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TMS2024
153rd Annual Meeting & Exhibition

MARCH 3–7, 2024
HYATT REGENCY ORLANDO
ORLANDO, FLORIDA, USA
#TMSAnnualMeeting



SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2024 SYMPOSIUM:

ADDITIVE MANUFACTURING

Additive Manufacturing Materials in Energy Environments

Additive manufacturing (AM) applications in energy applications have grown significantly over recent years due to the recognized advantages and benefits for supply chain development, economic and performance enhancements. However, the full adoption of AM in all energy sectors is hindered by the lack of available codes and standards, as well as a limited understanding of material performance in a specific energy environment. To overcome these challenges, it is essential to gather relevant material data, develop new materials, and advance qualification, inspection, and testing technologies. These efforts are necessary to meet the higher demands of materials in energy environments and enable their wide use in various applications.

This symposium invites talks focusing on understanding, developing, and qualifying AM materials that target the environments in specific energy sectors, including solar, wind, nuclear, oil and gas, natural gas, coal, and space applications. The symposium aims to share material data and introduce advanced materials and methods to accelerate the qualification and adoption of AM in different energy sectors.

This symposium will integrate invited and contributed talks in the following three categories:

- **Material Behavior and Characterization:** characterizing the properties and behaviors of AM materials in the energy environments (e.g., mechanical properties, mechanical failures, corrosion), discovering new AM materials for improved properties and behaviors, and applying advanced characterization techniques in simulated and in-situ environments.
- **Qualification and Testing:** understanding the effects of AM process on material properties, evaluating long-term performance of AM materials in the energy environments through accelerated testing, modeling, and simulation.
- **Performance Monitoring and Quality Control:** Monitoring the performance of AM materials in energy environments, establishing model-based qualifications and quality acceptance protocols.

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