ICAM 2024

Oct. 28 – Nov. 1, 2024
Atlanta, GA

ASTM INTERNATIONAL CONFERENCE ON ADVANCED MANUFACTURING

Research to Application through Standardization

Submit an Abstract at www.amcoe.org/icam2024

Value Chain: Design

One of the critical success factors to making the most out of Additive Manufacturing (AM) is to utilize Design for Additive Manufacturing (DfAM) fundamentals and optimization techniques to take advantage of the design freedom that additive manufacturing enables. As AM technology evolves, design and optimization go beyond the traditional user-CAD input. Engineers also need to factor in stress analysis, thermal analysis, process simulation, microstructural evolution modeling, material-process-microstructure-property relationships, and cost estimation to effectively influence the design of AM components. Understanding and applying DfAM fundamentals and current state-of-the-art optimization and AI techniques are critical to creating quality, value-added solutions, accelerating the adoption of AM, and reducing the time and cost of AM implementation.

Topics of interest include but are not limited to:

- DfAM fundamentals (best practices, guidelines, standards)
- Design, modeling, and simulation tools and methodologies with DfAM focus
- DfAM methods, including materials, processes, and post-processing (e.g., post-machining, heat treatment, etc.)
- Reverse engineering, 3D scanning applications, and DfAM methodologies (such as for legacy parts)
- Optimization of AM designs (e.g., generative design, topology optimization, CAE, AI, etc.)
- AI in DfAM (e.g., Large Language Models, Knowledge Graphs, Machine Learning etc.)
- AM design and simulation needs that standards should address
- Case studies, industrial use-cases, and applications
- Design of architected materials (e.g., graded materials, cellular materials, etc.) and bio-inspired design

Symposium Organizers

- **Dhruv Bhate,** Arizona State University, USA
- **David Rosen,** Georgia Institute of Technology/A*STAR-IHPC, USA/Singapore
- **Tim Simpson,** Penn State University, USA
- **Andrew Thompson,** Northrop Grumman, USA

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Research to Standards
ADDITIVE MANUFACTURING