

## Registration Fees

For participants from QIP/AICTE approved colleges, there is no registration fee. They will be provided TA (AC-III) by the shortest route from the nearest railway station to Kanpur. Daily allowance (for boarding and lodging) will be paid to every participant from QIP/AICTE approved colleges as per the existing rules of CDTE/QIP for the period of the course. A caution deposit of **Rs. 1000** in the form of a DD should accompany the completed form. This will be refunded to those participants who attend the course.

**For participants from industry/R&D organization**, the registration fee (non-refundable) is Rs. 10,000/- (covers only course fees and course material).

*All payments should be through DD drawn in favor of "Coordinator, Continuing Education Program, IIT Kanpur" payable at State Bank of India, IIT Kanpur Branch.*

## Important dates

Application in the prescribed format duly forwarded by the participant's institution should reach the coordinators on or before July 31<sup>st</sup>, 2017. The name of the selected candidates will be available in the homepage of the coordinators w.e.f. August 5<sup>th</sup>, 2017. The Head of the Institution is requested to forward only one candidate for the course based on their preference.

## Applications and DD should be sent to

J. Ramkumar  
Department of Mechanical Engineering  
Indian Institute of Technology Kanpur  
Kanpur, 208016, Uttar Pradesh.  
Tel: +91-(0512)-259-7546  
Fax: +91-(0512)-259-7408  
E-mail: jrkmur@iitk.ac.in

## Accommodation

Accommodation will be provided to all the participants from 13.08.2017 till 22.08.2017 in Visitor's Hostel. The boarding and lodging charges will have to be borne by the participants (DA will be paid as per the existing rules of CDTE/QIP). Rooms at the Guest House are very reasonably priced.

## Weather at Kanpur

The weather at Kanpur in first week of August will be pleasant. Day-time temperatures range from 26-35°C.

## How to reach

Kanpur, a major city of Uttar Pradesh is well-connected by rail, road and air to all the parts of the country. The railway station is at a distance of about 18 km from the IITK campus. A regular auto-rickshaw (about Rs. 250) and taxi service (about Rs. 400) from the station are available.

## Short Term Course on

## Micro Manufacturing

**14<sup>th</sup> -21<sup>st</sup> August, 2017**

*Sponsored by*

Quality Improvement Program Center  
for Continuing Education Indian  
Institute of Technology Kanpur

*Coordinator*

**J. Ramkumar**



**Organized by**

Department of Mechanical Engineering  
Indian Institute of Technology Kanpur  
Kanpur UP 208016, India

## Background

Emerging miniaturization technologies are perceived by many as potentially key technologies of the future that will bring about completely different ways people and machines interact with the physical world. The miniaturization of devices associated with a number of fields including optics, electronics, medicine, avionics to name a few is demanding the production of components with manufactured features in the range of a few to a few hundred microns. Specific applications include micro-scale fuel cells, fluidic micro-chemical reactors requiring micro-scale pumps, valves and mixing devices, micro-fluidic systems, micro-holes for fiber optics, micro-nozzles for high-temperature jets, micro-molds and deep X-ray lithography masks, etc. Functional requirements of many devices demand very tight tolerances and the use of a wide variety of engineering materials including stainless steel, titanium, brass, aluminum, platinum, iridium, plastics, ceramics, and composites. To meet these rapidly evolving needs, this course focuses on the key issues associated with product miniaturization and manufacturing of the miniaturized products. Emphasis will be placed on both conventional and new advanced micro-machining processes in addition to the accompanying trend toward the miniaturization of manufacturing equipment and metrology systems. The fundamental scientific and pragmatic technological topics associated with miniaturization will be discussed.

## Course Contents/ Format

This course is offered under the Continuing Education Program of IIT Kanpur and is sponsored by the Quality Improvement Program. The course is open for Mechanical/ Chemical Engineering faculty of AICTE approved Engineering Colleges, practicing engineers from Industry and scientists from R & D Labs. The content of the course will be as follows:

- Introduction to Micro-manufacturing and Scaling Laws.
- Mechanical micromachining and associated computer/laboratory work.
- Advanced micromachining processes including, Electro-discharge machining, Electro-chemical, Ultrasonic and Vibration-assisted machining and laser machining processes and associated laboratory work.
- Micro-machine tool system and machining essentials including part registration.
- Metrology and micro-manufacturing case studies, Concluding remarks, General Q&A session.

## Speakers

Faculty members of various Departments in IIT Kanpur.

## Number of participants

The number of participants under the QIP sponsored category is limited to 30. In case of more applicants, the final selection criterion shall be decided by the organizers. Preference will be given to candidates who have a Master's degree with specialization in an area relevant to the theme of the course. The above restrictions do not apply to applicants from Industry, R&D laboratories and self sponsored applicants.

## Registration form

Micro Manufacturing

August 14-21, 2017

Name:.....

Designation:.....

Organization: .....

Gender (for accommodation): M.....

F..... Address of communication:

E-mail:.....

Tel:.....Fax:.....

Qualification:.....

Experience (years):.....

Research Interests:

## Payment Details

Draft No:.....Date:.....

Amount: Rs.....

Date:.....

Signature

## Sponsored by

Name.....

Designation.....

Signature and seal of the recommending authority.