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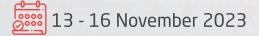
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18TH MIDDLE EAST CORROSION CONFERENCE & EXHIBITION





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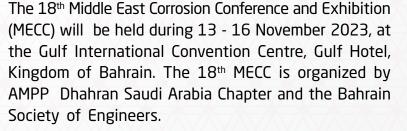












The biennial corrosion conference and exhibition was launched in 1979 and has accompanied the development of the Gulf region in becoming the global capital of reliable energy. It is recognized as a prime venue for sharing knowledge among professionals in all areas of corrosion mitigation. The number of professional and industrial delegates has steadily grown to cover all aspects of corrosion with representatives from around the globe.





The technical program also includes workshop sessions on different aspects of corrosion provided by specialists from across the globe. The exhibition, held in conjunction with the conference, will provide a unique platform to showcase the latest developments in products, solutions and methodologies in the corrosion industry.

ne 18th MECC introduces the 4th Industrial Revolution (4IR) Pavilion in addition to several new sections of conversations. The MECC 2023 will continue the successful sections of the previous conferences such as the Nonmetallic Pavilion and the Exhibition Theatre and will provide a unique platform for professionals from all over the world over four days in Bahrain.











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Advisory Committee | Member



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Dr. Tobias ScheeleSenior Vice President - Products,
AVEVA

The Industrial Connected Economy, The Future is Now!

We're living in times of change and the market dynamics are reshaping the industrial environment. There's no room for failures, extra costs, and operational delays if energy companies want to increase competitivity and comply with their sustainability goals. Today, a robust digitalization journey is crucial to help organizations to innovate and grow. The way we access and manage data is more critical than ever, but, despite the fast pace of industrial software advancements, the digital adoption and culture change required to enable real transformation is slow. Teams are still working in silos within their organizations, dealing with disparate systems, which leads to information inconsistency, delayed and sub-optimal decision-making. If it's challenging to reconcile information and enable collaboration within the same organization, imagine across the supply chain and ecosystem.

From preventing corrosion across in different types of assets to enabling real time enhanced collaboration across multiple sites, the digital technology we need to overcome the organization's biggest pains is already available. This presentation will demonstrate how energy companies can build a digital journey to engineer smarter, operate reliably and optimize resources across the entire ecosystem. We will discuss how energy companies and the industry leveraged their data through advanced analytics and cloud to prevent corrosion, reduce costs and minimize risk of loss production and environment disasters.

Biography

Tobias has global sales responsibility for the full AVEVA portfolio. Prior to that role he was in charge of the Engineering portfolio, and before that he led Global Accounts, having end-to-end business responsibility for AVEVA's most strategic customers.

At the time of the transition from Schneider Electric Software to AVEVA Software, LLC, Tobias held the position of Senior Vice President - Software. In that role, he was responsible for the global P&L management of the Engineering and Simulation business within the Schneider Electric Software Group.

Tobias joined Schneider Electric via the Invensys acquisition where he held several senior positions within the company's product management and portfolio groups. Before joining Invensys, he held various positions of increasing responsibility at Aspen Tech, covering their European simulation license business, later moving toward product management and consulting focusing on the chemical industry on a global scale.



Prof. Mohammad Abu Zahra
Head of MENA Region,
Global CCS Institute

Carbon Capture and Storage (CCS) Global Status, Opportunities & Challenges

Carbon Capture and Storage (CCS) is a vital technology to mitigate greenhouse gas emissions, combat climate change, decarbonize the industry and ultimately to achieve carbon neutrality.

This presentation will highlight recent advancements in CCS technologies, covering breakthroughs in capture, transport, and storage methods, as well as global deployment of large-scale CCS projects. As CCS technologies continues to verify a steady rise in both interest and adoption, it is crucial to get a fundamental understanding of its economic viability, including cost reduction trends and the potential for carbon pricing mechanisms to incentivize widespread decarburization of the industry.

Lastly, the presentation will touch upon the specific status of CCS in the Middle East and North Africa (MENA) region, focusing on notable projects, initiatives, and potential opportunities for CCS implementation.

Biography

Prof. Mohammad Abu Zahra joined the Global CCS Institute in January 2022 as Head of Middle East and North Africa (MENA) region, bringing 18 years of deep experience and international expertise in the Carbon Capture field. Prof. Abu Zahra is also an experienced university professor and a current member of the UN Council of Engineers for Energy Transition (CEET). Previous responsibilities included the management of projects in carbon dioxide capture and CCS integrated systems, consultancy, chemical engineering, and process design.

Prior to joining the Institute, Prof. Abu Zahra worked as a professor and CO2 capture research leader at Masdar Institute and Khalifa University (2011-2022). He worked at the International Energy Agency Greenhouse Gas R&D Programme (IEAGHG) as a project manager for the carbon capture and integrated energy systems team.









Dr. Enrique Garcia Chief Technology Officer, National Composites Centre UK

New Technology Opportunities for the Composites Industry: Composites Key Role in Delivering Net Zero

Due to their outstanding properties (unmatched specific structural performance, fatigue behavior, low CTE, high chemical and corrosion resistance and its ability to conform to complex shapes) composite materials have found uses in many sectors. From use in lightweight structures in sectors like aerospace, defense, space and sports (F1, cycling, skiing) to corrosion-free subsea 0&G structures and 130m long wind turbine blades. The presentation will focus on the critical role that composites will play in major sectors to achieve net zero.

Net-zero aerospace and surface transport can only happen with the use of lightweight structures (chassis, EV battery cases, hydrogen storage for vehicles). In the same way, the full exploitation of wind as a key energy vector would be completely impossible without composite blades and there is massive potential for further use of composites in traditional steel structures like towers or even floaters. Construction and infrastructure, other energy vectors (e.g. nuclear fusion and small modular reactors) will also accelerate their route to net zero by using composites. However this will require the development of three key aspects: New engineering tools, a new generation of more sustainable materials and a fully developed supply chain, from cradle to grave.

