AMPP Annual Conference + Expo 2026 Topics

Thank you for participating in the Association for Materials Protection and Performance (AMPP) Annual Conference + Expo 2026. We have a robust offering of topics under four main sectors:

1. Defense and Civil Infrastructure
2. Energy
3. Maritime
4. Strategic Geographies and Emerging Industries

For 2026, we've expanded our peer-reviewed opportunities to include both papers (where the topics are shown as highlighted in red) and presentations-only (where the topics are shown as highlighted in yellow).

On behalf of the AMPP staff, chairs/vice chairs, and all participants, we look forward to a successful annual conference in Houston, Texas, USA!

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Defense and Civil Infrastructure Sector: Bridges

Bridge Preservation and Asset Management
This session addresses the latest advancements and strategies in maintaining and managing corrosion and materials issues for bridge infrastructure. This session will cover corrosion and coatings considerations for bridge inspection, preservation methods, and the implementation of asset management systems designed to extend the lifespan and enhance the performance of bridge structures.

Bridge Preservation: New Technologies for Concrete and Steel Structures
This will be a forum on Bridge Preservation. It will cover both steel and concrete. It will focus on current and new technologies that will extend the life of our bridge infrastructure. It will include multiple Speakers and a panel discussion.

Defense and Civil Infrastructure Sector: Concrete Infrastructure

Corrosion of Reinforced Concrete Structures: Coatings and Concrete
Corrosion of steel rebar causes structural degradation of reinforced concrete systems in the civil infrastructure. Field practice and research continue to better understand the problem and provide effective practical solutions. This session is intended to provide a forum for practitioners and researchers in the technical areas of reinforced concrete and coatings to disseminate information and provide practical solutions for corrosion of the aging civil infrastructure.

Preventing Failures in Structural Concrete: Corrosion, Coatings, and CP
The session will focus on inspection, preservation and repair techniques to mitigate deterioration of reinforced concrete structures. Specific focus will be on assessment methods which characterize the distress mechanisms; development of appropriate rehabilitation scope of work; and methods of mitigating corrosion through coatings and cathodic protection. Recent case studies and new and emerging technologies will be highlighted, as well as industry trends and research needs.

Paper topics shown in red.
Presentations-only topics shown in yellow.

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Defense and Civil Infrastructure Sector: Water/Wastewater

Advanced Concepts for Concrete Surface Preparation, Restoration, and Protective Lining Systems for Municipal Wastewater

Concrete infrastructure within municipal wastewater systems faces significant challenges due to exposure to corrosive environments, inflow and infiltration, and mechanical wear. This session explores advanced methodologies for the preparation, restoration, and protection of concrete surfaces in wastewater facilities. Emphasizing innovative techniques and materials, the session aims to extend the lifespan and resilience of such structures. Key aspects include:

- Surface Preparation: Fundamental steps to ensure optimal adhesion and performance of protective systems.
- Restoration Techniques: Methods such as patching, crack injection, and resurfacing.
- Protective Lining Systems: Cutting-edge applications evaluated for their chemical resistance, durability, and adaptability to varying environmental conditions within wastewater systems.

Corrosion Management: Water Treatment, Desalination, Transmission, and Reuse

As global demand for freshwater continues to rise, the reliance on desalination has increased—bringing with it complex corrosion challenges across every stage of the water cycle. This symposium aims to address the critical intersection of corrosion science and desalination technologies, focusing on the challenges and innovations in the desalination, treatment, transport, and reuse of saline and brackish waters. The session will explore corrosion mechanisms, materials performance, and mitigation strategies across a variety of desalination technologies (thermal, membrane, hybrid), as well as in post-treatment systems, distribution networks, and industrial water reuse applications. Emphasis will be placed on advanced materials, coatings, corrosion monitoring techniques, predictive modeling, and case studies highlighting operational best practices from across the globe.

Paper topics shown in red.
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Defense and Civil Infrastructure Sector: Water/Wastewater (cont.)

Metallic Corrosion in the Water and Wastewater Industries

Corrosion of water and wastewater infrastructure presents a significant and escalating challenge for utilities worldwide, impacting system reliability, public health, and operational costs. This symposium will explore current strategies and emerging technologies for corrosion management across the water and wastewater sectors. Topics will include methods for early detection and assessment of corrosion in pipelines and equipment, proven techniques to mitigate or arrest active corrosion, and best practices for preventing corrosion in both new and aging facilities.

Defense and Civil Infrastructure Sector: Coating Materials

Advancements in Inspection Instruments and Techniques

This session explores the latest innovations in the tools and methodologies used for inspection of protective coatings application. This session will present cutting-edge inspection instruments, such as advanced thickness gauges, adhesion testers, non-contact instruments, and digital imaging systems, along with their practical applications in various industries. Attendees will learn about new techniques for detecting coating defects, ensuring compliance with industry standards, and enhancing overall inspection accuracy and efficiency.

