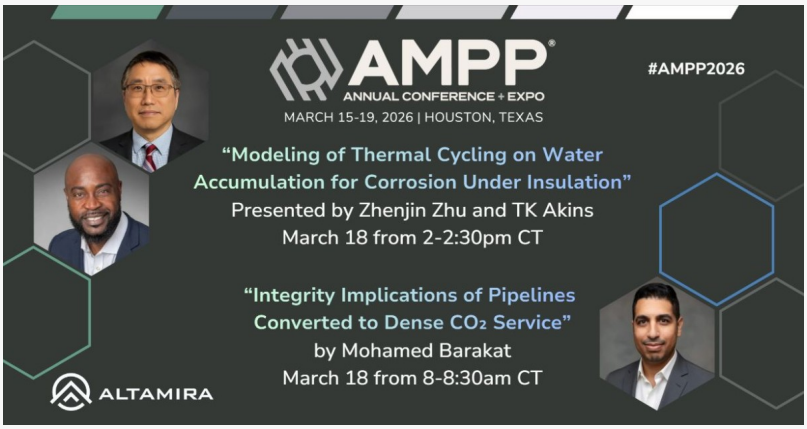
Altamira Experts To Present at the 2026 AMPP Conference + Expo on CUI & Pipeline Integrity of CO2 Pipelines

HOUSTON, TX, UNITED STATES, March 13, 2026 /EINPresswire.com/ -- Altamira, a leading environmental and engineering consulting firm specializing in pipeline integrity, corrosion management and regulatory compliance for the energy sector, will present two technical papers at the 2026 AMPP Annual Conference + Expo in Houston, Texas. The conference, hosted by the Association for Materials Protection and Performance (AMPP), is the world's largest corrosion and materials protection event, bringing together industry experts, researchers and operators to share advances in corrosion science and infrastructure integrity.



Altamira Experts To Present at the 2026 AMPP Conference + Expo on CUI & Pipeline Integrity of CO2 Pipelines

Altamira's research presentations will address two critical challenges facing the energy industry today: corrosion under insulation (CUI) in process facilities and integrity management for pipelines converted to dense carbon dioxide (CO□) service.

> Our Altamira team is proud to contribute research that helps operators better understand corrosion risks, manage pipeline integrity & support emerging infrastructure such as CCS transportation systems"
>
> *TK Akins, Vice President of Integrity*

Advancing Understanding of Corrosion Under Insulation
Altamira researchers Zhenjin Zhu, PhD, P.Eng., and TK Akins, VP of Integrity, will present the paper titled "Modeling of Thermal Cycling on Water Accumulation for Corrosion Under Insulation" on Wednesday March 18th at 2:00 pm CT.

The research introduces a theoretical model designed to evaluate how thermal cycling influences water accumulation in insulated piping systems — one of the primary drivers of corrosion under

insulation. The study models the thermal insulation system as a combination of protective coating layers, insulation material and jacketing and predicts temperature profiles and heat loss through steady and unsteady heat conduction equations with convective boundary conditions.

The model also considers how insulation materials absorb moisture and how condensation forms when water vapor diffuses through microchannels at jacketing joints or sealant breaks. By analyzing variations in water vapor solubility (i.e., humidity) governed by thermal cycling frequency and magnitude, the model quantifies water accumulation and evaluates how liquid spreads and is retained within insulation materials.

Additional factors — including insulation hydrophilicity, coating performance and system configuration — are incorporated to assess potential coating breakdown under hot immersion service conditions. The resulting corrosion predictions account for oxygen corrosion rates, leachable ions from insulation materials, water accumulation and metal surface temperatures. The predicted incubation time for CUI and cumulative wall loss help identify high-risk locations and support the development of preventive and mitigative measures for effective corrosion risk management.

Pipeline Integrity Considerations for Dense CO Service

Altamira will also present “Integrity Implications of Pipelines Converted to Dense CO Service,” authored by Mohamed Barakat, P.Eng. on Wednesday March 18th at 8:00 am CT. The paper addresses emerging integrity challenges associated with pipelines repurposed for carbon capture and storage (CCS) infrastructure.

As global decarbonization efforts accelerate, dense-phase CO pipelines — operating in supercritical or

TK Akins Vice President, Integrity at Altamira

Zhenjin Zhu, Ph.D., P.Eng. Principal Engineer

liquid-like states — are increasingly being deployed for long-distance transportation. While similar in construction to hydrocarbon pipelines, CO□ pipelines face distinct integrity risks due to their unique thermodynamic and chemical properties.

The paper reviews regulatory requirements for converting steel pipelines to dense CO□ service, including enhanced hydrostatic testing protocols, in-line inspection requirements for identifying existing defects and material toughness considerations necessary for fracture control.

