

ASTM INTERNATIONAL CONFERENCE ON ADVANCED MANUFACTURING

Research to Application through Standardization

Submit an Abstract at www.amcoe.org/icam2024

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. 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 behavior e.g., corrosion resistance, sour service applications (NACE Compliance), wear resistance, and fatigue performance,
- Post-processing for AM parts, challenges, and opportunities for improvement
- AM compliance (or lack of) with product specifications in the EMOG industries
 - opportunities and challenges to AM adoption in these industries
- Development of next-generation AM materials for novel applications in the EMOG industries, such as Hydrogen tanks and extreme high temperature irradiation environments
- Materials development, testing for AM materials, and parts and manufacturers qualification
- Large-scale AM for applications in the EMOG industries
- Automated workflows, and inventory digitization and management
- Design for AM, process simulation (e.g., generative design, latticing and topology optimization) and multi-scale modeling for AM in the EMOG industries
- In-situ monitoring and process control, nondestructive evaluation (NDE), and Inspection
- Long term in-service behavior prediction or accelerated testing
- Certification, Regulatory, IP rights and warranty issues
- On-site, flexible AM cells for local spare parts and repair



Symposium Organizers

- Carlo De Bernardi, ConocoPhillips, USA
- Ali Bonakdar, The University of North Carolina at Charlotte, USA
- Isabella van Rooyen, Pacific Northwest National Laboratory (PNNL), USA
- Valeria Tirelli, AIDRO, Italy
- Mostafa Yakout, University of Alberta, Canada



CENTER of
EXCELLENCE

Research to Standards

ADDITIVE MANUFACTURING