

REGISTRATION FORM

**Short Term QIP Course on
Advanced Scanning Electron Microscopy and
Microanalysis
11th March-15th March 2019**

Name: _____

Title/Position: _____

Organization: _____

Mailing Address: _____

Confirmation No. (Rcvd by email): _____

Email: _____

Phone(s): _____

Research interests: _____

Accommodation Required: Yes / No

*Payment to be planned only after obtaining
participation approval through mail:
Details of enclosed Demand Draft:*

DD No. _____ Dated: _____

Amount (Rs): _____ Issuing Bank: _____

Date

Signature of Applicant

About Accommodation:

Accommodation at IITK will be arranged only for participants from outside Kanpur city on request at the time of application itself. Accommodation will be available on shared-basis in double occupancy rooms. The guest room occupants have to abide by the existing rules of guest house.

For student participants: Visitor Hostel Extension (Non-AC)/ Hostel Rooms (Non-AC)

For participants other than students: Visitor Hostel (AC rooms)

For further information, contact:

Course Coordinators:

Dr. Kaustubh Kulkarni,
Associate Professor,
MSE Department, IIT-Kanpur
E-mail: kkaustub@iitk.ac.in
Phone No. 0512-2596102
<http://home.iitk.ac.in/~kkaustub/>

Dr. Gouthama
Professor and Head, ACMS
IIT-Kanpur
E-mail: gouthama@iitk.ac.in
Phone No. 0512-2597450

Dr. Shashank Shekhar,
Associate Professor,
MSE Department, IIT-Kanpur
E-mail: shashank@iitk.ac.in
Phone No. 0512-2596528
<http://home.iitk.ac.in/~shashank/>

SHORT TERM QIP COURSE

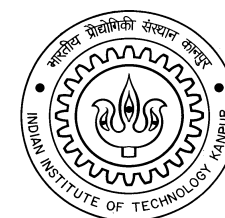
ON

Advanced Scanning Electron Microscopy and Microanalysis - 2019

March 11th – March 15th 2019

Venue:

**VH PBCEC
Indian Institute of Technology,
Kanpur**



**Advanced Center for Materials Science
Indian Institute of Technology
Kanpur, 208 016,**

ABOUT THE COURSE

Electron microscopy has become the most widely used characterization tool by researchers in advanced materials processing/development/design. The range of experimental techniques available is really broad and requires varying degree of expertise, both in the conduct of the analysis and interpretation of the acquired data/results. Some of the techniques are highly demanding and sophisticated enough to make their usage impossible without rigorous training and experience. The lack of exposure and expertise in these techniques is becoming more and more a limitation in carrying out the highest possible quality of research using the presently available research infrastructure. This course aims to address this lacuna in our education and training.

CHARACTERISATION TOOLS/TECHNIQUES

The course will focus mainly on two characterization techniques viz. Scanning Electron Microscopy (SEM) and Micro-Compositional Analysis in a fairly comprehensive manner. Fundamentals of Transmission Electron Microscopy and Micro-compositional analysis will also be covered briefly.

Scanning Electron Microscopy

- Basic modes of imaging: SE and BSE
- X-ray Energy dispersive spectroscopy (EDS)
- EBSD/OIM in micro-texture analysis
- Fractography and failure analysis
- Focused Ion Beam (FIB) and its applications
- In-situ studies in SEM

Electron Micro-Probe Analysis (EPMA)

- Comparison: EDS vs WDS
- Qualitative Vs Quantitative analysis
- X-ray data analysis Modes
- Detailed quantification procedure including ZAF correction

Transmission Electron Microscopy (TEM)

- Imaging: BF, DF and WB-DF
- Electron diffraction: SAED, CBED, etc.
- Phase contrast imaging - HRTEM
- Chemical analysis: EDS and EELS

A series of lectures, tutorials and lab sessions will be delivered by the experts from IIT-Kanpur. It will cover the fundamentals as well as applications of complete range of techniques.

APPLICATION PROCEDURE

- Send an email to kkaustub@iitk.ac.in with subject as QIP-SEM2019
- An approval will be sent by the Coordinator with a Confirmation No.
- Fill this confirmation no. in the registration form. The registration form should be sent to the coordinator (address given alongside) along with the registration fee. The last date for receiving the application is **March 5th 2019.**

REGISTRATION FEES

A maximum of 35 participants will be selected (first-cum-first serve basis) and the participants need to send a letter from their Head of the Institute/Department, in support of their application. Ph.D Students should route their application through supervisor.

1. Teachers/Faculty from AICTE Institutes:
Rs.1000/- refundable on participation
2. Ph.D Students of IITK : Rs. 2000/-
3. Ph.D Students from other Institutions: Rs. 5000/-
4. Post-doc/ Technical Staff: Rs. 10,000/-
5. Persons from Industry & R&D Labs: Rs. 15,000/-

Cancellation charges for all : Rs. 1000/-
(if cancelled after sending the draft)

***Payment only by demand draft in favour of
"Co-ordinator, Continuing Education
Programme, IIT Kanpur"***

To : **Prof. Kaustubh Kulkarni**
Western Lab 302A
Department of Materials Science and Engineering
Indian Institute of Technology Kanpur
Kanpur 208 016, UP