



SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

ELECTRONIC, MAGNETIC, AND ENERGY MATERIALS

2D Materials – Preparation, Properties, Modeling & Applications

Since the discovery of Graphene, interest in basic and applied research in 2D-Materials is on an exponential rise. Challenges and opportunities continue to grow in the areas of process-property-performance correlations in 2D-Materials. Efforts to transfer technology from fundamental R&D to prototyping to manufacturing are being pursued rigorously on a global scale.

Studies on materials such as Carbon Nanotubes, Graphene, Hexagonal Boron Nitride, Perovskites, Phosphorene, Transition Metal Dichalcogenides (TMDCs), Xenes (Germanene, Silicene, Stanene) are of interest to the Symposium.

This symposium will include, but will not be limited to the following topics:

Scope 1: Methods of Fabrication, Material Properties

- Top-Down Approach – Mechanical Exfoliation, Liquid Phase Exfoliation, Ball-Milling Based Exfoliation
- Bottom-Up Approach – Chemical Vapor Deposition, Wet Chemical Synthesis, Hydro/Solvothermal Synthesis Material Properties
- Electrical, Electronic, Magnetic, Mechanical, Optical, Structural & Thermal Properties.

Scope 2: Modelling & Simulation Band-Structure, Transport Properties, Optical Properties, Device Simulation

- Tools & Methods
- Data sets of Properties
- Standards, Methods

Scope 3: Device Fabrication, Properties & Applications

Studies focused on the use of these materials for the fabrication of membranes, 2D-sheets, 2- and 3-Terminal active and passive devices, photodetectors, sensors, transistors, applications in batteries, solar cells, thermoelectrics, topological insulators, energy storage, ultracapacitors, hydrogen storage, valleytronics, CO₂ capture, thermal management are some of the examples of interest to the Symposium.

SPONSORED BY:

TMS Functional Materials Division; TMS Thin Films and Interfaces Committee

ORGANIZED BY:

- **Nuggehalli Ravindra**, New Jersey Institute of Technology
- **Madan Dubey**, US Army Research Laboratory
- **Hesam Askari**, University of Rochester
- **Arunima Singh**, Arizona State University
- **Mengqiang Zhao**, New Jersey Institute of Technology
- **Sufian Abedrabbo**, Khalifa University
- **Gerald Ferblantier**, University of Strasbourg - IUT LP / ICube Laboratory - CNRS
- **Ramana Chintalapalle**, University of Texas at El Paso