

*STC on RAFNAP-2017*, February 15-19, National Institute of Technology Durgapur, India

**TEQIP-II (CoE) Sponsored SHORT TERM COURSE on**  
**Recent Advances and Fundamentals of Nanomaterials for**  
**Applications in Photonics (RAFNAP-2017)**

**February 15-19, 2017**



**Course Coordinators:**

Prof. P. Kumbhakar & Dr. M. K. Mandal

**Department of Physics**  
**National Institute of Technology Durgapur**  
**Mahatma Gandhi Avenue**  
**Durgapur 713 209**

**Please send the completed application to the Course Coordinator on or before 10<sup>th</sup>**  
**February 2017**

## THE INSTITUTE

National Institute of Technology Durgapur (NITD) is a leading technical institute offering undergraduate, postgraduate and doctoral programmes in various disciplines of science, engineering technology, Social sciences and Management. 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 (REC) 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 (MHRD), 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. NITD is an **Institute of National Importance** declared 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 KMs 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 ~ 2 hrs. 30 mins.

## THE DEPARTMENT

Department of Physics of NIT Durgapur is one of the oldest and leading Departments in terms of research activities and sponsored projects. The Department, over the years, has successfully completed a number of MHRD, AICTE, DAE and DST Research and Development projects as well as a number of sponsored projects. Department of Physics of NIT Durgapur is a DST FIST sponsored department. Also presently several research project sponsored by DST, CSIR, MHRD, and DAE are running including Center of Excellence (CoE) project in “*Advanced Materials*”. The Centre of Excellence in Advanced Materials was founded in 2013 through a major grant of the MHRD under its Technical Education Quality Improvement Programme to encourage the institute’s contribution to materials research. The centre has been founded as a partnership between the departments of Physics and MME (Metallurgical & Materials Engineering).

A good number of Ph.D. degrees have been awarded under the supervision of the faculty members of the Department and a number of students are working at present for their Ph.D. degrees. Theoretical and experimental investigations are being carried out in the frontier areas like Photonics, Nanoscience and Nanotechnology, Carbon Nanotubes and Graphene, CNT Hybrids and Composites, MD Simulation of Nanomaterials, Nonlinear Optics, Conducting Polymers, Nanocomposites and Thin Films, Magnetic Ferrite Materials, Nonlinear Dynamics, Liquid Crystals, High Energy Physics, Study on Helium and Geothermal Exploration and Earthquake Precursors etc. The Department offers M.Sc. (Physics) and M. Tech. (Advanced Materials Science and Technology) courses. Many students who have received their M. Tech. degrees from this Department are serving now in different Institutes of higher learning in India.

## ABOUT THE SHORT TERM COURSE RAFNAP-2017

Nanostructured materials may be defined as those materials having at least one dimension of the order of 1-100 nm. The explosion in interest in these materials in both academic and industrial has aroused over the past decades due to the remarkable electrical, optical and magnetic properties of the nanostructured materials. On the other hand, recently a new area of science of technology has emerged, namely Photonics. The applications of photonics cover many disciplines, with the single aim of harnessing the photon in fields such as optics, materials science, electrical engineering, nanotechnology, physics and chemistry. Photonics technology enables the processing, storage, transport and visualization of huge masses of data. In manufacturing, laser light is used as a fast and precise tool for cutting, welding and

scribing. Laser manufacturing is used for objects as large as huge ocean-going tankers to tiny nano structures. Innovative lighting systems create convenient surroundings and save energy. In the present 'information era', the high speed and efficient communication of huge information have been made possible due to the advancement in the field of optical communication in terms of development of good quality small size optical sources, optical detectors and very low loss optical fiber for guiding the optical signals. Laser has an important role in nanoscience and nanotechnology for the study and development of devices for our well-being. An important scientific research is going on all over the globe for the development of high speed optical computer by developing integrated small scale laser based devices.

The Objectives of the short term course is to bring researchers and technocrats from different parts of our country to a common gathering and share the recent developments in synthesis, characterization techniques and properties of advanced materials such as glasses, luminescent materials, semiconductors, biomaterials, nanostructured materials etc.

In addition to the lecture classes delivered by the eminent speakers there will be laboratory sessions for hands-on-experience as well participants may be given chances to access some state-of-art equipment purchased under CoE (Advanced Materials). The full list of equipment is available at <http://www.nitdgp.ac.in/research/coe/images/coe.doc>.

### **TOPICS TO BE COVERED**

As the present course is intended for the participants having interest in the broad areas of Fundamentals and Applications of Nanomaterials- Sciences, Technology & Photonics the lectures will cover the synthesis, characterization and applications of different types of materials including glass, semiconductor, metal and composites.

### **RESOURCE PERSONS**

The resource persons constitutes experts/senior faculty members from NIT Durgapur and various guest speakers from other reputed institutions and industries including IIT, IISc., ISM, CSIR Laboratories, Research Institutes, Universities, etc.

### **WHO CAN ATTEND RAFNAP-2017**

RAFNAP-2017 is aimed to attract and bring together Faculty Members, Scientists, Engineers, Technologists, Research Scholars and PG students from Academic and Research Institutions and Industries. The participants will benefit immensely and will get new insights and knowledge about the topic through close interactions/discussions with the Senior Faculty Members/Scientists and Experts of the respective field during the lecture sessions as well as in some laboratory sessions.

### **BOARDING & LODGING**

Shared accommodation may be provided to the limited numbers of deserving candidates in some nearby Hotel/Guest House. No TA/DA will be paid to the participants by NIT Durgapur.

### **REGISTRATION FEES**

Category	Registration fee INR
Faculty/Staff Member of Academic Institutes	1000
Research Scholars	750
PG/UG Students	500
Scientist from Industries	3000

*Registration fee includes study/lecture materials, refreshment and lunch for 5 days during the course.*

**\*\*Last Date of Registration:10 th Feb. 2017.**

**REGISTRATION FORM**  
**TEQIP-II (CoE) Sponsored One Week Short Term Course on**  
**Recent Advances and Fundamentals of Nanomaterials for Applications in**  
**Photonics (RAFNAP-2017)**

**February 15-19, 2017**

Dept. of Physics, National Institute of Technology, Durgapur  
M.G. Avenue, Durgapur – 723109,  
West Bengal, India

1. Name: -----
  2. Designation & Affiliation: -----
  3. Male/Female:-----
  4. Mailing Address:-----
  5. Telephone No. : \_\_\_\_\_ ( M)\_\_\_\_\_ ( O)
  6. E-mail ID : -----
  7. Highest Academic Qualification:-----
  8. Working Experience (In nos. of Years): -----
  9. Accommodation required (Y/N):-----
  10. Registration fees: NEFT/Account Transfer DD/Cheque No. \_\_\_\_\_ Amount -----.
- (In favor of “NITD PHY STC”, Account No: 33116861035, IFSC Code: SBIN0002108)
11. Vegetarian / Non-Vegetarian: -----

*N.B.: Please ensure that all the fields (1 to 11) are properly filled-in and then duly signed. 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*

***Please send the completed application form together with the scanned copy of the demand draft to the Course Coordinator on or before 10<sup>th</sup> February 2017 by E-mail: nitdphystc@gmail.com***

**CORRESPONDING ADDRESS**

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