Biography

Enrique has extensive experience in technology strategy and product development working from the nanoscale to the largest structures. He has held senior manager positions in sectors including aerospace, automotive, railway, and renewables. He has focused on the development of design and manufacturing technologies to deliver industrial products with a special emphasis on how Digital Technologies can re-engineer engineering.

With previous work ranging from fundamental research all the way to serial production, Enrique is particularly interested in working closely with academia, government and industry to develop the right strategies to deliver capability and technology at the National Composites Centre that bridges the so-called "Valley of Death", transforming bright ideas into successful products.

CONFERENCE PAPERS

1. Asset Management Through Digital Transformation	
Title	Author
Improve Atmospheric Column Overhead Corrosion Mitigation Through Cloud-Based, Continuous Salt Point Corrosion Monitoring	Ezequiel Vicent
Develop A Computational Model To Predict Biocorrosion Progression In Oil And Gas Industry	Sarah Al-Aqeel
Autonomous Corrosion And Scale Control	Dana Kayshibaeva
Digitising Ultrasonic Wall Thickness Data At Scale	Rob Phillips
Digitalized Corrosion Control Documents For Enhanced Refinery Mechanical Integrity And Reliability	Sridhar Srinivasan
Underground CP Test Station Remote Monitoring System	Abed Sneineh
Artificial Intelligence Framework For Database Integration And Data Quality Evaluation For Asset Integrity	Bashaer AlHammad
Artificial Intelligence Powered Non-Destructive Testing For Pipe Wall Loss	Ahmed Al-Jarro
Digitalization Of OSI Program Managment - From Inspection To Monitoring	Aziz Rehman
Online Asset And Integrity Monitoring To Enhance Safety, Reliability And Profitability	Ammar AlMousa
Online Corrosion Design Basis Memorandum (Online CDBM)-Corrosion Digital Solution At Your Fingertips	Ahmad Mustaza Ahmad Rusli
IOW Analysis With Wireless UT Sensors: How Process Changes Impact Corrosion Rates	Steve Strachan
Eddy Current Array- Digital Generation Of Eddy Current Testing (ECT) For Inspection Of Surface And Near-Surface Defects	Mohammed Lutfallah

Gaining Actionable Insights From Legacy Corrosion & Inspection Data	Shahram Memon
Enhancing Cathodic Protection System Design And Operation Efficiency by Numerical Modeling	SeonYeob Li
CP Modeling For Complex Pipeline Network - Path Towards Operational Excellence	Plamen Petrov
An Artificial Intelligence Based Application To Predict Internal Corrosion Risk In Produced Gas Flowlines	Mohammed Alqahtani
Application Of IIoT, Machine Learning and AI In Optimizing Plant Performance and Predictive Maintenance	Sara Hassan
Modeling And Prediction Of Pipelines External Corrosion	Naim Dakwar
Future of Digital Corrosion Management	Shadi Hamati
Saudi Aramco Corrosion Management Solution (CMS) - A Proactive Transformation In Corrosion Management	Abdullah Alratoee
Lorawan - The Future Of Remote Sensing Technology	Mitch Gribi











2. Advances in the Use & Application of Non-Metallic Materials	
Title	Author
Non-Metals For Desalination Industries	Nausha Asrar
The Utilization Of 3D Printing In O&G Applications	Joao Tavares
Fire Behaviour Of GFRP Reinforced Concrete: State Of The Art Review	Julien Saade
Composites In Infrastructure Applications	Dustin Troutman
Expanding The Use Of Non-Metallic GRE Materials Tubulars In Multiple Oil And Gas Applications	Ralph El-mir
Methodologies To Predict The Operational Limits Of Non-Metallic Materials In Well Applications: The Cases Of Hydrocarbon Production & amp; Carbon Dioxide Sequestration	Jay Yun
Finite Element Simulation Of GFRP Reinforced Concrete Slab Exposed To Fire	Muhammad Rahman

Reinforced Thermosetting Resin Pipes (RTRP) Failures & Quality Control Measures Adopted During Construction Of The Largest LNGI Facility In Kuwait	Faisal Al-Refai
Development & Implementation Of High Pressure Large Diameter RTR Pipe Systems For Oil & Gas Transmission Pipelines	Alwin Fahrer
Compatibility Study Of HDPE Internal Lining In Carbon Steels For Polymer Injection And Mixing Applications	Ahmed Al-Yahyaai
CFRP Prestressed Concrete Assembled Raft-Type Floating Structures With Wave Energy Converters	Chongfeng Xie
The Use Of Reinforced Thermoplastic Pipes For High Temperature Severe Environments For Oil And Gas Upstream Applications	John Wright
Advantages Of Using Appropriate Thermoplastics To Manufacture Cable Trays	Jérémie Sanchez



3. Protective Coatings - Challenges and Opportunities	
Title	Author
Success Story: The Rolling Journey Of Coatings Standards (2011 - 2021)	Hassan Al-Sagour
New Coating Technology To Resolve External Surface Casing Chronic Corrosion Challenge	Ebadul Haque
Optimized Surface Preparation Method For Maintenance And Repair Coating	Sangki Chi
Laser Scanning To Evaluate Pipeline Joint (Girth) Weld Quality And Coatability	Aman Rastogi
Anti Corrosion And Fouling Coatings To Improve Operations Of Heat Transfer Equipment	Alex Barre
Reducing OPEX, CAPEX And CO2 Emissions In Refining And Chemical Process Unit Fired Heaters And Heat Exchangers Using Tubacoat Technology	Sanjay Lodha
Coating Material For Downhole Application, Lab Vs. Field Evaluation	Tao Chen
Fire Protective Coating For Environmentally Friendly City	JUYEON HWANG
Novel Internal Coating System For High Concentration H2S Environments	Robert Lauer
A High Performance Solvent Free Epoxy Coating Which Is Applicable For High Temperature Immersion Environments	SEUNG HYUN YANG
Graded Nano-Structured Coating Characterization	Nayif Rasheedi
Comparative Study Of FBE Internal Coatings In CO2/H2S/N2-Brine/MEG	Abdulrahman Alhuwaiji
How Can New Coating Technologies Secure Long Lasting Corrosion Protection Even Under Unpredictable Application Conditions?	Anders Solli

