

DST-FIST Supported Postgraduate and Research Department of Physics

The Research Centre was established and approved by the University of Kerala in 2001. A total of 105 students have so far registered for PhD at the Centre, of whom 65 have been awarded Ph.D degree since 2001. Currently there are 20 students carrying out their research here. Faculty members have published more than 400 research papers in international journals and 250 in conference proceedings. They have also participated in 475 conferences including many international symposia. The Department received a total research fund of 300 lakhs over the years from 22 major research projects sanctioned by various agencies like DST, UGC, CSIR, BRNS, DRDO, ISRO, KSCSTE, KSHEC etc. A substantial number of major research instruments were installed in the research division for the smooth conduct of research activities. The Department also has to its credit 10 new entries made in the JCPDS files for new compounds and 8 international patents registered. Two new patent applications have also been submitted. A central instrumentation unit established under UGC-CPE scheme is functioning in the Department.

Instrumentation Facilities

A central instrumentation unit established under UGC-CPE scheme is functioning in the Department. The central instrumentation centre facilitates independent and interdisciplinary research. Major research instruments include Raman Spectrometer, RF Magnetron Sputtering Unit, Perkin Elmer UV-Vis Spectrometers, Perkin Elmer FTIR Spectrometers, Perkin Elmer Photoluminescent spectrometer, Microwave Furnaces, Hybrid Microwave Furnaces, High Temperature Furnaces, Keithley current source meter, Hydraulic press, Nanomaterials synthesis set up, Electrospinning set up, Electric & Dielectric Measurement set up, UNIX based work station with software for Molecular Simulations, Z-scan set up etc.

Areas of Research

The major areas of research include thin film technology, Superconductivity, Infrared transparent materials, Dielectric ceramics, Energy harvesting materials, SOFC, Spectroscopy Nanomaterials, Spectroscopy Raman Spectroscopy, and Nano-synthesis of functional materials.

Research Laboratories

1. Centre for Molecular and Biophysics Research (CMBR)
2. Electronic Materials Research Laboratory(EMRL)
3. Thin Film Laboratory (TFL)
4. Nanomaterials Research Laboratory (NRL)

Research Guides

No.	Name of Research Guides	Area of specialization
1	Dr. Jijimon K. Thomas	Materials Science, Nanomaterials,

		Superconductivity, Energy harvesting materials
2	Dr. Sam Solomon	Dielectric Resonators, SOFC, Energy Materials
3	Dr. Hubert Joe	DFT, Quantum Computational studies, Vibrational spectroscopy
4	Dr. Annamma John	Materials Science, Spectroscopy
5	Dr. H. Padmkumar, (VTMNSS College, Dhanuavachapuram)	Electronic Ceramic Materials, Nanomaterials
6	Dr. John Jacob	Nanomaterials
7	Dr. Renju Krishnan (St. Xavier's College, Thumba)	Nanostructured materials