-Energy Ball Milled AA5083	38
Galvanic Corrosion of A231b Ultrasonically-Welded with Bare And Zn-Coated Steels	38
Hydration Testing of Developed Corrosion Resistant Topcoats for U.S. Marine Corps Ground Vehicles	38
Modeling of MgRP Protection Considering Chemical Inhibition, Electrochemistry, and Mass Transport	38
Sea Spray Aerosol Assessment of Atmospheric Corrosion in a Marine Environment	38
Sustainable High-Performance Protective Coatings for Aggressive Corrosion Conditions	38
Pits, Cracks and Crevices - Research in Progress - Day 1	55
Role of Sustainability - Research in Progress	59
Applying Machine Learning to Determine the Corrosion Resistance of Alloys	59
Climate Change Corrosion and Integrity Management	59
Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys	59
Corrosion and Fatigue of U.S. Offshore Wind Foundations	59
Corrosion Management and Materials Selection in "Green Building"	59
Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel	59
Corrosion Phenomena Associated with Different Common Food Chemicals Stored in Tinplate Cans with BPA-free Coating	59
Corrosion Product Analysis on the Surface of Bio-Oil-Exposed Alloys	59
Corrosion Studies of Ferrous Alloys in Pine-Derived Bio-Oil and Heavy Fuel Oil Blends	59
Green Inhibitors in Corrosion Control: Non-chromium Conversion Coatings for Aluminium Alloys	59
Impact of System Design on Insulation Drying Time after Water Ingress	59
Innovative Routes for the Fabrication of Multifunctional Epoxy Coatings with Improved Barrier, pH Responsive Self-Healing and Antimicrobial Functionalities	59
Investigating Climatic Influence on Degradation of Cartridge Brass	59
Longitudinal Modeling of Phase Behavior and Implications for Downhole Corrosion	59
Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System	59
Tracer and Electronic Tag Impregnated Solids with Tailored and Accelerated Corrosion for Sensing / Characterization and Sustainability	59
Understanding the Impact of Insulation Chemistry on Surface Corrosion to Develop More Robust Insulation Systems that Promote Sustainability	59
Research Topical Symposium	
Technical Program, Symposia	
Emergent Materials - Research Topical Symposium	65
Corrosion Characteristics of 316L Manufactured by Selective Laser Melting	65
Corrosion Resistant Nanostructured Eutectic High Entropy Alloy	66
Design of Low Cost, Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance	66
Dissolvable Supports for 3D Printed Copper and GRCo Alloys	66

Evaluating Corrosion Behavior of Additively Manufactured Al-10 wt. %Si-0.3 wt. %Mg Alloy for Automotive Applications.....	65
Hot Salt Stress Corrosion Cracking and Electrochemical Corrosion Behaviour of Additively Manufactured Ti-6Al-4V.....	66
Hydrogen Trapping and Transport Behavior in Additively Manufactured Stainless Steels.....	65
ICME Design of Corrosion Resistant HEA and AM Materials.....	66
Localized Corrosion of Additively Manufactured Stainless Steels.....	65
On the Dynamic Passivity of a Low Cost and Lightweight Compositionally Complex Alloy.....	66
Passivation Phenomena of Compositionally Complex Alloy Ni38Fe20Cr22Mn10Co10 and the Nature of its Electrochemical Oxide.....	66
Sensitization and Carbide Formation in the Complex Microstructure by Laser Additive Manufacturing.....	65
Right to Deny or Remove	
General Information.....	5
Role of Sustainability - Research in Progress	
Technical Program, Symposia	
Research in Progress	
Applying Machine Learning to Determine the Corrosion Resistance of Alloys.....	59
Climate Change Corrosion and Integrity Management.....	59
Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys.....	59
Corrosion and Fatigue of U.S. Offshore Wind Foundations.....	59
Corrosion Management and Materials Selection in "Green Building".....	59
Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel.....	59
Corrosion Phenomena Associated with Different Common Food Chemicals Stored in Tinplate Cans with BPA-free Coating.....	59
Corrosion Product Analysis on the Surface of Bio-Oil Exposed Alloys.....	59
Corrosion Studies of Ferrous Alloys in Pine-Derived Bio-Oil and Heavy Fuel Oil Blends.....	59
Green Inhibitors in Corrosion Control: Non-chromium Conversion coatings for Aluminium alloys.....	59
Impact of System Design on Insulation Drying Time after Water Ingress.....	59
Innovative Routes for the Fabrication of Multifunctional Epoxy Coatings with Improved Barrier, pH Responsive Self-Healing and Antimicrobial Functionalities.....	59
Investigating Climatic Influence on Degradation of Cartridge Brass.....	59
Longitudinal Modeling of Phase Behavior and Implications for Downhole Corrosion.....	59
Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System.....	59
Tracer and Electronic Tag Impregnated Solids with Tailored and Accelerated Corrosion for Sensing / Characterization and Sustainability.....	59
Understanding the Impact of Insulation Chemistry on Surface Corrosion to Develop More Robust Insulation Systems that Promote Sustainability.....	59
S	
Section Officer Meeting on Elections	
Meetings, Other.....	113
Selecting the Right Surface Preparation for Performance	
What's New at CORROSION 2020.....	12
Selecting the Right Surface Preparation for Performance	
Technical Program, Forums.....	78
Coatings and Linings.....	78
Shifting the Paradigm of Protective Materials Design Via Self-Healing Functionality	
Corrosive Chronicles and <i>MP</i> Innovation Theater	
Coatings and Linings.....	82
Shuttle Service	
General Information.....	4
Shuttle Transportation Desk	
General Information.....	7
Social Media	
General Information.....	5
Solid Particle Erosion and Erosion-Corrosion	
Technical Program, Symposia	
Erosion-Corrosion	
Adhesion of Corrosion Product Layers Formed in Dewing Conditions.....	42
A Discussion on Modeling Abrasive Wear in Slurry Systems.....	42
A Review of Various Guidelines for Predicting Solid Particle Erosion with Computational Fluid Dynamics Codes.....	42
Computational Study on the Erosive Surface Degradation in Generic Pipe Conduits Used in Internal Combustion Engine Cooling Systems.....	42
Corrosion and Erosion Studies of Ceramic and Metal Matrix Composites.....	42
The Effects of Distance Between Two Elbows in Series on Erosion of the Second Elbow.....	42
The Effects of Particle Size on Solid Particle Erosion of Elbows in Low Liquid and Annular Multiphase Flows.....	42
Sour Corrosion	
Technical Program, Symposia	
Corrosion in Sweet and Slightly Sour Production Conditions - Day 1.....	63
A New System of Corrosion Flow Loops and Some Experimental Results.....	63
Carbon Steel Corrosion on Production Environment, Evaluating the Impact of CO ₂ Partial Pressure, BSW and Oil Characteristics on Tubular Life Extend.....	63
Correlation Between Concentration of Maximum Adsorption on Platinum and CO ₂ Corrosion Inhibition Efficiency of Nitrogen Heterocyclic Aromatic Compound.....	63
Corrosion of Mild Steel in Concentrated Monoethylene Glycol (MEG).....	63
Corrosion of Steel Armour Wires in Flexible Pipes - Effect of Small Amounts of H ₂ S.....	64
Effect of Aggressive Substance on the Nature of Corrosion Scales Formation on Super 13Cr Stainless Steel in Formate Completion Fluid.....	63
Effect of CaCO ₃ Aqueous Saturation on CO ₂ Corrosion of Mild Steel.....	64
Effect of Salt Concentration on Corrosion Rate of Pipeline Steel at Low Temperature in Acidic Aqueous Environments.....	64
Electrochemical Investigation into the Influence of Monoethylene Glycol on CO ₂ Corrosion in Presence of Acetic Acid.....	64
Exploring High Pressure CO ₂ Annular Corrosion in Flexible Pipes.....	64
Exposure of Various Polymer-lined Pipe Sections to a Sour Liquid Hydrocarbon Fluid at a Maximum Service Temperature: Methodology and Observations.....	64
Failure Studies of Pipe Fittings Retrieved from a Shale Production Field.....	64
Flowline Material Performance and Challenges in Oil and Gas Sweet and Sour Environment.....	64
Internal Corrosion in Tank Vapor Gas Piping - Case Study.....	64
Precipitation Kinetics of FeCO ₃ in Non-Ideal Solutions.....	64
Role of Acetic Acid on the Kinetics and Mechanism of Carbon Steel Dissolution Under CO ₂ Top of Line Corrosion.....	64
Corrosion in Sweet and Slightly Sour Production Conditions - Day 2.....	76
The Combined Effect of O ₂ and CO ₂ on Corrosion of Flexible Armour Wires.....	76
The Effect of Minor Oxygen Ingress on Initiation and Propagation of Localized Corrosion of X65 Mild Steel in Marginally Sour Environments.....	76
Oil and Gas Production	
Corrosion and Scale Formation at Carbon Steel in Sour Aqueous Solution at Elevated Temperature.....	43
Corrosion Behaviour of 316L Stainless Steel in Highly Sour Environment.....	42
Effect of Cr and Mo on Corrosion Behavior of High Strength Steel in CO ₂ /H ₂ S Environments.....	42
Effect of Iron Carbide on Iron Sulfide Layer Protectiveness.....	43
Fe, O ₂ , FeCO ₃ , or FeS - Which One Will Prevail at High Temperature in CO ₂ /H ₂ S Environments?.....	43
Fluid Governing Mechanics and its effect on H ₂ S Scavenger Tower Design.....	43
New, Non-corrosive, Non-Nitrogen containing H ₂ S Scavenger For Use in Predominately Oil and Gas Systems.....	43
Sour Under-Deposit Corrosion with Different Iron Sulfides.....	42
Study On Elemental Sulfur Formation From Black Powder Deposits.....	43
The Role of Acid Gas Partial Pressure on Corrosion Processes in Oil and Gas Production Systems.....	42
Speaker Ready Room	
General Information.....	6
Speakers Breakfast	
Meetings, Other.....	112, 113
Special Lectures	
Featured Speaker.....	18
Frank Newman Speller Award Lecture.....	19
Keynote Session.....	17
Plenary Lecture.....	18
Willis Rodney Whitney Award Lecture.....	19
Speller Lecture	
Meetings, Other.....	113
Standards Committee Informational Meeting	
Meetings, Administrative.....	111
Technical Committee Information.....	97
Standards Committee Informational Meetings	
Meetings, Other.....	112
Standards Committee Officer Orientation	
Meetings, Other.....	113
Student Poster Display	
Exhibition.....	123
Student Poster Orientation	
Meetings, Other.....	112
Student Poster Session	
Harvey Herro Category	
A Comparative Study on the Corrosion Behavior of Anodic Oxide Films on Aerospace Alloys during Electrochemical Impedance Spectroscopy, Salt Spray and Immersion Tests.....	89
A Novel Electrode Material for Supercapacitors.....	89
Calculation of Surface Speciation on Mild Steel under Applied Polarization.....	89
Cathodic Poisoning Effect on Corrosion Behavior of High-Energy Ball Milled Mg-10Al Alloy by Addition of GE.....	89
Cathodic Reduction Kinetics on Stainless Steel Surfaces in Corrosive Evaporated Environments.....	90
Chlorine and Sulphur Induced High Temperature Corrosion in a Thermal Cracking Process of Waste Plastics.....	90
Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys.....	90
Corrosion Behavior of Alloys in Purified Molten Salts.....	90
Corrosion Behavior of Metallic Alloys in Novel Molten Chlorides for Concentrated Solar Power Applications.....	90
Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel.....	90
Corrosion Resistant Nanostructured Eutectic High Entropy Alloy.....	90
Corrosion Testing of Additively Manufactured Ti-6Al-4V With Different Print Parameters.....	90
Designing Corrosion Inhibitors with High Aqueous Solubility and Low Tendency Towards Micellization: A Molecular Dynamics Study.....	90
Design of Low Cost Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance.....	90
Development of a Low-Powered Wireless Sensor Network of Conductivity Probes to Detect the Presence of Fluids That Cause Internal Pipeline Corrosion.....	90
Effect of Activators on Pack Carburization of a Low Carbon Steel.....	90
Effect of pH on Additively Manufactured Biomedical Alloys in Phosphate-Buffered Saline.....	90
Effect of Poly(aniline)/Chitosan Composite on Corrosion Behavior of Nanostructured Titanium in Hanks' Solution.....	90
Electrodeposition of Metallic Films on 3D Printed Polymer Foams as Electrodes for Water Splitting.....	90
Elucidating the Effect of Feedstock Powder Morphology on the Corrosion of Selective Laser Sintered Additively Manufactured 316L Stainless Steel.....	90
Galvanic Corrosion Investigation of Structural Transition Joints.....	90
Green Smart Anti-Corrosion Coating.....	90
High Temperature Oxidation Resistance of Additively Manufactured Ni-Based Superalloys.....	90
Influence of Build Orientation and Surface Finish on the Corrosion of Additively Manufactured 316L.....	90
Influence of Graphene Enrichment on Erosion-Corrosion and Cracking Behaviors of Electroless Ni-P Composite Coatings.....	90
Localized Corrosion Mechanism of Heat Treatable AA6xxx at Anodic Potentials During Galvanic Coupling With CFRP in Automobile Applications.....	90
Manganese-Cobalt Coatings for Ferritic Stainless Steels.....	90
Microstructure and Corrosion Behavior of 3D-Printing Maraging Steel and the Effects of Heat Treatment.....	90
Modeling of the Hydrogen Embrittlement of Zn-Ni Coated High Strength Steel under Atmospheric and Immersion Conditions.....	90
Pack Aluminizing of UNS S30400 Stainless Steel.....	90
Pitting Corrosion Behavior of Ni38Fe20Cr/MnCo42-x High Entropy Alloys.....	91
Pitting of Austenitic Stainless Steel 316L Under Simulated Atmospheric Exposure for Spent Nuclear Fuel Storage Dry Canister Applications.....	91
Replacing Ruthenium in a Corrosion-Resistant High Entropy Alloy With Commodity Elements.....	91
Resistivity, Sorptivity & Porosity of Concretes Containing Supplementary Cementitious Materials.....	91
Separation of Corrosive and Non-corrosive Sulfur Compounds from Vacuum Gas Oils by Ligand Exchange Chromatography.....	91
Stress Corrosion Cracking of 316L Stainless Steel Produced by Selective Laser Melting.....	91
Surface Modification of AZ31 Magnesium Alloy for High Corrosion Resistance by Reactive Friction Stir Processing.....	91
The Corrosion of Copper in the Chloride and Sulfide-Containing Environment Anticipated in a Deep Geologic Repository for the Permanent Disposal of Used Nuclear Fuel.....	91
The Effect of Build Orientation on the Corrosion Behavior of Selective Laser Melted UNS 30403.....	91
The Effect of Substrate Oxygen Content on the Short-Term Corrosion Behaviour of Copper in Aqueous Sulfide Solutions.....	91
The Effects of Nitinol Purity and Surface Finish on Corrosion Susceptibility.....	91
The Relationship Between Microstructure and Galvanic Corrosion of Low Alloy Steel A508 and 309L/308L Austenitic Stainless Steel Dissimilar Metals Weld.....	91
Thermal Cycling of Stainless Steel 316 with PCM 638: A Corrosion Study.....	91
Marcel Pourbaix Category	
Anticorrosion Performance of Hybrid Smart Release Bionanocomposite Coatings on Aluminium Alloy 6061.....	91
A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential Non-Iterative Approach.....	91
Application of a Synthetic Antimicrobial Peptide in Inhibiting Corrosion by a Sulfate-Reducing Bacterium.....	91
Application of Electrochemical Impedance Spectroscopy to Identify Degradation of Antifouling Coatings on Steel in Marine Environments.....	91
A Smart Coating Embedded with pH-Responsive Microcapsules Containing a Corrosion Inhibiting Agent.....	91
Characterization of Early-Stage Oxide Films on Metallic Alloys.....	91
Chemical Waves in Corrosion - Rethinking Interfacial Transport Processes.....	91
Completing the Circuit: A Novel Mechanism of Microbially-Induced Carbon Steel Corrosion at an Aqueous/Non-Aqueous Interface.....	91
Corrosion Behavior of In-Situ Consolidated Nanocrystalline Al-2at.%V Alloy.....	91
Corrosion in Trace H ₂ S in CO ₂	91
Corrosion Susceptibility of an Additively Manufactured Al-Si-Mg Alloy.....	91
Critical Literature Review of Batch Inhibition Applied for TLC Mitigation.....	91
Critical Literature Review of Fe3C Effect on Corrosion Inhibitor Performance.....	91
Customisation of Implant Materials for Skeletogenesis: From Corrosion to Cell Culture.....	91
Detection of Corrosion Using Millimeter Waves.....	92
D-Limonene Enhancement of THPS Biocide Treatment of Biofilm and Biocorrosion.....	92
Effectiveness of Strontium Zinc Phosphosilicate Inhibitor Pigment on the Active Protection of AA2198-T851 Aluminium Alloy in Sodium Chloride Solution.....	92
Effect of Chloride Droplet Size on Pitting Corrosion of Type 304 Stainless Steel.....	92
Effects of Quenching Media and Addition of Boron and Titanium Nano Particles Powder on Corrosion Resistance of Al-7Si-3Mg Alloy.....	92
Evaluation of Corrosion Behavior of Silicate Coated AZ31 Mg Alloy in Earle's Solution.....	92
Evaluation of Hydrogen Evolution Reaction in Aqueous Solutions Containing Dissolved CO ₂ in High Pressures.....	92
Evaluation of Techniques for Determining Critical Micelle Concentration of Corrosion Inhibitors.....	92

Subject Index

Exploring Caesalpinia Coriaria as a Green Anodizing Additive for Aerospace Applications.....	92
Formation Modes of Corrosion Product Layers in Aqueous CO ₂ Environments.....	92
Formulation of Coating Systems with Reflective Cool Pigments.....	92
How Entrapment of Oil Molecules in Adsorbed Corrosion Inhibitors Improves Film Properties-A Computational Study.....	92
Influence of Hard TiN Inclusions of Strained Supermartensitic Stainless Steel (SMSS) on the Nucleation of Pitting Corrosion.....	92
Magnetite Nanoparticles Accelerate Microbiologically Influenced Corrosion Caused by <i>Desulfovibrio vulgaris</i> Against Carbon Steel.....	92
Microbiologically Induced Corrosion of 2205 Duplex Stainless Steel.....	92
Microbiologically Induced Corrosion of Open-Cell Aluminum Foams.....	92
Modeling Uniform CO ₂ Corrosion of Mild Steel in High Salinity Environments.....	92
New Green Anodizing Processes.....	92
Pitting Initiation on X65 Mild Steel in Marginally Sour Environments due to Trace Amount of Oxygen Ingress.....	92
Quartz Crystal Microbalance: Working Principles and Relevance for Quantifying Adsorption Kinetics of Corrosion Inhibitors.....	92
Solvent-Free Coating Using MACO Bio-Based Reactive Diluent.....	92
Study of Corrosion Inhibition Persistence.....	92
Study on the Corrosion Protection of ZnO/ZnO/TiO ₂ Nanocomposite Coated Stainless Steel Prepared by Using Radio Frequency Sputtered Ultra-Thin Coating Method.....	92
Testing the Effectiveness of Reflective Cool Pigments.....	92
The Effect of Coating Deficiencies in the Aluminized and Galvanized Steel Pipes.....	92
The Effects of H ₂ S Adsorption on the Hydrogen Permeation in High Strength Low Alloy Carbon Steels.....	92
The Influence of Iron Sulfides on Localized Corrosion of Mild Steel: A Review on the Effect of Experimental Conditions.....	92
The Use of Atomic Emission Spectroelectrochemistry (AESEC) to Study the Behaviour of Nickel Alloys Under Industrially-Relevant Conditions.....	92
Mars Fontana Category	
Accelerated Corrosion Test to Determine Grout Robustness for Post-Tensioned Bridges.....	88
AC Induced Cracking Susceptibility of Low Carbon Steels Under Cathodic Protection.....	88
A Laboratory Investigation on the Effect of Chloride Roadway Deicers on the Corrosion of Buried Pipes.....	88
A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions.....	88
Change in Microstructure Hardness and Corrosion Properties of Al-xV Alloy Produced by Different Sintering Temperature Using Spark Plasma Sintering.....	88
Chloride Corrosion Threshold in Reinforced Fly Ash Concrete.....	88
Chloride Diffusion in Alkali Activated Fly Ash.....	88
Corrosion Behavior and Hardness of Mg-xWt% Al (X=5, 10, 15, 20) Alloys Synthesized by High Energy Ball Milling.....	88
Corrosion Behavior of Low-Cost Compositionally Complex Alloys derived from AlFeMnSi via the Phase Separation Approach.....	88
Corrosion Behavior of Metal-Ceramic Composites.....	88
Corrosion Initiation and Propagation of Carbon Steel Rebar Embedded in Binary and Ternary Concrete.....	88
Corrosion Performance of Steel Reinforced Carbonated Calcium Silicate Concrete for Sustainability Applications.....	88
Corrosion under Hot Dilute Acidic Pre-hydrolysis Biorefineries Processes.....	89
Device for Imaging Cross-Section of Post-Tensioned Structural Tendons in the Field.....	88
Early-Stage Oxidation Mechanism of UNS N07214 in Dry and Humid Environments.....	88
Effect of Cr and Mo Alloying Elements on Corrosion of High Strength Low Alloy Steel.....	88
Effects of Nitrite and Nitrate on Chloride-Induced Corrosion of Steel Bar in Simulated Concrete Pore Solutions.....	88
Effects of Solution Parameters and Gamma-Radiolysis on Corrosion Dynamics of Galvanically-Coupled Dissimilar Metals.....	88
Erosion and Corrosion of Al/SiC Metal Matrix Composites.....	88
Failure Analysis of Alloy C-276 Using Modern Characterization Techniques.....	88
Failure Analysis of Deaerator Enclosure & Evaluation of Process Data to Improve MOE.....	88
Field Exposure Corrosion Testing Using Electrochemical Impedance Spectroscopy (EIS)-based Applique Sensors.....	89
Impedance Based Corrosion Sensing with ZnO/PVDF Electrospun Fiber Mats.....	89
Impedance Response Influenced by the Variability of the Random Physical Properties Distribution for Immersed Coating Material.....	89
In Situ Characterization of Zirconium Oxides for Nuclear Fuel Cladding Applications.....	89
Investigation of Localized Corrosion Resistance for Surface Treated Martensitic Stainless Steels.....	89
Lunar Influences on Reinforced Concrete Corrosion.....	89
Measurement of Corrosion Fatigue Crack Growth on AA7085-T7451 in Complex Aerospace Environments.....	89
Modeling of Microbiologically Influenced Corrosion (MIC) for Risk-Based Inspection (RBI) in the Oil and Gas Industry: Screening Assessment.....	89
Numerical Modeling and Experimental Approach to the Local pH Variations in a Carbon Steel/Aluminum-Alloy Galvanic Couple Under Thin Electrolyte Films.....	89
pH-Controlled Release of Corrosion Inhibitors From Colophony Microcapsules Containing Nitrite for Steel Reinforced Concrete.....	89
Prediction of Corrosion Inhibitor Behavior in Oil/Water Flow: A Critical Review.....	89
Quantifying the Propagation Stage of Corrosion Resistant Reinforcing Steel.....	89
Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System.....	89
Reliability-Based Finite Element Analysis of Pipeline Dents Interacting With Corrosion Features.....	89
Sacrificial Anode Cathodic Protection Design for Internal Protection of Pipelines.....	89
SCC Study of 316LN Stainless Steel Rebars in Simulated Concrete Pore Solution Contaminated With Chloride Ions Using Slow Strain Rate Testing.....	89
The Effect of Corrosion Location Relative to Local Stresses on the Fatigue Life of Geometrically-Complex, Galvanically Corroded AA7075-T6.....	89
The Effect of Microstructure on (Localized) Corrosion and Passivity Behaviour of High Strength Steels.....	89
The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on Corrosion Fatigue of AA5456-H116 in 3.5 wt.% NaCl.....	89
Use of Impressed Current for Accelerated Corrosion Testing of Al Alloy Panels.....	89
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 1	
Technical Program, Symposia	
Hydrogen Embrittlement	
A Fracture Mechanics Approach to Characterizing Hydrogen Embrittlement of Fasteners.....	74
A Review of Hydrogen Embrittlement of Nickel-Based Alloys for Oil and Gas Applications.....	74
Development of a Master Curve to Characterize the Susceptibility of Fastener Materials to Hydrogen Embrittlement.....	74
Effect of Different Strength Levels, Coatings and Cathodic Charging Levels on the Hydrogen Embrittlement Resistance of AISI 4340 Bolting Material.....	74
High-Strength Nickel Low Alloy Steels for Oil and Gas Equipment: ASTM A508 Grade 4N Under Cathodic Protection and Simulated Sour Environments.....	74
Hydrogen Embrittlement Susceptibility of Steel Armour Wires for Flexible Pipes.....	74
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2	
Technical Program, Symposia	
Hydrogen Embrittlement	
The Role of Cathodic Protection Simulation in Assessing Hydrogen Embrittlement Risks for CRAs and Other Materials - Subsea Gasket Case.....	77
Technical Program, Symposia	
Hydrogen Embrittlement	
The Role of Cathodic Protection Simulation in Assessing Hydrogen Embrittlement Risks for CRAs and Other Materials - Subsea Gasket Case.....	77
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2	
Technical Program, Symposia	
Hydrogen Embrittlement	
Comparison of Hydrogen Embrittlement Testing Methods of Alloy 718.....	77
Evaluation of HAC Susceptibility in DMWs for Subsea Service under Cathodic Protection.....	77
Heat Treatment and Notch Severity Effects on the Inconel® 718 Susceptibility to Hydrogen Embrittlement Evaluated by the RSL Method.....	77
Influence of the Hardening Phases on the Hydrogen Embrittlement Susceptibility of Ni-Alloys based on UNS N07718.....	77
The Effect of Interactions between Cathodic Protection Potential and Stress Concentration on Hydrogen Embrittlement of Precipitation-Hardened Nickel Alloy.....	77

