

TEQIP-III Sponsored

Short Term Course

On

**RECENT ADVANCES IN
MICROFLUIDICS:
DEVELOPMENT, APPLICATION
& ANALYSIS**

(RAMDAA-2017)



December 6 to 10, 2017

Organized by

**Mechanical Engineering Department
National Institute of Technology Durgapur
M. G. Avenue, Durgapur-713209, W.B., India**

Website: www.nitdgp.ac.in

COURSE COORDINATORS

**Dr. Rabindra Nath Barman, Assistant Professor
Mechanical Engineering Department
Dr. S. C. Rana, Assistant Professor
Mechanical Engineering Department
Dr. Shantanu Pramanik, Assistant Professor
Mechanical Engineering Department**

PATRON

**Prof. Anupam Basu / Prof. Animesh Biswas
Director, NIT Durgapur**

ADVISORY COMMITTEE

**Prof. Sudip Chattopadhyay, Dean(R&C)
Prof. A. K. Meikap, Coordinator TEQIP III
Dr. A. K. Banik, Nodal officer (Academic) TEQIP III
Prof. A. N. Mullick, HOD, Mechanical Engineering**

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Mr. J. Dey
Mr. A. Patari

CONTACT PERSONS

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Dr. Shantanu Pramanik
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and +919434788146
Email: rahul.barman@yahoo.co.in
Email: subhasrana@yahoo.co.in
Email: shantanu.pramanik@me.nitdgp.ac.in**

IMPORTANT DATES

Last Date of Application submission: 27.11.2017

Notification for selection: 28.11.2017

BOARDING & LODGING

Boarding, lodging and travel expenses shall be borne by the participants. Limited shared accommodations may be available in the Institute Guest House on first come first served basis. Several good hotels are available in and around Durgapur. Participants may contact directly or through the coordinator(s) for accommodation in Hotels. No TA/DA will be paid to the participants by NIT Durgapur.

REGISTRATION FEES

A.) For Faculty/Industry person/Staff member:

Registration fee Rs.3, 000/- (Three Thousand only)

B.) For Ph.D./M.Tech. B. Tech. Student: Registration fee

Rs.2, 000/- (Two Thousand only)

Registration fee includes kit, study/lecture materials, copy of the Proceedings, refreshment and lunch for 5 days during the course.

REGISTRATION PROCEDURE

Print-out of the “REGISTRATION FORM” duly forwarded by Director/ Dean of the Institute/ HOD should be sent to any of the contact persons on or before 27.11.2017 along with any one of the followings as the attachment:

(i). **Demand Draft** drawn in favour of “RAMDAA-2017” payable at Durgapur.

(ii) Print out of the **money receipt** for “ONLINE MONEY TRANSFER” or “MONEY TRANSFER BY ATM” to following account:

Account Name: **RAMDAA2017**

Account Number: 37270616754

Bank Name: **S.B.I, R.E COLLEGE, DURGAPUR BRANCH**

BRANCH CODE: **2108, IFSC: SBIN0002108.**

(Mention detail in remarks during fund Transfer)

(iii) Xerox copy of “PAY IN SLIP” for deposit of “REGISTRATION FEES” to the above account.

ABOUT THE INSTITUTE

National Institute of Technology Durgapur (NITD) is a leading technical institute offering undergraduate, postgraduate and doctoral programmes in various disciplines of engineering, technology,

science, social science and management studies. The education system is holistic with equal importance being attached to all-round development of the students. NITD was established as a Regional Engineering College Durgapur (RECD) in 1960 as a joint venture of the Government of India and Government of West Bengal. REC Durgapur was converted to NIT Durgapur under the full administrative and financial control of the Ministry of Human Resource Development of Government of India with a Deemed University status on 3rd July, 2003. Subsequently NITD has been given the status of a University by the UGC Act. The Institute was declared an **Institute of National Importance** by the Government of India on August 15, 2007.

The city of Durgapur is recognized as one of the fastest developing Tier-II cities in the national scenarios. Durgapur is situated at a distance of about 180 km from Kolkata. It is located right on the major railway and expressway (NH-2) connecting Kolkata to Delhi and Durgapur can be reached from Kolkata (and vice versa) in about 3 hours.

