

MSE 2024

24 - 26 Sep 2024 (Darmstadt)

dgm.de

Topic F: Functional Materials, Surfaces and Devices

F10: 3D Structural Design of Functional Materials for Smart Applications

Abstract:

In recent years, the field of materials science has witnessed a paradigm shift with the emergence of 3D structural design of functional materials. The symposium objectives encompass showcasing cutting-edge developments in the realm of 3D structural design of functional materials. It provides a platform for the exchange of knowledge among experts, fostering collaboration and networking. The diverse spectrum of applications for 3D materials, including energy harvesting, storage, sensors, biosensors, and more, will be explored. Additionally, the symposium will delve into the various 3D printing technologies that underpin the fabrication of these functional materials, with discussions ranging from additive manufacturing to bioprinting. The symposium program covers an array of topics, including materials innovation, 3D printing technologies, energy harvesting and storage, sensors and biosensors, biomedical applications, environmental sustainability, and industrial applications. It will feature keynote presentations by leading experts, followed by contributed talks and poster sessions. Interactive panel discussions will provide participants with the opportunity to engage in in-depth conversations about the challenges and opportunities inherent in 3D structural design.

This symposium is targeted at a broad audience, including researchers, scientists, academics, students, and industry professionals interested in the latest developments in 3D materials and their applications. It offers numerous benefits, including gaining insights into the forefront of research, networking with peers and industry partners, showcasing research and innovations, and exploring opportunities for collaboration on multidisciplinary projects.

Symposium Topics:

- Materials Innovation: Discuss the use of various materials, including 2D materials, polymers, cellulose, and more, in 3D structural design.
- 3D Printing Technologies: Explore different 3D printing techniques, such as additive manufacturing, bioprinting, and nanoscale 3D printing, for functional materials fabrication.
- Applications: Diverse applications of 3D materials, including energy harvesting, energy storage (ex. supercapacitors, batteries) sensors, biosensors, electromagnetic shielding, wearable electronics and more.
- Environmental Sustainability: Address how 3D materials contribute to sustainable practices, including recyclability and reduced waste.
- Industrial Applications: Showcase real-world industrial applications and case studies of 3D materials for enhanced product performance.

Symposium Organizer



Dr. Henrique Vazão de Almeida
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Dr. Sumita Goswami
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