Mansour Alhammad
Rashed Alhajri
Elizabeth Cambre
Mana Al-Mansour
Neil Wilds
Ahmed Alezz
Amal Al-Borno



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4. Microbiologically Influenced Corrosion Assessment and Mitigation Title Author Validation Of An Optimized Qpcr Workflow For MIC Risk Identification And Oilfield Microbial Monitoring. Improved Biocide Treatment Programs For Targeted Reservoir Integrity Combination Biocides For Persistent Microbial Control Evaluating The Effect Of Surface Finishing On Microbial Induced Corrosion Of Pipeline Steels Eman Almutawa

Microbiological Control In Cooling Towers

Mitigation Of Microbiologically Influenced Corrosion In Stagnant Fire Water Lines	Faisal Al-Refai
Validation Of A Culturing Device For Detecting Sulfate-Reducing Bacteria	Xiangyang Zhu
Selection Score Card: A Numerical Approach In Biocide Selection	Juan Hernandez Montiel
Managing Onshore And Offshore Process Piping And Pipelines Against MIC In Mature Field	Farih Mitraningsih
MIC Investigation Case Study.	Dhrar Zeyada
Use Of Microbiological, Geochemical, And X-Ray Diffraction Techniques To Support The Autopsy Of RO Membrane From A Saudi Aramco Gas Plant	Husam Khanfar
Challenges In Microbial Monitoring Of Oil-Water Separation Facilities	Alexander Grigoryan



Ibrahim Alghamdi

5. Corrosion in Downhole, Upstream Production Facilities and Transmission Pipelines	
Title	Author
The Effect of Mercury to Carbon Steel in CO2 And H2S Environment	Azmi Mohammed Nor
Montecarlo Simulation for Fitness for Service (FFS) Analysis	Sarah Aldossary
Field Challenges Maintaining the Integrity and Inspecting Offshore Non-Scrapable Pipelines	Itoro Akrasi
An Evaluation of Well Completion Materials for Impure Carbon Dioxide Supercritical Streams In Hydrocarbon Production And Geological Carbon Sequestration	Manuel Marya
Impact of H2S Souring on PDO Facilities Materials of Construction.	Hajir Al Huraizi
Field Study of Corrosion Inhibition Effect on Corrosion of Low Flow Velocity Gas Flowlines Under Co2 Environments	Muhammad Khan
Oxygen Corrosion Control for Multiphase and Gas Phase Pipelines	Geeta Rana
Corrosion Control & Integrity Management of Flare Gas Recovery Units	Mohamud Farah
Hydrogen Embrittlement of The Structural Component of A Composite Flex Cord Line Pipe (FCLP) 801 System - Causes And Mitigations	Ibrahim Gadala
Complex AC Induced Voltage & Mitigation System For Long Transmission Pipelines With Many Parallel And Crossing Overhead Power Lines	Samer Abu Imarah
Impact Of Impurities On The Corrosion In CO2 Dense Phase Transmission Pipelines	Ali Al-Hajri
Fatigue improvement of welded elements and structures by ultrasonic peening	Usman Ghani

CUI Monitoring For Cold Duty Insulation, Evaluation And Use Cases	Prafull Sharma
"Light Weight" Tomographic Monitoring Of Pipe Wall Thickness	Geir Instanes
A Study Of Pipeline Integrity Management In Oil And Gas Production	Iftikhar Ahmad
Facilities Of Arabian Gulf Oil Company Through Corrosion Management	Fadhel Aithan
Pipeline Lamination Assessment	Ayman Janbi
Corrosion Inhibitor Selection For High Temperature Sweet Gas Wells	Anas Rushaid
Exploiting down-hole Corrosion Technological Solutions and Best-Practices to safeguard Mature Oil Field	Ali Alssafwany
Corrosion Inhibition Of API 5CT C95 In 15Wt% HcI Solution At High Temperature	Abdullah S. Al-Enezi
Internal Corrosion Risk Assessment For Crude Pipeline-D - A Case Study	Ayman Alabdullatif
Application Of Scale Prevention In Oil Wellhead Flowlines In Hassi Messaoud Field Using ENMAX Technology	Abdelaziz Noaman







6. Corrosion Prevention and Protection of Civil Assets	
Title	Author
Durability Enhancement Of Civil Assets Utilizing Corrosion Inhibiting Admixture	Shadi Hindaileh
Numerical Simulation Of Punching Shear Capacity Of GFRP Bar-Reinforced Concrete Slabs-On-Ground	Dr. Muhammad Rahman
Effectiveness Of The Methods For Detection And Evaluation Of Corrosion On The Reinforcement Steel In RC Structures - A State-Of-Practice Review	Carlos Acero
Evaluation And Design Of Galvanic Corrosion Protection Of Reinforced Concrete Structures	Laith Haboubi
Migrating Surface Applied Corrosion Inhibitors For Corrosion Mitigation Of Existing Civil Assets	Shadi Hindaileh
Nondestructive Testing Methods For Corrosion Assessment: The Right Procedure Matters.	Jorge Reyna Enriquez
Corrosion Management - A Journey From Failure Investigation To Prevention	Nausha Asrar
Plant Extracts As Corrosion Inhibitors	Hajar Alkhamis
Underground Concrete Sulfur Pit Comprehensive Assessment And Rehabilitation	Hatem El-Ashmawi
Chloride Ion Solidification Of Calcined Layered Double Hydroxides With Different Cationic Types In Cement-Based Materials	Hu Zhao
Novel Approach For Sustainable Carbon Sequestration & Corrosion Mitigation In Cementitious Composites	Saheed Adekunle

