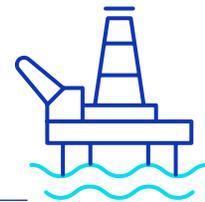# ICAM25

International Conference on Advanced Manufacturing

Research to Application through Standardization

October 6-10 | Las Vegas, NV

Industrial Sector: Energy, Maritime, Oil and Gas

Additive manufacturing (AM) technology has gained considerable popularity in the Energy, Maritime, and Oil & Gas (EMOG) industries to move beyond prototyping and into production parts for specific applications and requirements. In comparison to the aerospace, automotive, and medical industries, the adoption of AM in the EMOG industries has been moderate and is still very nascent. However, these sectors are aggressively exploring the potential of using AM to improve supply chain lead-time, performance, and operational efficiency. These industries face some unique challenges that other; more AM advanced industries do not encounter. Standard development bodies (e.g., API 20S) have already established frameworks around AM part adoption in EMOG. However, certification and qualification of these parts in extreme environments are still to be defined and established. Many stakeholders in EMOG industries have already demonstrated the capabilities of using AM to produce high-performance components, which has triggered increased interest in more components in higher safety requirements within these industries.

TOPICS OF INTEREST INCLUDE BUT ARE NOT LIMITED TO:

– Specific operational requirements with an emphasis on environmental and long-term in-service behavior prediction or accelerated functional testing (e.g., corrosion resistance (NACE Compliance), static and dynamic testing)
– Design for AM, digital twin, process modelling and simulation (e.g., generative design, latticing and topology optimization) and multi-scale modeling for AM in the EMOG industries
– Materials development, in-service behavior prediction or accelerated functional testing (e.g., high strain rate deformation)
– Process development and process optimization for development of next generation AM materials for novel applications in the EMOG industries, such as Hydrogen tanks and extreme high temperature irradiation environments
– Qualification and Certification for Regulatory compliance, accelerated approaches to reduce qualification / certification time, opportunities, and challenges to AM adoption in these industries, IP rights and warranty issues
– Scalability of large-AM parts (e.g., laser DED, wire arc, hybrid) for applications in the EMOG industries, on-site, flexible AM cells for local spare parts and repair (e.g., convergent manufacturing activities)
– Data analysis for Technical Data Packages (TDP), modelling and simulation, AI integration with AM
– In-situ monitoring and process control, post-processing, nondestructive evaluation (NDE), and Inspection
– Post-processing for AM parts, challenges, and opportunities for improvement, automated workflows, and inventory digitization and management
– Workforce education development to rapidly enable adoption of AM in EMOG (e.g., operators and Engineers)

Symposium Organizers

– **Ali Bonakdar**, University of North Carolina Charlotte, USA
– **Carlo De Bernardi**, Conoco Phillips, USA
– **Igor Ortiz,** Ikergune, Spain
– **Valeria Tirelli**, AIDRO, Italy
– **Soumya Nag**, Oak Ridge National Laboratory (ORNL), USA
– **Isabella van Rooyen**, Pacific Northwest National Laboratory, USA
– **Yash Parikh**, EOS, USA
– **Mostafa Yakout**, University of Alberta, Canada

Submit an abstract

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