

## About IIITDM Kancheepuram

Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Kancheepuram is an Institution of National importance established in 2007 by the Ministry of Education, Government of India. It is a Centre of Excellence for pursuing design and manufacturing-oriented engineering education and research and promoting the competitive advantages of Indian products in global markets. The institute offers UG and PG programs in the areas of Computer Science, ECE, Mechanical Engineering, and interdisciplinary Ph.D. programs in core and applied areas of basic sciences and humanities (Physics, Mathematics, Biomedical, Biotechnology, and English) and engineering.

## About ACCELERATE VIGYAN

"Accelerate Vigyan" (AV) strives to provide a big push for high-end scientific research and prepare scientific manpower which can venture into research careers and a knowledge-based economy. Recognizing that all research has at its base the development of quality, well-trained researchers; AV will initiate and strengthen mechanisms of identifying research potential, mentoring, training, and hands-on workshops, on a broad-based national scale. The aim is to expand the research base in the country, with three broad goals - consolidation/ aggregation of all scientific training programs, initiation of high-end orientation workshops, and creation of opportunities for training and skill internship.

## About SERB

SERB has a vision to position science & technology as the fulcrum for social and economic change by supporting competitive, relevant, and quality scientific research and development. As the premier national research funding agency, the mission is to raise the quality and footprint of Indian science and engineering to the highest global levels in an accelerated mode, through calibrated, competitive support of research and development. Although a nascent organization, SERB can trace its existence to the erstwhile Science and Engineering Research Council (SERC), a division of the DST that provided extramural funding for S&T research in India for more than four decades. The creation of SERB, in the year 2011, is considered an important institutional milestone in the Indian S&T ecosystem.

## Registration

Participants interested to attend this program should register online using the following link:  
<https://forms.gle/A6tzHJLMeexzkdK87>

**Last date of registration: 04-12-2022**

Selected participants will be informed through the registered email. However, selected Ph.D/P.G students should provide the NOC from the supervisor or HOD of respective institution.

## Resource Persons

The course content will be delivered from a pool of resource persons on the subject from leading prestigious academic institutions including IITs, NITs, IIITDM and others.

## SERB Sponsored

## One Week High-End Workshop on Sensors and Energy Material Devices

*(Physical Mode)*

**12<sup>th</sup> – 18<sup>th</sup> December 2022**



**Organized by**

**Department of Sciences and Humanities  
(Physics)**

**Indian Institute of Information Technology,  
Design and Manufacturing (IIITDM)**

**Kancheepuram,  
Chennai, India-600127**

[www.iiitdm.ac.in](http://www.iiitdm.ac.in)



## About the Workshop

The high-end workshop (Accelerate Vigyan - Karyashala) aims to elucidate sensors and energy concepts of portion allied with infrared (IR) image sensors for defence technology, UV-visible photodetectors for optical and energy devices, and gas sensors for health monitoring. Generally, a sensor is a device that detects the change in the environment and responds to some output on the other system. Most of the technologies such as optical communication, video imaging, night vision, biomedical imaging, motion detection, gas sensing, and renewable energy include the application of sensors and energy material devices, which are used in our daily lives.

New semiconductor materials and devices are the subversive frontier technology emerging among the international research community in recent years and also a propeller for the development of new sensor technology. This course will predominantly focus on the current status and future development of semiconductor materials for sensors and energy devices.

Herein, to fabricate the sensor/energy test-devices, the physical vapour deposition techniques (Sputtering, Thermal & electron-beam evaporation techniques); to analyze the as-grown samples, structural, morphological, and compositional techniques; and finally the device characteristics can be discussed along with all technical lab sessions.

## Topics Covered

The objectives of the high-end workshop are the necessity of sensor technology, identification of semiconductor material for sensor devices, fabrication of IR imaging sensor, photodetector, energy, and gas sensor test-devices, device production and available platforms, and scope of the manufacturing opportunities on sensors for researchers.

- Thin film and Nanotechnology
- Material Characterization Techniques
- Basics on Advanced Semiconductor Devices
- Defence, Energy, and Sensor Devices
- Device Fabrication & Analysis of Photodetectors
- Device Fabrication & Analysis of Infrared Image Sensors and Gas Sensors

### Important Dates

Last date for Applications : 04-12-2022

Intimation of Selection : 05-12-2022

Confirmation of Participation : 06-12-2022

## Information for Participants

- The proposed workshop is meant to support motivated PG and Ph.D. level students, who are having a strong willingness to get excellence in their scientific and engineering research pursuits in the area of Sensor and Energy Devices.
- The workshop will be conducted in face-face mode. Participants willing to participate in this workshop should have the provision to stay within the institute premises and free accommodation will be provided.
- **Course Registration is free** for all participants.
- **Seats are limited (only 25)** and the participants are selected by organizers on a first come first.
- Shortlisted candidates will be informed through their email.
- Upon completion of the course, an objective/quiz-based assessment of all participants will be done.
- TA will be provided to all the participants by producing the tickets with the shortest route as per the norms.

### Chief-Patron

**Prof. M.V. Kartikeyan**

Director, IIITDM Kancheepuram

### Patron

**Dr. S. Jayavel**

Dean-SRICCE, IIITDM Kancheepuram

**Dr. M.A. Shalu**

HOD, SH, IIITDM Kancheepuram

### Workshop Coordinator

**Dr. Y. Ashok Kumar Reddy**

Assistant Professor of Physics

IIITDM Kancheepuram, Chennai

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### For Further Assistance

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