Coatings 101: Materials, Operations, and More

The session will provide an overview of industrial protective coatings, including design considerations, material selection, surface preparation guides, ambient conditions, and basic quality control techniques. What participants will attain out of this course is a basic understanding of how protective coatings are specified and applied to meet the goals of a project. We will review and present typical inspection instruments used on a paint project, surface preparation guides, how to read a product data sheet, and how to measure ambient conditions.

Beyond Protective: Architectural and Commercial Coatings

This symposium features technical papers on all aspects of thermal and cold spray coatings used to mitigate corrosion of metallic and reinforced concrete structures 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 results of basic and applied research on thermal spray processes and coating materials including field experience on thermal spray coatings, materials, processes and strategies for corrosion control. Papers on thermal spray coatings of zinc, aluminum and their alloys for corrosion mitigation with relevant field applications would be of great interest to the symposium. Contributions on conventional and novel thermal and cold spray coating systems used to prevent corrosion of metal and reinforced concrete structures in all environments

Defense and Civil Infrastructure Sector: Coating Materials (cont.)

Thermal and Cold Spray Processes and Applications in Corrosion Mitigation

This symposium features technical papers on all aspects of thermal and cold spray coatings used to mitigate corrosion of metallic and reinforced concrete structures 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 results of basic and applied research on thermal spray processes and coating materials including field experience on thermal spray coatings, materials, processes and strategies for corrosion control. Papers on thermal spray coatings of zinc, aluminum and their alloys for corrosion mitigation with relevant field applications would be of great interest to the symposium. Contributions on conventional and novel thermal and cold spray coating systems used to prevent corrosion of metal and reinforced concrete structures in all environments

Thermal and Cold Spray Coatings and Case Studies

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 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, aerospace, etc. The open-forum format would allow fruitful exchange of ideas which would otherwise not be possible in a traditional symposium.

Zinc Coatings and Case Studies for Asset Protection in Corrosive Atmospheric Conditions

This session discusses protective coatings case studies and other technical information on infrastructure such as bridges, storage tanks, structures in the electrical market, and other critical assets in corrosive atmospheres. It includes presentations from protective coatings experts who will speak about coatings such as liquid zinc-rich coatings, hot-dip galvanizing, and thermal spray zinc metallizing. The content is designed to share proven strategies for protecting steel substrates and provides multiple options for asset owners, specifiers, and inspectors to consider.

Paper topics shown in red.
Presentations-only topics shown in yellow.

Defense and Civil Infrastructure Sector: Defense

Atmospheric Corrosion and Environmentally Assisted Cracking

This symposium seeks technical papers to improve understanding of environmentally assisted cracking (EAC) caused by the combined effects of atmospheric corrosion and mechanical loads on susceptible material. The phenomenon of atmospheric corrosion and EAC can occur in a wide range of applications, such as aerospace, automotive, chemical process, and energy industries. Topics of interest include failure analysis, laboratory test methods, modeling of materials performance, modeling coupled with data science techniques like machine learning, evaluation of measurement, monitoring and non-destructive inspection technologies, industry standards development and/or gap analysis, state of the art EAC research and reviews.

DoD Case Studies: Military Infrastructure and Weapon Systems

This session presents DoD case studies focused on protective coatings and corrosion management for military infrastructure and weapon systems. Attendees will explore innovations in coating selection, application, and specification management to extend service life in demanding environments. Presentations will highlight advanced mitigation strategies, and emerging technologies that improve corrosion control. Experts will share insights supporting long-term sustainment and mission readiness of defense assets.

Military Coatings and Corrosion

This symposium will offer a platform for updates on developments in corrosion control in the military.

Defense and Civil Infrastructure Sector: Aerospace

Aerospace Corrosion Modeling and Environmental Severity

The session will include topics related to corrosion modeling and model-based systems engineering for the aerospace defense industry. Papers will identify the state-of-the-art in corrosion modeling, simulation, and data analytics and discuss the current gaps and needs in data and methodology. corrosion, and enhance structural integrity.

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Energy Sector: Asset Integrity

Key Corrosion Issues and Mitigation Approaches in Mining and Minerals Processing

This symposium is intended to generate an overview of the predominant corrosion issues in mining and mineral processing. With the wide variety of mining and mineral processing operations, often rather different technologies are employed. Hence, some corrosion issues may be very specific for a specific branch of mining/mineral processing, whilst others occur more or less everywhere (e.g., slurry pipelines as an example for the latter). AMPP wants to combine the vast knowledge on corrosion that exists in our organization with real -life experience of mining operators to help improve corrosion control and mitigation in mining. And thereby to help operators to increase safety and reduce OPEX. Presentations are invited from mining operators, corrosion measurement, control, or mitigation suppliers, consultants, or anybody else interested in contributing. Within AMPP, standards committee 21 “Corrosion in Mining and Mineral Processing” is working on standards to help mining operators to avoid corrosion issues. With this symposium, we intend to extend our reach to a wider mining and minerals processing community. With the aspiration to work together closely towards the common goal of corrosion issues avoidance.

