

THE WORLD COMES HERE.
TMS 2025
154th Annual Meeting & Exhibition



March 23–27, 2025
MGM Grand Las Vegas
Hotel & Casino
Las Vegas, Nevada, USA
#TMSAnnualMeeting



SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2025 SYMPOSIUM:

ADDITIVE MANUFACTURING

Additive Manufacturing Modeling, Simulation and Machine Learning

This symposium will provide an excellent platform to exchange the latest knowledge in additive manufacturing (AM) modeling, simulation, artificial intelligence and machine learning. Despite extensive progress in AM field, there are still many challenges in predictive theoretical and computational approaches that hinder the advance of AM technologies.

The symposium is interested in receiving contributions in the following non-exclusive areas: In particular, the following topics are of interest:

- AM process modeling, monitoring and defect detection
- Modeling of microstructure evolution, phase transformation, and defect formation in AM parts
- AM materials development using the Integrated computational materials engineering (ICME) approach
- Modeling of residual stress, distortion, plasticity/damage, creep, and fatigue in AM parts
- Modeling behaviors of AM materials in various environments (e.g., corrosion, high temperature, etc.)
- Computational modeling of process-structure-property-performance relationships for qualification of additive manufacturing
- Artificial intelligence (AI), machine learning (ML) and data science applications to AM
- Calibration and validation data sets relevant to models, uncertainty quantification
- Efficient computational methods using reduced-order models or fast emulators for process control
- Multiscale/multiphysics modeling strategies, including any or all of the scales associated with the spatial, temporal, and/or material domains

ORGANIZERS

Jing Zhang, Indiana University – Purdue University Indianapolis; **Li Ma**, Johns Hopkins University Applied Physics Laboratory; **Charles Fisher**, Naval Surface Warfare Center - Carderock; **Brandon McWilliams**, US Army Research Laboratory; **Yeon-Gil Jung**, Changwon National University

SYMPOSIUM SPONSORS

TMS Materials Processing & Manufacturing Division, TMS Additive Manufacturing Committee, TMS Integrated Computational Materials Engineering Committee

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QUESTIONS?

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