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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

Printed Electronics and Additive Manufacturing: Advanced Functional Materials, Processing Concepts, and Emerging Applications

Additive manufacturing and direct-write printed electronics technologies employing metal, dielectric, semiconductor, polymer, and ceramic materials have the potential to enable new products and markets. Accordingly, many emerging applications in sensing, photovoltaics, energy-harvesting and storage, robotics, wearables, healthcare, aerospace, and communication necessitate electronic materials of novel form factors and unique processing approaches.

The proposed symposium will focus on the emerging additive manufacturing concepts and techniques for the processing of 2D/3D structures. Technical sessions will focus on fabrication methods and characterization of active and passive functional components integrated into engineered geometries. Topics related to functional materials, low-temperature processing, large-area manufacturing, and electronic applications are within the scope of this symposium.

Invited and contributed papers will discuss both the fundamental aspects underlying certain applications, the correlation of device performance and functionality, and the particular challenges regarding technology, fabrication processes, and reliability.

Research fields of interest are related but not necessarily limited to the following topics:

- Direct-write printing and additive manufacturing of functional 2D/3D structures and geometries: Materials, Processes, and Characterization
- Nanomaterials, inks, and substrates for direct-write printing and additive manufacturing.
- Nanostructured materials for solid-state and electrochemical energy storage devices (batteries and supercapacitors)
- Low thermal budget processing and characterization of functional inks and 2D/3D materials
- Flexible/stretchable devices enabled by printed electronics
- Methods and materials for printing on biodegradable and water-soluble substrates
- Multimaterial and multifunctional structures and devices

- Testing and quality control for qualification and standardization of printed electronics
- Hybrid electronics: Merging printed electronics and additive manufacturing (Materials and Process integration to realize active/passive sensors, detectors, TFTs, antennas, PVs, batteries, supercapacitors, and large area electronics)

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