Facilities Integrity and Process Safety

This symposium features technical papers on the management of corrosion, process safety, and assets related to Facilities for oil and gas midstream, upstream and downstream.

Energy Sector: Electrical Transition

Expanding Infrastructure: Interference, Reconductoring, and Other Growth Opportunities

This symposium features technical presentations on all aspects of corrosion related to issues from expanding infrastructure. Topics may include interference from renewable resources, effects of reconductoring of powerlines, the development of HVDC powerlines, concerns of data centers and any other topics that discuss the effect on the corrosion industry relating the growth of the energy industry from now to the future.

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Energy Sector: Nuclear Power

Corrosion and Material Protection in Nuclear Systems

This symposium will feature technical papers on material corrosion related issues encountered in nuclear waste and spent fuel storage and disposal, generation of nuclear power energy in light, heavy and advanced nuclear power reactors and plants. Paper can include degradation mechanisms for materials and components in service in nuclear systems. Also of interests are papers on materials manufacturing and materials development techniques for current and advanced materials for nuclear power generation, including areas like additive or other advanced manufacturing techniques.

Energy Sector: Cathodic Protection

AC Interference

This symposium will share AC Interference case studies, findings, or other topics for oil and gas, electric, railroad, or other industries.

Cathodic Protection Monitoring

This session will cover the latest advancements in CP system monitoring, including remote sensing technologies, real-time data analysis, and automated inspection techniques that ensure optimal performance and compliance with industry standards. Case studies will illustrate successful implementations and highlight challenges and solutions in maintaining effective CP systems. Papers will provide practical insights into best practices for designing, installing, and monitoring CP systems to enhance the longevity and reliability of critical assets.

Anodic & Cathodic Protection

This symposium features technical papers on anodic and cathodic protection of metallic structures, focusing on oil and gas, water, and chemical systems.

CP in Offshore and Marine Environments

Cathodic Protection innovations, novel designs and applications for any offshore and marine industries and a focus on CP, material and corrosion advancements and/or issues in the renewable sector.

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Energy Sector: Digital Transformation

Corrosion Management
This symposium is seeking technical papers on recent corrosion management implementations, lessons learnt for these, and the development of new corrosion management philosophies.

Internal Corrosion Management — Innovation and Emerging Technologies
This symposium is focused on internal corrosion management, particularly pulling for innovation, emerging technologies, and AI applications in such space.

Machine Learning for Corrosion Management
This symposium highlights the growing role of machine learning in managing pipeline corrosion, from predicting degradation rates to enhancing inspection and monitoring strategies. By combining historical data, sensor inputs, and environmental factors, machine learning enables more accurate risk assessments and proactive maintenance. The session aims to connect corrosion experts and data scientists to drive smarter, data-informed integrity solutions.

Data Challenges in Corrosion
This session aims to create a dynamic environment where industry experts can share their insights, exchange best practices, and collaborate on finding innovative solutions to the data challenges posed by corrosion data. Participants will have the opportunity to discuss the complexities of collecting, storing, and analyzing corrosion-related data and the application of cutting-edge technologies, such as machine learning and data analytics, to improve corrosion management strategies.

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Energy Sector: Extreme Environments

High-Temperature Materials and Corrosion Evaluation and Mitigation

The High-Temperature Materials and Corrosion Symposium seeks abstracts/papers showcasing experiences and development in material properties and performance, testing, in-service case study, experimental framework and computation-assisted modeling of high temperature alloys and coatings/claddings for exposure at temperatures of 400 °C and above. The focus of this symposium is on material properties and performance; oxidation and corrosion behavior, mechanisms, modeling, and prediction; material characterization; failure analysis; alloy and coating development; and practice in industries including aerospace, nuclear, fossil, clean and renewable energy, industrial heating, refining, chemical and petrochemical, supercritical fluid application, molten salt reactor, etc.

Energy Sector: Oil and Gas Materials

Advances in Materials for Oil and Gas Production

This symposium features technical papers on advances in materials technology and research in oil and gas production and related asset development. The focus is on new and improved materials (including Additive Manufacturing), both corrosion and environmental cracking material responses in environments found in oil and gas production and support operations, modifications and improvements to existing test methods, and development of new test methods. This symposium also includes consideration and measurement of a material's performance in its employed exposure environment.

Nonmetallic Materials in Chemical Processing and Oil and Gas Production

This symposium will focus on the use of nonmetallic materials of construction to control corrosion in the chemical processing and oil and gas industries.

