

THE WORLD COMES HERE.  
**TMS2025**  
154<sup>th</sup> Annual Meeting & Exhibition



**March 23–27, 2025**  
MGM Grand Las Vegas  
Hotel & Casino  
Las Vegas, Nevada, USA  
#TMSAnnualMeeting



## SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2025 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 the 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, CO<sub>2</sub> capture are some of the examples of interest to the Symposium.

#### ORGANIZERS

**Nuggehalli Ravindra**, New Jersey Institute of Technology; **Madan Dubey**, US Army Research Laboratory; **Hesam Askari**, University Of Rochester; **Ritesh Sachan**, Oklahoma State University; **Joshua Young**, New Jersey Institute of Technology; **Sufian Abedrabbo**, Khalifa University; **Gerald Ferblantier**, University of Strasbourg - IUT LP / ICube Laboratory - CNRS; **Chintalapalle V. Ramana**, University of Texas

#### SYMPOSIUM SPONSORS

TMS Functional Materials Division, TMS Thin Films and Interfaces Committee

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**QUESTIONS?**

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