Course content

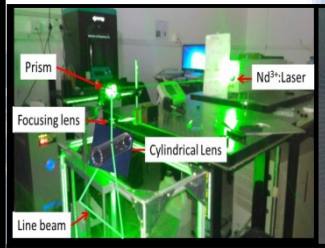
- Sensors and Actuators
- Pneumatic system design
- Micro-robotics
- Design
- Bio-MEMS & Lab on chips
- Signal processing and analysis of MEMS device
- Opto-Mechatronics
- Nanoscale Memory
- Mechanical system modelling
- Micro fluidic-system vices
- Micro/Nano fabrication
- Bio/Chemical Sensors
- Soft material based Opto-electronic sensors
- Device characterization techniques
- Life cycel analysis of MEMS and Mechatronics device
- Nano-particle generation

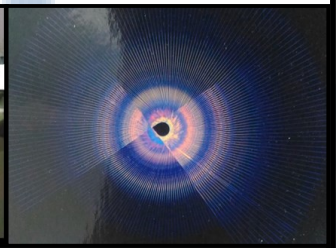
Hands on Experience

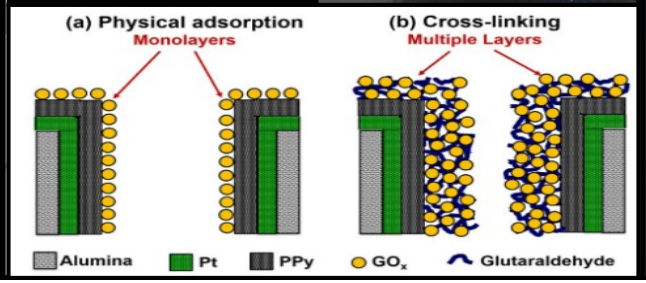
- PLC based pneumatic system design
- Opto– Mechatronics system design
- Control of Mechanical elements
- Laser based micro Fabrication
- Smart material based device development
- Thin film deposition techniques
- Sputtering
- PVD and PLD
- Four probe conductivity
- System automation in LabVIEW platform
- Data acquisition and processing
- Nano-scale Memory devices
- Optical characterization technique
- Life cycle analysis of MEMS based device

Course Objective

Micro electromechanical systems (MEMS) present a unique platform where both electrical and mechanical components are fabricated on a single wafer. Some of the fastest growing areas which utilize different MEMS sensors and actuators are entertainment industries, consumer electronics, medical, defence, space industries, etc. The electro mechanical device basically includes micro actuators, micro sensors, micro transducers, micro-switches etc., these micro device have occupied their own positions for different applications ranging from bio medical, aerospace, defense, energy and day to day life. Mechatronics MEMS and micro fabrication are interlinked areas, focusing towards the development of micro devices for the benefit of mankind. Keeping the interest of researchers, faculties, and employees from different institutions, R&D labs and companies across the country, we have designed a unique program on Mechatronics, MEMS and micro-fabrication, which cover fundamentals of design, fabrication, and packaging of a complete MEMS device.







Short Term Course *on*

MECHATRONICS, MEMS & MICRO-FABRICATION

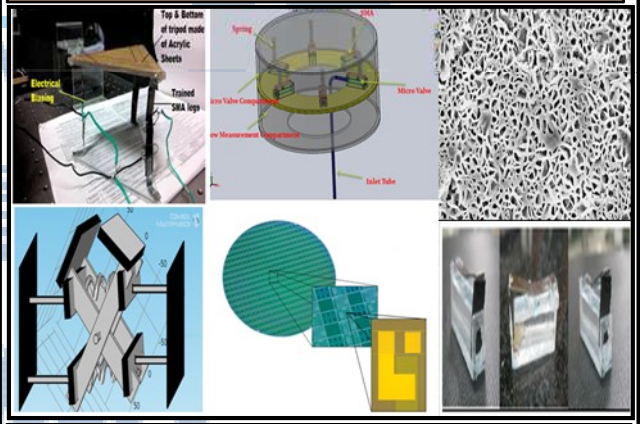
Sponsored by TEQIP

INDIAN INSTITUTE OF TECHNOLOGY INDORE

Simrol Campus, Indore, Madhya Pradesh

March 27-29, 2019

Venue: Titanium Building , IIT Indore



Coordinators

Dr. I.A. Palani ,

Mectaronics and Instrumentation lab, Discipline of Mechanical Engineering, IIT Indore

Dr. Vipul Singh,

Molecular & Nanoelectronics Research Group, Discipline of Electrical Engineering, IIT Indore

About IIT Indore

IIT Indore located at Simrol, Khandwa Road, Madhya Pradesh, is one of the eight new Indian Institutes of Technology (IIT) established by the Ministry of Human Resource Development (MHRD), Government of India in 2008-09. Recently IIT Indore is ranked 14th amongst all engineering universities and institutions in India and a very impressive 5th in teaching and resource category by MHRD as per NIRF 2018. Also, **IIT Indore debuts with a rank of 351-400 in the times higher education world University ranking 2019, 2nd amongst Indian institutes.**

IIT Indore, established in 2009 by the Government of India, is a unique educational institution that focuses on interdisciplinary research and teaching. The institute is growing rapidly as the only center for advanced learning and knowledge-dissemination in the pure and applied sciences in Central India. The interdisciplinary approach of the institute is well reflected in its departmental setup comprising basic sciences, a school of engineering and a school of social sciences. The larger commitment of the institute to socio-economic development is evident in its multi-dimensional approach to social problems and is engraved in its motto ('knowledge for the wellbeing of all'), which makes this institution one of its kind and it stands out even within the distinguished IIT family.

Who should attend?

The program is open to faculty, research scholars and students from all the colleges and universities. Industry personnel working in the concerned/allied discipline may also apply.

Registration Fees

- There is **no fee for participants from TEQIP sponsored colleges**. The nominations along with the registration forms must be sent through their coordinator to the address below. Email confirmation in advance is suggested.
- For Other faculty participants, the fee is Rs. 4000/- (Three Thousand Five Hundred Only) per participant for professionals and Rs. 2000/- (One Thousand Seven Hundred and Fifty Only) for students. For industry participants the fess is Rs 8000/-. Registration fee includes course material, tea & working lunches.
- **Deadline for the registration is march 1st-2019.**

MODE OF PAYMENT:
Through **online payment/bank transfer** of **"Registrar, IIT Indore"**

Bank: Canara Bank.
Branch: IIT Indore, Simrol campus.
Account number: 1476101027440.
IFS Code: CNRB0006223.

Evidence of payment should be emailed in advance to confirm the participation.

Accommodation: Accommodation may be arranged in the IIT campus based on first come first serve based on availability (on payment basis).

Coordinators
Dr. I.A. Palani (palaniia@iiti.ac.in)
Dr. Vipul Singh (vipul@iiti.ac.in)

Application form

Name: ……
Affiliation:……
Address of Communication:
……
……
……
Mobile Number: ……..
Email Address: ……
Area of Interest:……
Category: **Faculty/Scientist/research scholar**

Payment Details:
Reference No:……
Date: ……
Amount in Rs. :……
Drawn at: …….

Name and address of the sponsoring organization:
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Signature with date :

Send the duly filled registration form hardcopy along with the scanned copy through
e-mail: iiticepmechatronics@gmail.com

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