It further evaluates major integrity threats such as internal corrosion and contamination by impurities including sulfur dioxide (SO□) and hydrogen sulfide (H□S). To address these risks, the study proposes a predictive framework for risk-based integrity management of converted CO□ pipelines.

Mohamed Barakat, P.Eng. Senior Engineer

Altamira - Air Quality, Environmental, Multidiscipline Engineering and Pipeline Integrity and Compliance

The framework incorporates five interconnected layers of integrity protection, including phase control methods, internal corrosion mitigation strategies, crack arrest recommendations and monitoring and inspection programs. Preventive measures highlighted in the study include impurity control through upstream gas processing, material compatibility assessments during pipeline repurposing and advanced inspection planning to enable early defect detection.

Supporting the Energy Transition Through Engineering Excellence

“Industry collaboration and technical innovation are essential to ensuring safe, reliable energy infrastructure,” said TK Akins, VP of Integrity at Altamira. “Our team is proud to contribute research that helps operators better understand corrosion risks, manage pipeline integrity and support emerging infrastructure such as carbon capture transportation systems.”

Altamira’s participation in the AMPP conference reflects the company’s ongoing commitment to

advancing corrosion science, strengthening pipeline safety and supporting regulatory compliance across the energy sector.

Hosted by Association for Materials Protection and Performance (AMPP), this premier global event — formerly the NACE Annual Conference — brings together more than 37,000 members across 140 countries and thousands of corrosion and coatings professionals for a week of education, innovation and industry collaboration.

Join Us at Booth #2044
The exhibit hall officially opens on Monday, March 16, from 5:00 – 7:30 p.m., followed by exhibit hours on:

• Tuesday, March 17: 9:00 a.m. – 5:00 p.m. CT
• Wednesday, March 18: 9:00 a.m. – 5:00 p.m. CT

Altamira invites attendees to visit Altamira at booth #2044 to connect with our team of engineering, environmental and regulatory experts. Whether you're focused on pipeline integrity, corrosion management, environmental compliance or digital transformation, our specialists will be available to discuss tailored solutions designed to strengthen asset performance and regulatory alignment.

The Industry's Largest Gathering of Corrosion & Coatings Professionals
The 2026 conference promises an exceptional week of learning and networking, featuring:

• 600+ hours of technical content
• Groundbreaking research presentations
• Standards and technical committee meetings
• Research in Progress (RIP) sessions
• Round Table Sessions (RTS)
• Hands-on workshops
• A dynamic exhibit hall showcasing cutting-edge technologies

Technical topics span the full spectrum of materials protection and performance, including Oil & Gas, Civil Infrastructure, Coatings & Surface Preparation, Maritime & Defense, Carbon Capture & Storage, Corrosion Mechanisms & Mitigation Methods, Health & Safety and Emerging Technologies.
From pipeline safety and asset integrity to advanced coating systems and AI-driven corrosion analytics, AMPP 2026 will highlight the innovations shaping the future of infrastructure reliability worldwide.

From pipeline safety and asset integrity to advanced coating systems and AI-driven corrosion analytics, AMPP 2026 will highlight the innovations shaping the future of infrastructure reliability worldwide.

At booth #2044, you'll have the opportunity to:

• Explore technology-enabled compliance strategies
• Discuss PHMSA-aligned pipeline safety programs
• Learn about corrosion risk modeling and asset integrity solutions
• Review environmental, health and safety frameworks
• Discover GIS-powered asset management tools
• Connect with experts in federal, state and local regulatory navigation

To Schedule a meeting at AMPP 2026 Annual Conference, reach out to Efrain.Garcia@Altamira-US.com or (832) 496-3004.

About Altamira
Altamira is a leading engineering and environmental consulting company specializing in regulatory compliance, strategic advising and digital solutions. With decades of experience and a reputation for integrity, innovation and agility, Altamira partners with clients to solve complex operational and regulatory challenges across various industries. Our multidisciplinary team delivers high-quality services in asset integrity, pipeline safety, environmental health and safety, GIS and energy asset engineering, supported by deep expertise in federal, state and local regulations including PHMSA, EPA, DOT and OSHA. Headquartered in Texas with satellite offices across the Gulf Coast and Southwestern U.S., Altamira is committed to driving sustainable outcomes and long-term value through tailored, technology-enabled solutions

For more info visit www.Altamira-US.com
Original Release:
https://altamira-us.com/news/altamira-experts-to-present-at-the-2026-ampp-conference-and-expo-on-cui-and-pipeline-integrity-of-co2-pipelines/

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