Title	Author
Transition From Combinatorial Chemistry To Present Day Robotics In Product Development For Oil Field Chemicals	Nihal Obeyesekere
Development Of Corrosion Inhibitor With Low Toxicity For High Temperature/High Shear Applications	Geeta Rana
ndustry Best Practices For Evaluating Efficacy Of Corrosion Inhibitors Used In The Oil And Gas ndustry	Trevor Place
Dligomeric Type Inhibitors Meeting A Broad Spectrum Of Oilfield Corrosion Challenges	Per-Erik Hellberg
Development Of A Versatile Continuous Application Based Corrosion Inhibitor To Mitigate Fop-Of-The-Line Corrosion Under Both Sweet And Sour Operating Conditions	Jeremy Moloney
The Performance Study Of High-Temperature, High-Pressure (HTHP) Corrosion Inhibitors At Sour Conditions	Heonyeong Song
The Laboratory Evaluation And Development Of Corrosion Inhibitors And Multifunctional Products For The Jafurah Field	Jody Hoshowski
Successful Field Deployment Of Corrosion nhibitor For Offshore Corrosive Mercury- Containing Gas Stream	Mohamed Abou Zour





8. Corrosion Research & Materials Applications	
Title	Author
Effect Of Welding Parameters On Corrosion Resistance Of Duplex And Super Duplex Stainless Steel Materials	Tariq Al-Ghamdi
Failure Of Demineralized Stainless Steel Water Pipe Attributed To Sulfuric Acid Induced Corrrosion	Tariq Al-Ghamdi
Microstructure And Corrosion Behavior Of 316L Stainless Steel Fabricated By Selective Laser Melting Additive Manufacturing In 3.5 % Nacl Solution	Ibrahim Albalawi
Failure Analysis Of Super Duplex Stainless Steel By Brittle Fracture, Lesson Learned	Mohamed Shaaban
Metallurgical Assessment Of A Failed Heat Exchanger Tube	Saeed Kadasah
High Temperature Corrosion Quantification In Renewable Diesel And Sustainable Aviation Fuel Applications	Sridhar Srinivasan
Comparing Microstructures Of S31603 Stainless Steel Coupons In H2S And CO2 Environments	Bader Alqahtani
HFW Pipe Seam Screening Test For Susceptibility To Hydrogen Embrittlement	Saad Al-Muaili
A Summary Of The Corrosion Behbaviour Of Stainless And Nickel-Based Alloys And An Assessment Of Their Potential As Materials For Deep Geothermal Applications	Yong Hua
Evaluation Of Corrosion Inhibition Performance Of A Novel Polymer For Carbon Steel In Simulated Acidizing Fluid: Influence Of Temperature And Flow On Protection Efficiency	Saviour Umoren
Influence Of Oxygen Diffusion Coefficients and Soil Moisture Content On The Corrosion Behavior Of Carbon Steel	Layan AlSharif

Low Dose Novel Additive Synergist/Enhancer For Imidazoline Based Oilfield Chemical Products	Yolanda De Abreu
Electrochemical Methods Vs Long-Term Immersion Tests To Assess Localized Corrosion Tendencies Of Corrosion Inhibitors	Yolanda De Abreu
Choosing The Right Material For Hydraulic And Instrumentation Systems In Marine Environments - Results From Field Testing	Barinder Ghai





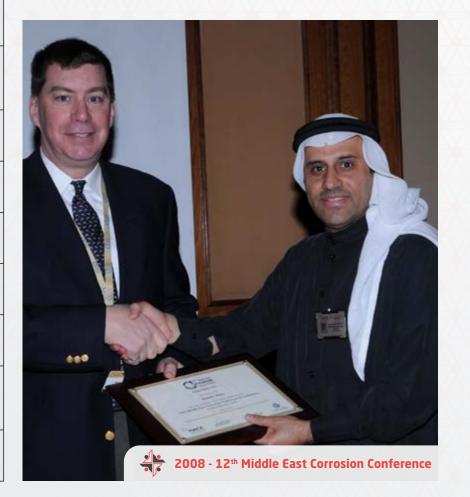
CONFERENCE PAPERS

9. Advances, Challenges & Field Experiences



with Cathodic Prote	ection
Title	Author
The Role Of DC Decouplers With Cathodic Protection Systems	Jay Warner
Cathodic Protection Design & Commissioning For Sheet Piles Using SACP Aluminum Anodes	Ahmad Rajab
Cathodic Protection Challenges In A Saudi Aramco Remote Pipelines Corridor	Ahmad Almalki
Spread Resistance - The X-Factor In AC Corrosion And Cathodic Protection	Lars Nielsen
Assessment Of Cathodic Protection Performance With Different International Criterion For Man- Made River Project PCCP Lines.	Haitham Hussin
Acquiring And Analyzing Electrical Resistance Probe Data Using Web-Based Remote Monitoring Tools	Jamey Hilleary
Linear Anodes For Pipeline Rehabilitation - Thirty Years Later.	Ted Huck
Recent Advances And Applications Of Cathodic Protection Technologies In China	TE KE
Mixed Metal Oxide Coated Titanium For Impressed Current Anodes Cathodic Protection	Talal Al-Zahrani
Solving Challenges In CP And Coating Surveys Through Technology Advancements	Ashish Khera
Controlling AC Safety And Corrosion Risk Assessment On Pipelines With Digital Twins	Christophe Baete
Benchmarking International Cathodic Protection And Alternating Current Mitigation Standards To Determine Suitable Protection Criteria	Craig Botha
Challenges In Study, Monitoring And Mitigation Of AC Interference On Cross-Country Pipelines	Anshul Jain