Supercritical Systems

Technical Program, Symposia	
Corrosion in Supercritical Systems.....	49
Corrosion of 3Cr Low-alloyed Steel in Supercritical CO ₂ Environments.....	49
Corrosion Reactions in Simulated CO ₂ Ship Transport Conditions.....	49
Corrosion Testing in Supercritical CO ₂	49
Effect of H ₂ S on the Corrosion of Mild Steel at HPHPT Condition.....	49
Impact of O ₂ Content on Corrosion Behavior of X65 Mild Steel in Gaseous, Liquid and Supercritical CO ₂ Environments.....	49
Oxidation of Welded Materials in High Temperature Supercritical Carbon Dioxide.....	49
Pitfalls and Artefacts in Corrosion Experiments with Dense Phase CO ₂	49

T

TCC 101 Sessions I and II	
Meetings, Other.....	112
TCC Advisory Committee on Operations	
Meetings, Administrative.....	110
TCC Officer Training	
Meetings, Other.....	113
TCC Planning Committee	
Meetings, Administrative.....	110
TCC Reference Publications Committee	
Meetings, Administrative.....	111
TCC Session I	
Meetings, Administrative.....	110
TCC Session II	
Meetings, Administrative.....	111
Technical Achievement Award	
2020 NACE Association Awards.....	23
Technical and Research Activities Committee (TRAC)	
Meetings, Administrative.....	111
Technical Committee Information	
General NACE International Technical Committees Information.....	97
Standards Committee Information Meeting.....	97
Technical Program, Forums	
A Tour to West Asia and Africa: Corrosion Management Challenges and Opportunities in the Most Fascinating Area in the World.....	80
Barrier and Anti-Corrosion Properties of Graphene Enhanced Coatings.....	78
Battle Against Corrosion in Latin America.....	79
Coatings and Linings	
A Tour to West Asia and Africa: Corrosion Management Challenges and Opportunities in the Most Fascinating Area in the World.....	80
Barrier and Anti-Corrosion Properties of Graphene Enhanced Coatings.....	78
Premature Coating Failures - Common and Uncommon Causes and How to Investigate Coating Failures When They Occur.....	79
Selecting the Right Surface Preparation for Performance.....	78
Thermal and Cold Spray Coatings - Processes, Applications and Challenges.....	80
What Does a Facility Owner Look for in a Quality Coating Contractor?.....	80
Corrosion Management	
Battle Against Corrosion in Latin America.....	79
The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation.....	78
Corrosion Under Insulation: Materials, Fundamental, Identification and Mitigation.....	80
CUI (Corrosion Under Insulation)	
Corrosion Under Insulation: Materials, Fundamental, Identification and Mitigation.....	80
IMPACT PLUS: A Blueprint for Improved Corrosion Management Practices and Sustainability.....	80
Leadership Training	
Leadership: Activate the Leader Within.....	78
Be a Leader.....	78
Establish Your Brand.....	78
Everyone At The Table (Diversity and Inclusion).....	78
Seven Enduring Truths of Knowledge Management Workshop.....	78
NACE Water Forum: Sharing Best Practices in the Water and Wastewater Industries.....	78
Pipelines, Tanks, and Well Casings	
PHMSA Pipeline Safety Forum.....	79
Premature Coating Failures - Common and Uncommon Causes and How to Investigate Coating Failures When They Occur.....	79
Selecting the Right Surface Preparation for Performance.....	78
Thermal and Cold Spray Coatings - Processes, Applications and Challenges.....	80
The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation.....	78
Water and Wastewater	
NACE Water Forum: Sharing Best Practices in the Water and Wastewater Industries.....	78
WCO Forum - Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions.....	79
What Does a Facility Owner Look for in a Quality Coating Contractor?.....	80
World Corrosion Organization	
WCO Forum - Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions.....	79
Technical Program, Symposia	
Additive Manufactured Materials	
Corrosion of Additively Manufactured Materials.....	51
Correlation Between Microstructure and Corrosion Resistance for Am Products in Stainless Steel and Light Metals.....	51
Corrosion and Mechanical Properties of Additively Manufactured CoCrFeNi-Based Multi-Principal Element Alloy.....	51
Corrosion Behavior of 304L Stainless Steel Produced by Laser Powder Bed Fusion.....	51
Corrosion Behavior of Ti6Al4V Alloy Produced by LPBF for Biomedical Applications.....	51
Corrosion Studies of Additive Manufactured Alpha-Beta Ti Alloys.....	51
Electrochemical Testing of Additive Manufactured Ti6Al4V and NiTi Materials in a Biological Fluid Environment.....	51
Influence of the Surface Condition on the Pitting and SCC Resistance of Alloy UNS N07718 Produced via Selective Laser Melting.....	51
Optimization of Filler Metals and Process Parameters for the Waam Fabrication Components from Corrosion Resistant Ni-Base Alloys.....	51
Pitting and Crevice Corrosion Resistance of a Direct Metal Laser Sintered (DMLS) 316L Stainless Steel in Artificial Seawater.....	51
Three-Body Tribocorrosion Behaviour of Additively Manufactured 316L Stainless Steel.....	51
Anodic and Cathodic Protection	
Anodic and Cathodic Protection.....	45
Cathodic Polarization Characteristics of Carbon Steel in Alberta Soils.....	45
Cathodic Protection of Structures in a Confined Area Using Remote Anodes.....	45
Challenging the European Standard Nf En 50162 Regarding the Evaluation of Corrosion Risk by DC Stray Currents.....	45
Circuit Resistance Determination in Impressed Current Cathodic Protection System for Above Grade Storage Tank Bottoms Using A Grid System.....	45
Coupon Interpretation in Multi-Line Corridors.....	45
Design and Operation of Cathodic Protection System for Duplex Stainless-Steel Pipeline: Protection Criteria and Stray Current Management.....	45
FEM Simulation of New Generation of Buried Vessels	
Cathodic Protection.....	45
Intelligent Remote Monitoring and Control System of Cathodic Protection for Long-distance Pipelines.....	45
Mass Transit Track-To-Earth Resistance Measurements.....	45
Metallurgical Testing of Drawn Arc Silver Braze (DASB) and Thermit Welded Connections for Cathodic Protection.....	45
Oxygen Evolution from the MMO Anode Cathodic Protection System and its Effect on the Corrosion of the Soil-Side Bottom Plate of an Aboveground Storage Tank.....	45

Subject Index

Stray Current Interference Simulation and Mitigation Associated with Light Rail Transit (LRT) Systems and Adjacent Metallic Pipelines – A Case Study.....	45
The Effect of Inductive Loading on Rectifier Interruption.....	45
The Grid System for AST Bottom Protection: 30 Years Later.....	45
Use of Solid State Decouplers to Eliminate Stray Current Corrosion in Isolation Joints.....	45
Atmospheric Corrosion	
Combined-Effects Material Degradation under Atmospheric Conditions.....	32
Acidification of the electrolyte in the Carbon Steel/Aluminum Alloys galvanic couple: Modeling and experimental study.....	32
A Review of Combined Effects Testing in Corrosion Science: The Contribution of Mechanical and Environmental Stress Factors.....	32
Atmospheric Corrosion: GIS Corrosion Mapping and Materials Selection for Electrical Transmission Lines and Solar Systems.....	32
Atmospheric Corrosion Through the Eyes of a Computer Simulation.....	32
Continuous Measurement of Aerospace Coating Degradation due to Environmental and Mechanical Stressors.....	32
Corrosion Resistance by Design.....	32
Corrosivity Study of De-Icing Salts.....	32
Methods to Evaluate Atmospheric Coating Degradation to Wet-Dry Cycles using Real-Time Monitoring.....	32
Mitigation of Flange Face Corrosion during Plant Construction.....	32
Physico-Chemical Characterization of Corrosion Scales in Braking Systems.....	32
Simultaneous Fatigue and Corrosion of Joined Materials for Automotive Applications.....	32
Using a Computational Galvanic Model in a Fracture Mechanics Framework to Improve Material Degradation Prediction.....	32
Biomedical Materials	
Research in Progress	
The Effects of Purity and Surface Finish on Corrosion and Oxide Layer Composition of Nitinol.....	31
Catholic Protection, Offshore	
Offshore Catholic Protection - Case Studies of New or Novel Designs or Subsea Inspection Techniques.....	39
Can Anodes Interfere when they are Mounted on Electrically Separate Structures?.....	39
Catholic Protection Within Narrow Gaps of Offshore Wind Turbine Foundations.....	39
If Sacrificial Cathodic Protection Works Inside a Tank, Why Won't it Work in a Pipe?.....	39
Modelling and Analysis of Electrical Field Gradients Over Offshore Pipelines with Cathodic Protection – Impact of Drain to Wells.....	39
Retrofit Cathodic Protection for a Norwegian FPSO: New Challenges and Solutions.....	39
Catholic Protection, Reinforced Concrete	
Catholic Protection of Reinforced Concrete and Steel Frame Structures: A Retrospective on Technology.....	61
Burlington Skyway Electrochemical Chloride Extraction - 30 Years Later.....	61
Exploring Cathodic Protection of Strands In Post-Tensioned Tendons.....	61
Field Application of Cathodic Prevention on a Marine Viaduct.....	61
Forensic Evaluation of Long-Term Galvanic Cathodic Protection of Bridge Piling in a Marine Environment.....	61
Hot-Dip Galvanized Rebar Performance in Bridge Decks.....	61
Long Term (20 Years) In-Service Performance of Concrete ICCP of Marine Wharf Structures in Australia.....	61
Projection of Onset and Subsequent Failure Rate of Bridge Post-Tensioned Tendons Considering Time Dependence of Stress.....	61
Protecting Reinforced Concrete Structures with Thermal Sprayed Zinc Anodes.....	61
Test Methods to Identify Robustness of Grout Materials to Resist Corrosion.....	61
The Determination of the Chloride Threshold of Stainless Steel in Concrete – A Review.....	61
Coatings and Linings	
Nanomaterials and Coatings Technologies.....	54
Corrosion Phenomena in Braking Systems.....	55
Corrosion Properties of Anodized Mg Alloys by Micro-Arc Oxidation (MAO).....	55
Differentiation of Coating Performance for Corrosion Protection by EIS.....	55
Hexacoaniferate-Intercalated Layered Double Hydroxides as Nano-Additives for Detection of Early-Stage Corrosion of Steel.....	54
High-Performance Anti-Corrosion Coatings Based on the Inclusion of Nanomaterials.....	54
Lithium Salts as Active Corrosion Inhibitors for Aluminum Substrates.....	54
Preparation & Tribological Characterization of Graphene Enriched Ni-P Coatings on X70 Pipeline Steel.....	54
Range of Nanostructured Materials as a Toolbox for Incorporation of New Functionalities in Protective Coatings.....	54
Silica Nanocapsules Based on Gemini Surfactant as Environmentally Friendly Nanocontainers for Corrosion Protection in Seawater.....	54
Oil & Gas Coating Technology - day 1.....	69
Comparison of Offshore Maintenance Coating Performance Using Two Industry Standards – NACE SP 0108 and ISO 12944-9.....	69
Corrosion Behavior of Weldment With and Without Coatings.....	70
Cut-Back Edge Cathodic Disbondment Susceptibility of Exposed Bare Field Joints in Offshore Pipelines.....	69
Durability of Fluoropolymer Top Coat Systems Related to Standards.....	69
Effect of Surface Roughness on Cathodic Delamination and Corrosion Creep.....	69
Isoocyanate Free Water Repellent Top Coat for Offshore Corrosion Protection.....	69
Modified Cathodic Disbondment Test Methods for Comparing the Performance of HPPC and FBE Coatings.....	69
Multi-Functional New Coating System for Extending the Life Time of Onshore and Offshore Infrastructure.....	69
Overview of Latest Advances in Measuring and Understanding Cathodic Protection Current Permeability by Organic Coatings.....	69
Properties of Splash Zone and Immersion Coatings.....	69
The Importance of Surface Preparation Method on the Corrosion Resistance and Mechanical Properties of Zinc Rich Primers.....	69
The Influence of Corrosion Preventing Inhibitors on the Performance of Corrosion Protective Coatings.....	69
Oil & Gas Coating Technology - Day 2.....	76
Comparative Evaluation of Four Viscoelastic Materials for Coating Patch Repairs.....	76
Diamond Like Carbon Coating for Long IDs of Drill Collars.....	76
Qualification and Application Programs of Linings for Hydrocarbon Aboveground Storage Tanks.....	76
Thermal and Cold Spray Coatings	
Corrosion Resistance and Deterioration Behavior of Overlapping Layer Between Thermal Spray Coating and Heavy Duty Coating.....	43
Determination of the Corrosion Rate of Thermally Sprayed Aluminum (TSA) in Simulated Marine Service.....	43
Development of Novel Coating Systems for Mitigating Corrosion of Offshore Wind Turbines.....	43
Hot Corrosion Behavior of Suspension Plasma Sprayed Yttria Stabilized Zirconia Thermal Barrier Coating.....	43
Interlayer Coatings on Graphite for Improving the Durability of Plasma Sprayed Yttria Coating for High-Temperature Applications.....	43
Prediction of Thermal Spray Aluminium Coatings Performance in Marine Environments by Combination of Laboratory and Field Tests.....	43
Protecting Steel Structures from Corrosion with Thermal Sprayed Zinc Duplex Coatings.....	43
The Influence of Temperature on the Performance of Sacrificial Metallic Coatings Operating in Seawater.....	43
Concrete	
Concrete and Architecture - Research in Progress - Day 1.....	46
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures.....	47
Catholic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete.....	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures.....	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps.....	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion.....	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures.....	46
Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion.....	46
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete.....	46
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown.....	46
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides.....	46
Pitting of Carbon Steel in Synthetic Concrete Pore Solution.....	46
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode.....	47
Towards a Physically Significant Model of the Impedance of Steel in Concrete.....	47
Training of Non-Destructive Detection of Reinforcement Corrosion.....	47
Concrete and Architecture - Research in Progress - Day 1.....	46
Concrete	
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode.....	47
Concrete and Architecture - Research in Progress - Day 2	
Research in Progress	
Effect of Waste Clay from a Polylol Production Process as a partial Substitute for the Cement in Reinforced Concrete.....	61
Next Generation Reinforced Concrete Corrosion Modeling with Interdependent Initiation and Propagation Stages.....	61
Corrosion Inhibitors	
Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP).....	53
Comparison of VCI and CP Performance Using Floor Scan Data from Several 10-Year Old AST Floors.....	53
Efficiency of Organic Compounds as VCIs for the Packaging of Carbon Steel Engine Elements in Automotive.....	53
Evaluating Corrosion Inhibitors for Hydrostatic Testing.....	53
Evaluation of Mono-Layered Imidazole Based Adsorbed Material for Corrosion Control of Mild Steel in Acid Chloride Environment with Hypothetical Evidence.....	53
Improving the Durability of Packaging Materials Using Vapor Phase Corrosion Inhibitors.....	53
Protect and Prolong - A New Multi-functional Diesel Fuel Additive.....	53
Screening and Studying Novel Corrosion Inhibitors in Solution by High-Throughput Techniques.....	53
Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation.....	66
Smoke Corrosivity Evaluation for Data Center Components.....	66
Progress in Laboratory Testing of Corrosion Inhibitors for Oil Field Applications.....	39
An Improved Methodology Used to Assess the Performance of Organic Corrosion Inhibitors.....	39
Can Micelles be Used to Expedite and Enhance Lab Qualification Testing?.....	39
Evaluation of N-Furfuryl Nitrona Molecule as a Corrosion Inhibitor for Carbon Steel Using EIS.....	39
High Pressure Corrosion Testing: A Distressing Case History with a Successful Resolution.....	39
Impact of CO ₂ Partial Pressure on Electrochemical Measurements at High Temperatures.....	39
Investigation of an Organic Inhibitor on Mild Steel by In Situ Atomic Force Microscopy Coupled with Electrochemical Measurements.....	39
Nanotechnology Based Field Method for Detection and Monitoring Corrosion Inhibitors.....	39
Surface Preparation of Test Specimens and Its Impact on Localized Corrosion.....	39
Under Deposit Corrosion Testing under Inhibited and pH Stabilized Conditions.....	39
Corrosion Management	
Corrosion Management - Implementation & Progress - Day 1.....	34
Chemical & Enhanced Preservation Methodologies – Endeavors to Maintain The Integrity of Joint Operation (JO) Surface Facilities.....	34
Corrosion and Protection Challenges and Opportunities in the Frame of a Circular Economy.....	34
Corrosion Effects of Municipal Anti-Icing and De-Icing Programs.....	34
Corrosion Management as Part of an Integrated Management System.....	34
Corrosion Management Framework (CMF) and Challenges for Implementation in High Sour and High Pressure Pipelines.....	34
Corrosion Management Implementation in a New Subsea Development Based on Innovative Subsea Corrosion Monitoring in the Caspian Region.....	34
Corrosion Management - The Smartest Tool in the Box.....	34
Corrosion Risk Assessment of Aging Plant in the Down Stream Petroleum Sector.....	34
Fit-for-Purpose Hydrogen Sulfide Management for Mixed-Production.....	34
Neighborhood Watch - Right Step Towards Asset Integrity.....	34
O&G Asset Integrity Assessment with Increase in Water Cut.....	34
The Role of the Corrosion Engineer in Contributing Towards the United Nations Sustainable Development Goals.....	34
Three-Step Corrosion Management Model.....	34
Corrosion Management - Implementation & Progress - Day 2.....	50
Estimating the Financial Risk Reductions Associated with Cathodic Protection Programs.....	50
Holding Water – A Corrosion Management Program in a Vast Seawater Injection System.....	50
Importance of Corrosion Monitoring to Ensure Effective Corrosion Management of Carbon Steel Pipelines.....	50
Managing a Full Life Cycle Digital Coating/FM Program.....	50
On-site Corrosion Inhibitor Detection for Improved Corrosion Management.....	50
The Everglades as Host to Zinc Coated Iron Pipe.....	50
Update for Expected Service Life and Cost Considerations for Maintenance and New Construction Protective Coating Work.....	50
Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management, The Aggregating and Standardizing Disjointed Integrity Management Data.....	74
Artificial Neural Networks on Predicting Internal Localized Corrosion.....	74
Challenges in Developing, Deploying, and Transforming Online Corrosion Management Dashboards.....	74
Corrosion Data Management Using 3D Visualisation and a Digital Twin.....	74
Digital Asset Transformation by Continuous Corrosion (metal thickness) Monitoring: Case Studies from European Refineries.....	74
Machine Learning to Find Corrosion Inhibitors for Aeronautical Aluminium Alloys.....	75
Real-Time Process Monitoring and Predictive Corrosion Analytics: Applications and Case Studies.....	75
Remote, Visual Inspection and Digital Analysis for External Corrosion Assessment in Refining Unit Applications.....	75
Statistical Analysis for Groundbed Life Estimation.....	75
The Maturation and Deployment of Autonomous Corrosion and Coating Evaluation Systems to Enable Condition Based Maintenance.....	75
Using 3D Model And AI to Predict Atmospheric Corrosion - a Smart Tool for Decision Makers.....	75
The Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management.....	74
Digitization Aspects in Modern Corrosion Management System.....	74
Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management, The Corrosion Management	
Bayesian Network for Data-Driven Inspection Planning of Oil and Gas Pipelines.....	74
Corrosion Data Management Using 3D Visualisation and a Digital Twin.....	74
Environmentally Assisted Cracking	
Environmentally Assisted Cracking - Day 1.....	35
Constant Load Tests and Hydrogen Uptake of Various Steel Grades in High Pressure H ₂ Gas and Acidified H ₂ S-saturated Aqueous Brine Solution.....	35
Correlation of Hydrogen Diffusion and Trapping Behaviour with Hydrogen Embrittlement Resistance in Line Pipe Steels.....	35
Domain Diagrams for the Sulfide Stress Cracking Resistance of High Strength Low Alloy Steel 4 Tbx Bar Stocks.....	35
Experimental Corrosion-Fatigue Assessment of Different OCTG Grades Exposed to Contaminated Drilling Mud.....	35
Fast Screening of Sulfide Stress Corrosion Resistance of Supermartensitic Stainless Steel Thought Alternative Test Methods.....	35
Fatigue and Static Crack Growth Rate Study of X-65 Line Pipe Steel in Gas Transmission Pipeline Applications.....	35
Hydrogen Charging of Armo Iron and L80 Steel in Various Electrolytes.....	35
Hydrogen Effect on Plastic Deformation and Fracture in Austenitic Stainless Steel.....	35
Hydrogen Embrittlement Study of Two Heats of UNS N07725 in Sea Water Under Cathodic Polarization Conditions.....	35
Hydrogen Induced Stress Cracking Of Ni-Alloy 625 (UNS N06625).....	35
Role of Precipitation on the Hydrogen Embrittlement Behavior of Inconel 718.....	35
The Influence of Stress Concentration and Plastic Strain on the Resistance of Precipitation-Hardened Nickel Alloys to Hydrogen Embrittlement.....	35
Theoretical and Experimental Justification for a Novel Approach for the Evaluation of Sulfide Stress Cracking Susceptibility in High Strength Low Alloys.....	35
Environmentally Assisted Cracking - Day 2.....	52
Comparison of Stress Corrosion Cracking Behavior of Fe13Cr5Ni- and Fe17Cr5.5Ni- Based High Chromium Stainless Steels in H ₂ O ₂ Environments.....	53
Fitness-For-Purpose Research of Octg for Underground Gas Storage Applications in H ₂ /CO ₂ Environments.....	53
Fracture Failure Analysis of Type HL Sucker Rod in H ₂ S-CO ₂ Environment.....	52
Influence of Pitting Susceptibility on the Nucleation of Stress Corrosion Cracking in High Strength Austenitic Stainless Steel at Elevated Temperature.....	52
Practicality of Zinc Embrittlement in Fire.....	53
Probabilistic Environmentally-Assisted Cracking Threshold Stresses for the Safe Use of Stainless Steels in Service Equipment.....	52
Stress-Assisted Corrosion of a Superheater Tube: The Role of Thermal Fatigue Cracking and Crevice Corrosion in the Failure Mechanism.....	52
Sulfide Stress Cracking of Low Alloy Steels for Oil and Gas Production: Revisiting the Effect of Ni as an Alloying Element.....	53