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Energy Sector: Oil and Gas Materials (cont.)

New Developments and Recent Experiences With Nickel, Titanium, Zirconium, and Other High Alloyed Corrosion Resistant Materials

The objective of the symposium is to facilitate communication amongst diverse industries on the use of corrosion resistant alloys. The symposium is focused on the development of Nickel-, Titanium-, Zirconium-, and other high alloyed corrosion resistant alloys for temperatures below 600,°C using novel concepts, the application of these alloys in chemical process, petrochemical, oil and gas upstream and downstream, pharmaceutical, and various other industries, characterization of corrosion resistance using a variety of techniques, and life prediction models. Topics such as new alloy development, the use of atomic or other materials modeling techniques to develop new alloys, multi-principal element alloys for corrosion applications in various industries, alloy cladding or overlay coatings, and failure analysis, case studies, materials characterization involving these corrosion resistant alloys are also welcome. The symposium will feature a combination of invited and volunteer papers.

Recent Experiences With Austenitic and Duplex Stainless Steels

This symposium explores the performance and versatility of austenitic and duplex stainless steels across a wide range of industries. Contributions will highlight recent user experiences, with topics including material selection, corrosion behavior, fabrication practices, and emerging developments. While particular attention is given to applications in demanding or corrosive environments—such as chemical processing, oil and gas, pulp and paper, desalination, and power generation—the symposium also welcomes insights from architecture, water infrastructure, transportation, and other fields where stainless steel plays a critical role. Both successes and lessons learned are encouraged to foster knowledge exchange across disciplines.

Energy Sector: Oil and Gas Pipelines

Pipeline Integrity

This symposium will feature technical papers on all aspects of pipeline integrity. This will include pipeline integrity management, inspection, assessment, mitigation, operational aspects, regulatory issues, and emerging technologies. It will offer a forum for operators, regulators, and service providers to collaborate and share experiences to help drive a safer and more sustainable future.

Sweet and Sour Corrosion

This symposium features technical papers on corrosion in CO_2 and/or H_2S service, or general internal corrosion challenges associated with onshore/offshore production system, pipelines and facilities in oil & gas.

Paper topics shown in red.
Presentations-only topics shown in yellow.

Energy Sector: Oil and Gas Pipelines (cont.)

Pipeline Safety and Asset Integrity Management

Pipeline safety and asset integrity (AI) management systems are essential for ensuring the reliability and sustainability of energy transportation. Effective asset integrity (AI) management helps prevent failures, reduce environmental risks, and optimize operational efficiency. Artificial intelligence (AI) is transforming asset integrity (AI) management by enhancing safety, reliability, and efficiency across industries like oil and gas, emerging fuels and power generation. AI-driven solutions enable predictive maintenance, real-time monitoring, and data-driven decision-making, helping organizations optimize asset performance and reduce operational risks. Data fusion applications are leveraging AI algorithms used to enhance decision-making in asset integrity management, where symbiosis of two complementary ILI and/or NDE techniques can be coupled to provide a more reliable approach to predict lifetime in service and prevent premature failures. Moreover, AI can analyze images of equipment to detect damage and threats such as cracks, corrosion, or wear. By comparing current images with historical patterns, AI improves accuracy in identifying anomalies, allowing for early intervention before structural integrity is compromised. Stakeholders integrating AI for AI management report significant cost savings on maintenance and reductions in unplanned outages.

Solid Particle Erosion and Erosion-Corrosion

Solid particle erosion refers to the damage that occurs when hard particles, carried by a fluid, strike a material's surface, causing wear and degradation. This process is particularly relevant in industrial applications where materials are exposed to abrasive particles frequently. Common examples include pipelines, turbines, and pump internals, where the fluid flow can carry sand, sediment, or other solid particles. Erosion-corrosion is a combined process involving the mechanical wear due to solid particle erosion and the chemical deterioration due to corrosion. This dual effect can significantly accelerate the degradation of materials, particularly in environments where fluids are laden with solid particles and corrosive agents.

Energy Sector: Oil and Gas Refining

Corrosion, Fatigue, and External Stress Cracking Under Thermal Insulations

Thermally insulated assets are prone to degradations such as Corrosion under insulation (CUI), Corrosion Fatigue, and Insulation Driven Stress corrosion cracking (SCC). In addition to degradations, the moisture absorption in thermal insulation results in the increased thermal losses leading to process in-efficiencies and Increased carbon footprints. This symposium invites original and impactful work around the degradation and performance issues in thermally insulated systems. The abstract submissions and papers can include (but not limited) original research work, case studies, new technologies addressing the inspection, monitoring and mitigation of the degradation mechanisms and thermal losses.

Oil Refining Industry Corrosion

This symposium features technical papers on corrosion and materials issues within the refining industry. Topics may include case studies, research, materials/coatings performance, damage mechanisms, failure analyses, etc.