CP Upgrade For Buried Tanks With Cost-Effective Approach	Mohammed Al-Otaibi
Cathodic Protection Design For Water Disposal Wells	Ahamed Rasmi
Pipelines External Corrosion Management - Advance CP Inspection Technology GPS Synchronized CIPS	Bharat Bhushan Jasingh
Circuit Theory Applied To Models For Design Of Single Well Casing CP Systems	Jersson Morales
Catching the IR-free potential: an overview of the remaining IR components in Off measurements, and importance of the design for PRE with integrated coupon	Ivano Magnifico



CONFERENCE PAPERS



10. Corrosion in Refining, Petrochemical & Chemical Industries Title **Author** Improved Unit Economics, Crude Blending And Throughput Management Using A Novel High Sridhar Srinivasan Temperature Corrosion Prediction Framework Metallurgical Assessment Of A Failed Heat-Saeed Kadasah **Exchanger Tube** Flow Accelerated Corrosion In Heat Recovery Fatma Alradhi Steam Generator Of A Desalination Plant Experiences With Corrosion And Wet H2S Cracking Gerrit Buchheim In HIC Resistant Steel Amine Absorbers Failures With Duplex Stainless Steels (DSS) In Hydro-Gerrit Buchheim processing REACs - Update On Latest API Survey Corrosion Challenges In Aromatic Extraction Unit Ameer Hamza Limitations Of The Old Generation Water & Steam Cycle Chemistry Treatment: Highlighting Corrosion IL Yoo Issues And Proposing Advanced Treatment Options. New Super-Austenitic Grade Alloy 35Mo (UNS N08935) With Excellent Corrosion Properties For Johan Salwen Refinery And Petrochemical Industry Corrosion Control In Atmospheric Crude Distillation Osama Khalil Tower Overhead System Considering Mass Transfer In Refinery Crude George Duggan Distillation Overhead Water Wash Reformer Pigtail Degradation Over 49 Years' Ratnakar Kadikar Service: A Case Study Premature Failure Of Trim Cooler Copper Nickel Tubes Due To Microbiology Influenced Corrosion Abdullah Alratoee (MIC) - A Case Study High Temperature Hydrogen Attack: The Roles Of Residual Carbon, Initial Microstructure & Carbide Mohammed Alshahrani Stability

11. Material Performance and	d Sustainability
Title	Author
CFRP Wrapping - To Repair Critical Pipeline Water Leaks Without Shutdown Of The Plant	Mohammed Mustafa
Cost Effective Nonmetallic Technique To Restore Structural Integrity Of Corroded Surface Casing	Mohammad Bashar
The Transformation Of Shipping & Transport Material To Nonmetallic Products. A Case Study Of Wooden-To-Plastic Pallets	Fahad Al Suwaiei
Use Of Nonmetallic Materials To Improve Construction Productivity And Sustainability Of nfrastructures	Waseem Khatri
Reducing embodied carbon by using FRP rather than steel	Tom Byrnes
mproving Composite Structures Optimisation and Sustainability in Existing and New Markets	Alessandro Cannas
Wireless Monitoring Of Composite Repairs For Effective Corrosion Management In Pipes	Stuart McKay
Coating The Way To A Hydrogen Economy: Challenges Ahead	Amal Al Borno
Deploying An Innovative Method To Protect Pipelines During Excavation	Mahmoud Dweib

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Additive Manufacturing Fundamentals: From Concept to 3D Printing



Joao Tavares
3D Printing Group
Leader,
Saudi Aramco



Omar Abuhabaya
Chief Operation Officer,
National Additive
Manufacturing and
Innovation Company



Saad Alharbi
Application Engineer,
National Additive
Manufacturing and
Innovation Company

Additive manufacturing is an advanced manufacturing method, where parts get manufactured by joining materials to make objects from 3D model data. The 3D printer stacks layer upon layer of material to form the final object, as opposed to subtractive manufacturing methodologies. 3D printing adds a great value to businesses by addressing many operational challenges such as enabling the production of obsolete parts that are no longer produced by its original manufacturer, and in reducing associated lead time and cost significantly. Additive manufacturing also promotes and accelerates the development of innovative ideas and patented technologies by giving innovators a platform to quickly prototype and visualize their concepts.

- The session provides an overview of all mainstream 3D Printing technologies and current state-of-the-art.
- The workshop covers the fundamentals of 3D Printing across all process steps: part identification, reverse engineering, design enhancement and 3D Printing.
- The latest 'slicing' and post-processing techniques will be introduced with real case studies.
- The session addresses typical challenges associated with 3D Printing and viable troubleshooting practices.
- Participants will directly engage with computer assisted design (CAD) and 3D Printing of an experimental part.

Administrative Information

Dates	tes Timings Venue		Fees	
13 November	08:30 - 14:30	Gulf International Convention Centre	USD 135 / BD 50	



Ashish Khera, P.EngDirector,
Allied Engineers

The preferred option for integrity validation of pipelines remains as In-line Inspection (ILI), however, the non-intrusive technique of Direct Assessment (DA) is also an excellent acceptable proven integrity validation tool which can be utilized instead or as complementary to ILI.

Advanced DA programs which are based on best practices have been applied successfully to several scrapable and non-scrapable lines with a mandatory deliverable of root cause analysis and a mitigation plan for managing the corrosion rate. Case studies related to application of DA programs will be showcased for pipelines following under below categories:

- Onshore or offshore
- With CP or without CP
- Aging assets from 1940's or new pipelines yet to be commissioned
- Scrapable or non-scrapable
- Processing products of gas, wet gas, crude oil, water, multiphase or refined products

The presentation will also cover, the advantages of integrating the DA programs within In-line Inspection (ILI), demonstrating how these programs can help pipeline owner's overall integrity program and risk management.

This DA workshop would also include case studies as per the theme of this event, focusing on "advances, challenges and field experiences with CP".