Subject Index

Test Protocol for Assessing the Sulfide Stress Cracking Resistance of Low Alloyed Steels in High Temperature High Pressure Sour Environments	53
Understanding of the Sour Resistance Improvement of an Industrial X52 Linepipe Through Ni Addition	53
Erosion-Corrosion	
Solid Particle Erosion and Erosion-Corrosion	42
Adhesion of Corrosion Product Layers Formed in Dewing Conditions	42
A Discussion on Modeling Abrasive Wear in Slurry Systems	42
A Review of Various Guidelines for Predicting Solid Particle Erosion with Computational Fluid Dynamics Codes	42
Computational Study on the Erosive Surface Degradation in Generic Pipe Conduits Used in Internal Combustion Engine Cooling Systems	42
Corrosion and Erosion Studies of Ceramic and Metal Matrix Composites	42
The Effects of Distance Between Two Elbows in Series on Erosion of the Second Elbow	42
The Effects of Particle Size on Solid Particle Erosion of Elbows in Low Liquid and Annular Multiphase Flows	42
Hydrogen Embrittlement	
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 1	74
A Fracture Mechanics Approach to Characterizing Hydrogen Embrittlement of Fasteners	74
A Review of Hydrogen Embrittlement of Nickel-Based Alloys for Oil and Gas Applications	74
Development of a Master Curve to Characterize the Susceptibility of Fastener Materials to Hydrogen Embrittlement	74
Effect of Different Strength Levels, Coatings and Cathodic Charging Levels on the Hydrogen Embrittlement Resistance of AISI 4340 Bolting Material	74
High-Strength Nickel Low Alloy Steels for Oil and Gas Equipment: ASTM A508 Grade 4N Under Cathodic Protection and Simulated Sour Environments	74
Hydrogen Embrittlement Susceptibility of Steel Armour Wires for Flexible Pipes	74
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2	77
The Effect of Interactions between Cathodic Protection Potential and Stress Concentration on Hydrogen Embrittlement of Precipitation-Hardened Nickel Alloy	77
The Role of Cathodic Protection Simulation in Assessing Hydrogen Embrittlement Risks for CRAs and Other Materials - Subsea Gasket Case	77
Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2 Comparison of Hydrogen Embrittlement Testing Methods of Alloy 718	77
Evaluation of HAC Susceptibility in DMWs for Subsea Service Under Cathodic Protection	77
Heat Treatment and Notch Severity Effects on the Inconel® 718 Susceptibility to Hydrogen Embrittlement Evaluated by the RSL Method	77
Influence of the Hardening Phases on the Hydrogen Embrittlement Susceptibility of Ni-Alloys based on UNS N07718	77
Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP)	
Corrosion Inhibitors	
Four Year Exposure and Monitoring Data of VCI's for Corrosion Protection of AST Tank Bottoms; Effects of Salt Contamination	53
Improving the Durability of Packaging Materials Using Vapor Phase Corrosion Inhibitors	53
Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation	
Corrosion Inhibitors	
Buried Ultrasonic Corrosion Monitoring Sensors for Midstream Asset Integrity	66
Chelating Agents for Iron Sulfide Scale Removal at 300°F	66
Closed Loop Systems: Electrochemical Studies on Nitrite/Molybdate Corrosion Inhibitors	66
Development of a New Vapor Corrosion Inhibitor for Corrosion Under Insulation at Elevated Temperatures	66
Investigation of Acid Corrosion Inhibition Using N,N'-(1,4-phenylenebis(methyl))bis(N,N-dimethylalkyl-1-aminium) Chloride Corrosion Inhibitors	66
Non-acidic Iron Sulfide Scale Dissolver: from Lab Development to Field Application	66
Ultrasonic Chemical Cleaning; Development of Chemical Blends for Industrial Applications	66
USDA-certified Biobased, Low VOC and Biodegradable Paint Stripper and Graffiti Remover	66
Localized Corrosion	
Localized Corrosion - Mechanisms, Research Methods, Modelling and Control	37
Alternative Sensitization Test Method for Austenitic Stainless Steels used as Non-Magnetic Drill Collars	37
Development of Unified & Methodology Examining the Critical Pitting/Repassivation Potential and Temperature	37
Dynamic Crevice Tribocorrosion Behavior of Surgical Grade 316L Stainless Steel in Ringer's solution	37
Effect of H ₂ s in the Passivity Breakdown of Austenitic Stainless Steel, Point Defect Model Perspective	37
Effect of H ₂ S in the Passivity Breakdown of Austenitic Stainless-Steel, Point Defect Model Perspective	37
Electrochemical Behavior Under Artificial Seawater and Intergranular Corrosion Performance of 6XXX Aluminum Alloys Series	37
Evaluation of Corrosion of Copper Drinking Water Pipes Exposed to Sulfurous Well Water and Ozone Treatment	37
Influence of Buffer Solution on Supermartensitic Stainless Steel Localized Corrosion and Oxide Layer Formation	37
Investigating the Interaction of Brine Solutions and Diluted Inhibited HCl Acid Corrosion on Coiled Tubing Steel	37
Investigation of Pitting Corrosion of Carbon Steel in CO ₂ Saturated Corrosion Environment Using Artificial Pits Designs	37
Localized Corrosion Resistance of Ferritic Fe-Cr-Al ATF Cladding in Cooling Pools	37
Pitting Corrosion of a Ni-Cr-Fe Alloys in Chloride and Thiosulfate Solutions: One-Dimensional Artificial Pit Electrode Studies	37
Statistical Analysis on the Spatial Distribution of Localized Corrosion on Corroded Steel Bars	37
Marine Corrosion	
Marine Corrosion - Research in Progress	
Corrosion Behavior and Galvanic Compatibility of Selected Materials in Natural Seawater	38
Oxygen Reduction Catalysis on Stainless Steel Oxides	38
Marine Corrosion - Ships and Structures	
Biodegradable SPC Polyurethane Coating	67
Cathodic Protection at a Nuclear Facility	67
Characterization of Corrosion Resistance on Ni-Advanced Weathering Steel Exposed to Tropical Marine Atmosphere	67
Correlating Pitting Susceptibility to Local Microstructure in Aa5083 Using Automated Image Analysis and Data Science Frameworks	67
Corrosion Evaluation and Mechanism Analysis of Welded Joints of Low Alloy and High Strength Structural Steel Under Tropical Marine Atmospheric Environment Exposure	67
Corrosion of Open Cell Aluminum Foams in Simulated Marine Environments	67
Corrosion Sensors Led In-Service Performance Assessment of Steel Pile Wrapping/Jacketing Systems on Marine Structures in Australia	67
Development of Corrosion Resistant Steel for Cargo Oil Tank of Crude Oil Tanker	67
Duplex Zinc Corrosion Protection for Marine Structures	67
Effectiveness of Epoxy and Moisture-Cure Polyurethane Coatings in Corrosion Mitigation of Embedded Rebar- an Experimental Study	68
Effect of Blocking Compound on Electrochemical Corrosion Behavior of Wire Rope at Gulf of Mexico Surface and Subsea Temperatures	67
Effect of Fouling on Cathodic Protection Current on Steel Submerged in Natural Waters	67
Galvanic Corrosion Investigation of Structural Transition Joints	68
Improvements in Anti-Corrosion Performance through the Integration of Graphene Nano-Platelets (GNPs) into Coating Systems for C4/C5 Environments	68
Short-Term Corrosion Behavior of New Low Alloy Steel Bars in Tropical Marine Atmosphere of Thailand	68
Subsequent Mounting of Brackets to Coated Surfaces Using Adhesives	67
The Role of Alloy Microstructure on The Cavitation Erosion Behavior of Aluminum-Based, Iron-Based and Nickel-Based Alloys in Seawater	68
Marine Corrosion - Ships and Structures	
Marine Corrosion	
Correlating Pitting Susceptibility to Local Microstructure in Aa5083 Using Automated Image Analysis and Data Science Frameworks	67
Metals & Alloys	
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 1	41
After 30 Years of Duplex Stainless Steel Experience in Oil & Gas - Do we still face challenges?	41
Alloy 35Mo- A New Alloy for Seawater Applications	41
Analysis of Corrosion Pitting in a 317L Stainless Steel Surface Condenser Tube Bundle	41
Bolts and Nuts (Fasteners) Failure of In-Service Stainless Steel Chemical Storage Tanks at Wafra Joint Operation- A Case Study	41
Development of an Advanced Carburizing and Nitriding Stainless Steel	41
Evaluating the Flaw Tolerance and Ductile Tearing Resistance of Austenitic Stainless-Steel Welds	41
In Situ Electrochemical Testing Of Stainless Steel Surfaces	41
Lessons Learned from New Stainless Steel Fabrication	41
Materials Selection for Seawater Injection Service - Crevice Corrosion Evaluation of Stainless Steels Under Controlled Oxygen Conditions	41
On Comparing and Predicting the Crevice Corrosion Resistance of Austenitic Drilling Alloys with Typical Downhole Production Alloys	41
Optimization of FGD Operating Conditions by Electrochemical Laboratory Testing Applied to Alloy UNS S32205	41
Polythionic Acid Stress Corrosion Cracking on Proprietary UNS S34751 Similar Welded Joint	41
Stress Corrosion Cracking of Austenitic Grade 347 and Duplex Grade 2205 Stainless Steels in Refinery Simulated Media Containing Hydrogen Sulfide and C	41
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 2	58
A Recent Case of Intermetallic Precipitations in Super Duplex	58
Considerations Performing Ferrite Measurements with Focus on Point Counting According ASTM E562	58
Corrosion of Stainless Steels: Effects of Finishing	58
Corrosion Properties of Alloy 35Mo, New Pren 52 Alloy for Refinery and Chemical Industry	58
Influence of Centerline Intermetallic Stringers on Pitting Corrosion Resistance of Superduplex Stainless Steels	58
Negative Effects of Welding on Corrosion Resistance of Austenitic and Duplex Stainless Steel	58
Study on Ferrite Measurement Methods for Duplex Stainless Steel Part 2: Focus on Measurement by Ferrite Scope	58
Welding of Cra with Insufficient Purging Gas - Impact on Mechanical Properties and Corrosion Resistance	58
Recent Experiences with Nickel, Titanium, Zirconium and other Corrosion Resistant Alloys	73
Alloy UNS N06058: A Solution for Demanding Corrosive Applications Where Common Members of The Ni-Cr-Mo Alloys Experience Their Limits	73
Analysis of Intergranular Corrosion of UNS N10276 Pipe Longitudinal Welding Seam	73
A Novel High Entropy Alloy Possessing Excellent Corrosion Resistance Manufactured by Standard Cast and Wrought Processing	73
Corrosion Behavior of Zirconium-based Composites	73
Crevice Corrosion of Alloy 625 Strake Bands in Sea Water	74
Crevice Corrosion Resistance of New Alloy 35Mo Compared to UNS N06625 and UNS N10276	73
Detecting Grain Boundary Precipitation on the Precipitation-Hardened Nickel Alloy UNS N07725: Double-Loop Electrochemical Potentiokinetic Reaction	73
Effects of Minor Alloying Elements on the Metal-Dusting Behavior of Ni-Based Alloys	73
Electrochemical Evaluation of Novel Titanium Alloys	73
Grain Boundary Corrosion in Welded UNS N10276 Microstructures	73
Hydrogen-Induced Cracking or Pure Titanium in Sulphuric Acid and Hydrochloric Acid Solutions Using Constant Load Method	73
Modeling Corrosion of Corrosion Resistant Alloys in Chemical Processes Environments including Mixed Acids and Salts	73
Nickel Based Alloy Casting Failure in Potash Production Mill	73
Response of Alloy UNS N08825 to the Variation of Ni Content and Annealing Temperatures in Terms of Its Corrosion Resistance	73
Understanding Mu Phase Precipitation Impact on Sensitization Behavior of UNS N10276 and Its Detection Using ASTM Standard Methods	73
Microbiologically Influenced Corrosion	
Control of Problematic Microorganisms in Oil and Gas Field Operations	47
A Field Study into the Mitigation of Severe Downhole Microbiologically Influenced Corrosion of Oxygen Contaminated Hydro-Fracked Shale Oil Reservoirs	47
An Evaluation of Cessation of Nitrate Treatment of High-Volume Seawater Injection Systems	47
A New High Performance Biguanide Polyammonium-Based Blend for Control of Microbiological Fouling in Oil and Gas Stimulation	47
A Novel Method for the Enhanced Kill of Sulfate Reducing Microorganisms	47
Biocide Evaluation and Optimization For Pw Pipelines by Testing on System-Specific High-Risk Microorganism 48	47
Development of an Efficient Mic Mitigation and Control Strategy in Pipeline Pigging Operations	47
Enhanced Biocide Treatment Using D-Tyrosine Against Desulfovibrio Vulgaris Corrosion of Carbon Steel	48
Managing the Internal Corrosion of Oil Producing Well Flowlines	47
Microbiologically Influenced Corrosion by General Aerobic and Anaerobic Bacteria in Oil & Gas Separators	48
Novel Screening Method to Optimize Biocide Strategies Under Model Field Conditions	47
Remediation of Microbially Contaminated Horizontal Wells with Acrolein	48
SourMit, a novel Thermal-Hydraulic-bioChemical (THbC) Model for Prediction of Reservoir souring	47
Synergistic Effect of Biocide and Biodespersant to Mitigate Microbiologically Influenced Corrosion in Crude Oil Transmission Pipelines	47
The 1000's Microbial Genus Belonging to the O&G Fields from Argentina	47
Microbiologically Influenced Corrosion	68
Baseline Distribution and Diversity of MIC-Relevant Microorganisms in Compacted Bentonites after Incubation for 1 Year	68
Evaluation and Monitoring of the Biocorrosion of Metallic Pipes	68
Is it MIC or Pitting Corrosion? An Insight in a Common Overlapping	69
Laboratory Investigation of Biocide Treated Waters to Inhibit Biofilm Growth and Reduce the Potential for MIC	68
MIC Pitting Mechanism Concerning Ion Selectivity of Biofilm and Symbiosis	69
Microbially Influenced Corrosion Perforation Failure Analysis of L80 Tubing in Water Injection Wells in a Middle East Oilfield	68
Microbiologically Influenced Production Casing Corrosion	68
Nitrate Addition for Controlling Microbiological Souring Triggers Formation of Pitting Corrosion of Carbon Steel	68
Novel Primer Sets for Field Based qPCR Testing Allows On-Site Detection of High-Risk Organisms Associated with MIC and H ₂ S Production	68
Rapid Microbial Detection, Quantification and Control	68
Severe Microbiologically Influenced Corrosion (MIC) of Pure Zinc and Galvanized Steel in the Presence of Desulfovibrio Vulgaris	69
Military Corrosion	
Corrosion Issues in Military Equipment and Facilities	64
Lifetime Enhancement of Propulsion Shafts Against Corrosion-Fatigue by Laser Peening	64
Measurement and Prediction of Aerospace Corrosion Rate Using Real Time Sensor Measurements and Machine Learning Approaches	64
Statistical Modeling of Weather Data for Representative Environmental Severity Testing	64
Surface Treatment to Mitigate Exfoliation Corrosion of 5XXX Series Aluminum Alloys	65
Mineral Scale and Deposits	
Recent Developments in Mineral Scales and Deposits Control Technologies - Day 1	40
A New Look on the Scale Inhibition Mechanisms and Some Refinement of the Scale Inhibition Theory	40
Application of Aluminum Alloy and its Corrosion Control Challenges in Water Treatment Industry	40
Calcium Carbonate Biofouling in the Presence of Heavy Metals	40
Calcium Carbonate Scale Deposition and Inhibition: Effects of Corrosion Inhibitors	40
Carbonate and Sulfide Scale Formation in Multiphase Conditions	40
Corrosion Control Using Inhibitor Systems Based on Phosphonates and Metal Phosphonate Materials	40
Critical Review on Sulphide Scale Formation, Removal and Inhibition	40
Deposition Prevention of Complex Mineral Scales Such as Iron Sulfide on Pipelines Using Water Soluble Polymers	40
Designing Laboratory Test Protocols for Asphaltenes Deposition	40
Gypsum Scale Inhibitors Performance in the Presence of Impurities	40
Iron carbonate (FeCO ₃) SLIPS (Slippery Liquid Infused Porous Surfaces) for enhanced scale resistance	40
Non-Phosphorus Treatment Technology for Cooling Water Systems	40
Scale Formation and Wetting of Surfaces: A Microfluidics Investigation	40
Recent Developments in Mineral Scales and Deposits Control Technologies - Day 2	57
Distinct Mechanisms of Silica Scale Formation: Silicic Acid Polycondensation and Silica Particle Growth	57
Effective Laboratory Test Method for Quick Screening and Selection of Halite Inhibitors using Field Brine Composition	58
Erosion Corrosion of Oilfield Piping and Equipment due to Calcite Scales - Case Study	58
Evaluation of Scale and Corrosion Inhibitors using a Jet Impingement Method	57
Improving Scale Management - Combining Advanced Detection Techniques with Novel Tagged Polymeric Scale Inhibitors	57
Inhibition of Calcium Carbonate Scale Formation In Water-Mono Ethylene Glycol Solutions by Water Soluble Polymers	57
Inhibition of Formation of Magnesium Hydroxide by Polymers: The Role Molecular Architecture	57
In Search of Synergy: Inhibitor Synergy and Antagonism in Scale Control	58
Metal Sulfide Scale Inhibitors	57

New Insight into the Mechanisms of Iron Carbonate Formation in Sweet Carbonate Reservoir during Acid Stimulation	57	Application of Super 13Cr Steel in Oil and Gas Wells with High Temperature and Small Amounts of H ₂ S	44
Pilot Rig Scale Testing: Hydrodynamics and Scale Deposition	57	Corrosion Resistance of Stainless Steels and Nickel Alloys in Seawater	45
Surface Precipitation and Growth Kinetics of Calcium Carbonate (CaCO ₃) Scale Using a Novel Capillary Flow Rig	58	Development of a New High Interstitial Non-Magnetic Stainless Steel for Oil and Gas Applications	45
Synthesis and Applications of Novel Fluorescent-Tagged Scale Inhibitors in Water Treatment	58	Development of High Strength Grade and Cost Effective Super Martensitic Stainless Steel Solution for high CO ₂ /H ₂ S Environment	44
The Development of Novel Laboratory Test Method on Evaluation of Scale Inhibition and Dispersancy for Cooling Water Applications	57	Effect of Nb Addition and Processing Path on the K _{IC} of a Low Alloyed Octg Steel	44
The Impact of Temperature Increases Upon Calcite Saturation and Rigorously Calculated Indices	58	Environmentally-Assisted Cracking (SSC and SCC) of Martensitic Stainless Steel OCTG Material in Sour Environment in 5%NaCl and 20%NaCl Solution	44
Nuclear Systems		Evaluation of SCC, SSC, GHSC and HE Resistance of Aged UNS N06625 Forged Bars	44
Corrosion in Nuclear Systems - Day 1	32	Flow Forming as a Manufacturing Technique for Building Critical Pressure Housings: Considerations and Case Study	45
Analysis of the Pitting Factor for Predicting Localized Corrosion of Liquid Radioactive Waste at Elevated Temperatures	33	Implications of Failure of Alloy 718 (UNS N07718) Tubing Hanger in Sour Well	44
An Overview of Recent Progresses in Monitoring, Understanding and Protecting Localized Corrosion on Buried Pipelines	33	Reduction of Conservatism in Ssc Testing for Well Tubulars	44
Effect of Chloride on the SCC Behavior of Carbon Steel Welds Exposed to Concrete Pore Water Under Anoxic Conditions	33	Sour Service Limit of 17% Cr Stainless Steels Grades for OCTG	44
Effects of Surface Conditions and Chemistry on Evolution of Open-Circuit Potential of Carbon Steel in Nuclear Waste Stimulants	33	The Effect of Low Temperature Diffusional Heat Treatments on the Corrosion Resistance of Nickel Alloys UNS N08935 - a New Versatile Grade for O&G	44
Electrochemical Corrosion Behaviors of Waste Package Materials	33	Non-Metallics for Chemical and Mineral Processing and Oil and Gas Production	76
Electrochemical Corrosion Evaluation of Boral® Panels from the Decommissioned Zion Nuclear Power Plant Spent Fuel Pool	33	A Novel Gasket Design for an Isolating Gasket to Solve Common Sealing Problems	76
Electrochemical Studies of Stainless Steels in Hanford Effluent Treatment Facility Environments	33	Compatibility of Polymers Exposed to Heating Oil Blends with 10 % and 20 % Biodiesel (FAME)	76
Evaluation of SCC Susceptibility of Steels Used in Nuclear Waste Storage Tanks in Caustic Simulants	33	Elastomer Compatibility with a Pyrolysis-derived Bio-oil	76
Field Metallurgy and Replication on Natural Gas Processing Facility: Non-Destructive Metallurgical Testing to Complement other Regular NDT	33	Experiences and Opportunities for Continuous Improvement with Spoolable Composite Pipelines	76
Laboratory Studies Related to External Corrosion of Hanford's Double-Shell Tanks	32	Long-Term Performance of a Subsea Wet Insulation Material at 180 °C Continuous Operation Temperature	76
Localized Weld Repairs Increase Corrosion Rates at Nuclear Plants	33	Nanolaminated Alloys to Diminish Corrosion and Wear on Artificial Lift Components	76
Performance of Vapor Corrosion Inhibitors on Mitigating Corrosion of Secondary Liner in Double Shell Storage Tanks at Hanford	33	Sour Corrosion	42
Reference-Electrode Evaluations and Potential-Distribution Modelling in Nuclear Waste Environments	33	Corrosion and Scale Formation at Carbon Steel in Sour Aqueous Solution at Elevated Temperature	43
Corrosion in Nuclear Systems - day 2	48	Corrosion Behaviour of 316L Stainless Steel in Highly Sour Environment	42
An Electrochemical Corrosion Study into 20Cr-25Ni-Nb Advanced Gas-cooled Reactor Fuel Cladding	48	Effect of Cr and Mo on Corrosion Behavior of High Strength Steel in CO ₂ /H ₂ S Environments	42
Contribution of Cathodic Reaction Inside Crevice on Propagation of Crevice Corrosion of 304L SS in Sodium Chloride Solution	48	Effect of Iron Carbide on Iron Sulfide Layer Protectiveness	43
Corrosion Behavior of 12%Cr-6%Al Oxide Dispersion Strengthened Steels for New Fuel Cladding in Nitric Acid Solutions Containing V and Ru	48	Fe ₃ O ₄ , FeCO ₃ or FeS - Which One Will Prevail at High Temperature in CO ₂ /H ₂ S Environments?	43
Corrosion Resistance in Water and Steam of Monolithic FeCrAl Alloys and Zirconium Alloy Coatings	48	Fluid Governing Mechanics and its effect on H ₂ S Scavenger Tower Design	43
Deployment of Laser Peening to Prevent SCC of Nuclear Fuel Dry Storage Canisters	48	Improved Protocols to Test Corrosion Inhibition Efficiency and Scavenging Performance in Sour Petroleum Systems	43
FAC Assessment for 2 Inch Diameter SA106 Pipe With Elbow and Weld	48	New, Non-corrosive, Non-Nitrogen containing H ₂ S Scavenger For Use in Predominately Oil and Gas Systems	43
Influence of Dissolved Hydrogen on the Internal and Intergranular Oxidation of Ni-Base Alloys in Simulated Pwr Primary Water	48	Sour Under-Deposit Corrosion with Different Iron Sulfides	42
Role of Material Condition on Precursor Corrosion Damage and Stress Corrosion Crack Initiation Behavior of Alloy 600 in PWR Primary Water	48	Study On Elemental Sulfur Formation From Black Powder Deposits	43
SCC Growth Behavior of Stainless Steels and Nickel Base Alloys during Chemical Transients in BWR Environments	48	The Role of Acid Gas Partial Pressure on Corrosion Processes in Oil and Gas Production Systems	42
Oil and Gas, Inhibitors		Oil Sands	
Control of Corrosion in Oil and Gas with Inhibitors - day 1	62	Materials and Integrity in Oil Sands	54
Analysis of Corrosion Inhibitor Performance Curves Using Langmuir Adsorption Kinetics	62	50 Years of Oilsands Operation: Comprehensive Review of Wear Materials	54
Closed Cooling Loop Corrosion - a Laboratory Based Investigation of Possible Causes	62	Environmental Limits and Susceptibility of UNS S30403 to Environmentally Assisted Cracking in Thermal Oil Sands Operations	54
Corrosion Inhibition of C-Steel Pipeline Transporting Natural Gas at High Temperature	62	Passive Fire Protection Considerations for Oil Sands Applications	54
Corrosion Inhibitor Deliverability - A Corrosion Inhibitor Residual Success Story	62	Slurry Pot Erosion-Corrosion Assessment of Cr White Cast Irons	54
Corrosion Inhibitors for Jet Pump Applications	63	Validation of SlurryWearSimTM - A Dense Slurry Pipeline Erosion-Corrosion Model	54
Corrosion Inhibitors in O&G industry: A Review of Current Application Challenges and Research Gaps	62	Pipeline Integrity	
Corrosion Mitigation of Deepwater, 143km Long Multi-phase Pipelines	63	Pipelines, Tanks, and Well Casings	
Development of a Concentrated Corrosion Inhibitor Compatible with Produced Water Brine and Scale Inhibitor 63	63	Field Experience on Why Pipeline In-Line Inspection (ILI) Fails	70
Effect of Corrosion Inhibitor Head Group on the Electrochemical Processes Governing CO ₂ Corrosion	62	Pipelines, Tanks, and Well Casings	
Electrochemical Investigation of a Commercial Corrosion Inhibitor: Mechanism, Efficiency and Influence of Mg, and Ca, Ions	62	Pipeline Integrity	70
Elucidating the Influence of Calcium Ion Concentration on Corrosion Inhibitor Performance	62	Advances in Coupon Analysis for Improved Corrosion Management	70
High Temperature Corrosion Inhibition Performance and Thermal Stability of Nitrite	63	Best Practices to Ensure Effective Pipeline Corrosion Management and Mistakes That Can be Avoided	70
Monitoring Change of a Low-PPM Dosage Corrosion Inhibitor Over Time in a Long-Distance Pipeline Carrying Very Light Hydrocarbons	63	Corrosion Control in Water Injection Pipelines	70
On the Adsorption Properties of Non-Surfactant Corrosion Inhibitors: Pyridine, Quinoline and Acridine	62	Datascience to Enhance Pipeline Maintenance	71
Selective Loss of Bulk Corrosion Inhibitor Species when Exposed to Glass, Plastic, and Steel	63	Detecting and Preventing Internal Corrosion Damage in Unpigging, Intermittently-Operated, Crude-Oil Pipelines	70
The Effect of Temperature and Critical Micelle Concentrations (CMC) on the Inhibition Performance of a Quaternary Ammonium-Type Corrosion Inhibitor	62	Detection and Location of Coating Delamination and Anomalies on Buried Pipelines by Using Electromagnetic Reflectometry	70
Utilization of Adsorption Kinetics Rate Constants to Better Define Corrosion Inhibitor Availability	62	Development of a Low-Power Wireless Sensor Network of Conductivity Probes for the Detection of Corrosive Fluids in Pipelines	70
Control of Corrosion in Oil and Gas with Inhibitors - Day 2	75	Extending the Life of an Ageing Forty Two Years Old Offshore Wet Crude Pipeline	70
Adsorption and Self-Assembly of Corrosion Inhibitors on Metallic Surfaces Studied Using Molecular Simulations	75	Failure Analysis of a Composite Polyester-Fiberglass Pipe Support Sleeve - A Case Study	70
Adsorption Free Energy of Corrosion Inhibitor Molecules at Metal-Water and Air-Water Interfaces: A Computational Investigation	75	Field Experience on Why Pipeline In-Line Inspection (ILI) Fails	70
Development of Novel Corrosion Inhibitors for High Temperature Sour Gas Environments, The	75	In-line Inspection of Hydrogen Pipelines	70
Effect of Steel Microstructure and Corrosion Product Characteristics on Inhibition Performance of Decanethiol Against TLC	75	Methodology for the Evaluation of Batch Corrosion Inhibitor Films and their Integrity	70
Two Way Application of Corrosion Inhibitor in Gas and Condensate Field	75	Multi-Stage Commissioning and Concurrent Survey Work on a New Pipeline: A Case Study in Converging and Diverging Corrosion Interests	70
Understanding Synergistic Effects between Corrosion Inhibitor Molecules using Density Functional Theory	75	Use of Large Standoff Magnetometry in Pipeline Integrity Investigations	70
Oil and Gas, Inland to Subsea		Use of Piezoelectric and M&S Guided Wave Ultrasonic Monitoring Technologies on Underground Piping	70
Flow Assurance in Oil and Gas from Inland to Subsea	36	Using Failure Analysis to Optimize Corrosion Mitigation Costs	70
An Intelligent Flushing System For Oil or Gas Gathering Systems	36	Water Hammer and Fatigue Strength Reduction from Grit Blasting for Coatings	71
Deposition and Corrosion Mitigation using Surface Treatments	36	Pipeline Integrity - day 2	77
Experimental Investigation and Numerical Modeling of Barium Sulfate Scaling in Porous Media	36	Estimating Corrosion Rate Risk Distributions using Machine Learning and Geospatial Analytics	77
Impact of Surface Conditions on Calcium Carbonate (CaCO ₃) Scaling Kinetics in a Once-Through Capillary Flow Rig	36	Reliable, Traceable, Verifiable and Complete Pipeline Records	77
Nanotechnology Based Detection Method for Speciation and Differentiation of Phosphonate Scale Inhibitors	36	Pipeline Integrity - Day 2	
New Approach on Iron Sulfide Scale Modeling and Prediction at pH 4-7	36	Deepwater Riser Repair Systems	77
Removal of Iron Carbide in Turbulent Conditions and Influence on Iron Carbonate Formation	36	Mandatory Integrity Reassessment of Gravity-Fed Crude Oil Pipelines Using MP-ICDA in Kuwait	77
Strontium Effect on Sulfate Scale Precipitation: Kinetics and Inhibition	36	Monitoring and Assessing Pipeline Water Crossings in the Face of Severe Flooding, River Scour, and River Channel Migration	77
The Development of Novel Laboratory Test Method for Scale Inhibitor Evaluation in the Presence of Ferrous Iron	36	Pipeline and Subsea Integrity Assessment Using Corrosion Direct Assessment and Local Area Inspection	77
Oil and Gas Production		Successful Application of MP-ICDA to Assess and Confirm Crude Oil Pipeline Corrosion Threats in Kuwait using ILI	77
Advances in Materials for Oil and Gas Production - Day 1	30	Pits, Cracks and Crevices	
An Investigation on the Sulfide Stress Cracking of Tmpc Pipeline Steels	30	Pits, Cracks and Crevices - Research in Progress - Day 1	55
A Review of Fit-for-Purpose Sour Tests of Low Alloy Steels: Effects of Buffer Chemistry and Purge Gas Composition	30	A Systematic Investigation on the Occurrence of Stress-Induced Pits and Grooves in Ssc Four-Point Bend Testing of Pipeline Steel	55
Case Study on the Downhole Materials Selection and Sour Service Qualification for a High Pressure, High Temperature Gas Field	31	Atmospheric Corrosion and Cracking of 304 Stainless Steel in Controlled Marine Atmospheres	55
Crack Propagation Behavior and K1ssc During DCB Test with a Proposed U-Type Side Groove Specimen Geometry	30	Effect of AC Interference on the Stress Corrosion Cracking Susceptibility and Pitting Behavior of Low Carbon Steels Under Cathodic Protection	55
Effect of Test Conditions on the Discrepancies in SSC Test Results and Groove Formation on Low-Alloyed Steel	30	Failure Analysis of Alloy C-276 Using Modern Characterization Techniques	56
Micrographic Acceptance Criteria for SSC Testing	30	Measurement of the Effect of Complex Aerospace Environments on Corrosion Fatigue Crack Growth of AA7	56
Qualification Of Seamless X60qos And X65qos Linepipe Grades For Extreme Sour Service Conditions With Partial Pressure Of H ₂ S Beyond 1 Bar	30	On the Deterministic Prediction of Crack Growth in Engineering Alloys	55
Sour Environmental Severity Based on Equal Hydrogen Content and HIC/SSC Susceptibilities	30	On the Evaluation of Hydrogen-Induced Cracking Test Results in Sour Media Using H-Probes	55
SSC limits of Tmpc Line Pipes	30	Perodynamic Modeling of Pits, Cracks, and Crevices	56
Surface Hard Zone Phenomenon in Tmpc Line Pipe for Sour Service: A State of the Art Review	30	Prompt Gamma Activation Analysis Measurements of Hydrogen Absorption in Subsea Oil & Gas Materials under Cathodic Protection	55
The Effect of Mill Scale on OCTG Sour Cracking Resistance	30	Study of the Cracking Mechanism of Carbon Steel in presence of H ₂ S/CO ₂ and H ₂ S scavenger utilizing In-Situ Surface Enhanced Raman Spectroscopy	56
The Implications and Practicality of Adopting the Dissolved H ₂ S Concentration in Brine as the Sour Service Severity Scalable Parameter	31	The Effect of Laboratory Atmospheric Corrosion Conditions and Corrosion Inhibitors on Environmental Fatigue Damage	56
The Tmpc Process of C-Steel Grades and the Control of Key Parameters to Avoid Local Hard Surface Areas	30	The Effects of Loading Frequency, Sensitization, and Electrochemical Potential on Corrosion Fatigue of AA456-H116 in 3.5 wt.% NaCl	55
Advances in Materials for Oil and Gas Production - Day 2	44	Towards Incorporations of H Embrittlement into a Grain Boundary Decohesion Model	55
Alloy 975 (UNS N09975) Resistant to Severe Sour Environments	44	Pits, Cracks and Crevices - Research in Progress - Day 2	71
		A Numerical Study Examining the Critical Factors for Localized Corrosion Using a Sequential Non-Iterative Approach	71
		A One Dimensional Crevice Experiment for Determining the Critical Factors Contributing to Crevice Corrosion Repassivation	71
		Assessing the Influence of Calcium on X65 Carbon Steel Pitting Using an Artificial Pit	71
		Corrosion of Carbon Steel under Used Nuclear Fuel Container Condition	71
		Determination of Key Marine Environment Effects on Maximum Pit Size Predictions	71
		Evaluation of 304L Pit Chemistry in Methanol/Water Mixtures	71
		Identifying, Predicting and Preventing Localized Corrosion in Kr-85 Storage Canisters	72