Business of Coatings and Corrosion: Economics

Economics of Corrosion: Associated Direct and Indirect Costs

This session will examine the direct and indirect costs associated with corrosion, including maintenance expenses, downtime, repair costs, and lost productivity across various sectors such as infrastructure, transportation, energy, and manufacturing. Participants will gain a comprehensive understanding of the economic implications of corrosion mitigation strategies, including preventive maintenance, protective coatings, and advanced materials. Case studies and economic models will illustrate the cost-effectiveness of investing in corrosion management practices to prolong asset life and enhance operational efficiency. Papers will also explore emerging trends in corrosion economics, such as life cycle cost analysis and risk-based decision-making, to optimize resource allocation and mitigate financial risks associated with corrosion-related failures.

Business of Coatings and Corrosion: Workforce Development

Reinvention, Reentry, and Retention

This session explores the realities and opportunities of workforce reintegration across technical industries, particularly within the materials protection and performance space. As organizations respond to seismic shifts in labor, leadership, and legacy systems, this session will spotlight solutions that empower second-act professionals, reentry pathways for displaced talent, and strategies that improve long-term retention of mission-critical workers. Presentations will focus on practical approaches and policy-relevant insights in the face of a fast-evolving future of work.

General: Jobsite Challenges, Strategies, and Programs

Jobsite Challenges, Strategies, and Safety Programs

Explore challenges across the entire paint industry value chain—from raw material handling and manufacturing to jobsite application—including hazardous materials, environmental risks, and safety concerns. This session presents strategies and programs to enhance safety, ensure compliance, and improve practices throughout production, distribution, and application stages.

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General: Coating Materials

Advanced Protective Coating Technology

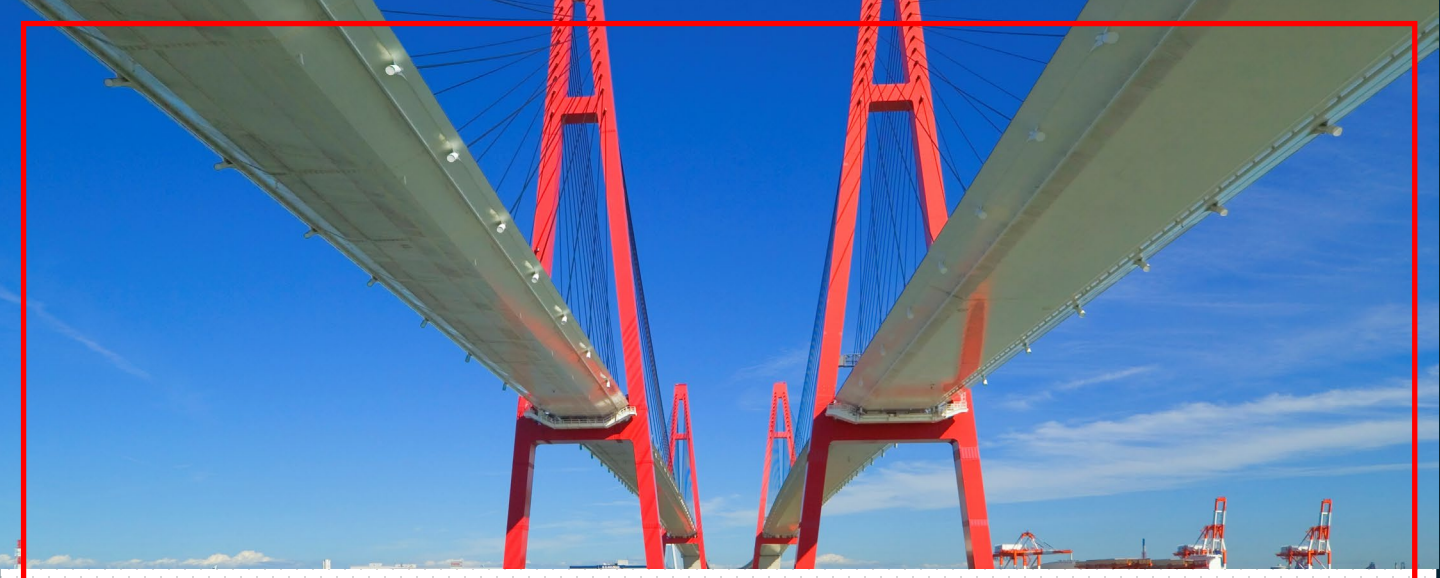
This symposium is looking for technical papers in the following areas:

- Advanced Fastener Coatings,
- Advanced Salt Measurement Methods,
- Advanced Salt Decontamination Chemicals.
- Offshore Windmill Coating (>25-year service life),
- Offshore Deck Coating,
- Subsea Coating,
- New Pipeline Coating Development,
- CUI coating,
- Thermal Insulative Coating,
- Cathodic Disbondment Mechanism,
- Coating Blister Mechanism