ABOUT THE DEPARTMENT

Department of Mechanical Engineering is the largest and one of the oldest departments of the Institute started in the year 1960. It offers both undergraduate (B.Tech.) and postgraduate (M.Tech.) degree course apart from doctoral programme. The annual intake of the UG course is above 150 and that of the PG course is about 60. At present about 42 students are doing their doctoral research with the department. The department comprises of well-qualified faculty members, supporting staff and suitably equipped laboratories. The continuous development of faculty and up gradation of the laboratories makes the department at par with the current day academic and research requirement of global standard which is reflected by continuously increasing student of the department opting for higher studies in India and abroad.

Department of Mechanical Engineering offers three PG courses with specialization of Fluid Mechanics & Heat Transfer, Machine Design and Thermal Engineering. A parallel module of part-time post graduate and doctoral programmes are offered by the department to facilitate the need of the working professionals of nearby institutes and industries.

ABOUT THE SHORT-TERM COURSE

Microfluidics is a quickly growing, highly interdisciplinary field at the interface of physics, engineering, chemistry and biology. Over the past years microfluidic approaches have been used for a variety of applications including nucleotide sequencing, functional genomics, single cell/single molecule studies and diagnostics. Many of these applications, including next generation sequencing device, have been

revolutionized by miniaturization, paving the way for global gene analysis and hence transforming biology. The field of microfluidics has four parents: molecular analysis, biodefence, molecular biology and microelectronics. The distant origins of microfluidics lie in microanalytical methods — gas-phase chromatography (GPC), high-pressure liquid chromatography (HPLC) and capillary electrophoresis (CE) — which, in capillary format, revolutionized chemical analysis. The original hope of microfluidics was that photolithography and associated technologies that had been so successful in silicon microelectronics, and in microelectromechanical systems (MEMS), would be directly applicable to microfluidics.

This workshop would bring the academicians, researchers and practitioners in the area of micro and nanofluidics with their allied areas to a common platform to disseminate their knowledge and share their experiences. The designed course work also provides unique learning opportunity by eminent Indian professors and Scientists.

RESOURCE PERSON

Prof. Suman Chakraborty
Mechanical Engineering Department, IIT Kharagpur, India.

Dr. Ranjan Ganguly
Department of Power Engineering, Jadavpur University, India

Dr. Debashis Pal
Department of applied Mechanics & Aerospace Engineering, IEST Shibpur, India

Dr. Subhra Dutta
Mechanical Engineering Department, IIT Delhi, India

Dr. Debabrata Das Gupta
Mechanical Engineering Department, IIT Delhi, India

Dr. Naga Hanumaiah
Senior Principal Scientist, CSIR - CMERI Durgapur, India

Dr. Abhiram Hens
Micro System Technology, CSIR-CMERI Durgapur, India

TOPICS TO BE COVERED

- **Micro and Nano Fluidics**
- **Magnetic particle based microfluidics**
- **Surface microfluidics**
- **Multiscale transport in microfluidic system**
- **Microfluidics basics and continuum scaling**
- **CFD applications in microfluidics**
- **Boiling in micro channels with application of electronic cooling**
- **Gas flow in micro channels/ Rarefied gas flow**
- **Electro kinetics and electro-hydrodynamics of microscale flow**

REGISTRATION FORM

TEQIP-III Sponsored Five-day SHORT-TERM COURSE on

Recent Advances in Microfluidics: Development, Application & Analysis (RAMDAA-2017)

December 06-10, 2017

Organized by

Mechanical Engineering Department, National Institute of Technology, M.G. Avenue, Durgapur – 713209, West Bengal, India

1. Name: _____
2. Designation & Affiliation: _____
3. Male/Female: _____
4. Mailing Address: _____
5. Telephone No. : _____ (Mob)
6. E-mail ID : _____
7. Registration Fees Paid, Amount: *Rs.* _____
(In Words: *Rupees*)

DD /Online Transaction Ref. No. _____

Date: ____ / ____ / **2017**

DD should be drawn in favour of “RAMDAA2017”, payable at Durgapur.

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Account Number: 37270616754

Bank Name: S.B.I, R.E COLLEGE, DURGAPUR BRANCH

BRANCH CODE: 2108, IFSC: SBIN0002108.

(Mention detail in remarks during fund Transfer)

8. Vegetarian / Non-Vegetarian: _____

N.B.: Photocopy of this form may also be used for registration.

Place: _____

Date: _____

Signature of the Applicant

Signature and Seal of the Head of the Department/Institute/Dean