Subject Index

In-situ Electrochemical Examinations on UNS N07718 Exposed to Acidified Chloride Solution at High Temperature - Role of Intermetallic Particles on Pit Initiation.....	72
Investigating Localized Corrosion Chemistry during Dissolution of Carbon Steel in CO ₂ -containing Environments via Synchrotron X-ray Methods and the Pencil-Electrode Technique.....	71
Localized and Uniform Corrosion of UNS N06022 in Aprotic Solvents at Room Temperature.....	72
Pitting Corrosion of Ni-Cr-Fe Alloys in Thiosulfate and Chloride Solutions.....	72
Self-accelerated Corrosion of Nuclear Waste Forms at Material Interfaces.....	72
Study of the Nucleation and Propagation of Open and Covered Pits in 2205 Duplex Stainless Steels.....	72
The Role of MnS Inclusions in Stainless Steel Pit Initiation and Propagation.....	71
The Susceptibility of Copper to Pitting Corrosion in the Chloride and Sulfide-Containing Environment Anticipated in a Deep Geologic Repository for the Permanent Disposal of Used Nuclear Fuel.....	71
Power Industry.....	72
Corrosion Risk Assessment of Galvanized T&D Structures and GIS Mapping.....	72
Field Application of Corrosion Resistant Weld Overlay in Ultra-Supercritical Coal-Fired Boiler Waterwalls.....	72
Inductive and DC Stray Current Interference from Different HVDC Transmission Line Systems on Metallic Pipelines.....	72
Novel Anti-Fouling Surface Treatments for Heat Exchangers.....	72
Stray Current Corrosion Risks and Case Histories in Communication Tower and Electric Transmission Applications.....	72
Use of Halophytes to Manage Soil Characteristics in Joint Use Environments.....	72
Pulp, Paper, Biomass Industries.....	65
Corrosion Issues in the Pulp, Paper and Biomass Industries.....	65
Corrosion and Chemical Characterization of Bio-Oils from Biomass with Varying Ash and Moisture Contents.....	65
Corrosion Assessment of Candidate Constructional Alloys under Hot Dilute Acidic Pre-hydrolysis Biorefining Conditions.....	65
Corrosion Assessment of Candidate Constructional Alloys under Hydrothermal Liquefaction Biorefining Conditions.....	65
Corrosion in Sulfuric Acid in Pulp and Paper Mills.....	65
Corrosion of Candidate Alloys for Hydrothermal Liquefaction (HTL) Reactor under Batch-mode Operation.....	65
Evaluation of Corrosion Susceptibility of Structural Steels in Biomass Derived Pyrolysis Oils.....	65
Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies.....	57
Testing and Monitoring.....	57
Heat Recovery Steam Generation Corrosion Monitoring and Inspection Challenges.....	57
Optical Fiber-based Sensor for Corrosion Monitoring at Elevated Temperatures.....	57
Recent Experiences with Austenitic and Duplex Stainless Steels - Day 1.....	41
Metals & Alloys.....	41
Evaluating the Flow Tolerance and Ductile Tearing Resistance of Austenitic Stainless-Steel Welds.....	41
Refining.....	49
Corrosion in the Refining Industry.....	49
317 Piping Stress Corrosion Cracking After Unit Unexpected Shutdown Recovery.....	49
Air Coolers in Wet Sour Services - Plug Gaskets Leakage During Startup.....	49
Case Study: Weld Repair of Aged Hydrogen Reformer Bull Tee.....	49
Double Jeopardy in a Refinery Setting: How to Successfully Inspect an Insulated Pipeline for Corrosion Under Insulation (CUI).....	50
Effect of Corrosion Inhibitors in the Refining Process of Crude Oil Contaminated with Organic Chlorides.....	50
Electrochemical Corrosion Behavior of Carbon Steel With and Without Residual Elements.....	50
Fitness for Purpose Evaluation of Hydrogen Production Unit Centrifugally Cast Tubes: "Post Exposure" Metallographic and Mechanical Test.....	49
HTHA in Low-Carbon Steel Occurring at Temperatures Recently Thought to be Not Possible.....	50
Hydrogen Embrittlement of SS 316L Instrument Tubing in Hydroprocessing Unit.....	49
Low H ₂ S High Temperature Sulfur Attack in Refining Hydrotreating Processes.....	50
Naphthenic Acid Corrosion and Sulfidic Corrosion in Crude Oil Fractions.....	50
PermaSense Wireless Non-Intrusive Corrosion Monitoring System Case Studies at Equinor Refining Denmark.....	50
Polythionic Acid Stress Corrosion Cracking of Type 347LN Containing Higher Cu for Improvement of Creep Strength.....	50
Qualification of a Single Pass Weld Overlay using NiCrMo-14 as an Alternative to Multi-pass NiCrMo-4 to Mitigate Crude Tower OVHD Corrosion.....	49
Review and Recommendations on PWHIT Exemptions for 2014 Edition of ASME B31.3.....	49
Research in Progress.....	29
Advanced Electrochemical Methods - Research in Progress.....	29
A Combinatorial Study into the Role of Magnesium in Preventing Organic Coating Cathodic Delamination from Zinc Galvanized Steel.....	29
Application of Localized Electrochemical Techniques to Study the Effect of Crystallographic Orientation on Passive Layer and Corrosion Behavior of Ferritic Steels.....	29
Chemical Imaging of Reactive Surfaces Using Microsensors as Tips in Scanning Electrochemical Microscopy: Applications in Corrosion Research and Protection.....	29
Delineation of Partial Anodic and Cathodic Reactions in Corrosion Processes Using Electrochemical Impedance Spectroscopy.....	29
Development of a Calibration Electrode to Facilitate Non-Destructive Coating Evaluation using a Scanning Kelvin Probe.....	30
How do Alloy Components Interact? Measuring In Situ the Kinetics of Passive Film Formation and Dissolution with Elemental Resonance.....	29
In-situ Time-lapse Scanning Kelvin Probe Force Microscopy - A Novel Approach towards Understanding Localized Corrosion of Aluminum Alloys.....	29
Local Electrochemical Methods to Study the Correlation Between Microstructure and the Corrosion of Metals.....	29
Mg-Sn Primer Coatings for the Protection of AA2024 Aerospace Alloys.....	29
Novel In-Situ Methods for Real-Time Monitoring of Corrosion Processes.....	29
Spectroelectrochemical Evaluation of Carbon Steel in Slightly Sour Environments Under the Presence of Triazine-Based H ₂ S Scavenger Byproducts utilizing In-Situ Confocal Surface Enhanced Raman Spectroscopy.....	30
The Reactivity of Aluminum Alloys During Pre-Treatment Processes by Atomic Emission Spectroelectrochemistry (AESEC).....	29
Utilising a Bespoke In situ X-ray Tomography Cell to Characterise In Real Time the Formation, Evolution and Breakdown of Corrosion Scales on X-65 Pipeline Steel in CO ₂ Saturated Environments.....	29
Biomedical Materials.....	31
Cathodic Voltage Controlled Electrical Stimulation for Orthopedic Implant Infection Control.....	31
Characterization of the Passive Film Formed on Selective Laser Melting 316L SS in the Phosphate-Buffered Saline Solution.....	31
Corrosion and Repassivation Behavior of Freshly Exposed Nitinol Surfaces in Simulated Body Fluids.....	31
Corrosion of Dental Implants Made of Titanium Alloy Connected to Stainless Steel.....	31
Demonstration of a Tribo-corrosion Model by Using Single Asperity Tribo-corrosion test on CoCrMo Alloy.....	31
Development of New Biodegradable Metal Alloys That Can Be Used as a Fixation Element in Patients Who Have Suffered Bone Fractures.....	31
Electrochemical Characterization of Titanium Alloys for Dental Implants.....	31
Performance of an Anti-Microbial Copper-Base Alloy for High-touch Surfaces.....	31
Selective Dissolution of β -Phase in Ti-6Al-4V in Presence of Inflammatory Species.....	31
Synergistic Effects of Bacterial Contamination and Citric Acid Detoxification on Titanium Surface Oxide.....	31
The Effect of Decontamination Solution on Implant Grade Ti6Al4V and CoCrMo.....	31
The Effects of Purity and Surface Finish on Corrosion and Oxide Layer Composition of Nitinol.....	31
Concrete and Architecture - Research in Progress - Day 1.....	47
Autonomous Sensor System for Corrosion Monitoring of Reinforced Concrete Structures.....	47
Cathodic Protection of Marine Chloride Induced Corrosion of Steel in Previously Cracked Concrete.....	46
Corrosion and Bond Characteristics of Coated Steel Reinforcement and Its Effect on the Service Life of Concrete Structures.....	46
Corrosion Rate Measurements in Reinforced Concrete Using Potential Steps.....	46
Determining the Appropriate Perturbation Amplitude in Concrete Resistance Measurement Based on Total Harmonic Distortion.....	46
Effect of Aggressive Environmental Condition on Performance of New Conductive Paint Anode for Reinforced Concrete Structures.....	46
Effect of Viscosity of Cactus Mucilage and Seaweed Extract on the Reinforcing Corrosion.....	46
Electrochemical Investigation of Reinforced Metakaolin-based Geopolymer Concrete.....	46
Investigation of Corrosion Initiation at Bonded Post-Tensioned Tendons Through Passivation Layer Breakdown.....	46
Passive Film Study of Austenitic Stainless Steel 316LN Rebar Immersed in Simulated Concrete Pore Solution Contaminated With Chlorides.....	46
Pitting of Carbon Steel in Synthetic Concrete Pore Solution.....	46
Probabilistic Model for Rebar-concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode.....	47
Towards a Physically Significant Model of the Impedance of Steel in Concrete.....	47
Training of Non-Destructive Detection of Reinforcement Corrosion.....	47
Concrete and Architecture - Research in Progress - Day 2.....	61
General Corrosion of Carbon Steel in Synthetic Concrete Pore Solution.....	62
Generic Relations Between Degree Of Saturation Of Concrete, Resistivity And Corrosion Rate.....	61
Smart Controlled Release Corrosion Inhibitors for Reinforced Concrete.....	62
The Effect of Zinc Aluminum Layered Double Hydroxide Intercalated With NO ₂ -(ZnAl-NO ₂ -Ldh) on the Corrosion Protection of Reinforced Concrete.....	62
Marine Corrosion - Research in Progress.....	38
A Study of the Effect of Chromate on the Cathodic Kinetics on AA7050-T7451 under Simulated Atmospheric Conditions.....	38
Comparison of a Novel Cerium-based Corrosion Inhibitor with Commercially Available Inhibition Additives.....	38
Corrosion Behavior and Galvanic Compatibility of Selected Materials in Natural Seawater.....	38
Cyclic vs. Non-Cyclic Accelerated Corrosion Methods - a Comparative Study.....	38
Effect of V Content on Corrosion Behavior and Hardness of High-Energy Ball Milled AA5083.....	38
Galvanic Corrosion of Az31b Ultrasonically-Welded with Bare and Zn-Coated Steels.....	38
Hydration Testing of Developed Corrosion Resistant Topcoats for U.S. Marine Corps Ground Vehicles.....	38
Modeling of MgRP Protection Considering Chemical Inhibition, Electrochemistry, and Mass Transport.....	38
Sea Spray Aerosol Assessment of Atmospheric Corrosion in a Marine Environment.....	38
Sustainable High-Performance Protective Coatings for Aggressive Corrosion Conditions.....	38
Pits, Cracks and Crevices - Research in Progress - Day 1.....	59
Role of Sustainability - Research in Progress.....	59
Applying Machine Learning to Determine the Corrosion Resistance of Alloys.....	59
Climate Change Corrosion and Integrity Management.....	59
Correlation between Laboratory Corrosion Tests and Field Exposure for Corrosion of Automotive Al-Mg-Si Alloys.....	59
Corrosion and Fatigue of U.S. Offshore Wind Foundations.....	59
Corrosion Management and Materials Selection in "Green Building".....	59
Corrosion of Carbon Steel Galvanically Coupled to Copper in Clay Media in the Disposal of Used Nuclear Fuel.....	59
Corrosion Product Analysis on the Surface of Bio-Oil-Exposed Alloys.....	59
Corrosion Studies of Ferrous Alloys in Pine-Derived Bio-Oil and Heavy Fuel Oil Blends.....	59
Green Inhibitors in Corrosion Control: Non-chromium Conversion coatings for Aluminium alloys.....	59
Impact of System Design on Insulation Drying Time after Water Ingress.....	59
Innovative Routes for the Fabrication of Multifunctional Epoxy Coatings with Improved Barrier, pH Responsive Self-Healing and Antimicrobial Functionalities.....	59
Investigating Climatic Influence on Degradation of Cartridge Brass.....	59
Longitudinal Modeling of Phase Behavior and Implications for Downhole Corrosion.....	59
Real Time Monitoring Technique for Detection of Microbial Corrosion in Oil and Gas System.....	59
Tracer and Electronic Tag Impregnated Solids with Tailored and Accelerated Corrosion for Sensing/Characterization and Sustainability.....	59
Understanding the Impact of Insulation Chemistry on Surface Corrosion to Develop More Robust Insulation Systems that Promote Sustainability.....	59
Research Topical Symposium.....	65
Emergent Materials - Research Topical Symposium.....	65
Corrosion Characteristics of 316L Manufactured by Selective Laser Melting.....	65
Corrosion Resistant Nanostructured Eutectic High Entropy Alloy.....	66
Design of Low Cost, Light Weight Compositionally Complex Alloys (CCA) with Excellent Corrosion Resistance.....	66
Dissolvable Supports for 3D Printed Copper and GRCo Alloys.....	66
Evaluating Corrosion Behavior of Additively Manufactured.....	65
Al-10 wt. %Si-0.3 wt. %Mg Alloy for Automotive Applications.....	65
Hot Salt Stress Corrosion Cracking and Electrochemical Corrosion Behaviour of Additively Manufactured Ti-6Al-4V.....	66
Hydrogen Trapping and Transport Behavior in Additively Manufactured Stainless Steels.....	65
ICME Design of Corrosion Resistant HEA and AM Materials.....	66
Localized Corrosion of Additively Manufactured Stainless Steels.....	65
On the Dynamic Passivity of a Low Cost and Lightweight Compositionally Complex Alloy.....	66
Passivation Phenomena of Compositionally Complex Alloy Ni38Fe20Cr22Mn10Co10 and the Nature of its Electrochemical Oxide.....	66
Sensitization and Carbide Formation in the Complex Microstructure by Laser Additive Manufacturing.....	65
Role of Sustainability - Research in Progress.....	59
Research in Progress.....	59
Corrosion Phenomena Associated with Different Common Food Chemicals Stored in Tinplate Cans with BPA-free Coating.....	59
Sour Corrosion.....	63
Corrosion in Sweet and Slightly Sour Production Conditions - Day 1.....	63
A New System of Corrosion Flow Loops and Some Experimental Results.....	63
Carbon Steel Corrosion on Production Environment, Evaluating the Impact of CO ₂ Partial Pressure, Bsw and Oil Characteristics on Tubular Life Extend.....	63
Correlation Between Concentration of Maximum Adsorption on Platinum and CO ₂ Corrosion Inhibition Efficiency of Nitrogen Heterocyclic Aromatic Compound.....	63
Corrosion of Mild Steel in Concentrated Monoethylene Glycol (MEG).....	63
Corrosion of Steel Armour Wires in Flexible Pipes - Effect of Small Amounts of H ₂ S.....	64
Effect of Aggressive Substance on the Nature of Corrosion Scales Formation on Super 13Cr Stainless Steel in Formate Completion Fluid.....	63
Effect of CaCO ₃ Aqueous Saturation on CO ₂ Corrosion of Mild Steel.....	64
Effect of Salt Concentration on Corrosion Rate of Pipeline Steel at Low Temperature in Acidic Aqueous Environments.....	64
Electrochemical Investigation into the Influence of Monoethylene Glycol on Co ₂ Corrosion in Presence of Acetic Acid.....	64
Exploring High Pressure CO ₂ Annular Corrosion in Flexible Pipes.....	64
Exposure of Various Polymer-lined Pipe Sections to a Sour Liquid Hydrocarbon Fluid at a Maximum Service Temperature: Methodology and Observations.....	64
Failure Studies of Pipe Fittings Retrieved from a Shale Production Field.....	64
Flowline Material Performance and Challenges in Oil and Gas Sweet and Sour Environment.....	64
Internal Corrosion in Tank Vapor Gas Piping - Case Study.....	64
Precipitation Kinetics of FeCO ₃ in Non-Ideal Solutions.....	64
Role of Acetic Acid on the Kinetics and Mechanism of Carbon Steel Dissolution Under CO ₂ Top of Line Corrosion.....	64
Corrosion in Sweet and Slightly Sour Production Conditions - Day 2.....	76
The Combined Effect of O ₂ and CO ₂ on Corrosion of Flexible Armour Wires.....	76
The Effect of Minor Oxygen Ingress on Initiation and Propagation of Localized Corrosion of X65 Mild Steel in Marginally Sour Environments.....	76
Supercritical Systems.....	49
Corrosion in Supercritical Systems.....	49
Corrosion of 3Cr Low-alloyed Steel in Supercritical CO ₂ Environments.....	49
Corrosion Reactions in Simulated CO ₂ Ship Transport Conditions.....	49
Corrosion Testing in Supercritical CO ₂	49
Effect of H ₂ S on the Corrosion of Mild Steel at HPHT Condition.....	49
Impact of O ₂ Content on Corrosion Behavior of X65 Mild Steel in Gaseous, Liquid and Supercritical CO ₂ Environments.....	49
Oxidation of Welded Materials in High Temperature Supercritical Carbon Dioxide.....	49
Pitfalls and Artefacts in Corrosion Experiments with Dense Phase CO ₂	49
Symposia Index (Symposia 2020 Listed by Administering STGs).....	93
Testing and Monitoring.....	60
AC Interference, AC Induced Corrosion, AC Risk Assessment, Monitoring and Mitigation.....	60
AC Corrosion at Other Frequencies Part A: Field Investigation and Mitigation.....	60
AC Corrosion at Other Frequencies Part B: Laboratory Investigations.....	60
AC Corrosion of Cathodically Protected Pipelines - Summary.....	60
A Non-Contact Remote Monitoring System for Measurement of AC Transmission Line Power Flows.....	60
A Pipeline Operator's Experience with AC Induced Corrosion.....	60
Case Analysis of Electromagnetic Interference of AC Substation on Pipeline.....	60
Case Study of AC-Induced Corrosion on Buried Pipeline: Field Test and Mitigation Design.....	60
Challenges in Implementing SP21424-2018 AC Corrosion Criteria.....	60
Design Considerations for Induced AC Mitigation: Induced Voltage vs. Current Density.....	60
Discussion on AC Corrosion Mechanism and Risk Assessment for Cathodically Protected Pipelines.....	60