Next-Generation Coatings: Predictive Strategies for Service Life, Durability, and Sustainable Performance

This symposium spotlights cutting-edge advancements in protective coatings, focusing on predicting and extending service life across diverse applications. Emphasizing the integration of accelerated testing, field validation, and computational modeling, this section invites technical contributions addressing emerging strategies in high-performance coating systems' life prediction. Topics include bridging laboratory testing with real-world performance, degradation kinetics, environmental exposure modeling, and failure analysis. Special attention will be given to innovations that support sustainability by extending coating durability, reducing maintenance cycles, improving worker safety, and incorporating environmentally conscious materials. The symposium also explores how predictive analytics and digital tools transform the development and qualification of next-generation protective coatings, ensuring long-term reliability and environmental stewardship.

Paper topics shown in red.
Presentations-only topics shown in yellow.



General: Coating Inspection

Coating Failures

This symposium features technical papers on coating failures on a variety of substrates, structures, and in a variety of industries for the purpose of advancing the knowledge and awareness of users, owners, contractors, manufacturers, technical professionals, etc. Example topics include determination of root causes and modes of coating failures, detailing of reasons and mechanisms affecting the coatings failure, investigative approach and stages of analysis, field methods for testing and sampling, and laboratory analyses and methodology. Other examples include case studies concerning paint and coating failures related to surface preparation, application, formulation, mis-specified materials and procedures, incompatibility, processing, upset conditions, and inadequate specifications. Assignment of remedial recommendations and lessons learned are also of interest.

The Future of Coatings Inspection

The world of coatings and materials is constantly changing with new developments and processes emerging almost daily. As coatings continue to become more robust and application processes more refined, what does the future of coating inspection look like? As robots and drones take over surface preparation, coating application and visual inspection, is the human component still needed across industries? Join us for a multi-industry panel discussion on how coating inspection continues to evolve and what the future needs may be.

Paper topics shown in red.
Presentations-only topics shown in yellow.

General: Coatings Technology

Beyond Traditional Protection: Innovations in Smart, Nano-Engineered, and Novel Functional Coatings

This session explores the transformative impact of nanotechnology on the development and performance of protective coatings. This session will delve into how nanomaterials are being used to create coatings with superior properties, such as enhanced durability, corrosion resistance, and self-cleaning capabilities. Attendees will learn about the latest advancements in nanoparticle formulations, application techniques, and the integration of nanotechnology in various industries. Acceptable topics would include nanocoatings, graphene, atomically thin coatings, 2D materials.

General: Corrosion Inhibitors

Advancements and Applications of Volatile/Vapor Corrosion Inhibitors (VCIs)

Volatile/vapor corrosion inhibitors are a well-established method for corrosion protection in a wide variety of applications from: oil and gas, transportation, packaging, water treatment. This is symposium allows authors to present on work related to the advancement and application of volatile corrosion inhibitors.

Corrosion Inhibitors in the Oil and Gas Industry

This symposium features technical papers on the study of corrosion inhibition mechanisms in the laboratory and the application of corrosion inhibitors or combination of corrosion inhibitors with other chemical functionalities in the field.

Paper topics shown in red.
Presentations-only topics shown in yellow.

General: Environmentally Assisted Cracking

Environmentally Assisted Cracking (EAC)
This symposium seeks technical articles to improve understanding of EAC mechanisms of both traditionally-processed and additively-manufactured (AM) steels, nickel-based alloys, copper-based alloys, aluminum alloy, etc., including but not limited to, sulfide stress cracking (SSC), stress corrosion cracking (SCC), hydrogen-induced stress cracking (HISC), hydrogen-induced cracking (HIC), hydrogen embrittlement (HE), corrosion fatigue cracking, liquid metal embrittlement which can take place in a wide range of industries and applications, such as oil & gas production, oil refinery, petrochemicals, hydrogen storage and transportation, carbon capture, utilization, and storage (CCUS), biofuels, geothermal, offshore wind, solar, nuclear power, automotive, aerospace, etc. The solicited articles cover the root cause failure analysis, mitigation strategies of EAC, laboratory testing of EAC, state-of-art EAC research progress and reviews, modeling of materials performance coupling with latest machine learning techniques, evaluation of destructive/non-destructive sensing technologies, industry standards development and/or gap analysis, and so on.

General: Microbiologically Influenced Corrosion

Microbiologically Influenced Corrosion (MIC)
The session will cover microbiologically induced corrosion (MIC) and its significant impact on various industries. The session will highlight the latest research on microbial activity's role in accelerating material degradation, focusing on how specific bacteria and environmental conditions contribute to MIC. Papers will cover detection, monitoring, and mitigation strategies, including novel biocides, advanced coatings, and biofilm-resistant materials. Real-world case studies from sectors such as oil and gas, water treatment, and maritime that illustrate effective approaches to managing MIC are encouraged.