Key takeaways from the workshop would be:

- Understand how DA fits in the overall pipeline integrity management plan
- Know the various applications of DA along with the respective standard and codes
- Recognize the benefits and limitations of each DA
- Differentiate between various DA's (ECDA, ICDA-DG/WG/ LP/MP and SCCDA) and their application
- Comprehend the DA methodology & understand the 4 steps
- Learn some key aspects for effectively applying DA as a Validation tool

Administrative Information



Dates	Timings	Venue	Fees
13 November	08:30 - 12:30	Gulf International Convention Centre	USD 135 / BD 50









Fundamental Solution for Enhancing Service Life of Assets by Advanced Surface Preparation and Coating Technologies



Or. Erik Risberg
Global Category
Director,
Steel Protection,
Jotun A/S



Dr. Claudiu IONESCU
Group Portfolio &
Innovation Director,
Winoa



Pierre Coste
Worldwide Technical
Services Manager,
Winoa

Annually, 3 trillion USD is spent to repair damages caused by corrosion globally and coatings is one of the most efficient ways to mitigate this phenomenon and save unnecessary expenses.

This workshop will be divided into 2 parts and will discuss, protective coatings, the parameters influencing coating quality, including substrates, surface preparations and application conditions.

During the 1st part, challenges and solutions of protective coatings for offshore structures will be presented. This workshop will discuss the correlation between accelerated test methods and in-service performance of coatings to further optimize test protocols and ensure long lasting corrosion protection on the most aggressive environments. Moreover, the difference between coatings optimized for new construction versus maintenance, and the utilization of different test protocols to verify the suitability for the intended usage, will be extensively discussed.

The 2nd part of the workshop will focus on the operational excellence in surface preparation using steel abrasives. A focus on cost saving and practices in mitigating coatings failure risks using this surface preparation technology will be presented. The workshop will highlight the main surface preparation working specification checkpoints, with a particular focus on the synergy between the blasting media features and blasting machines operating conditions. Finally, the finetuning of surface preparation parameters and its influence on the economics and the on lifetime of coating systems will be debated.

Administrative Information

Dates	Dates Timings		Fees	
13 November	08:30 - 12:30	Gulf International Convention Centre	USD 135 / BD 50	

Feffective Corrosion Under Insulation (CUI) mitigation strategies by using novel insulating materials



Mark Krajewski
Director of
Technical Services,
Aspen Aerogels



Altaf Rahman EMEA Commercial Director, Aspen Aerogels



Hussein Dassouki
Business Development
Manager,
Aspen Aerogels

This workshop offers participants an opportunity to explore the benefits of using novel Aerogel insulating materials to improve Corrosion Under Insulation (CUI) mitigation strategy. Attendees will gain in-depth knowledge about the theory and causes of CUI, learn how coatings and cladding play a pivotal role in the mitigation strategy, and will understand the impact of moisture and water on process performance and CUI rates. Focus will be provided on the role of insulating materials in the battle against CUI and how Aerogel base materials can contribute to improve CUI mitigation. During the workshop, participants will engage in compelling discussions and will be provided with sound technical evidences from independent testing and real-life case studies attesting the performance of these materials under the most challenging environments.

The workshop will provide a hands-on experience to witness these materials exceptional capabilities first-hand. All participants will have the opportunity to install Aerogel materials onto a pipe section, and will be invited to perform water and moisture tests. By completing the workshop, attendees will learn the techniques and best practices for seamless implementation of Aerogel materials and will gain practical skills that can be immediately applied to improve CUI prevention strategies.

All attendees will embark on an engaging journey as the workshop will employ the renowned 6 Hats format to facilitate interactive discussions. All participants will be invited to develop an outline CUI mitigation strategy tailored for specific plant needs, and will be given the opportunity to exchange ideas and insights with industry experts and peers.

By completing the workshop, participants will experience the unparalleled benefits of Aerogel based materials for online insulation applications and the advances these materials can offer on the CUI mitigation domain.

Certificates of completion of this workshop will be provided to attest each participant commitment to advancing their knowledge, recognizing attendees' active participation gained expertise in CUI mitigation.

Administrative Information

Sponsored by: aspen aerogels

Dates	Timings	Venue	Fees	
13 November	08:30 - 12:30	Gulf International Convention Centre	USD 135 / BD 50	



CONFERENCE / WORKSHOP REGISTRATION



First Name	Middle Name	Family Name	
Position		Organization	
P O Box	Address		
City	Country	Postal Code	
Telephone	Email		
Bahrain Society of Engineers Swift Code : NBOBBHBM IBA Payment through Credit C	AN No: BH47-NB0B-0000-0099-0659-	rahrain (Main Branch) 91	
Please debit my VISA	Mastercard AN	1EX	
Credit Card Number		Expiry Date	
Card Holder Name			
Billing Address			
Signature		Date	

Conference Registration Fees						
		Full Registrations (Early Birds) Before 30 Sep 2023		ull Registrations ter 30 Sep 2023	On	e Day Registration
Member (AMPP/ BSE)		BD 225 / USD 600	\(\frac{1}{2}\)	BD 280 / USD 750		BD 130 / USD 350
Non- Members		BD 300 / USD 800		BD 360 / USD 950		BD 190 / USD 500
Students		Not applicable		BD 75 / USD 200		BD 38 / USD 100

	Workshop Fees					
S No.	S No. Workshop					
1	Additive Manufacturing Fundamentals: From Concept to 3D Printing	BD 50 / USD 135				
2	Integrity Validation and Root Cause Analysis of Pipelines Through Advanced Direct Assessment Program	BD 50 / USD 135				
3	Fundamental Solution for Enhancing Service Life of Assets by Advanced Surface Preparation and Coating Technologies	BD 50 / USD 135				
4	Effective Corrosion Under Insulation (CUI) Mitigation Strategies by Using Novel Insulating Materials	BD 50 / USD 135				

Conference Fee includes the following:

• Invitation to opening ceremony dinner • Access to all conference technical sessions • Eligibility to register for a workshop • Admission to the conference exhibition • Invitation to luncheons

Cancellation must be send in writing to the Conference Coordinator. A Cancellation fee of BD 30 (US\$ 80) will be charged for cancellation before Sep 30, 2023. After this date cancellation is nonrefundable.





