

**The following are the 12 major research projects ongoing in the institute worth Rs.228.57 Lakh**

1. Inorganic-Organic Hybrids based on Kegging-type Polyoxometalate-Schiff Base metal complexes: Synthesis, Characterization and Proton Conducting studies.
2. Sophisticated Flexible Supercapacitors for High Energy Storage application based on Nanomaterials
3. Estimation and Tracking of Subsurface Groundwater Discharge (SGD) along coastal stretches of Andhra Pradesh and Tamil Nadu, based on understanding (and modelling) of the coastal aquifer hydrodynamic
4. A Hybrid and flexible magneto electric trilayer structure for combined magnetic sensing and mechanical actuation applications
5. Development of Hierarchical structures for Solar Desalination
6. Experimental Investigation on Role of Hybrid Tool Pin Profile on Microstructure and Mechanical Properties of Friction Stir Welded dissimilar AA6082- AA5083 Aluminium Alloy
7. Process Optimization of IPMCS for optimal functionality and in air operability
8. Design and Development of Night Vision Imaging LIDAR and Laser 3-D Imaging System for Homeland Security and Other Surveillance applications in Defence
9. Development of AI Based Efficient and Storage Independent PV Water Pump for agricultural applications.
10. Design and Development of Knowledge based expert system to assist farmers for maintenance of Agricultural field using aerial data acquisition
11. Development of ZrO <sub>2</sub> Nanoparticles doped- Bi <sub>2</sub> O <sub>3</sub> -B <sub>2</sub> O <sub>3</sub> : Cr <sub>2</sub> O <sub>3</sub> glass-ceramic phosphors
12. Tailoring electronic and magnetic properties of two-dimensional layered transition metal oxides for spintronics applications