



SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

ADDITIVE MANUFACTURING

Additive Manufacturing Modeling, Simulation and Artificial Intelligence

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, but not limited to, are of interest:

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

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