

## Course content

- Precision Manufacturing and its applications
- Diamond turning/ machining
- Laser Assisted micro manufacturing
- EDM /ECM based micro machining
- Mechanical micro-machining
- Laser assisted micro-3d printing
- PVD based micro-processing techniques
- Metrology for Precision, Meso, Micro and Nano Engineering
- Surface Texture including measurement of surface roughness parameters and introduction to surface integrity
- Metrology of gears
- Laser assisted micro-3d printing

## Hands on Experience

1. Evaluation of surface roughness using non-contact Optical profiler
2. Evaluation of surface roughness using contact type 3D surface measurement-cum-contour tracing equipment
3. Measurement different parameters of micro-geometry of gears on the CNC-gear metrology machine
4. Laser Assisted micro-3d Printing
5. E-beam evaporator
6. Thermal evaporator
7. High power laser

## Course Objective

The miniaturized products/components and high precision requirements often demand innovative manufacturing methods, testing and characterization tools/techniques. Application of precision manufacturing in aerospace, automotive industries and advances in microelectronics and biomedical engineering, look to the processing of advanced materials and fabrication of functional surfaces. The overall challenge is to achieve a synergy among machining, forming and additive manufacturing techniques at micro, nano and meso scales

## Resource Persons

Prof.Nilesh.J.Vasa, Engineering Design, IIT Madras

Dr.Vipul Singh, IIT Indore

Dr. Balasubramanian, BARC

Prof. Suhash Joshi, IIT Bombay

Prof. V. Radha krishnan, Former Professor, IIT Madras

Prof.C.P.Paul , RRCAT, Indore

Prof.Rahman, Former professor, NUS

Dr.I.A.Palani, IIT Indore

Prof. Neelesh K Jain, IIT Indore

## Workshop on PRECISION, MICRO AND NANO ENGINEERING

Sponsored by TEQIP

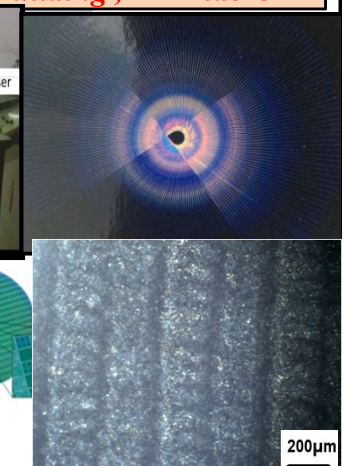
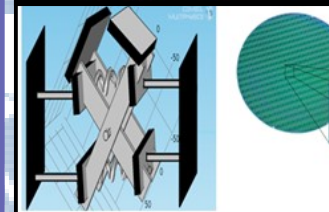
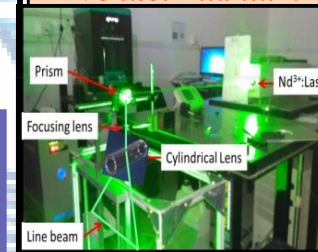


**INDIAN INSTITUTE OF TECHNOLOGY  
INDORE**

Simrol Campus, Indore, Madhya Pradesh

**December 9 -11, 2019**

**Venue: Titanium Building , IIT Indore**



## Coordinators

**Dr. I.A. Palani ,**

**Prof. N.K. Jain ,**

**Discipline of Mechanical 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, 2<sup>nd</sup> 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. For Participants who are registering for COPEN conference they have to pay Rs 1000 Only
- **Deadline for the registration is Decmeber 1<sup>st</sup> 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

## Coordinators

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**Prof.Neelesh Kumar Jain**  
**(nkjian@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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**Head/Associate Professor,**  
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