

## **RESEARCH INTERESTS:**

- Fabrication and characterization (Electrical, Optical and Structural) of thin films.  
Electronic devices and Solar cells.  
Schottky junctions, Metalization and ohmic contacts.
- Stand Alone PV Systems (Solar Water Pumping, Low Power PV Refrigeration)
- Alloying, doping, crystal growth and thin films of II-VI semiconducting compounds like CdS, CdTe, ZnTe, CdSe, CdS<sub>x</sub>Se<sub>1-x</sub> etc. and I-III-VI<sub>2</sub> compounds like CuInS<sub>2</sub>, CuInSe<sub>2</sub>, CuInTe<sub>2</sub> etc.
- Si and GaAs material processing for solar cells and schottky junctions.
- Development of Spray and CBD techniques for thin films preparation.
- Transparent conductors (metal oxide semiconductors) like SnO<sub>2</sub>, SnO<sub>2</sub>:F, InO, InO<sub>2</sub>:Sn, ZnO etc. their thin film preparation and characterization.
- Metal induced crystallization of a-Si, a:Si:H.  
Post deposition processing by thermal annealing and laser annealing of semiconductors & devices.
- Characterization of materials by X-ray diffraction (Rocking Curve, GIXRD, Reflectivity and Phase analysis by Powder diffraction)
- Sythesis of Nanoparticles and possible applications in Renewable Energy and Environment