Inclusive of 10% Value Added Tax

Benefits	Diamond Sponsor BD 18,000 or US\$ 48,000	Platinum Sponsor BD 10,000 or US\$ 26,600	Gold Sponsor BD 8,000 or US\$ 21,300	Gala Dinner Sponsor BD 6,500 or US\$ 17,300	Silver Sponsor BD 5,500 or US\$ 14,600	Luncheon Sponsor BD 5,000 or US\$ 13,300	Technical Track Sponsor* BD 5,000 or US\$ 13,300	Workshop Sponsor BD 1,200 or US\$ 3.200		
Company name & logo displayed in publicity materials including conference hall, outdoor, website, adverts & banners	Full	Full	3/4	3/4	1/2	1/2	1/2	1/4		
Company will be honored with a plaque	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Free exhibition stand	35 sq m	24 sq m	15 sq m	12 sq m	12 sq m	12 sq m	8 sq m			
Free admission for delegates	15	7	5	5	3	3	3	1		
Publicity materials in conference pack	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Free advertisement in the exhibition guide	2 Pages	2 Pages	1 Page	1 Page	1 Page	1/2 Page	1/2 Page	-		
Company logo will appear on the exhibition guide covert	Full	Full	3/4	3/4	1/2	1/2	1/2	1/4		
Company logo in conference hall	Full	Full	3/4	3/4	1/2	Logo in Iunch venue	Logo in technical track session	Logo in workshop session		
Company name and logo will be published on the conference website which shall be linked to the sponsor's website	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

^{*}Technical Track associated with any other sponsorship excluding workshop sponsorship (SR 16,000 or BD 1,600 or US\$ 4,300)





Company Name				
Contact Person	Title			
Mailing Address				
City	Country	Postal Cod	le	
Telephone	Fax	Email		
Signature		Date		
Company Seal				
Diamond Sponsor	Gold Sponsor	Silver Sponsor	Technical Track Sponsor	
Platinum Sponsor	Gala Dinner Sponsor	Workshop Sponsor		
Rakan Al-Shebil M: +966 Conference Support T: + Payment may be made Bahrain Society of Enginee Swift Code: NBOBBHBM Payment through Credit Please debit my VI Credit Card Number Card Holder Name Billing Address	by Bank Draft / Cheque payabers AC No. 99065991 National IBAN No: BH47-NB0B-0000-009 t Card SA Mastercard	aramco.com 7475 E: conference.manager@t le to: Bank of Bahrain (Main Branch) 99-0659-91 AMEX Expiry Date		
Signature		Date		

CANCELLATION POLICY:

A Sponsor/Exhibitor may cancel their participation in the Conference by giving conference organizers notice in writing. If organizers receive notice of cancellation by 31st July 2023 or before the issue of last conference brochure, 20% of the sponsorship/exhibition fee shall be levied as cancellation charges. If notice of cancellation is received after the issue of last conference brochure or 31x July 2023 the Sponsor/Exhibitor shall be obligated and agrees to pay a cancellation charge of 50% of the total sponsorship/exhibition fee. If notice of cancellation is received after 30th September 2023, the entire sponsorship/exhibition fee is due as cancellation charge In the event of cancellation, organizers have the full right to use the space for their own convenience, including selling the space to another exhibitor, without rebate or allowance to the cancelled exhibitor. Both AMPP Dhahran and Bahrain Society of Engineers assume no responsibility for having included the name or description of the cancelled exhibitor in programs, news releases, publicity or other material.

EXHIBITION INFORMATION



The exhibition will be held in conjunction with the technical sessions within the conference venue. The exhibition is intended to provide an opportunity for companies, consulting and research organizations to display and demonstrate their products and services related to corrosion management.

DETAILS AND BENEFITS

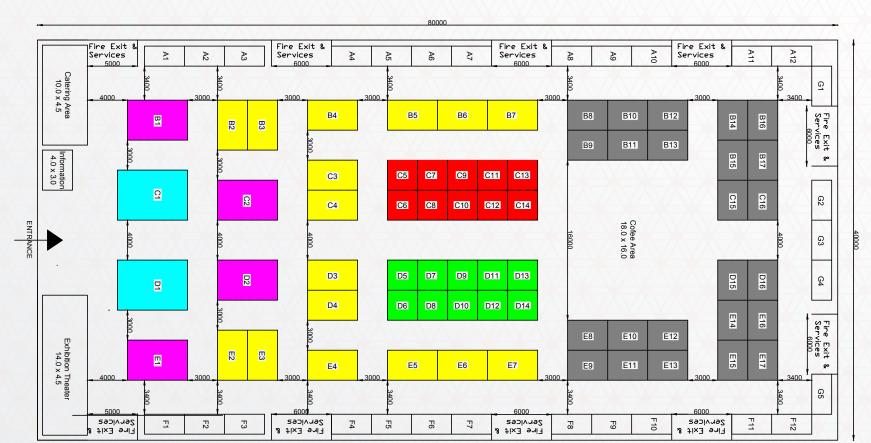
The exhibition stands are 4m wide x 2m deep and 2.4m high. Stand fittings will consist of a system stand, two fluorescent lights, fascia board in English, one electrical power point and sufficient tables and chairs. In addition each exhibitor will avail the following benefits:

- Exhibitor names and logos will be published in the Conference website.
- Exhibitors profile and logo will be included in the Conference proceedings.
- Advertising space will be available in the Exhibition Guide.
- A brief profile (8 to 10 lines) of each exhibitor will be included in the official Exhibition Guide which will be circulated to all invited government officials, VIPs, visitors and participating delegates.
- Wide publicity will be given in the Gulf region about the exhibition to attract consultants, contractors, government officials and professionals to visit the exhibition booths during the conference period.
- Each exhibitor is entitled to one full conference package and entry to the Conference Technical Sessions.
- Best three exhibitors will be selected and honored during the conference dinner. All other exhibitors will also be honored with certificates.











