

SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

ELECTRONIC, MAGNETIC, AND ENERGY MATERIALS

Functional Nanomaterials: Functional Low-Dimensional (OD, 1D, 2D) Materials 2026

Low-dimensional (OD, 1D, 2D) materials are a broad class of materials with emergent properties originating from their reduced physical dimensions, unique morphologies, and tunable chemistry. These low-dimensional materials offer exciting new opportunities for innovations in the technological frontiers critical for the sustainable future advancement of society, such as sustainable energy generation and storage applications, nano-optoelectronic devices, high-performance sensors, and advanced environmental and healthcare technologies.

The 2026 Symposium on Functional Nanomaterials will address all aspects of low-dimensional nanomaterials, encompassing: two-dimensional (2D) nanofilms, nanosheets, and monolayers, one-dimensional (1D) nanofibers, nanotubes, and nanowires, zero-dimensional (0D) nanoparticles and quantum dots, as well as their hierarchical assemblies, heterostructures, frameworks, and organic-inorganic hybrids.

Along with sessions for conventional nanomaterials, focused sessions will be dedicated to unique design/ synthesis/fabrication/manufacturing/characterization strategies, novel integration routes for emerging functionalities, and advanced device applications.

Examples of session topics include but are not limited to:

- Advanced Characterization and Theoretical Methods
 Interrogation of low-dimensional materials and their
- Interrogation of low-dimensional materials and their fundamental properties via in situ and operando methods for developing emergent functionalities.
- Theoretical frameworks and computational, learning, and data-intensive methods for modeling, predicting, understanding, and designing lowdimensional materials and their derivative systems.
- Synthesis, Processing, and Integration
- Large-area/volume synthesis, processing, and manufacturing of low-dimensional materials.
- Integration and application of low-dimensional materials with advanced instrumentation and methods to enable scalable production.
- Structural Engineering and Functional Systems
- Hierarchical multi-scale structures and architectures based on low-dimensional materials.
- Applications, functional devices, and engineered systems derived from low-dimensional materials.

SPONSORED BY:

TMS Functional Materials Division; TMS Nanomaterials Committee

ORGANIZED BY:

- Changhong Cao, McGill University
- Yong Lin Kong, Rice University
- Michael Cai Wang, University of South Florida
- Mostafa Bedewy, University of Pittsburgh
- Pilgyu Kang, George Mason University
- Bishnu Khanal, Sandia National Laboratories
- Seungha Shin, University of Tennessee

www.tms.org/TMS2026

QUESTIONS? Contact programming@tms.org