Paper topics shown in red.
Presentations-only topics shown in yellow.

General: Materials Sustainability

Materials Sustainability and Materials Stewardship Practices
Materials sustainability and materials stewardship practices are becoming increasingly important for today's organizations. This symposium will aim to present the concepts of materials sustainability and materials stewardship within the circular economy as additional principles to consider within corrosion management best practices.

Maritime: Inspecting, Monitoring, QA/QC

Marine Coating Performance Under Pressure: Challenges and Innovations
Marine corrosion remains one of the most persistent and costly challenges in the coatings industry. This session explores both the practical realities of coating application, inspection, and maintenance in shipyards, as well as the latest advancements in coating technologies. Learn about surface preparation under extreme conditions, common causes of marine coating failures, and how digital tools are transforming quality control and predictive maintenance strategies in some of the harshest environments on Earth. Join us for an insightful discussion on extending service life and reducing lifecycle costs.

Maritime: Maritime and Naval

Marine Corrosion and Performance Issues for Materials and Coatings
The technical session will focus on service failures and their avoidance for materials and coatings in marine environments (both immersed and atmospheric conditions). However, papers dealing with new technology/innovation will also be considered. It is anticipated that prospective authors will present service-related failures and possible mitigation strategies.

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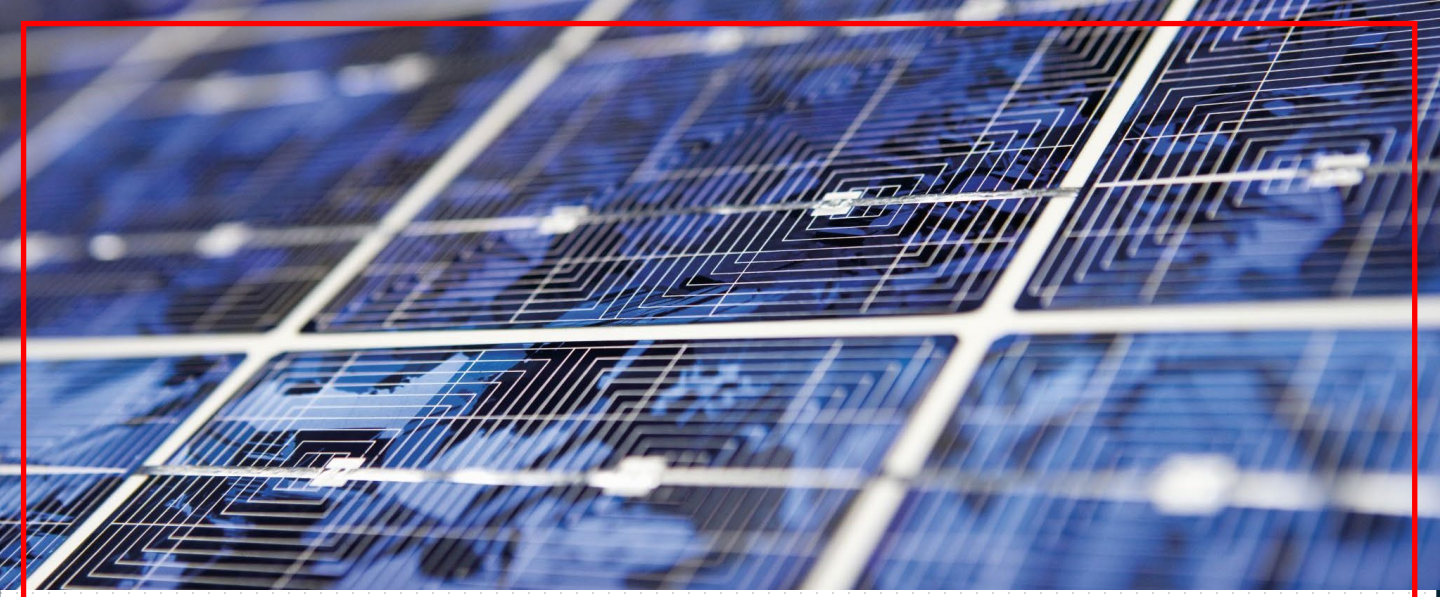

Strategic Geographies and Emerging Industries: Additively Manufactured Materials

Corrosion and Corrosion Testing of Additively Manufactured Materials

This symposium features technical papers on material degradation and corrosion-related issues of additively manufactured (AM) materials. Subjects include, but are not limited to, process, structure, performance relationships, post-processing treatments, surface finish, corrosion mechanism of AM materials, AM material degradation in corrosive environments, AM materials selection and applications, AM qualification and certification, integrity, or risk analysis, and assessment, etc.

