

ABOUT KARYASHALA WORKSHOP

KARYASHALA' is an effort to improve the research productivity of promising PG and Ph.D. students from universities and colleges through high-end workshops on specific themes. This program aims to provide opportunities to acquire specialized research skills. These workshops will primarily be facilitated at organizations/ institutions/ laboratories of national importance such as IITs, IISc, IISERs, NITs, CSIR, ICAR, ICMR, etc. 'KARYASHALA' is aimed to provide hands-on experience to students primarily from universities, colleges, private academic institutions, and newly established institutes in handling/troubleshooting high-end scientific instruments and such skill development on themes required for research work. The program 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. However, the support will not be directly provided to the beneficiaries, but through the Event Organizers applying for and coordinating these events on behalf of SERB.

ABOUT THE INSTITUTION

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram (IIITDM Kancheepuram) is an Institute of National Importance established in 2007 by the Ministry of Human Resource Development, Government of India to pursue design and manufacturing oriented engineering education, research and to promote the competitive advantage of Indian products in global markets. It was declared as an Institute of National Importance (INI) by the Ministry of Human Resource Development, Government of India, in July 2011, thus becoming the first IIIT to be accorded this status. Later in 2014, IIIT Bill 2014 was passed by the Parliament on 1 December 2014, thus granting the status of Institutes of National Importance upon the 5 MHRD funded IIITs including IIITDM Kancheepuram. IIITDM Kancheepuram was ranked 8th in Innovation Ranking by NIRF 2023.

ORGANIZING COMMITTEE

CHIEF PATRON

Prof. M. V. Kartikeyan,
Director
IIITDM Kancheepuram, Chennai

PATRON

Prof. S. Jayavel,
Dean (SRICCE)
IIITDM Kancheepuram, Chennai

Co-PATRON

Prof. Raja B,
HOD (ME)
IIITDM Kancheepuram, Chennai

CONVENERS

Dr. Kishor Kumar Gajrani,
Assistant Professor (ME),
IIITDM Kancheepuram

Dr. Karthick S,
Assistant Professor (ME)
IIITDM Kancheepuram, Chennai

ABOUT THE DEPARTMENT OF MECHANICAL ENGINEERING

Established in 2008 with 30 students, our Mechanical Engineering Department has grown to 450+ members, including 19 faculties, 5 technical staff, and 425+ students. We offer UG course, postgraduate courses, and a Ph.D. program. Our innovative curriculum spans Thermal and Fluid Sciences, Engineering Design, Manufacturing Science, and Robotics. This provides a dynamic platform for students, researchers, and industry partners to explore modern engineering.

SERB SPONSORED ONE-WEEK HIGH END WORKSHOP (KARYASHALA) ON

MICROMACHINING AND MICROFABRICATION FOR BIOMEDICAL DEVICES

31 MARCH – 06 APRIL, 2024



Conducted by

Department of Mechanical Engineering,
Indian Institute of Information Technology, Design
and Manufacturing, Kancheepuram, Chennai -
600127, Tamil Nadu, India

In association with

ACCELERATE VIGYAN
Science and Engineering Research Board (SERB)

BACKGROUND

The "Micromachining and Microfabrication for Biomedical Devices" workshop is an advanced and comprehensive program designed to provide participants with a deep understanding of the principles, techniques, and applications of micromachining and microfabrication specifically tailored for biomedical devices. This high-end workshop aims to bridge the gap between engineering and biomedical sciences by focusing on the intricate field of miniaturization and precision fabrication.

Course Content*

Outlines of the broad topics that will be covered during the course are as follows:

- ❖ Introduction to Micromachining and Microfabrication
- ❖ Microfabrication Processes and Materials
- ❖ Materials for biocompatibility
- ❖ Microfluidics and Lab-on-a-Chip Systems
- ❖ Surface Modification Techniques for Biocompatibility
- ❖ Surface coatings for biocompatibility and anti-fouling properties
- ❖ Surface characterization techniques
- ❖ Quality Assurance and Testing in Microfabrication
- ❖ 3D Printing
- ❖ BioMEMS (Micro-Electro-Mechanical Systems)
- ❖ Case Studies and Real-world Applications
- ❖ 5 Hands-On-Sessions

WHO SHOULD ATTEND?

The program is meant to support motivated PG, PhD, and UG 4th-year level students only, who are having a strong willingness to get excellence in their scientific and engineering research pursuits.

OBJECTIVE OF THE KARYASHALA

- ❖ Gain in-depth knowledge of micromachining and microfabrication techniques specific to biomedical devices.
- ❖ Develop practical skills through hands-on experience with cutting-edge microfabrication tools and equipment.
- ❖ Understand the challenges and considerations in designing and fabricating biomedical devices at the micro-scale.
- ❖ Stay updated with the latest advancements and emerging trends in the field.
- ❖ Network with experts and professionals in the industry and academia.

RESOURCE PERSONS

Prof. Uday Shanker Dixit (IIT Guwahati)

Prof. Mamilla Ravi Shankar (IIT Tirupati)

Prof. G. L. Samuel (IIT Madras)

Prof. Pallab Sinha Mahapatra (IIT Madras)

Dr. Navneet Khanna (IITRAM Ahmedabad)

Dr. Jayaprakash K S (BITS Pilani Hyderabad)

Dr. Sneha Maria (Frost & Sullivan)

Dr. E. Hemachandran (NIAMT Ranchi)

Dr. N Ashwin Kumar (SRM Chennai)

Dr. Senthilkumaran K (IIITDM Kancheepuram)

Dr. Y. Ashok Reddy (IIITDM Kancheepuram)

Dr. Avinash Kumar (IIITDM Kancheepuram)

Dr. Uttam Mrinal Pal (IIITDM Kancheepuram)

Dr. Karthick S (IIITDM Kancheepuram)

Dr. Kishor Kumar Gajrani (IIITDM Kancheepuram)

SELECTION CRITERIA

- ❖ Based on the applicant profile merit
- ❖ Candidates with prior research exposure, area match, and performance in national-level exams will be prioritized
- ❖ Consistent good academic record

Selected participants will be informed by e-mail

WORKSHOP DETAILS

- ❖ **Duration:** 31 March to 06 April 2024 (7 days)
- ❖ **Place of Workshop:** IIITDM Kancheepuram, Chennai
- ❖ **Maximum Number of Participants:** 25
- ❖ **Reporting Date for Selected Candidates:** 30 March, or 31 March (Morning)
- ❖ Support for travel reimbursement as per the norms of SERB-AV KARYASHALA
- ❖ Boarding and Lodging Expenditures and other expenditures incurred as part of the workshop shall be supported as per the Scheme Approval of SERB-AV KARYASHALA.
- ❖ A certificate will be provided to the participant after the successful completion of the event

REGISTRATION LINK

Participants are requested to register using the following link or QR code:

<https://forms.gle/2mmGgv2esmcSKNqR9>



Registration Deadline: 25th March 2024

FOR ANY QUERY FEEL FREE TO CONTACT

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