Subject Index

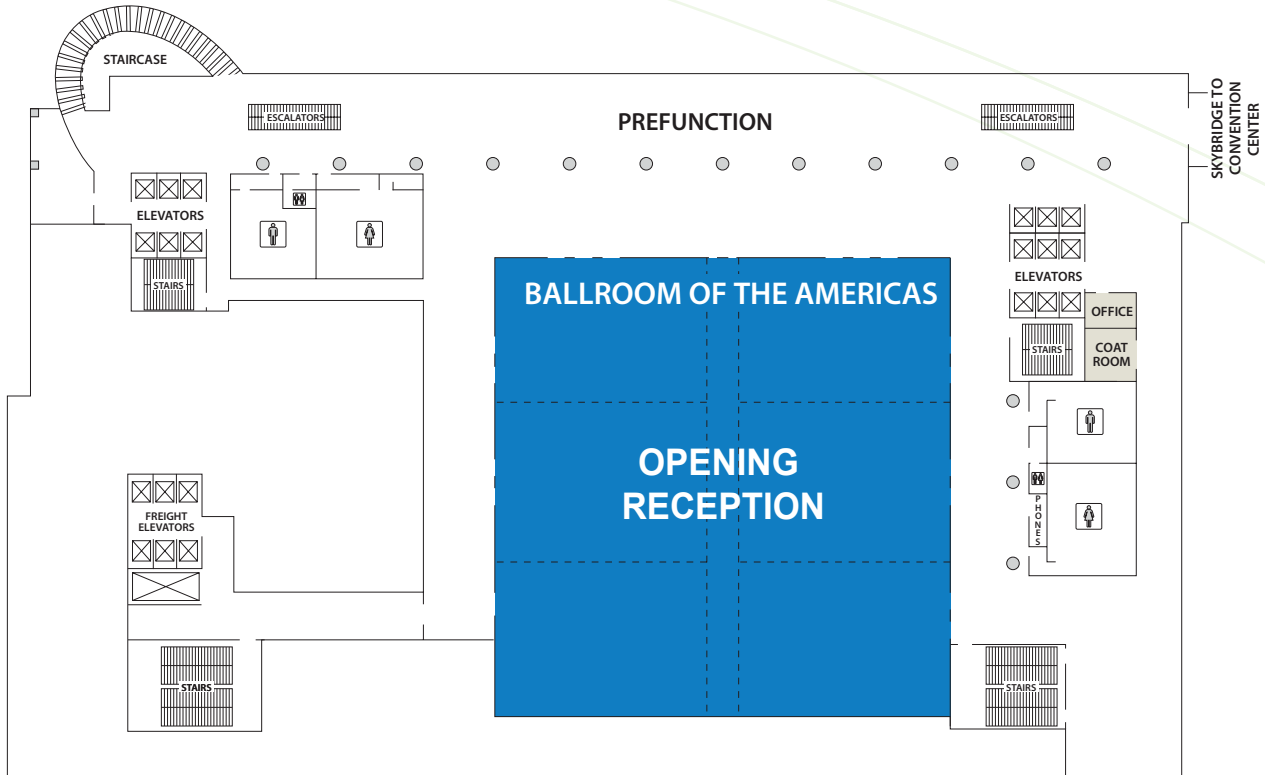
Excavation, Removal and Evaluation of Coupons Exposed to AC Interference While Connected to an Operating Product Transmission Pipeline.....	60	Corrosion Management.....	78
Laboratory and Field Testing for the AC Corrosion of Pipeline Steel.....	60	T.J. Hull Award	
Reflection of an AC Mitigation Project Modeled 12 Years Ago versus Today.....	60	2020 NACE Association Awards.....	21
Unmasking AC Threats on Petrochemical Pipelines.....	60	Transportation	
Direct Assessment.....	52	Meetings, Technical Committees	
Application of Direct Assessment Methods in Arid and "Sabkha" Environments.....	52	Transportation, Land - STG 43.....	108
Application of ICDA Methodologies to Twenty-Two (22) Oil & Gas Production and Transport Pipelines - A Case Study.....	52	Land Transportation: Information Exchange on Corrosion and Coating-Related Issues.....	108
Application of NACE Multi-phase Internal Corrosion Direct Assessment Standard SP0116.....	52	STG 43 Day 1.....	108
Implantation of Probability Modeling to Stress Corrosion Cracking Direct Assessment (SCCDA) Methodology.....	52	STG 43 Day 2.....	108
Material Selection Methodology Using Halite Tendency Indicators for Gas Wells: A Case Study.....	52	Transportation, Land - STG 43	
Process Improvements in Direct Assessment Programs.....	52	Meetings, Technical Committees	
The Use of MP-ICDA ICPM to Evaluate Design Implications for a New Kuwait Crude Oil Pipeline.....	52	Transportation	
Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies.....	56	Land Transportation: Information Exchange on Corrosion and Coating-Related Issues.....	108
Anodization-Emission Spectroscopy of Metals by White Light Interferometry.....	57	STG 43 Day 1.....	108
A Novel Corrosion Probe Design that Provides Long Life and High Sensitivity.....	56	STG 43 Day 2.....	108
A Novel Corrosion Rate Monitoring Method for Steel in Soil Based on Tafel Extrapolation Method.....	56	W	
Detection of Biofilm Forming Microbes Using Electrochemical Methods.....	56	Water and Wastewater	
High Resolution Ultrasound Alarm System for Subsea Corrosion Detection - Comparing Intrusive and Non-Intrusive Performance.....	56	Meetings, Technical Committees	
Installed UT Sensors for Continuous Corrosion Monitoring: Understanding How Process Changes Influence Corrosion Rates.....	56	Water Treatment Systems - STG 11.....	100
Monitoring Localized and General Corrosion using Advanced Electrochemical Sensors.....	56	Biocide Application/Misapplication.....	100
Monitoring Spatial Variation of Localized Corrosion in Concrete Slab Based on Ofdr Distributed Optical Fiber.....	56	Boiler Waterside Failure Analysis.....	100
Passive Magnetometry for Monitoring Integrity and Flow Diagnostics of Subsea Pipelines.....	56	Building Fire Protection Systems: Corrosion and Deposit Control.....	100
Thermal and Cold Spray Coatings		Fire Protection Systems.....	100
Coatings and Linings		STG 11.....	100
Prediction of Thermal Spray Aluminium Coatings		Technical Program, Forums	
Performance in Marine Environments by Combination of Laboratory and Field Tests.....	43	NACE Water Forum: Sharing Best Practices in the Water and Wastewater Industries.....	78
Testing and Monitoring		Workshops and Other Learning Opportunities	
Meetings, Technical Committees		Corrosion Management In Water/Wastewater.....	85
Corrosion Monitoring and Measurement—Science and Engineering Applications - STG 62.....	109	Water Treatment Systems - STG 11	
Acoustic Emission Testing and Measurement.....	109	Meetings, Technical Committees	
Corrosion Monitoring and Measurement - Science and Engineering Applications.....	109	Water and Wastewater	
Electrochemical Measurements.....	109	Biocide Application/Misapplication.....	100
Electrochemical Measurements Information Exchange.....	109	Boiler Waterside Failure Analysis.....	100
Hydrogen Permeation Technology - Online.....	109	Building Fire Protection Systems: Corrosion and Deposit Control.....	100
Sensors: Corrosion and Corrosiveness Sensor Technology.....	109	Fire Protection Systems.....	100
Techniques for Monitoring Corrosion - Field Experience.....	109	STG 11.....	100
Test Method for Monitoring Atmospheric Corrosion Rate by Electrochemical Measurements.....	109	WCO Forum – Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions	
Technical Program, Symposia		Technical Program, Forums	
AC Interference, AC Induced Corrosion, AC Risk Assessment, Monitoring and Mitigation.....	60	World Corrosion Organization.....	79
AC Corrosion at Other Frequencies Part A: Field Investigation and Mitigation.....	60	West Asia & Africa Area Board of Trustees	
AC Corrosion at Other Frequencies Part B: Laboratory Investigations.....	60	Meetings, Other.....	112
AC Corrosion of Cathodically Protected Pipelines - Summary.....	60	Western Area Board of Trustees	
A Non-Contact Remote Monitoring System for Measurement of AC Transmission Line Power Flows.....	60	Meetings, Other.....	112
A Pipeline Operator's Experience with AC Induced Corrosion.....	60	What Does a Facility Owner Look for in a Quality Coating Contractor?	
Case Analysis of Electromagnetic Interference of AC Substation on Pipeline.....	60	Technical Program, Forums.....	80
Case Study of AC-Induced Corrosion on Buried Pipeline: Field Test and Mitigation Design.....	60	Coatings and Linings.....	80
Challenges in Implementing SP21424-2018 AC Corrosion Criteria.....	60	What's New at CORROSION 2020	
Design Considerations for Induced AC Mitigation: Induced Voltage vs. Current Density.....	60	cKit™ Training for Sections.....	13
Discussion on AC Corrosion Mechanism and Risk Assessment for Cathodically Protected Pipelines.....	60	Corrosion in Sweet and Slightly Sour Production Conditions Symposium.....	13
Excavation, Removal and Evaluation of Coupons Exposed to AC Interference While Connected to an Operating Product Transmission Pipeline.....	60	Featured Speaker.....	12
Laboratory and Field Testing for the AC Corrosion of Pipeline Steel.....	60	First Service "How To" Mini-Sessions.....	12
Reflection of an AC Mitigation Project Modeled 12 Years Ago versus Today.....	60	Innovations in Chemical and Mechanical Cleaning and Fouling/Corrosion Mitigation Symposium.....	13
Unmasking AC Threats on Petrochemical Pipelines.....	60	NACE International Water Forum.....	12
Direct Assessment.....	52	NACE-SSPC Discussions Town Hall.....	12, 13
Application of Direct Assessment Methods in Arid and "Sabkha" Environments.....	52	National Shipbuilding Research Program (NSRP) Surface Preparation and Coatings (SP&C) Panel Meeting.....	13
Application of ICDA Methodologies to Twenty-Two (22) Oil & Gas Production and Transport Pipelines - A Case Study.....	52	NIICAP Forum.....	13
Application of NACE Multi-phase Internal Corrosion Direct Assessment Standard SP0116.....	52	Selecting the Right Surface Preparation for Performance.....	12
Implantation of Probability Modeling to Stress Corrosion Cracking Direct Assessment (SCCDA) Methodology.....	52	The State of Corrosion Today.....	12
Material Selection Methodology Using Halite Tendency Indicators for Gas Wells: A Case Study.....	52	Whitney Lecture	
Process Improvements in Direct Assessment Programs.....	52	Meetings, Other.....	112
The Use of MP-ICDA ICPM to Evaluate Design Implications for a New Kuwait Crude Oil Pipeline.....	52	WiFi-Wireless Internet	
Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies.....	56	General Information.....	5
Anodization-Emission Spectroscopy of Metals by White Light Interferometry.....	57	Willis Rodney Whitney Award Lecture	
A Novel Corrosion Probe Design that Provides Long Life and High Sensitivity.....	56	Special Lectures.....	19
A Novel Corrosion Rate Monitoring Method for Steel in Soil Based on Tafel Extrapolation Method.....	56	Workshops and Other Learning Opportunities	
Detection of Biofilm Forming Microbes Using Electrochemical Methods.....	56	Additive Manufactured Materials	
Heat Recovery Steam Generation Corrosion Monitoring and Inspection Challenges.....	57	NACE Consortia Additive Manufacturing Roundtable.....	86
High Resolution Ultrasound Alarm System for Subsea Corrosion Detection - Comparing Intrusive and Non-Intrusive Performance.....	56	Coatings and Linings	
Installed UT Sensors for Continuous Corrosion Monitoring: Understanding How Process Changes Influence Corrosion Rates.....	56	NSRP Surface Preparation and Coatings (SP&C) Panel Meeting.....	86
Monitoring Localized and General Corrosion using Advanced Electrochemical Sensors.....	56	Protective Coatings Workshop.....	84
Monitoring Spatial Variation of Localized Corrosion in Concrete Slab Based on Ofdr Distributed Optical Fiber.....	56	A Look at the Industrial Painting and Coatings Trade in 10 Years.....	84
Passive Magnetometry for Monitoring Integrity and Flow Diagnostics of Subsea Pipelines.....	56	Architectural and Industrial Maintenance (AIM) VOC Regulations and PCBTF (Oxsol 100) VOC Exemption Update.....	84
Workshops and Other Learning Opportunities		Augmented Reality in Coatings Inspection.....	84
Future Robotic Technologies In Confined Spaces.....	85	CoatingsPro Contractor Awards.....	84
The Coatings Experience		From the Sublime to the Ridiculous: Life in the Fast Coatings Lane.....	84
Exhibition.....	124	Passive Fire Protection.....	84
The Importance and Value for Inspection of Mechanical Insulation Systems		Protective Coatings in Infrastructure: Attributes, Structure Requirements and Case Studies.....	84
Corrosive Chronicles and MP Innovation Theater		Regulatory Update / Overview.....	84
Mechanical Insulation.....	81	Robotics in Coatings Inspection.....	84
The NACE Store		Shop and Field Applications for Metallic Zinc Coatings.....	84
General Information.....	6	Surface Preparation.....	84
Thermal and Cold Spray Coatings		The Misconceptions of Chemically Grouping Coatings.....	84
Technical Program, Symposia		Using Dry Film Thickness Measurement Equipment Effectively.....	84
Coatings and Linings		Corrosion Management	
Corrosion Resistance and Deterioration Behavior of Overlapping Layer Between Thermal Spray Coating and Heavy Duty Coating.....	43	Corrosion Management In Fpsos.....	86
Determination of the Corrosion Rate of Thermally Spayed Aluminum (TSA) in Simulated Marine Service.....	43	Marine Corrosion	
Development of Novel Coating Systems for Mitigating Corrosion of Offshore Wind Turbines.....	43	Corrosion in Marine Exhaust Gas Cleaning Systems (Scrubbers).....	85
Hot Corrosion Behavior of Suspension Plasma Sprayed Yttria Stabilized Zirconia Thermal Barrier Coating.....	43	Power Industry Corrosion	
Interlayer Coatings on Graphite for Improving the Durability of Plasma Sprayed Yttria Coating for High-Temperature Applications.....	43	Corrosion Impacts In Renewable Energy.....	85
Prediction of Thermal Spray Aluminium Coatings		Testing and Monitoring	
Performance in Marine Environments by Combination of Laboratory and Field Tests.....	43	Future Robotic Technologies In Confined Spaces.....	85
Protecting Steel Structures from Corrosion with Thermal Sprayed Zinc Duplex Coatings.....	43	Water and Wastewater	
The Influence of Temperature on the Performance of Sacrificial Metallic Coatings Operating in Seawater.....	43	Corrosion Management In Water/Wastewater.....	85
Thermal and Cold Spray Coatings – Processes, Applications and Challenges		World Corrosion Organization	
Technical Program, Forums.....	80	Technical Program, Forums	
Coatings and Linings.....	80	WCO Forum – Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions.....	79
The State of Corrosion Today		W.R. Whitney Award	
What's New at CORROSION 2020.....	12	2020 NACE Association Awards.....	22
The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation			
Technical Program, Forums.....	78		

Advertising Index

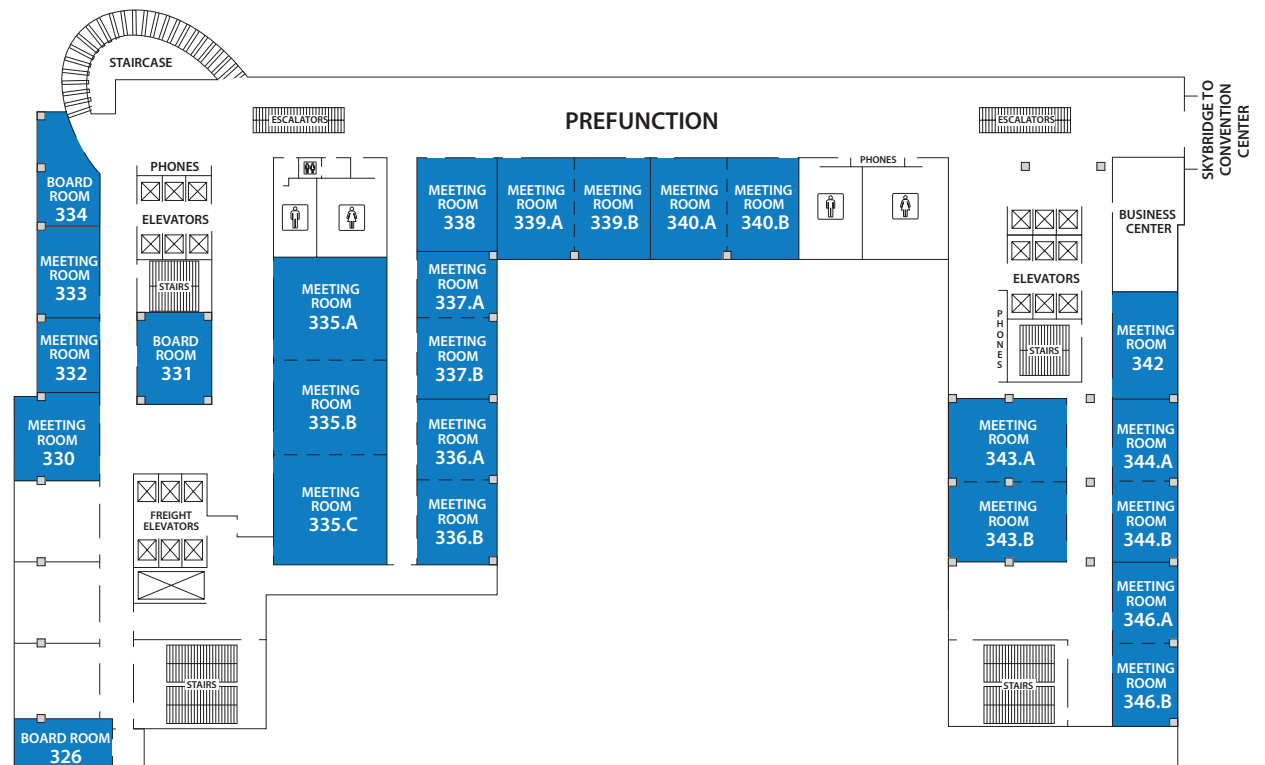
COMPANY	BOOTH NUMBER	PAGE NUMBER
Bio-Logic USA, LLC	2915	Inside Front Cover
Biotechnology Solutions	940	131
Blair Rubber Company	2427	Inside Back Cover
BORIN Manufacturing	2215	27
Carboline Co.	1513	2
CerAnode Technologies International	1027	Back Cover
CleanWirx 207	708	134
Clemco Industries Corp.	1250	136
Coastal Corrosion Control, Inc.	1014	138
CoatingsPro Contractor Awards Ceremony	2721	264
CORROSION 2020 Student Activities	2729	16
CORROSION 2021 (Call for Abstracts / Call for Papers/ Save the Date)	2729	17, 96, 140
Corrpro Companies, Inc.	1435	121
Dairyland Electrical Industries	2135	83, 201
De Nora Tech, LLC	1935	142
Deutsche Edelstahlwerke (Schmolz + Bickenbach Group)	1858	143
Emerson	1721	145
Fleet Maintenance & Modernization Symposium 2020	N/A	9
GPT Industries	826	149
Harley Giveaway Ad	By Express Pass, 708, 1049, 1247, 1623, 2320	11
HMT Tank Services	2320	115, 151
InduMar Products, Inc.	115	153
Integrated Global Services	1053	155
International/Interprovincial Corrosion Control Co. Ltd. (ICCC)	1712	157
Jennings Anodes USA	2343	159
Leadership Ad	N/A	113
Managing Corrosion with Polymers	N/A	95, 101
MESA	2035	163
Metal Samples	1519	1
MontiPower Americas, Inc.	2527	165
NACE Corrosion Under Insulation Course	2729	96
NACE Industrial Coating Application (ICA) e-Course	2729	200
NACE International Institute Contractor Accreditation Program	Across from Registration	200
NACE Section Election	2729	15
Nippon Steel Corporation	121	167
Polyguard Products, Inc.	1841	28
PPG Protective & Marine Coatings	1235	122
Protective Coating Specialist Certification Ad	Across from Registration	15
RockGuard HD	1247	172
ROCKWOOL Technical Insulation	515	174
RPS Composites	2209	103
SANDVIK	735	176
TEG 500X / STG-33	N/A	105
Thorpe Specialty Services Corporation	817	181
Trenton Corp.	1823	183