Strategic Geographies and Emerging Industries: Alternative Fuels

Corrosion in the Biofuel and Biomass Industry

The objective of this symposium is to share experience related to material selection, corrosion issues, and corrosion mitigation in the biofuels industry. We know that this industry is growing and that the switch from conventional fossil feedstocks to vegetable oil or biomass may cause severe corrosion issues. This symposium will cover both the production of biodiesel and bioethanol.

Hydrogen and Emerging Fuels — Material Compatibility

Hydrogen & Emerging Fuels will feature technical papers on a broad range of topics related to the hydrogen industry, including hydrogen production challenges and storage, material compatibilities, mitigation strategies, transport options, and challenges with transitioning existing energy systems to use with hydrogen.

Gaseous Hydrogen Embrittlement

This symposium features technical papers about the study of the hydrogen-metal interaction and reliability of alloys, components, and structures used in services which involve the treatment, storage and transport of hydrogen in gaseous form at different operating conditions in conventional and sustainable energy industries.

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Strategic Geographies and Emerging Industries: Carbon Capture, Utilization, and Storage

Corrosion in Carbon Capture, Transportation, and Utilization and Storage (CCTUS)
This symposium features technical papers on the measurement, mechanism, or assessment of corrosion in carbon capture and storage system, including carbon dioxide and other impurities present in the process. Papers can be of a research or industrial nature.

Material Selection and Qualification in CCS Downhole Environment
Material selection and qualification in Carbon Capture and Storage (CCS) environments are critical to ensuring the long-term integrity and safety of infrastructure exposed to high-pressure CO2, and associated impurities. The unique challenges posed by CCS systems necessitate careful consideration of materials to mitigate corrosion and mechanical degradation in downhole conditions.

Strategic Geographies and Emerging Industries: Drones and Robotics

Drones and Robotics for Preparation, Application, Inspection, and Beyond
This session will cover advancements, challenges, and use cases in drone and robotic technology equipped with integrated systems for inspecting, preparing, and coating hard-to-reach and hazardous areas. Presentations will provide insights into various application technologies, cleaning/prep technologies, and sensor technologies, including high-resolution cameras, thermal imaging, LiDAR, and ultrasonic sensors, that enhance the accuracy and efficiency of inspections and safety of applicators. The session will highlight real-world applications in sectors such as oil and gas, power generation, marine, and infrastructure, and will address regulatory considerations, data integration, and the future trends in autonomous maintenance and inspection systems.

Paper topics shown in red.
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Strategic Geographies and Emerging Industries: Renewables

Geothermal Power

This session will cover the aggressive chemical and thermal conditions that accelerate corrosion in geothermal systems and the latest innovations to mitigate and prevent corrosion in these extremes. The symposium will consider papers on advanced materials and coating technologies that enhance durability and performance of geothermal infrastructure, from wells and pipelines to power plant components. Best practices for monitoring and maintenance and case studies that demonstrate strategies for mitigating corrosion-related failures and extending the service life of geothermal assets are encouraged.

Impact of Corrosion on Wind, Solar, and Other Renewables

The session will highlight the challenges posed by corrosion when solar facilities are located near existing buried metallic structures, such as pipelines. Presentations will provide information on the newest corrosion protection technologies, maintenance strategies, and best practices for extending the service life of these assets. Difficulties solar farm developers face when designing support structures—whether galvanized, bare, or coated piles—due to the uncertainties surrounding soil corrosion rates will be highlighted.

Paper topics shown in red.
Presentations-only topics shown in yellow.

Strategic Geographies and Emerging Industries: Oil and Gas Materials

Materials Selection and Corrosion Protection in HPHT O&G Production

Over recent years, GoA is seeing a wave of production (currently over 250K bopd production) from Paleogene reservoirs (e.g. Anchor, Sparta, Kaskida, Tiber, Guadalupe, Shenandoah) which is challenging in material selection and corrosion protection in such HPHT (20K/350F), and/or high salinity (320K mg/L TDS) in some fields. This comprehensive topic covers Topsides, Hull & Mooring, Subsea (umbilical/riser/flowline and subsea production equipment), well completion. Protective coatings/linings, dry/wet insulation, cathodic protection, corrosion inhibitor, erosion, corrosion/erosion monitoring, inspection is also included.

Regional Issues in Materials and Integrity in Oil and Gas

This symposium features technical papers on oil and gas industry issues unique to geographic regions. The focus will be owner-operators, vendors, consultants, and researchers. Area of interest include but are not limited to corrosion, failures, wear, processing, material selection, inspection and asset integrity for mining, upgrading, refining, steam-assisted gravity drainage (SAGD), down-hole production, terminals and pipelines , and other surface equipment and facilities.

Paper topics shown in red.
Presentations-only topics shown in yellow.

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