

International Conference on Advanced Manufacturing

Research to Application through Standardization

ORLANDO, FL
SEPTEMBER 28 - OCTOBER 2, 2026

Non-Metallic Materials: Ceramics, Microelectronics, and Semiconductors

This symposium explores advances across ceramic additive manufacturing (AM), microelectronics, semiconductor-related applications, and multi-material AM systems that integrate structural and functional performance. As AM technologies mature, the intersection of ceramics, electronics, and semiconductor manufacturing has become a critical frontier for high-temperature systems, UHTCs, power electronics, heterogeneous integration, multifunctional components, and next-generation device architectures.

This symposium welcomes contributions that address materials, processes, design methods, reliability, and novel applications enabling or requiring complex geometries, multi-material assemblies, enhanced thermal and mechanical capabilities, embedded electronics, and high-value semiconductor-adjacent technologies. Topics include progress in AM ceramics, ceramic composites, AME (additively manufactured electronics), microfabrication approaches, multi-layer/multi-material integration, and emerging pathways for electronic and semiconductor device manufacturing using AM.

Topics of interest include but are not limited to:

Ceramics, Ceramic Composites, and Advanced Materials

- Material extrusion, binder jetting, and vat photopolymerization of ceramic systems
- Ultra-high-temperature ceramics (UHTCs)

and harsh-environment materials

- Feedstock development, characterization, and highly loaded suspensions
- Sintering strategies for single- and multi-material components
- Printability modeling and predictions
- Post-processing innovations for ceramic AM
- In-situ measurements and monitoring for process control
- Qualification and validation of AM ceramics
- Sustainability in ceramic feedstocks and processing

Microelectronics, Semiconductors, and AM-Enabled Devices

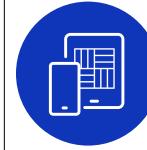
- Additively manufactured electronic circuits, sensors, antennas, filters, and passive components
- Micro- and nano-scale AM processes for device architectures
- Fabrication methods for flexible, wearable, and conformal electronics
- AM of patient-specific smart devices, smart home systems, and printed batteries
- AM-enhanced components for semiconductor manufacturing equipment (DFX-driven design)
- Hybrid AM processes that embed functional conductors, dielectrics, and semiconductors
- AME on semiconductor chips during or post-fabrication
- Novel sintering strategies for printed electronics
- Testing, reliability, and reproducibility of AME components and architectures

Materials, Design, Standards, and Modeling

- Functional materials for electronic and

semiconductor AM: dielectrics, conductors, resistive materials, ferrites, etc.

- Adoption of materials from photonics, optoelectronics, quantum technologies, and semiconductor ecosystems
- Standards development and performance benchmarks for AM materials and devices
- Multiphysics modeling, digital design workflows, ECAD–MCAD integration, and design automation
- Simulation of device performance, thermal-mechanical behavior, and multifunctional architectures
- Quality control frameworks and characterization methodologies



amcoe.org/icam2026

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