Hilton of the Americas Headquarters hotel

Level 2

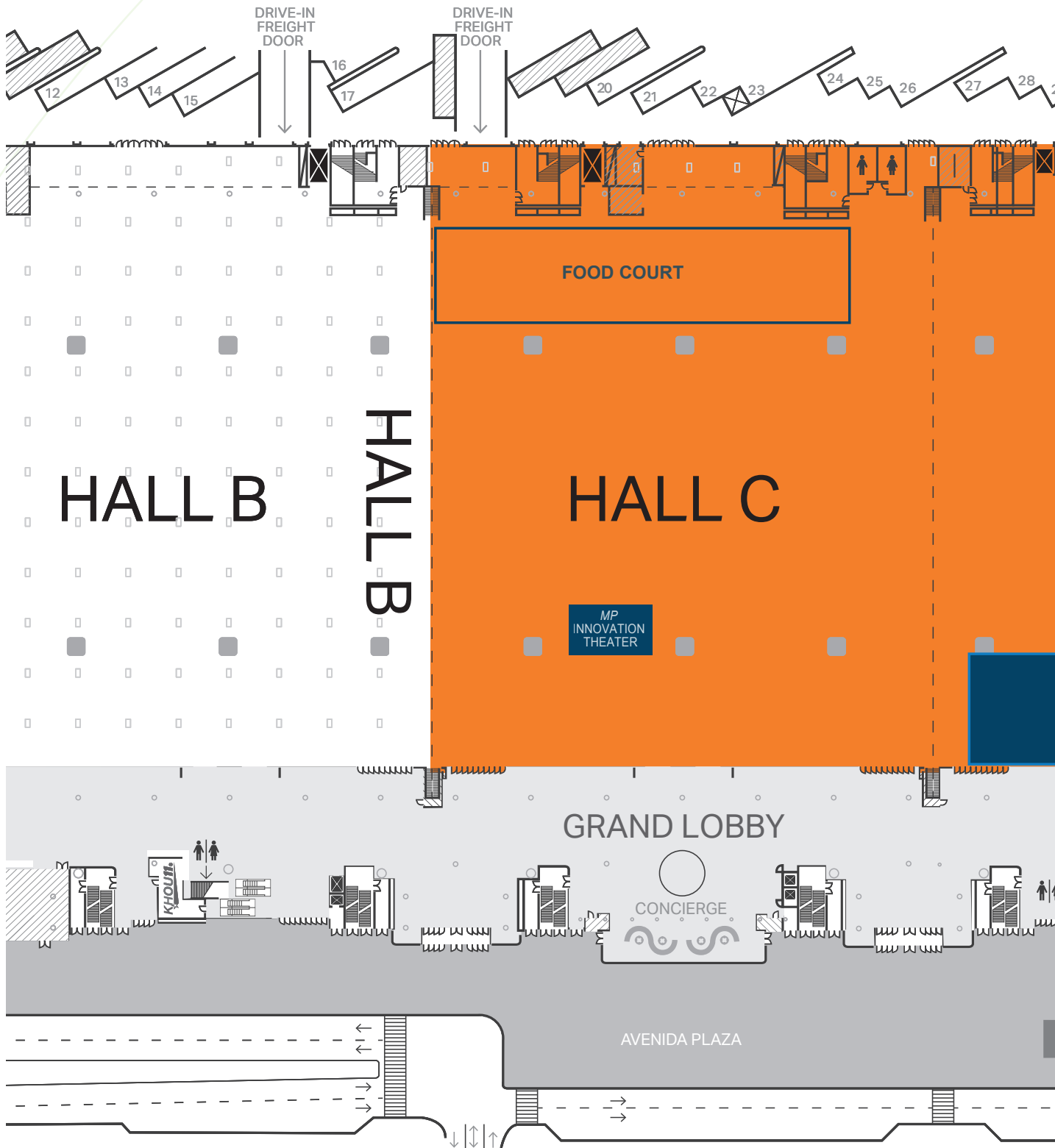


Level 3



George R. Brown Convention Center

Exhibit Hall | LEVEL 1 | Hall C-E



DISCOVERYGREEN®

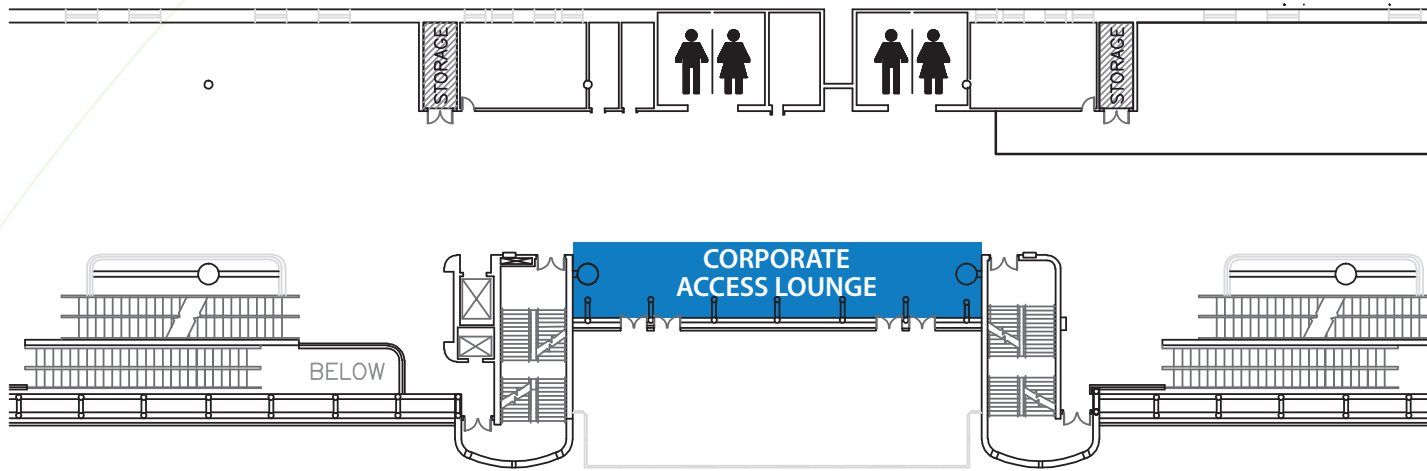
#CORROSION2020



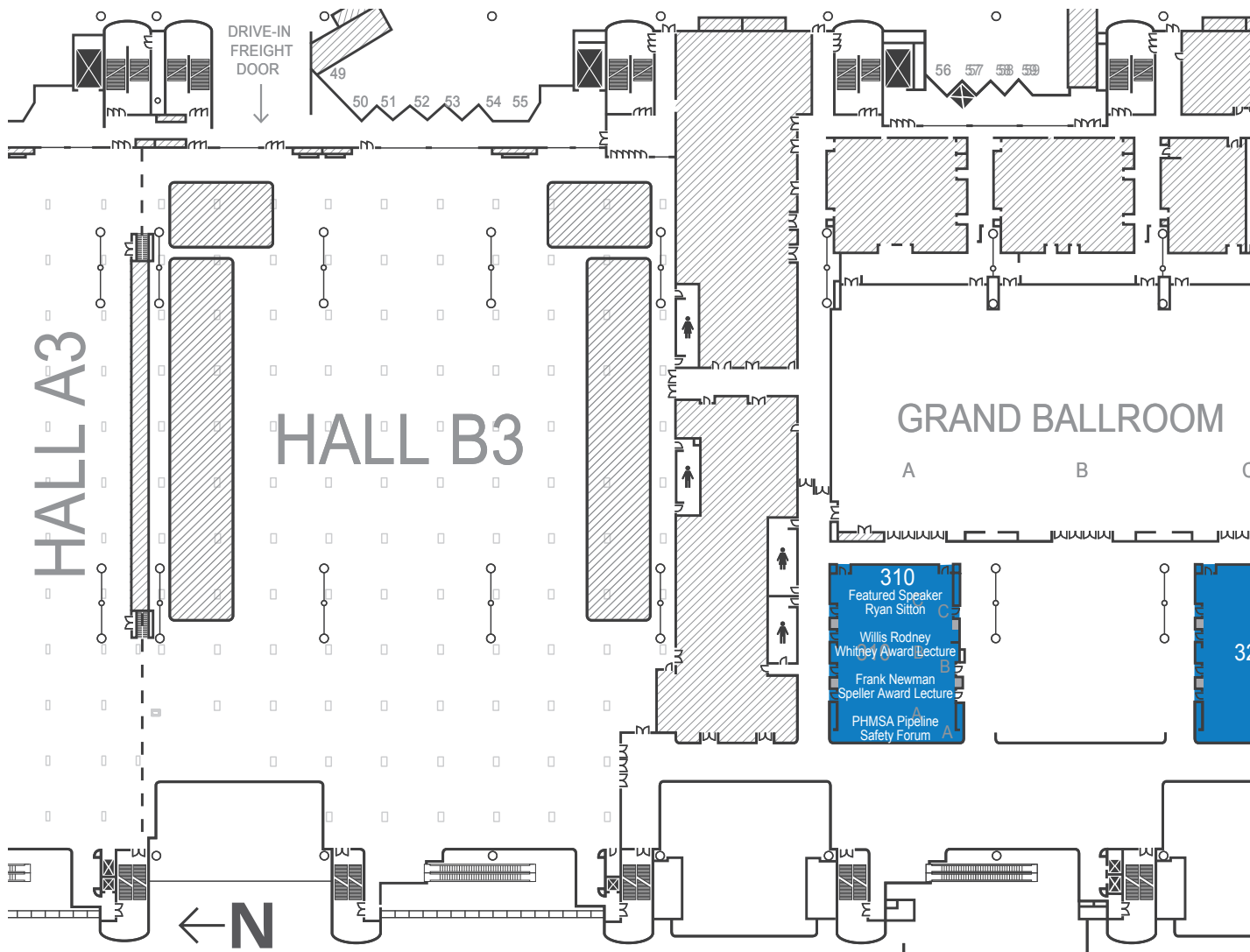
#CORROSION2020

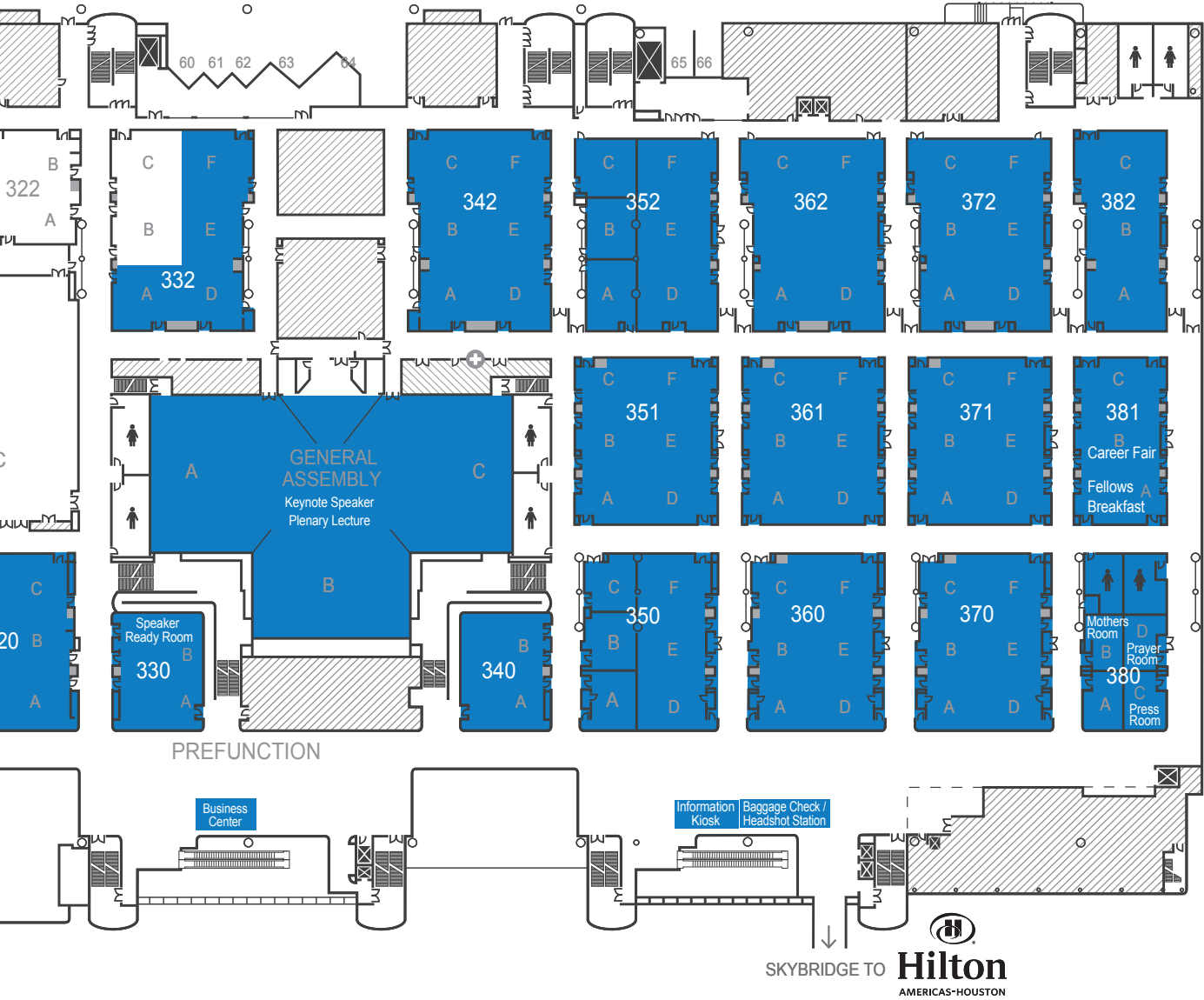
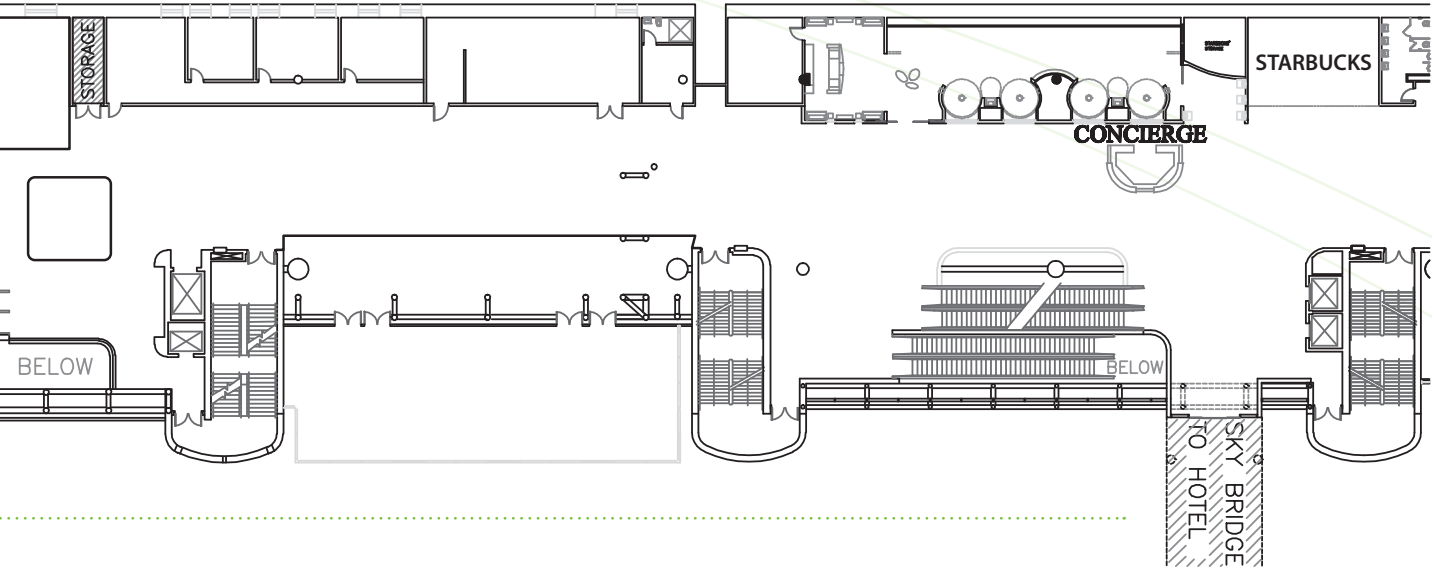
George R. Brown Convention Center

LEVEL 2

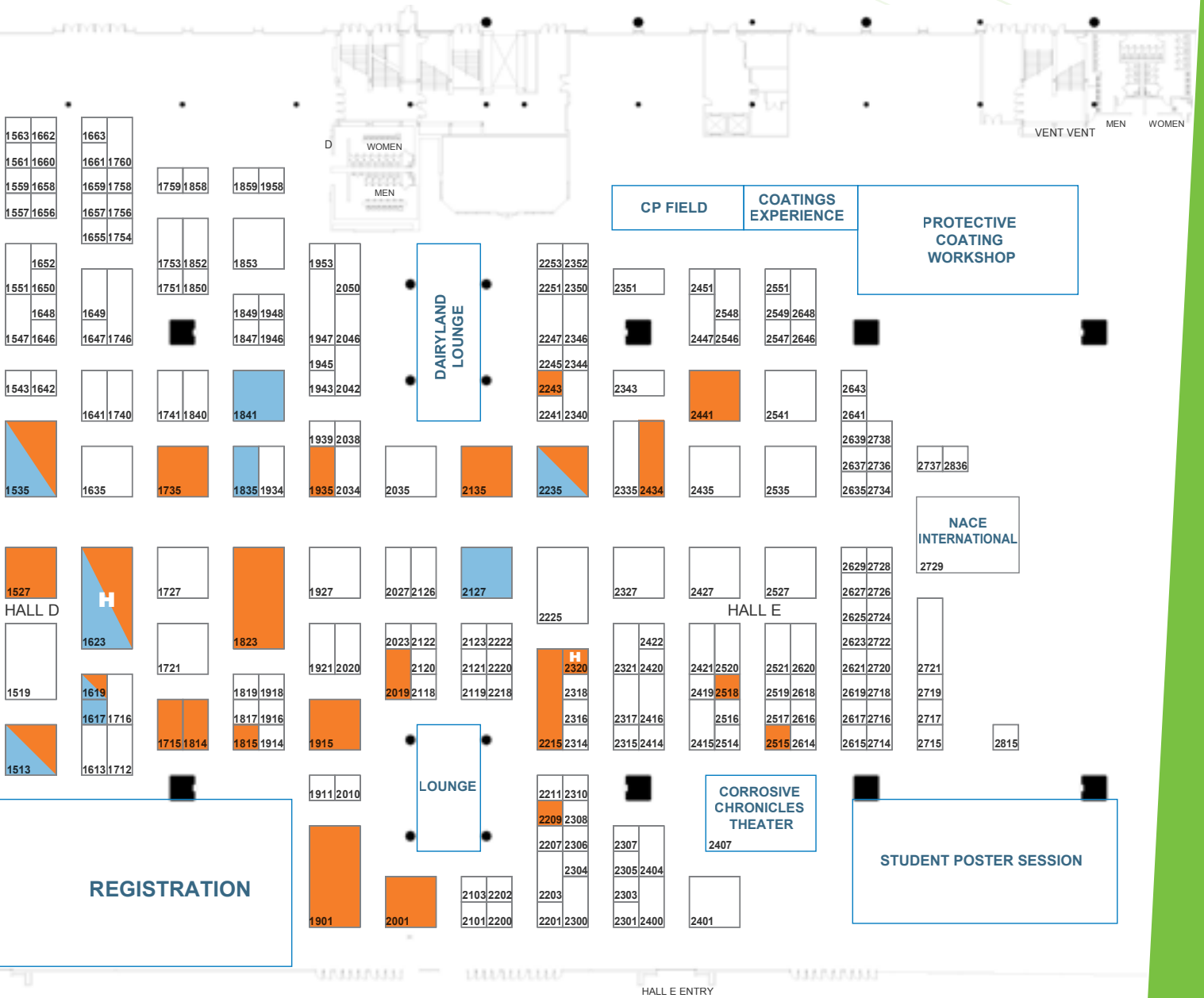


LEVEL 3





For the most up-to-date information, visit www.nacecorrosion.org.



Friday - Sunday

Day at a Glance

FRIDAY, MARCH 13			
COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	NACE Foundation Board of Directors	George R. Brown Convention Center	Room 320 C
SATURDAY, MARCH 14			
COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	NACE Board of Directors	Hilton Americas - Houston	Ballroom of Americas- AB
	Corrosion Technical Series: Corrosion Impacts in Renewables	Hilton Americas - Houston	335 C
	Corrosion Technical Series: Corrosion in Marine Exhaust Gas Cleaning Systems (Scrubbers)	Hilton Americas - Houston	335 B
	Corrosion Technical Series: Corrosion Management for FPSOs	Hilton Americas - Houston	336 AB
	Corrosion Technical Series: Corrosion Management in Water/Wastewater	Hilton Americas - Houston	335 A
	Corrosion Technical Series: Future Robotic Technologies in Confined Spaces	Hilton Americas - Houston	344
	CORROSION Crew Social Brew	El Big Bad	
SUNDAY, MARCH 15			
COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TEG 208X	Pipeline Crossings: Steel-Cased, Thrust-Bored, and HDD	George R. Brown Convention Center	Room 351 D
TEG 159X	Building Fire Protection Systems: Corrosion and Deposit Control	George R. Brown Convention Center	Room 352 B
TG 526	Cathodic Protection of Metallic Structures Submerged in Fresh Water	George R. Brown Convention Center	Room 360 AB
TG 527	Corrosion Prevention and Control Planning Standard	George R. Brown Convention Center	Room 362 C
TEG 582X	Corrosion Protection of Wind Energy Equipment and Facilities	George R. Brown Convention Center	Room 342 B
TG 370	Pipeline Corrosion Management	George R. Brown Convention Center	Room 350 C
	25th Annual NACE Race	Memorial Park	
	Area Coordination Committee	George R. Brown Convention Center	Room 352 F
	NACE Foundation Darrel D. Byerley Memorial Golf Tournament	Wildcat Golf Club	
	NACE MR0175/ISO 15156 Maintenance Panel	George R. Brown Convention Center	Room 372 ABC
	TCC 101 Session 1	George R. Brown Convention Center	Room 342 F
	ACPC Session I	George R. Brown Convention Center	Room 350 A
TEG 182X	Geothermal System Corrosion	George R. Brown Convention Center	Room 330 A
TEG 097X	Electrochemical Measurements Information Exchange	George R. Brown Convention Center	Room 332 E
TEG 500X	Nonmetallic Materials for Onshore and Offshore Facilities	George R. Brown Convention Center	Room 350 F
TEG 515X	Top-of-Line Corrosion	George R. Brown Convention Center	Room 352 A
TG 011	Underground Storage Tank Systems: Corrosion Control by Cathodic Protection	George R. Brown Convention Center	Room 351 D
TEG 188X	Cleaning: Chemical and Mechanical Cleaning	George R. Brown Convention Center	Room 342 A
TG 237	Microbiologically Influenced Corrosion on External Surfaces of Buried Pipelines: Detection, Testing	George R. Brown Convention Center	Room 350 C
TG 476	Corrosion Protection of Offshore Wind Power Units	George R. Brown Convention Center	Room 342 B
TG 200	Economics of Corrosion: Standard	George R. Brown Convention Center	Room 362 C
TEG 186X	Environmentally Assisted Cracking	George R. Brown Convention Center	Room 342 C
	MP Editorial Advisory Board	George R. Brown Convention Center	Room 350 B
TEG 282X	Oil and Gas Production, Sour Corrosion: Information Exchange	George R. Brown Convention Center	Room 332 D

Friday - Sunday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
	7 a.m. to 5 p.m.											
	8 a.m. to 5 p.m.											
	9 a.m. to 4 p.m.											
	9 a.m. to 4 p.m.											
	9 a.m. to 4 p.m.											
	9 a.m. to 4 p.m.											
	9 a.m. to 4 p.m.											
	6. to 10 p.m.											
	7	8	9	10	11	NOON	1	2	3	4	5	6
		8 to 9 a.m.										
		8 to 9:30 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 11 a.m.										
		8 to 11 a.m.										
		8 to 11 a.m.										
		8 a.m. to noon										
		9 to 10 a.m.										
		9 to 11 a.m.										
		9 to 11 a.m.										
		9 a.m. to 5 p.m.										
		9 a.m. to 5 p.m.										
		9 to 11 a.m.										
		9 to 11 a.m.										
		9:30 to 11:30 a.m.										
		10 to 11 a.m.										
		10 a.m. to noon										
		10 a.m. to noon										
		10 a.m. to noon										
		10 a.m. to noon										
		10 a.m. to noon										

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

SUNDAY, MARCH 15 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 018	Steel, Structural: Corrosion Control of Pilings in Nonmarine Applications	George R. Brown Convention Center	Room 360 AB
TG 529	Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures	George R. Brown Convention Center	Room 330 A
TG 547	Monitoring of Pipeline Casing Using CP Coupons, ER Probes, Permanent Reference Electrodes, etc. within the Annular Space of the Casing	George R. Brown Convention Center	Room 351 D
TG 261	Vapor Corrosion Inhibitors and Rust Preventives for Interim (Temporary) Corrosion Protection	George R. Brown Convention Center	Room 352 A
	Western Board of Trustees	George R. Brown Convention Center	Room 360 C
	Latin America Area Board of Trustees	George R. Brown Convention Center	Room 360 D
STG 45	Pollution Control, Waste Incineration, and Process Waste	George R. Brown Convention Center	Room 342 B
TG 344	Chemical Cleaning Test Methods—Low-Temperature Solutions	George R. Brown Convention Center	Room 342 A
TG 038	Steel Pipelines and Piping Systems: Internal Corrosion Control	George R. Brown Convention Center	Room 350 C
TEG 531X	The Role of Corrosion in Materials Stewardship and Sustainability	George R. Brown Convention Center	Room 362 C
TG 430	AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring	George R. Brown Convention Center	Room 360 AB
TEG 189X	Atmospheric Corrosion	George R. Brown Convention Center	Room 342 C
TEG 413X	Black Powder in Gas Pipelines	George R. Brown Convention Center	Room 332 D
TEG 368X/WG 12	Electric Utility Transmission and Distribution Corrosion and Grounding: Discussion of Issues	George R. Brown Convention Center	Room 330 A
	East Asia & Pacific Rim Area Board of Trustees	George R. Brown Convention Center	Room 361 C
TG 299	Joint Meeting IOGP 15156 (ISO/TC 67/WG 7) + TG 299	George R. Brown Convention Center	Room 372 ABC
TEG 351X	Advances in Corrosion Under Insulation (CUI) Technologies	George R. Brown Convention Center	Room 382 C
TG 360	Control of External Corrosion on Underground or Submerged Metallic Piping Systems	George R. Brown Convention Center	Room 351 D
	Publications Activities Committee	George R. Brown Convention Center	Room 361 D
TEG 094X	State-of-the-Art Research on Corrosion Inhibitors	George R. Brown Convention Center	Room 352 A
	TCC Session I	George R. Brown Convention Center	Room 352 F
TG 575	White Paper: Corrosion Prevention and Control for Marine Scrubbers	George R. Brown Convention Center	Room 342 B
TEG 097X	Electrochemical Measurements	George R. Brown Convention Center	Room 332 F
TG 377	Pipeline External Corrosion Confirmatory Direct Assessment	George R. Brown Convention Center	Room 350 C
TG 579	Pre-Job Determination for the Decontamination of Refinery and Pipeline Equipment	George R. Brown Convention Center	Room 342 A
TG 578	Material Sustainability	George R. Brown Convention Center	Room 362 C
TEG 098X	Acoustic Emission Testing and Measurement	George R. Brown Convention Center	Room 340 A
TG 584	Field Procedures relating to Pipeline AC Interference Detection, Monitoring & Mitigation	George R. Brown Convention Center	Room 360 AB
TEG 202X	Flow Assurance in Oil and Gas Production: Information Exchange	George R. Brown Convention Center	Room 332 D
TEG 187X	Microbiologically Influenced Corrosion	George R. Brown Convention Center	Room 342 C
TEG 530X	Renewable Energy Facilities Design, Construction and Commissioning	George R. Brown Convention Center	Room 330 A
TG 564	Standard Framework for Establishing Corrosion Management Systems	George R. Brown Convention Center	Room 362 C

	7	8	9	10	11	NOON	1	2	3	4	5	6
				10 a.m. to noon								
					11 a.m. to noon							
					11 a.m. to noon							
					11 a.m. to noon							
					11 a.m. to 4 p.m.							
					noon to 5 p.m.							
							1 to 1:30 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2:30 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 4 p.m.					
							1 to 4:30 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1:30 to 4:30 p.m.					
							1:30 to 5 p.m.					
							2 to 3 p.m.					
							2 to 4 p.m.					
							2 to 4 p.m.					
							2:30 to 4 p.m.					
									3 to 5 p.m.			
									3 to 5 p.m.			
									3 to 5 p.m.			
									3 to 5 p.m.			
									3 to 5 p.m.			
										4 to 5 p.m.		

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

Sunday - Monday

Day at a Glance

SUNDAY, MARCH 15 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	General Membership	George R. Brown Convention Center	Room 350 DE
	NACE MR0175/ISO 15156 Maintenance Agency	George R. Brown Convention Center	Room 372 ABC
	Standards Committee Informational Meeting	George R. Brown Convention Center	Room 350 DE
	Opening Reception	Hilton Americas - Houston	Ballroom of Americas

MONDAY, MARCH 16

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	Speaker's Breakfast Monday	George R. Brown Convention Center	Room 320 ABC
TG 052	Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars	George R. Brown Convention Center	Room 351 C
TG 301	Materials and Fabrication Practices for New Pressure Vessels Used in Wet H ₂ S Refinery Service	George R. Brown Convention Center	Room 372 DEF
TG 209	Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metal	George R. Brown Convention Center	Room 351 D
	Mini Keynote - The Future of Oil and Gas in the State of Texas by Ryan Sitton	George R. Brown Convention Center	Room 310 ABC
TEG 016X	Cathodic Protection and Corrosion Control Research Development	George R. Brown Convention Center	Room 360 AB
TG 570	Citric Acid-Based Stainless Steel Passivation of Tankers and Storage Tanks	George R. Brown Convention Center	Room 342 B
STG 61	Inhibition—Corrosion and Scaling	George R. Brown Convention Center	Room 352 A
TEG 115X	Sulfuric Acid—Material and Experiences	George R. Brown Convention Center	Room 342 A
	Offshore Cathodic Protection - Case Studies of New or Novel Designs or Subsea Inspection Techniques	George R. Brown Convention Center	Room 340 A
	Leadership: Activate the Leader Within Forum	George R. Brown Convention Center	Room 371 ABC
	Solid Particle Erosion and Erosion-Corrosion	George R. Brown Convention Center	Room 340 B
	Central Area Board of Trustees	George R. Brown Convention Center	Room 360 C
	Thermal and Cold Spray Coatings	George R. Brown Convention Center	Room 351 EF
	Progress in Laboratory Testing of Corrosion Inhibitors for Oil Field Applications	George R. Brown Convention Center	Room 362 EF
	Flow Assurance in Oil and Gas from Inland to Subsea	George R. Brown Convention Center	Room 332 F
	Sour Corrosion	George R. Brown Convention Center	Room 352 DE
	Combined-Effects Material Degradation Under Atmospheric Conditions	George R. Brown Convention Center	Room 332 E
	Localized Corrosion - Mechanisms, Research Methods, Modelling and Control	George R. Brown Convention Center	Room 362 C
	Marine Corrosion - Research in Progress	George R. Brown Convention Center	Room 342 F
	Biomedical Materials - Research in Progress	George R. Brown Convention Center	Room 342 E
	Advanced Electrochemical Methods - Research in Progress	George R. Brown Convention Center	Room 342 D
	Advances in Materials for Oil and Gas Production - Day 1	George R. Brown Convention Center	Room 370 ABC
	Corrosion Management - Implementation & Progress - Day 1	George R. Brown Convention Center	Room 360 EF
	Recent Developments in Mineral Scales and Deposits Control Technologies - Day 1	George R. Brown Convention Center	Room 382 A

Sunday - Monday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
										4:30 to 5 p.m.		
										4:30 to 5:30 p.m.		
										5 to 5:30 p.m.		
											5:30 to 7 p.m.	

	7	8	9	10	11	NOON	1	2	3	4	5	6
	7 to 8 a.m.											
		8 to 9 a.m.										
		8 to 9 a.m.										
		8 to 9 a.m.										
		8 to 9:30 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10:35 a.m.										
		8 to 11:30 a.m.										
		8 to 11:25 a.m.										
		8 a.m. to noon										
		8 to 11:50 a.m.										
		8 a.m. to 1:25 p.m.										
		8 a.m. to 1:50 p.m.										
		8 a.m. to 2:15 p.m.										
		8 a.m. to 3 p.m.										
		8 a.m. to 3 p.m.										
		8 a.m. to 3 p.m.										
		8 a.m. to 3:05 p.m.										
		8 a.m. to 3:25 p.m.										
		8 a.m. to 3:25 p.m.										
		8 a.m. to 3:25 p.m.										
		8 a.m. to 3:25 p.m.										

