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 Advanced Materials
 Research Laboratory
 Director

Laboratory Objectives

The fundamental and applied research performed in this laboratory seek to study the relationship between processing, structure, properties, and performance of metallics, ceramics, polymers and advanced materials systems to meet modern technological material needs. Example, antireflection and antifouling coatings, thermal interface materials, development of sophisticated and specialized 2D Materials system with improved electrical, optical, structural and improved sensing properties. Semiconductor oxides grown by Molecular Beam Epitaxy and Atomic Layer Epitaxy techniques for high temperature chemical gas sensors, and UV optoelectronics applications among others

Laboratory Capabilities

- Hitachi Thermomechanical Analyzer (TMA) applications for coefficient thermal expansion, softening temperature,
- Micro ID-Raman Spectrometry with built in microscopy for 2D materials identification.
- High Temperature and low temperature Chemical Vapor Deposition Reactors for Material Synthesis and Processing.
- AFM, High Resolution TEM and SEM,
- Hall Effect Measurements and CV measurements of Semiconductors

Laboratory Equipment(s)

- High Temperature and low Temperature CVD reactor
- Micro ID – Raman Spectrometer
- Nomarski DIC Optical Microscope

Courses Supported

- Undergraduate high impact learning and material Research

Research Supported

- Fundamental 2D, catalytic and Metal Oxides Research