EXHIBITION COST

Option A

One full exhibition stand 8 sq m with the fittings - SR 20,000 or BD 2,000 or US\$ 5,300 (per 8 sq m)

Option B

Exhibition space without fittings - SR 2,000 or BD 200 or US\$ 530 (per sq m)

SPONSORS & EXHIBITORS LIST (as of July 2023)



SPONSORS

- Saudi Aramco
- Al-Qahtani Pipe Coating Industries (AQPCI)
- Tamimi Energy Holding Company
- Specialized Oil & Gas Engineering
 Co. Ltd. (SOGEC)
- Arabian Pipecoating Co. (APCO)
- Abdulla Fouad Group
- lotun Saudia Co. Ltd.
- Diversified Lines for Petroleum Services Co. (DLPS)
- Cortec Middle East FZC
- Cosasco Middle East FZE

- German Metal Surface Treatment Chemical Company
- Hempel
- Anti Corrosion Contracting Co. Ltd.
- Gulf Engineering House Consulting
 Zheijang liuli Hi-Tech Metals Co...
- Zhejiang Jiuli Hi-Tech Metals Co., Ltd.
- KCC Corporation
- HATCON
- Future Pipe Industries (FPI)
- Newtech International W.L.L.
- Emerson FZE
- Metal Samples

- Sigma Paints
- Environmental Protection Technical Services Co.
- OLI Systems, Inc.
- Nami, a 3D Printing Company
- Namthaja
- Aspen Aerogels, Inc.
- Alleima

EXHIBITORS

- Corrosion & Technical Services
 W.L.L. (CTS)
- Dairyland Electrical Industries
- Safe & Shield Management W.L.L.
- United Special Technical Services
 Arabia Company Limited (USTS)
- Schmidt Abrasive Blasting LLC.
 Saudi Industrial
- Asset Integrity Engineering (AIE)
- Aspen Aerogels, Inc.
- TCR Arabia Company Ltd.
- Excel Engineering & Contracting Company Ltd.
- Saudi Trading & Research Co. Ltd. (STARC)

- Deyuan Pipeline Technology Co., Ltd. (Ancorro)
- WINOA
- ESAB Middle East & Africa
- Borin Manufacturing, Inc.
- Faredh Arabian Trading and Contracting Company
- One Garnet Group
- Asharqiyah cables company for industries
- Becht
- ClampOn
- Tinker & Rasor ANJAM Al Reyadah
- ANJAM Al Reyadah
- NDT Corrosion Control Services Co.

- Industrial Support Services
 Company Limited ("ISS")
- Candor Technology Co., Ltd.
- SGS Inspection Services
- Pipecare Group
- ChampionX / Champion Arabia Co. Ltd.
- Gecko Robotics
- Kalada Chemical Solutions LLC
- NOV Inc.







Company Name			<i></i>
Name of Representative			
Position			
Mailing Address			
City	Country	Postal Code	
Telephone	Fax	Email	
Products or Services to be displayed _			
Signature		Date	

SELECT THE DESIRED STAND OPTIONS

Option A

No. of Stands required

Shell Scheme Package

Participation Fees: SR 20,000 or BD 2,000 or US\$ 5,300 (per 8 sq m) Select preferred stand numbers from the exhibition layout









White wall panels 2.4m height. Carpet floor, 2 tables with chairs, 2 fluorescent lights, one 13 Amp power supply (3 pin) and waste



Stand space only (Minimum 8 sq m) **Participation Fees:** SR 2,000 or BD 200 or US\$ 530 (per sq m)

Stand Nos.







Participation does not include any stand construction except one 13 Amp power supply. *Inclusive of 10% Value Added Tax

Note: Confirmation of the agreed exhibition space will be against 50% down payment.

Payment may be made by Bank Transfer/Cheque payable to:

Bahrain Society of Engineers, AC No. 99065991 National Bank of Bahrain (Main Branch) Swift Code: NBOBBHBM IBAN No: BH47-NB0B-0000-0099-0659-91

Please mail or fax this form to:

Conference Coordinator 18th Middle East Corrosion Conference & Exhibition Bahrain Society of Engineers Phone: +973 178 10733, Fax: +973 1782 7475 Email: conference.manager@bse.bh

Cancellation Policy:

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CONFERENCE VENUE



The 4 days of the conference and the associated exhibition will take place at the Gulf International Convention Centre, Gulf Hotel, Kingdom of Bahrain, nested at the heart of the capital city, Manama.

This location is not only ideal for learning through conference participation and exhibitions, but also provides you easy access to all the shopping centres/ malls if you are thinking of taking a gift to your beloved ones and is a few minutes' walk to many mesmerising restaurants if you are thinking to have a bite.

The Gulf Hotel is a five-star facility with 366 elegant rooms of gracious style waiting for you with uncompromising service, efficiency and facilities. The hotel is conveniently located with an easy access for transportation, just a 20 minutes' drive from the Bahrain International Airport.

HOTEL DISCOUNTED RATES

Take advantage of the special discounted rate negotiated for conference attendees at Gulf Hotel. Book your stay between November 10 - 18, at www.mecconline.com/venue, and enjoy the perfect combination of comfort and affordability during the event. Don't miss out on this exclusive offer!







The Kingdom of Bahrain, an archipelago of 33 islands, is rich in history and is situated in the Arabian Gulf, off the east coast of Saudi Arabia. The country offers a fascinating blend of Eastern and Western cultures. The capital, Manama is a modern cosmopolitan city, which boasts world class restaurants, shopping centres, and tourist attractions. The climate is hot in summer and mild in winter. From November to April the weather is very pleasant, with temperatures ranging from 15 to 24 degree centigrade. Arabic is the official language, but English is widely used by most businesses.





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