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

MONDAY, MARCH 16 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	Recent Experiences with Austenitic and Duplex Stainless Steels - Day 1	George R. Brown Convention Center	Room 370 DEF
	Corrosion in Nuclear Systems - Day 1	George R. Brown Convention Center	Room 351 AB
	Environmentally Assisted Cracking Day 1	George R. Brown Convention Center	Room 361 AB
TEG 255X	Coatings, Thermal-Spray for Corrosion Protection	George R. Brown Convention Center	Room 361 D
	Education Subcommittee	George R. Brown Convention Center	Room 342 C
TG 912	RP0191 Worksheet for Selection of Oilfield Nonmetallic Seal System	George R. Brown Convention Center	Room 350 F
	NACE International Water Forum: Sharing Owner/Operations Best Practices and Contrasting New and Old	George R. Brown Convention Center	Room 362 D
TG 329	Cathodic Protection for Masonry Buildings Incorporating Steel Frames - SOA Report	George R. Brown Convention Center	Room 351 C
TG 177	Refineries, Environmental Cracking: Review of NACE SP0403 (Formerly RP0403)	George R. Brown Convention Center	Room 372 DEF
	TCC 101 Session II	George R. Brown Convention Center	Room 382 B
TG 426	Multiphase Flow—ICDA	George R. Brown Convention Center	Room 351 D
	NACE-SSPC Discussions Town Hall	George R. Brown Convention Center	Room 350 DE
	Student Poster Orientation	George R. Brown Convention Center	Room 320 ABC
TG 561	Molecular Microbiological Methods - Sample Handling and Laboratory Processing	George R. Brown Convention Center	Room 350 C
	Awards Committee	George R. Brown Convention Center	Room 352 F
TG 556	Electrochemical Realkalization of Steel-Reinforced Concrete – A State of the Art Report	George R. Brown Convention Center	Room 351 C
TG 249	Field-Applied Fusion-Bonded Epoxy (FBE) Pipe Coating Systems for Girth Weld Joints: Application, Performance, and Quality Control	George R. Brown Convention Center	Room 382 C
TG 167/284	ICCP of Internal Submerged Surfaces of Steel Water Storage Tanks; Galvanic Anode CP of Internal; Galvanic Anode CP of Internal Submerged Surfaces of Steel Water Storage Tanks - Joint meeting	George R. Brown Convention Center	Room 360 AB
TG 174	Refinery Injection and Process Mixing Points	George R. Brown Convention Center	Room 372 DEF
TEG 424X	Liquid-Applied Thermal Insulative Coating for Atmospheric Service at 0 to 375 °F	George R. Brown Convention Center	Room 361 D
	Barrier and Anti-Corrosion Properties	George R. Brown Convention Center	Room 361 EF
TEG 532X	Discussion on Ecological Risks of BioFouling	George R. Brown Convention Center	Room 342 B
TG 512	Downhole Corrosion and Scale Inhibitor Application via Capillary Tubing	George R. Brown Convention Center	Room 332 D
TEG 118X	Failure Prevention Case Histories	George R. Brown Convention Center	Room 342 A
	NII - Specialty Board for Pipeline Certifications	George R. Brown Convention Center	Room 332 A
TEG 093X	Vapor-transported Corrosion Inhibitors & Rust Preventives for Interim (Temporary) Corrosion Protection	George R. Brown Convention Center	Room 352 A
	Past Presidents Council	Hilton Americas - Houston	Room 335 A
TG 315	Internal Corrosion Direct Assessment Methodology for Liquid Petroleum Pipelines	George R. Brown Convention Center	Room 351 D
TG 248	Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines	George R. Brown Convention Center	Room 382 C
TEG 321X	Corrosion Probes for Soil and Concrete	George R. Brown Convention Center	Room 360 AB

ADMINISTRATIVE MEETINGS
NETWORKING
SYMPOSIA
TECHNICAL MEETINGS

Monday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6	
		8 a.m. to 3:25 p.m.											
		8 a.m. to 3:30 p.m.											
		8 a.m. to 3:30 p.m.											
		8:30 to 10 a.m.											
		8:30 to 11:30 a.m.											
		8:30 to 11:30 a.m.											
		8:30 a.m. to noon											
		9 to 10 a.m.											
		9 to 10 a.m.											
		9 to 10 a.m.											
		9 to 10:30 a.m.											
		9 to 10:30 a.m.											
		9 to 10:30 a.m.											
		9 to 11 a.m.											
		9 a.m. to noon											
			10 to 11 a.m.										
			10 to 11 a.m.										
			10 to 11 a.m.										
			10 to 11 a.m.										
			10 to 11:30 a.m.										
			10 a.m. to noon										
			10 a.m. to noon										
			10 a.m. to noon										
			10 a.m. to noon										
			10 a.m. to noon										
			10 a.m. to noon										
			10 a.m. to 1 p.m.										
			10:30 a.m. to noon										
				11 to 1:30 a.m.									
				11 a.m. to noon									

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

MONDAY, MARCH 16 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 510	Joint API/NACE Advisory Committee—API 751 Safe Operation of HF Alkylation Units—Corrosion and Materi	George R. Brown Convention Center	Room 372 DEF
TG 557	Sacrificial Cathodic Protection of Reinforced Concrete Elements	George R. Brown Convention Center	Room 351 C
TG 472	Test Procedure for Embeddable Impressed Current Anodes for Atmospherically Exposed Structures	George R. Brown Convention Center	Room 352 B
	CORROSION Journal Editorial Board	George R. Brown Convention Center	Room 350 A
	TCC Advisory Committee on Operations	George R. Brown Convention Center	Room 350 B
TG 326	Weldments, Carbon Steel: Prevention of Environmental Cracking in Refining Environments	George R. Brown Convention Center	Room 372 DEF
TEG 119X	Hydrofluoric Acid: Materials for Receiving, Handling, and Storing	George R. Brown Convention Center	Room 342 A
TEG 262X	Interference Problems	George R. Brown Convention Center	Room 360 AB
	NACE U Student Meeting	George R. Brown Convention Center	Room 350 DE
TG 572	Stray Current Corrosion in Reinforced and Prestressed Concrete Structures—SOA Report	George R. Brown Convention Center	Room 351 C
TG 260/263/264/312/313	TG 260/263/264/312/313 JOINT [02/03]	George R. Brown Convention Center	Room 361 D
TG 576	Dry Docking Hull Surface Maintenance and Repair Standard Practice	George R. Brown Convention Center	Room 342 B
TG 382	Internal Corrosion of Pipelines: Review of NACE Standard TM0172	George R. Brown Convention Center	Room 350 C
	Selecting the Right Surface Preparation for Performance	George R. Brown Convention Center	Room 361 EF
TG 511	Corrosion Under Paint (CUP) Test Standards for Equipment Used in the Nondestructive Evaluation (NDE)	George R. Brown Convention Center	Room 342 C
TG 440	Hydrotesting and Long-Term Wet Storage of Pipelines, Risers, and Subsea Equipment	George R. Brown Convention Center	Room 351 D
	The State of Corrosion Today: Business Impact, Policy Opportunity and Technology Innovation	George R. Brown Convention Center	Room 362 D
	NII - Specialty Board of Protective Coatings Certifications	George R. Brown Convention Center	Room 332 A
TEG 086X	Insulation for Upstream and Downstream Oil and Gas Operations	George R. Brown Convention Center	Room 350 F
TEG 528X	Non-Metallic Materials Basic Education	George R. Brown Convention Center	Room 362 AB
	Eastern Area Board of Trustees	George R. Brown Convention Center	Room 360 C
TG 268	Detection, Repair, and Mitigation of Cracking in Refinery Equipment in Wet H ₂ S Environments	George R. Brown Convention Center	Room 372 DEF
	Leadership: Activate the Leader Within Workshop	George R. Brown Convention Center	Room 371 ABC
TG 380	Underdeposit Corrosion—Testing and Mitigation	George R. Brown Convention Center	Room 352 A
	Policy Committee	Hilton Americas - Houston	Room 335 A
TG 347	Carbonate Stress Corrosion Cracking in Refinery Alkaline Sour Waters	George R. Brown Convention Center	Room 372 DEF
TG 470	Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection	George R. Brown Convention Center	Room 361 D
TEG 022X	Corrosion Control Coordinating Committee	George R. Brown Convention Center	Room 360 AB

	7	8	9	10	11	NOON	1	2	3	4	5	6
					11 a.m. to noon							
					11 a.m. to noon							
					11 a.m. to noon							
					11:30 a.m. to 1:30 p.m.							
					11:30 a.m. to 3:30 p.m.							
							1 to 1:30 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2:30 p.m.					
							1 to 2:30 p.m.					
							1 to 2:30 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3:30 p.m.					
							1 to 4 p.m.					
							1 to 4 p.m.					
							1 to 5 p.m.					
							1:30 to 2 p.m.					
							1:30 to 3:30 p.m.					
							1:30 to 3:30 p.m.					
							1:30 to 5 p.m.					
							2 to 2:30 p.m.					
							2 to 3 p.m.					
							2 to 3 p.m.					

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

Monday - Tuesday

Day at a Glance

MONDAY, MARCH 16 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 247	External Repair, Rehabilitation, and Weld Joints on Buried Steel Pipelines	George R. Brown Convention Center	Room 382 C
TG 358	Hydrofluoric Acid and Hydrogen Fluoride: Review of NACE Publication 5A171	George R. Brown Convention Center	Room 342 A
TG 504	Inspection Methods for Corrosion Evaluation of Prestressed Concrete Structures	George R. Brown Convention Center	Room 351 C
TG 231	Petroleum Refining Sulfide Stress Cracking (SSC): Review of NACE Standard MR0103	George R. Brown Convention Center	Room 372 DEF
TG 245	Oil and Gas Production, Erosion Management	George R. Brown Convention Center	Room 332 D
TG 455	Determining Corrosive Properties of Water-Soluble Liquid Hydrocarbon Pipeline Cargoes	George R. Brown Convention Center	Room 350 C
TG 372	Materials for Handling Concentrated Sulfuric Acid at Ambient Temperatures	George R. Brown Convention Center	Room 342 A
TG 393	Petroleum Refinery Corrosion Specialist Certification and Oversight of Refining Industry Corrosion Control Course Content	George R. Brown Convention Center	Room 372 DEF
TG 047	Reinforced Concrete: Sacrificial Cathodic Protection of Reinforced Concrete Elements	George R. Brown Convention Center	Room 351 C
	Keynote	George R. Brown Convention Center	General Assembly B
	Exhibit Hall Grand Opening Reception	George R. Brown Convention Center	Exhibit Hall

TUESDAY, MARCH 17

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	Speaker's Breakfast Tuesday	George R. Brown Convention Center	Room 320 ABC
	Fellow's Breakfast	George R. Brown Convention Center	Room 381 A
	NII Policy and Practices Committee	George R. Brown Convention Center	Room 332 A
	Plenary Lecture	George R. Brown Convention Center	General Assembly B
	Northern Area Board of Trustees	George R. Brown Convention Center	Room 360 C
	National Shipbuilding Research Panel Day 1	Hilton Americas - Houston	Room 335 AB
TG 460	Testing and Evaluation of Corrosion on Steel-Framed Buildings	George R. Brown Convention Center	Room 351 C
TG 293	Internal Corrosion Direct Assessment	George R. Brown Convention Center	Room 350 C
TG 273	Stress Corrosion Cracking Direct Assessment, External	George R. Brown Convention Center	Room 351 D
TEG 166X	Cathodic Protection in Seawater—Discussion of Current Topics	George R. Brown Convention Center	Room 351 EF
TG 490	Prequalification of Flow Efficiency Pipeline Coatings	George R. Brown Convention Center	Room 382 C
TG 542	Splash Zone Site-Applied Corrosion Protection System	George R. Brown Convention Center	Room 342 B
TG 568	Standard Practice for Application and Inspection of Intumescent Fireproofing	George R. Brown Convention Center	Room 361 D
TEG 524X	Coating and Lining Technology for Oil and Gas	George R. Brown Convention Center	Room 350 F
	International Education Partner Meeting	George R. Brown Convention Center	Room 342 C
TEG 331X	TEG 331X, Biomedical Implant Device Corrosion	George R. Brown Convention Center	Room 352 F
	Materials and Integrity in Oil Sands	George R. Brown Convention Center	Room 352 DE

Monday - Tuesday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
								2 to 3 p.m.				
								2 to 3 p.m.				
								2 to 3 p.m.				
								2:30 to 3 p.m.				
								2:30 to 3:30 p.m.				
								2:30 to 3:30 p.m.				
								3 to 3:30 p.m.				
								3 to 3:30 p.m.				
								3 to 3:30 p.m.				
									3:30 to 4:30 p.m.			
											5 to 7 p.m.	

	7	8	9	10	11	NOON	1	2	3	4	5	6
	7 to 8 a.m.											
	7 to 9 a.m.											
	7:30 a.m. to noon											
	8 to 9 a.m.											
	8 to 9:30 a.m.											
	8 a.m. to 5 p.m.											
			9 to 10 a.m.									
			9 to 10:30 a.m.									
			9 to 10:30 a.m.									
			9 to 11 a.m.									
			9 to 11 a.m.									
			9 to 11 a.m.									
			9 to 11 a.m.									
			9 to 11:30 a.m.									
			9 to 11:30 a.m.									
			9 to 11:30 a.m.									
			9 to 11:35 a.m.									

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

TUESDAY, MARCH 17 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TEG 120X	Metals: Reactive	George R. Brown Convention Center	Room 361 EF
STG 43	Transportation, Land - Day 1	George R. Brown Convention Center	Room 361 C
	TCC Planning Committee	George R. Brown Convention Center	Room 360 D
	Corrosion Management Implementation & Progress Day 2	George R. Brown Convention Center	Room 360 EF
	Corrosion in Supercritical Systems	George R. Brown Convention Center	Room 340 A
	Corrosion in Nuclear Systems Day 2	George R. Brown Convention Center	Room 351 AB
	Direct Assessment	George R. Brown Convention Center	Room 371 ABC
	Inhibitors - Vapor Transported (VCI) and Surface Coated Rust Preventive (RP)	George R. Brown Convention Center	Room 340 B
	Recent Experiences with Austenitic and Duplex Stainless Steels Day 2	George R. Brown Convention Center	Room 370 DEF
	Nanomaterials and Coatings Technologies	George R. Brown Convention Center	Room 362 EF
	Environmentally Assisted Cracking Day 2	George R. Brown Convention Center	Room 361 AB
	Corrosion of Additively Manufactured Materials	George R. Brown Convention Center	Room 332 E
	Real Time Corrosion Monitoring for Process Applications: Technology, Experiences, Case Studies	George R. Brown Convention Center	Room 382 B
	NACE APPEAL Consortia	George R. Brown Convention Center	Ballroom of Americas A
	Control of Problematic Microorganisms in Oil and Gas Field Operations	George R. Brown Convention Center	Room 332 F
	Anodic & Cathodic Protection	George R. Brown Convention Center	Room 371 DEF
	Corrosion in the Refining Industry	George R. Brown Convention Center	Room 372 DEF
	Advances in Materials for Oil and Gas Production Day 2	George R. Brown Convention Center	Room 370 ABC
	Pits, Cracks and Crevices Day 1 - Research in Progress	George R. Brown Convention Center	Room 342 E
	Recent Developments in Mineral Scales and Deposits Control Technologies Day 2	George R. Brown Convention Center	Room 382 A
	Concrete & Architecture Day 1 - Research in Progress	George R. Brown Convention Center	Room 342 F
TEG 191X	Corrosion Solutions for the Chemical Process Industry with Polymer Based Materials	George R. Brown Convention Center	Room 362 AB
	Role of Sustainability - Research in Progress	George R. Brown Convention Center	Room 342 F
TEG 398X	Hydrochloric Acid and Chlorine: Materials and Experiences	George R. Brown Convention Center	Room 342 A
TG 388	Cathodic Protection Rectifier Safety	George R. Brown Convention Center	Room 360 AB
TEG 053X	Reinforced Concrete: Design, Evaluation, and Remediation	George R. Brown Convention Center	Room 351 C
TEG 092X	Under-Deposit Corrosion	George R. Brown Convention Center	Room 332 D
	Protective Coatings Workshop Session I	George R. Brown Convention Center	Exhibit Hall
TG 567	Mitigation and Prioritization Strategies for Casings	George R. Brown Convention Center	Room 351 D
	NACE Institute Certification Exam Development	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
	Hexcorder Pro Digital Combined CIPS/DCVG Pipeline Integrity Surveys	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
TG 265	Coating, Polyolefin Resin Systems: Review of NACE SP0185-2007	George R. Brown Convention Center	Room 382 C

Tuesday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
			9 a.m. to noon									
			9 a.m. to noon									
			9 a.m. to noon									
			9 a.m. to 1:25 p.m.									
			9 a.m. to 1:25 p.m.									
			9 a.m. to 1:50 p.m.									
			9 a.m. to 1:50 p.m.									
			9 a.m. to 1:50 p.m.									
			9 a.m. to 1:50 p.m.									
			9 a.m. to 1:50 p.m.									
			9 a.m. to 2 p.m.									
			9 a.m. to 3 p.m.									
			9 a.m. to 3:25 p.m.									
			9 a.m. to 3:30 p.m.									
			9 a.m. to 4:50 p.m.									
			9 a.m. to 5:15 p.m.									
			9 a.m. to 5:15 p.m.									
			9 a.m. to 5:15 p.m.									
			9 a.m. to 5:15 p.m.									
			9 a.m. to 5:15 p.m.									
			9 a.m. to 6 p.m.									
			9 a.m. to 6 p.m.									
			9 a.m. to 6:10 p.m.									
			9:30 to 11:30 a.m.									
			10 a.m. to noon									
			10 a.m. to noon									
			10 a.m. to noon									
			10 a.m. to 5 p.m.									
			10:30 a.m. to noon									
			10:30 a.m. to noon									
				11 to 11:45 a.m.								
				11 a.m. to noon								

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

TUESDAY, MARCH 17 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 170	Corrosion Control of Submerged Areas of Offshore Steel Structures	George R. Brown Convention Center	Room 351 EF
TEG 346X	Offshore Coatings: Laboratory Testing Criteria	George R. Brown Convention Center	Room 361 D
	Whitney Lecture	George R. Brown Convention Center	Room 310 ABC
	ACPC Symposium Officer Training	George R. Brown Convention Center	Room 362 D
	Internal Corrosion Subcommittee	George R. Brown Convention Center	Room 342 C
	European Area Board of Trustees	George R. Brown Convention Center	Room 360 C
TEG 526X	High Temperature, High Pressure, Corrosive, Service Environments Pertaining to Oil and Gas and Other	George R. Brown Convention Center	Room 361 C
TG 545	State of the Art Report: Criteria for Corrosion Control of Steel in Concrete	George R. Brown Convention Center	Room 351 C
TG 548	Selecting Inhibitors For Use As Sucker-Rod Thread Lubricants	George R. Brown Convention Center	Room 332 D
TEG 311X	Threaded Fasteners: Coatings and Methods of Protection for Threaded Fasteners Used with Structural	George R. Brown Convention Center	Room 361 D
TG 168	Cathodic Protection Systems, Retrofit, for Offshore Platforms	George R. Brown Convention Center	Room 351 EF
TEG 338X	Cathodic Protection Monitoring: Use of Coupons	George R. Brown Convention Center	Room 360 AB
TG 217	Design, Fabrication, and Inspection of Tanks for Storage of Concentrated H ₂ SO ₄ and Oleum	George R. Brown Convention Center	Room 342 A
TG 589	Labeled Corrosion Images for Computer Vision Applications	George R. Brown Convention Center	Room 360 D
TEG 523X	Marine Corrosion of Copper Alloys	George R. Brown Convention Center	Room 342 B
TEG 573X	Pipeline Integrity Assessment: Corrosion Defect Prioritization for Risk Based Management Implementations	George R. Brown Convention Center	Room 351 D
TG 565	Plural Component Spray Standard Method	George R. Brown Convention Center	Room 382 C
TG 369	Techniques for Evaluating the Corrosiveness of Onshore Structures External Environment	George R. Brown Convention Center	Room 350 C
	Battle Against Corrosion in Latin America	George R. Brown Convention Center	Room 350 DE
	Career Fair	George R. Brown Convention Center	Room 381 B
	WCO Forum – Corrosion in Low-Carbon Energies (Renewables, Nuclear, and Carbon Capture): Issues and Solutions	George R. Brown Convention Center	Room 330 A
	Corrosion Control and Ecosystems Enhancement for Offshore Monopiles	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
	The Importance and Value for Inspection of Mechanical Insulation Systems	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
	Does your report tell the story?	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
	PHMSA Pipeline Safety Forum	George R. Brown Convention Center	Room 310 ABC
STG 33	Oil and Gas Production - Nonmetallics and Wear Coatings (Metallic)	George R. Brown Convention Center	Room 350 F
STG 01	STG 01 Strategic Planning	George R. Brown Convention Center	Room 351 C

	7	8	9	10	11	NOON	1	2	3	4	5	6
					11 a.m. to noon							
					11 a.m. to noon							
					11:15 to 11:45 a.m.							
					11:30 a.m. to 1 p.m.							
					11:30 a.m. to 1 p.m.							
							12:30 to 4 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2:30 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1:15 to 3 p.m.					
							1:30 to 2:15 p.m.					
							1:15 to 3:15 p.m.					
							1:30 to 4 p.m.					
							1:30 to 4:30 p.m.					
							2 to 3 p.m.					

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

Tuesday - Wednesday

Day at a Glance

TUESDAY, MARCH 17 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 478	Summary of Knowledge and Experience on Internal Corrosion of Pipeline Under Dewing Conditions (TOL)	George R. Brown Convention Center	Room 332 D
	Pipeline Subcommittee	George R. Brown Convention Center	Room 342 C
TEG 114X	Stainless Steels, Duplex and Ferritic: Application	George R. Brown Convention Center	Room 361 EF
	West Asia & Africa Board of Trustees	George R. Brown Convention Center	Room 352 F
	Leveraging Water Repellency Technology to Mitigate Corrosion Under Insulation Challenges	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
TG 454	Metallurgical and Inspection Requirements for Cast Galvanic Anodes for Offshore Applications	George R. Brown Convention Center	Room 351 EF
TG 549	Measurement of Leachable Chloride Content of Coatings Applied to Stainless Steel in High Temperature	George R. Brown Convention Center	Room 361 D
	Does your daily inspection report tell the story?	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
STG 08	Corrosion Management	George R. Brown Convention Center	Room 360 EF
TG 210	Cathodic Protection Coupon Technology	George R. Brown Convention Center	Room 360 AB
TG 325	Control of Corrosion Under Thermal Insulation and Fireproofing Materials—A Systems Approach	George R. Brown Convention Center	Room 342 A
STG 01	Corrosion Prevention and Control for Concrete, Land Transportation, and Coating Technology	George R. Brown Convention Center	Room 351 C
STG 44	Marine Corrosion: Ships and Structures	George R. Brown Convention Center	Room 342 B
TEG 059X/TEG 201X	TEG 059X [31]/ TEG201X [31] Joint Meeting	George R. Brown Convention Center	Room 332 D
TEG 080X	Well Casings, Corrosion Control: Information Exchange	George R. Brown Convention Center	Room 351 D
TG 031	Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating	George R. Brown Convention Center	Room 382 C
	NACE-SSPC Discussions Town Hall	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
TG 169	Petroleum, Petrochemical, and Natural Gas Industries—Cathodic Protection of Pipeline Transportation	George R. Brown Convention Center	Room 351 EF
TEG 116X	Stainless Steels: Austenitic and Nickel Alloys	George R. Brown Convention Center	Room 361 EF
	NACE Foundation Scholarship Awards Ceremony	House of Blues	
	GenNEXT Bash	House of Blues	

WEDNESDAY MARCH 18

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	Speaker's Breakfast Wednesday	George R. Brown Convention Center	Room 320 ABC
TEG 374X	Oil and Gas Production Materials Information Exchange	George R. Brown Convention Center	Room 372 ABC
	Corrosion Issues in Military Equipment and Facilities	George R. Brown Convention Center	Room 340 A
TEG 558X	Direct Assessment Methodology Application	George R. Brown Convention Center	Room 351 D
TG 013	External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms	George R. Brown Convention Center	Room 352 A
TEG 100X	Sensors: Corrosion and Corrosiveness Sensor Technology	George R. Brown Convention Center	Room 351 AB
STG 47	STG 47	George R. Brown Convention Center	Room 360 D
TEG 024X	DC and AC Transit Stray Current Problems	George R. Brown Convention Center	Room 360 AB

ADMINISTRATIVE MEETINGS

NETWORKING

SYMPOSIA

TECHNICAL MEETINGS

Tuesday - Wednesday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
								2 to 3 p.m.				
								2 to 3:30 p.m.				
								2 to 3:30 p.m.				
								2 to 4 p.m.				
								2:15 to 3 p.m.				
								2:30 to 3:30 p.m.				
								2:30 to 4 p.m.				
								2:45 to 4:45 p.m.				
								3 to 4 p.m.				
								3 to 5 p.m.				
								3 to 5 p.m.				
								3 to 5 p.m.				
								3 to 5 p.m.				
								3 to 5 p.m.				
								3 to 6 p.m.				
								3:15 to 4:45 p.m.				
								3:30 to 4:30 p.m.				
								3:30 to 5 p.m.				
												7 to 8 p.m.
												8 to 11 p.m.

	7	8	9	10	11	NOON	1	2	3	4	5	6
	7 to 8 a.m.											
		7:30 to 10 a.m.										
		8 to 9:50 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

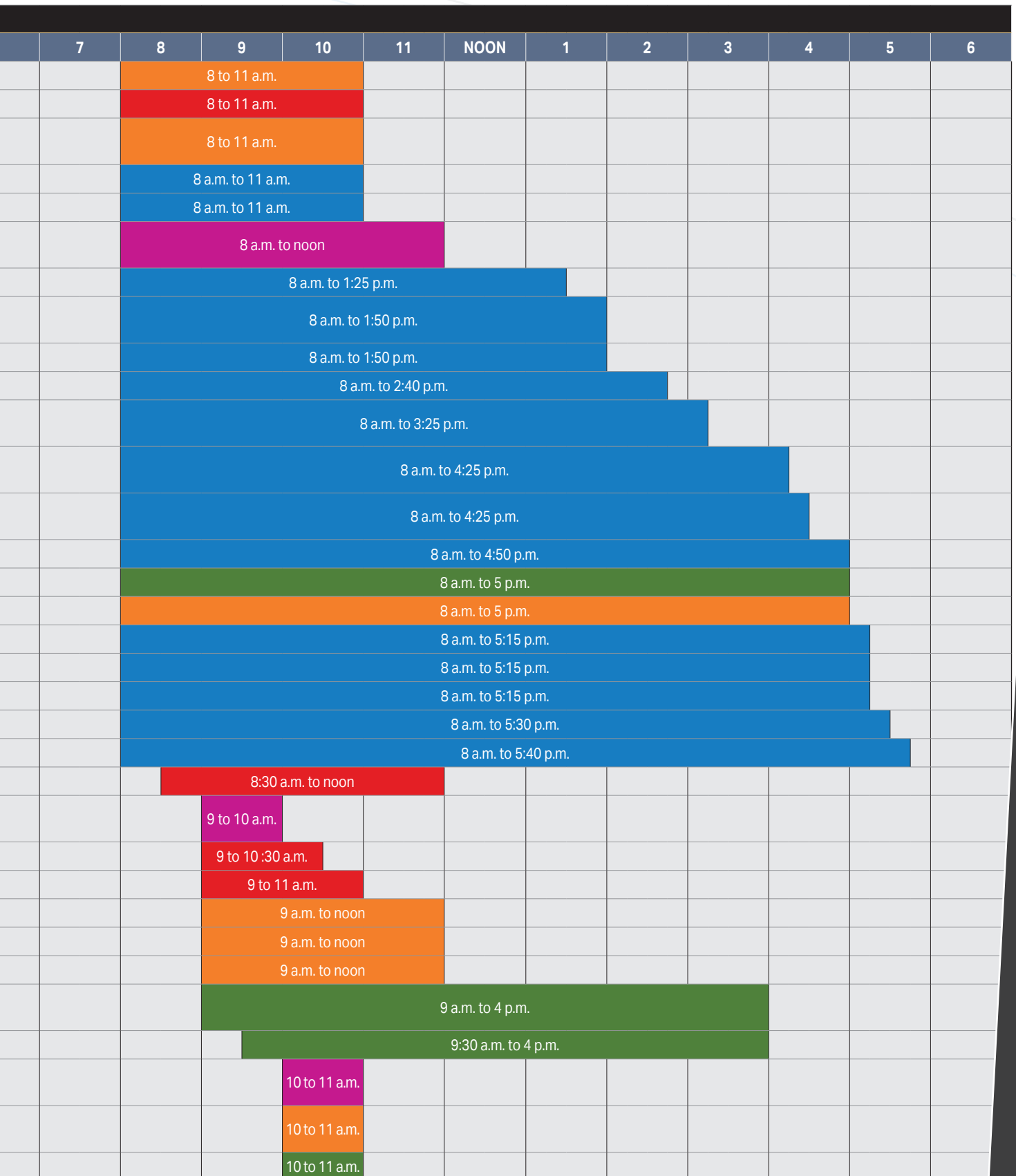
EXHIBIT HALL

WEDNESDAY MARCH 18 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TEG 149X	Biocide Application/Misapplication	George R. Brown Convention Center	Room 360 C
	NIICAP Oversight Board	George R. Brown Convention Center	Room 352 B
TG 479	Review of ISO 21809, for NACE National Adoption of Petroleum and Natural Gas Industries	George R. Brown Convention Center	Room 382 C
	Concrete & Architecture Day 2	George R. Brown Convention Center	Room 342 F
	Power Industry Corrosion	George R. Brown Convention Center	Room 332 E
	Premature Coating Failures - Common and Uncommon Causes & How to Investigate Coating Failures When They Occur	George R. Brown Convention Center	Room 360 EF
	Innovations in Chemical and Mechanical Cleaning	George R. Brown Convention Center	Room 340 B
	Cathodic Protection of Reinforced Concrete and Steel Frame Structures: A Retrospective on Technology	George R. Brown Convention Center	Room 351 EF
	Microbiologically Influenced Corrosion	George R. Brown Convention Center	Room 371 ABC
	Oil & Gas Coating Technology Day 1	George R. Brown Convention Center	Room 362 EF
	The Digital Asset Transformation - Driving Value for Corrosion & Asset Integrity Management	George R. Brown Convention Center	Room 332 F
	AC Interference, AC Induced Corrosion, AC Risk Assessment, Monitoring and Mitigation	George R. Brown Convention Center	General Assembly B
	Recent Experiences with Nickel, Titanium, Zirconium and Other Corrosion Resistant Alloys	George R. Brown Convention Center	Room 352 DE
	Corrosion in Sweet and Slightly Sour Production Conditions Day 1	George R. Brown Convention Center	Room 361 EF
	National Shipbuilding Research Panel Day 2	Hilton Americas - Houston	Room 335 AB
TEG 205X	Refining Industry Information Exchange	George R. Brown Convention Center	Room 372 DEF
	Control of Corrosion in Oil and Gas with Inhibitors Day 1	George R. Brown Convention Center	Room 362 AB
	Pipeline Integrity Day 1	George R. Brown Convention Center	Room 370 ABC
	Pits, Cracks and Crevices Day 2 - Research in Progress	George R. Brown Convention Center	Room 342 E
	Emergent Materials - Research Topical Symposium	George R. Brown Convention Center	Room 361 AB
	Marine Corrosion - Ships and Structures	George R. Brown Convention Center	Room 342 D
	NII Certification Commission	George R. Brown Convention Center	Room 332 A
	IMPACT PLUS: The Journey Towards Improved Corrosion Management Practices for Many Companies Session	George R. Brown Convention Center	Room 350 DE
	CIP Subcommittee	George R. Brown Convention Center	Room 342 C
	ACPC Session II	George R. Brown Convention Center	Room 350 B
STG 43	Transportation, Land - Day 2	George R. Brown Convention Center	Room 362 D
TEG 469X	Surface Preparation Issues	George R. Brown Convention Center	Room 362 C
TEG 514X	Oil & Gas Exploration Corrosion: Information Exchange	George R. Brown Convention Center	Room 332 D
	NACE Consortia Additive Manufacturing Roundtable Event	Hilton of Americas - Houston	Ballroom of Americas A
	CORROSION: Opportunities Realized Mini-Camp	George R. Brown Convention Center	Room 381 AB
	IMPACT PLUS: The Journey Towards Improved Corrosion Management Practices for Many Companies Session	George R. Brown Convention Center	Room 350 DE
TEG 291X	Land Transportation: Information Exchange on Corrosion and Coating-Related Issues	George R. Brown Convention Center	Room 351 C
	Section Officer Meeting on Elections	George R. Brown Convention Center	Room 330 A

Wednesday

Day at a Glance



OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

WEDNESDAY MARCH 18 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TG 297	Direct Current (DC) Operated Rail Transit and Mine Railroad Stray Current Mitigation—Review 10B189	George R. Brown Convention Center	Room 360 AB
TEG 108X	Hydrogen Permeation Technology—Online	George R. Brown Convention Center	Room 351 AB
TEG 509X	Materials Selection and Corrosion Control in the Mineral Processing Industries	George R. Brown Convention Center	Room 360 D
TEG 423X	Nonvisible, Nonwater-Soluble Contaminants Affecting Corrosion Protection	George R. Brown Convention Center	Room 352 F
TEG 577X	Oil and Gas Production Test Methods Learning	George R. Brown Convention Center	Room 372 ABC
TG 012	Pipelines, Steel-Cased	George R. Brown Convention Center	Room 351 D
	Protective Coatings Workshop Session II	George R. Brown Convention Center	Exhibit Hall
TG 543	Standard for External Corrosion Control of On-Grade Carbon Steel Storage Tank Bottoms	George R. Brown Convention Center	Room 352 A
TG 433	Stress Corrosion Cracking of Carbon and Low-Alloy Steels in Anhydrous Ammonia Service	George R. Brown Convention Center	Room 342 A
TG 530	Test Method for Monitoring Atmospheric Corrosion Rate by Electrochemical Measurements	George R. Brown Convention Center	Room 382 A
	Corrosion Issues in the Pulp, Paper and Biomass Industries	George R. Brown Convention Center	Room 340 A
TG 381	Fire Protection Systems	George R. Brown Convention Center	Room 350 F
	IMPACT PLUS: The Journey Towards Improved Corrosion Management Practices for Many Companies Session	George R. Brown Convention Center	Room 350 DE
TG 298	Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance, and Quality	George R. Brown Convention Center	Room 382 C
	Standards Committee Officer Orientation	George R. Brown Convention Center	Room 371 DEF
	Shifting the Paradigm of Protective Materials Design via Self-Healing Functionality	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
	Speller Lecture	George R. Brown Convention Center	Room 310 ABC
	Contractor Awards Program	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
	TCC Officer Training	George R. Brown Convention Center	Room 352 F
TG 257	Computerized Environmental Cracking Database	George R. Brown Convention Center	Room 362 D
TG 559	Slurry Pipeline Corrosion Management	George R. Brown Convention Center	Room 360 D
TG 516	Standard Practice for Evaluating Protective Coatings for Use Under Insulation	George R. Brown Convention Center	Room 382 C
TG 085	Sulfide Corrosion Cracking: Metallic Materials Testing Techniques	George R. Brown Convention Center	Room 372 ABC
TG 583	-850 mV Potential Criterion	George R. Brown Convention Center	Room 360 AB
TEG 163X	Boiler Waterside Failure Analysis	George R. Brown Convention Center	Room 360 C
TEG 132X	Corrosion Management of Aboveground Storage Tanks	George R. Brown Convention Center	Room 351 D
	ISO TC 35 U.S. TAG	George R. Brown Convention Center	Room 361 D

Wednesday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to noon								
				10 a.m. to 2 p.m.								
				11 a.m. to noon								
				11 a.m. to noon								
				11 a.m. to noon								
				11 a.m. to 1 p.m.								
				11:15 to 11:45 a.m.								
				11:15 to 11:45 a.m.								
						noon to 1 p.m.						
						noon to 2 p.m.						
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2 p.m.					
							1 to 2:30 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

WEDNESDAY MARCH 18 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
TEG 474X	Nanotechnology and Corrosion	George R. Brown Convention Center	Room 342 B
TG 533	Report on Underdeposit Corrosion (UDC) of Pipelines	George R. Brown Convention Center	Room 352 A
TEG 391X	Techniques for Monitoring Corrosion—Field Experience	George R. Brown Convention Center	Room 351 AB
TEG 123X/126X/128X/270X	TEG 123X/126X/128X/270X Joint Meeting	George R. Brown Convention Center	Room 350 F
	Corrosion Under Insulation: Materials, Fundamental, Identification & Mitigation	George R. Brown Convention Center	Room 382 A
	Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking Day 1	George R. Brown Convention Center	Room 360 EF
	A Tour to West Asia & Africa: Corrosion Management Challenges and Opportunities	George R. Brown Convention Center	Room 370 DEF
TEG 239X	Nonmetallic Materials of Construction: Expert Panel Discussion	George R. Brown Convention Center	Room 362 C
	Thermal and Cold Spray Coatings- Processes, Applications and Challenges	George R. Brown Convention Center	Room 350 DE
	Advancing Cathodic Protection Testing Through Integration & Automation	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
TEG 253X	Oil and Gas Production, Corrosion Inhibitors - Laboratory Evaluations: Information Exchange	George R. Brown Convention Center	Room 332 D
	Cathodic Protection (CP) Subcommittee	George R. Brown Convention Center	Room 342 C
TG 563	The Mitigation of Internal Corrosion in Non-Lined, Non-Coated Pipelines Carrying Seawater for the Mining Industry	George R. Brown Convention Center	Room 360 D
	What Does a Facility Owner Look for in a Quality Coating Contractor?	George R. Brown Convention Center	Room 350 C
	TCC Reference Publications Committee	George R. Brown Convention Center	Room 350 A
TG 554	Test Method for Resistance to Environmentally-Induced Hydrogen Stress Cracking in Welds	George R. Brown Convention Center	Room 362 D
TG 494	Four-Point Bend Test Method	George R. Brown Convention Center	Room 372 ABC
	NACE-SSPC Discussions Town Hall	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
STG 40	Military and Aerospace Systems and Facilities	George R. Brown Convention Center	Room 352 F
TG 445	Internal Corrosion Monitoring of Subsea Production and Injection Systems	George R. Brown Convention Center	Room 332 D
TEG 929X	Concrete and Structural Steel in Mining	George R. Brown Convention Center	Room 360 D
TG 446	Application of Cathodic Protection for External Surfaces of Steel Well Casings	George R. Brown Convention Center	Room 352 A
TG 495	Biodegradable Magnesium Alloys	George R. Brown Convention Center	Room 342 B
TEG 197X	Cathodic Protection: Pipe-Type Cable	George R. Brown Convention Center	Room 360 AB
	ISO TC 156 U.S. TAG	George R. Brown Convention Center	Room 361 D
TEG 267X	Pipelines: In-Line Inspection	George R. Brown Convention Center	Room 351 D
STG 11	Water Treatment Systems	George R. Brown Convention Center	Room 360 C
STG 30	Oil and Gas Production-Cathodic Protection	George R. Brown Convention Center	Room 351 C

	7	8	9	10	11	NOON	1	2	3	4	5	6
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3:30 p.m.					
							1 to 4 p.m.					
							1 to 4 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1 to 5 p.m.					
							1:15 to 2 p.m.					
							1:30 to 2:30 p.m.					
							1:30 to 3:30 p.m.					
							2 to 3 p.m.					
							2 to 4 p.m.					
							2 to 4 p.m.					
							2 to 4 p.m.					
							2:30 to 4 p.m.					
							2:30 to 4 p.m.					
							2:30 to 4:30 p.m.					
							2:30 to 4:30 p.m.					
							3 to 4 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					
							3 to 5 p.m.					

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

Wednesday - Thursday

Day at a Glance

WEDNESDAY MARCH 18 (continued)

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
STG 38	Process Industry-Pulp, Paper, and Biomass Conversion	George R. Brown Convention Center	Room 340 A
STG 62	Corrosion Monitoring and Measurement-Science and Engineering Applications	George R. Brown Convention Center	Room 351 AB
STG 37	Process Industry—High Temperature	George R. Brown Convention Center	Room 350 F
	NACE Institute Certification Exam Development	George R. Brown Convention Center	Corrosive Chronicles Theater (Booth 2407)
TG 571	Environmental Prediction for Material Selection in Oil and Gas Production	George R. Brown Convention Center	Room 372 ABC
TG 084	Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments	George R. Brown Convention Center	Room 362 D
	Adjustable Atmospheric Corrosion Test Rack	George R. Brown Convention Center	MP Innovation Theater (Booth 311)
	Honoree Night	Minute Maid Park	

THURSDAY MARCH 19

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
	Speaker's Breakfast Thursday	George R. Brown Convention Center	Room 320 ABC
	Research Committee	George R. Brown Convention Center	Room 350 DE
TG 357	External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX)	George R. Brown Convention Center	Room 350 C
TEG 473X	Power Generation and Delivery Education Roadmap	George R. Brown Convention Center	Room 330 A
TG 133	Slow Strain Rate Test Method for Screening Corrosion-Resistant Alloys for SCC in Sour Oilfield Servi	George R. Brown Convention Center	Room 372 ABC
TG 552	Standard Practice for the Drone Inspection for Corrosion under Insulation of Pipelines	George R. Brown Convention Center	Room 351 C
TEG 569X	Additive Manufacturing Corrosion Issues	George R. Brown Convention Center	Room 342 B
TG 585	Best Practice of Carbon Steel HDD Design, Construction and Management	George R. Brown Convention Center	Room 351 D
	Corrosion in Sweet and Slightly Sour Production Conditions - Day 2	George R. Brown Convention Center	Room 361 EF
	Oil & Gas Coating Technology - Day 2	George R. Brown Convention Center	Room 362 EF
	Exhibits Committee	George R. Brown Convention Center	Room 352 B
STG 34	Petroleum Refining and Gas Processing	George R. Brown Convention Center	Room 372 DEF
	Non-Metallics for Chemical and Mineral Processing and Oil and Gas Production	George R. Brown Convention Center	Room 342 E
	Subsea Materials vs. Hydrogen Embrittlement and Stress Corrosion Cracking - Day 2	George R. Brown Convention Center	Room 360 EF
	Control of Corrosion in Oil and Gas with Inhibitors - Day 2	George R. Brown Convention Center	Room 362 AB
	Pipeline Integrity - Day 2	George R. Brown Convention Center	Room 370 ABC
STG 10	Nonmetallic Materials of Construction	George R. Brown Convention Center	Room 352 F
TG 522	Technical Guidance for Using Self-Propelled In-Line Inspection Devices in the Direct Examination Pha	George R. Brown Convention Center	Room 350 C

Wednesday - Thursday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
									3 to 5 p.m.			
									3 to 5 p.m.			
									3:30 to 4 p.m.			
									3:30 to 5 p.m.			
										4 to 5 p.m.		
										4 to 5 p.m.		
										4:15 to 5 p.m.		
												6:15 to 10 p.m.

	7	8	9	10	11	NOON	1	2	3	4	5	6
	7 to 8 a.m.											
		7:30 to 11:30 a.m.										
		8 to 8:30 a.m.										
		8 to 9 a.m.										
		8 to 9 a.m.										
		8 to 9 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 9 a.m.										
		8 to 9:30 a.m.										
		8 to 10 a.m.										
		8 to 10 a.m.										
		8 to 11 a.m.										
		8 to 11 a.m.										
		8 to 11 a.m.										
		8 to 11:25 a.m.										
		8 a.m. to noon										
		8:30 to 10 a.m.										

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

THURSDAY MARCH 19 *(continued)*

COMMITTEE	EVENT/MEETING/SYMPOSIUM	LOCATION	ROOM
STG 03	Coatings and Linings, Protective: Immersion and Buried Service	George R. Brown Convention Center	Room 382 C
TG 544	Ripple Load Test for Evaluation of Sour Service Cracking Resistance	George R. Brown Convention Center	Room 372 ABC
	State of the Association Town Hall, Thursday, 9-10:30am, GRB, Room 332 E, Green	George R. Brown Convention Center	Room 332 E
TG 404	Nuclear Buried Piping	George R. Brown Convention Center	Room 330 A
STG 31	Oil and Gas Production—Corrosion and Scale Inhibition	George R. Brown Convention Center	Room 332 D
	NII Board of Directors	George R. Brown Convention Center	Room 332 A
TG 082	Cracking, Stepwise: Pipeline Steels	George R. Brown Convention Center	Room 372 ABC
	Conferences and Exposition Activities Committee (CEAC)	George R. Brown Convention Center	Room 352 B
TG 502	3D Laser and Structured Light	George R. Brown Convention Center	Room 351 D
TEG 407X	Localized Corrosion	George R. Brown Convention Center	Room 342 B
TG 041	Pipeline Direct Assessment Methodology	George R. Brown Convention Center	Room 350 C
TG 536	Evaluation of Carbon and Low-Alloy Steels for Resistance to Stress-Oriented Hydrogen-Induced Cracking (SOHIC)	George R. Brown Convention Center	Room 372 ABC
TG 471	Nondestructive Evaluation (NDE) Technologies to Evaluate Buried Pipe in Nuclear Power Plants	George R. Brown Convention Center	Room 330 A
	TCC Session II	George R. Brown Convention Center	Room 342 A
TEG 286X	Oil and Gas End-User Experience with Molecular Microbiological Methods (MMM) and Problem Solving	George R. Brown Convention Center	Room 332 D
STG 02/03/04	STG 02,03,04 Joint Meeting	George R. Brown Convention Center	Room 382 C
STG 32	STG 32 Officers Meeting	George R. Brown Convention Center	Room 372 ABC
TEG 224X	Nuclear System Corrosion	George R. Brown Convention Center	Room 330 A
TG 294	Pipeline Coating: Aboveground Techniques for the Underground Evaluation of Condition	George R. Brown Convention Center	Room 351 D
STG 60	Corrosion Mechanisms	George R. Brown Convention Center	Room 342 B
	African Corrosion Professionals Meeting	Hilton Americas - Houston	Room 335 AB
TG 214	Bacterial Growth in Oilfield Systems - Field Monitoring: Review of NACE Standard TM0194-2014	George R. Brown Convention Center	Room 332 D
STG 32	Oil and Gas Production-Metallurgy	George R. Brown Convention Center	Room 372 ABC
	Technical and Research Activities Committee (TRAC)	George R. Brown Convention Center	Room 342 A
STG 41	Electric Utility Generation, Transmission, and Distribution	George R. Brown Convention Center	Room 330 A
STG 05/35	STG 05/35 Joint Meeting	George R. Brown Convention Center	Room 351 D

Thursday

Day at a Glance

	7	8	9	10	11	NOON	1	2	3	4	5	6
			9 to 10 a.m.									
			9 to 10 a.m.									
			9 to 10:30 a.m.									
			9 to 11:30 a.m.									
			9 to 11:30 a.m.									
			9 a.m. to noon									
			10 to 11 a.m.									
			10 to 11:30 a.m.									
			10 a.m. to noon									
			10 a.m. to noon									
			10 a.m. to noon									
					11 a.m. to noon							
					11:30 a.m. to noon							
					11:30 a.m. to 2:30 p.m.							
							1 to 2 p.m.					
							1 to 2:30 p.m.					
							1 to 2:30 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 3 p.m.					
							1 to 5 p.m.					
								2 to 4 p.m.				
									2:30 to 4:30 p.m.			
									3 to 4:30 p.m.			
									3 to 5 p.m.			
									3 to 5 p.m.			

OTHER MEETINGS

ISO MEETINGS

FORUMS/WORKSHOPS

EXHIBIT HALL

Don't Miss *CoatingsPro's* Fourth Annual Contractor Awards Ceremony



Join us at the
CORROSION Conference & Expo to celebrate
Wednesday, March 18, 2020
noon to 1 p.m.

Houston, TX – George R. Brown Convention Center



Contractors recently achieving 5 Star Recognition with the NACE International Institute Contractor Accreditation Program (NIICAP) will also be recognized

Not registered for conference?

Visit nacecorrosion@nace.org for more details.



Photos courtesy of the award winners



INNOVATION TO MAKE IT FIRST. QUALITY TO MAKE IT LAST

LASTING DEFENSE AGAINST CORROSION AND ABRASION

Blair Rubber Co.'s linings are used for the toughest jobs in the energy producing and chemical industries – extending the life of your vessels and equipment.

Rubber Linings For: Scrubbers, FGD Absorber Towers, Slurry Recirculation, Polishing Vessels, Water Intake Boxes, Ion Exchanger Vessels, Waste Water Treatment, Rake Arms & Associated Piping

Booth #2427

CerAnode™

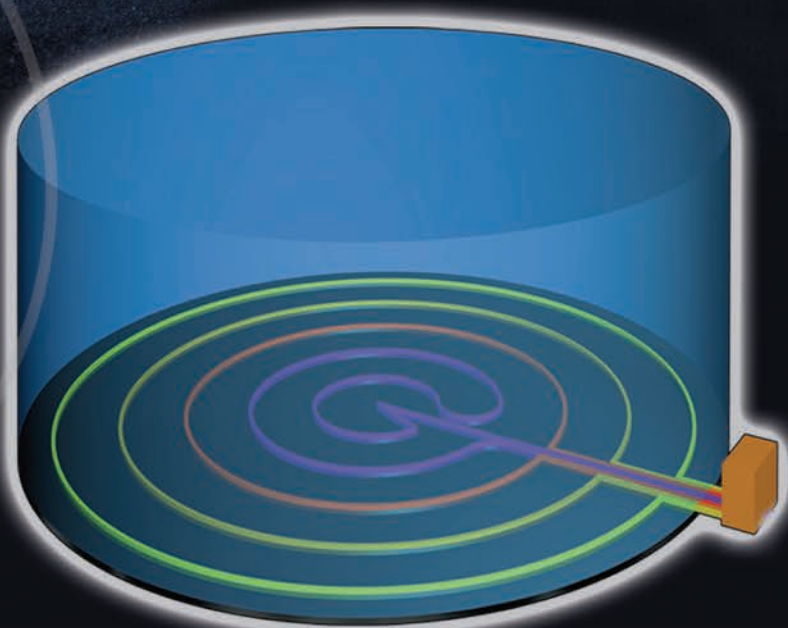
Technologies International

A World Standard

A Manufacturer of Mixed Metal Oxide Anodes Since 1984

THE OPTIMIZED ANODE SYSTEM

- discrete concentric arcs
- each arc has individual redundant leads
- arcs follow tank bottom symmetry
- current distribution is optimized
- groundbed resistance is optimized
- designed for direct burial in sand
- 100% factory heavy duty connections
- arrives on site ready to lay in place
- less than 10% current attenuation
- low cost
- power efficient
- easy to install
- optional integrated plastic mesh
- customized computer design printout
- 50-year design life
- JIT on site



Thermal Spray & Metrology Lab



The CerAnode PiggyBack

Tank Bottom (PBT) Anode System

CerAnode Technologies International • 937.278.6547 (FX 4352) • WEB: www.ceranode.com • EMAIL: ceranode@apsmaterials.com

Global Cathodic Protection, Inc. • 713.784.9588 (FX 953.9395) • WEB: www.globalcorrosion.com • EMAIL: global@globalcorrosion.com

CerAnode Technologies International is a Division of APS Materials, Inc. • © Copyright 2007, All Rights Reserved