

### Resource Persons

Guest speakers from various IITs/NITs, R&D labs and central universities

### Eligibility

College/University/Institute teachers in Applied Physics/ Physics, Chemistry, Biomedical Engineering, Materials Science, Biotechnology, Electronics, Electrical and other allied Engg. branches, etc. who are in continuous service.

### Registration Fee

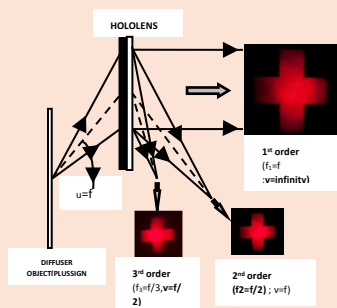
Nil

### Boarding and Lodging

Free food and accommodation on shared basis is available for outstation participant only on first come first serve basis.

### How to Apply

The application form along with term and conditions are enclosed with this brochure. The same can be downloaded from IIT(ISM) website (<http://www.iitism.ac.in>) and send the hard copy of the duly filled application form by speed post to the course coordinator(s) on or before 15<sup>th</sup> May, 2018.



### FDC Members & Organizing Committee

**Prof. A. K. Nirala, Coordinator, FDC**

**Dr. M. Yadav, Coordinator, FDC**

**Dr. U. Tripathy, Co-Coordinator, FDC**

**Dr. P. K. Sharma, Co-Coordinator, FDC**

**Dr. H. P. Nayek, Co-Coordinator, FDC**

**Dr. P. K. Kewat, Co-Coordinator, FDC**

**Dr. S. A. Sahu, Co-Coordinator, FDC**

### Local Organizing Committee

All the Faculty Members of Department of Applied Physics.

### Program Correspondence Details

**Dr. Umakanta Tripathy**

**Program Coordinator**

Assistant Professor

Department of Applied Physics

Indian Institute of Technology (ISM)

Dhanbad-826004, Jharkhand, India

Ph: 0326-223-5180 (O); +91-9471192489

Email: tripathyu@gmail.com;

utripathy@iitism.ac.in

**Prof. Anil Kumar Nirala**

**Program Coordinator**

Professor and Head

Department of Applied Physics

Indian Institute of Technology (ISM)

Dhanbad-826004, Jharkhand, India

Ph: 0326-223-5483 (O); +91-9431125123

Email: aknirala@gmail.com;

aknirala@iitism.ac.in

## Refresher Programme in Physics

with Special Focus on

**Bio- Photonics**

under

**FACULTY DEVELOPMENT CENTRE**

[A MHRD, GOI funded centre sanctioned under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching]

(May 26<sup>th</sup> - June 15<sup>th</sup>, 2018)

Venue: IIT (ISM) Dhanbad



**Organized by**

**FACULTY DEVELOPMENT CENTRE  
INDIAN INSTITUTE OF TECHNOLOGY  
(INDIAN SCHOOL OF MINES)**

**DHANBAD-826004, JHARKHAND, INDIA**

**<http://www.iitism.ac.in>**

**Email: [fdc@iitism.ac.in](mailto:fdc@iitism.ac.in)**

## About Indian Institute of Technology (Indian School Mines) Dhanbad



Indian Institute of Technology (Indian School of Mines) Dhanbad is a fully residential technical institute having all modern facilities located in the mineral-rich belt of India in the major coal city of Dhanbad, Jharkhand, India. It was established as ISM in 1926 on the lines of the Royal School of Mines, London.

IIT (ISM) Dhanbad, an Institute of National importance, has been rendering invaluable service to the cause of global education and societal development in its nine long decades of existence. Keeping in tune with the changing times a need has been realized for further expansion and diversification. IIT (ISM) has grown into a full-fledged technical institution with 18 departments offering a wide range of courses in Engineering, Science, Management, Humanities and Social Sciences at UG, PG and Ph.D. levels. IIT (ISM) admits students through IIT-JEE and GATE Entrance Exam in various courses of the respective departments.

### Venue Location

The course will be conducted at FDC/EDC, IIT(ISM) Dhanbad. Dhanbad has good railway connectivity from several parts of the country. The nearby airports are Kolkata and Ranchi which are nearly 250 km and 180 km, respectively, from Dhanbad.

### About Faculty Development Centre (FDC)

The Faculty Development Center at Indian Institute of Technology (Indian School of Mines) Dhanbad, has been sanctioned by the Ministry of Human Resources Development Government of India, under the scheme of Pandit Madan Mohan Malaviya National Mission on Teachers and Training (PMMMNMTT). Faculty development has a critical role to play in promoting academic excellence and innovation. FDC will incubate and nurture, on a continuous basis the professional development of teachers and will create opportunities for professional growth. Research Cell located within FDC will help to undertake research on different aspects for professional development of teachers. Faculty development is an essential element of institutional

effectiveness. The extent to which the institution supports faculty development will be strongly reflected in levels of the engagement in learning activities, conduct of research and ultimately fulfilling the objectives and goals of the colleges/universities/institutes. Faculty development program includes the four possible types of development: personal (interpersonal skills, career development, and life planning issues); instructional (course design and development, instructional technology); organizational (ways to improve the institutional environment to better support teaching); and professional (ways to support faculty members so that they fulfill their multiple roles of teaching, research and service).

### Vision and Mission

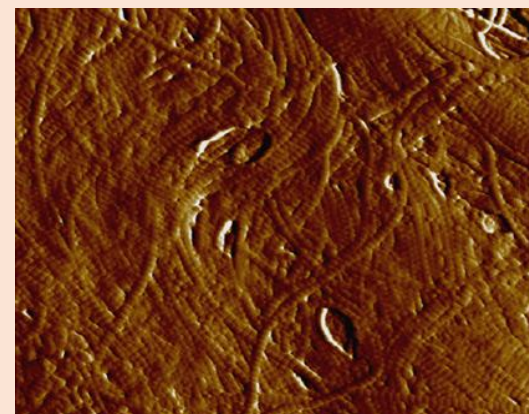
- To inculcate among teachers, the motivations to promote institutional effectiveness through the development of personal, instructional, organizational, and professional growth of faculty.
- To promote organizational strategies for faculty development so as to incentivize teachers to grow professionally and enable the institutions to grow.
- Faculty development is expected to result in improved teaching performance and better learning outcomes for students and teachers.
- To promote new ways of thinking about the student-teacher relationship, and increased commitment to educational scholarship.
- Developing all round skills are a prominent aspect for faculty development.

### Objectives

- Training program for the entry level teachers or faculties on probation will be planned so that the person who enters the college/university/institute is sensitized of his/her roles and responsibilities in their respective organizations.
- Raising the quality of teaching in colleges/universities/institutes.
- The faculty development center will also offer a wide variety of services, as outlined below:
  - Teaching & Learning
  - Research & Creative Activity
  - Career Planning
  - Collegial Conversations
  - Communication Technologies
  - Resources & Support

### Aim and Programme Objectives:

The refresher programme should stimulate interest of young early-career researchers in the fields of Nanotechnology from different parts of the country as well as provided them a platform to learn the latest developments in the field. The refresher programme will focus on developing understanding on Nanoscale Science (including Physics, Chemistry, Engineering and Biology) and facilitate knowledge-sharing among scientists in these fields.



### Programme Contents

The Programme will focus on:

- Single Molecule Biophysics.
- Optical and Magnetic Tweezer.
- Advance Microscopy Techniques.
- Super-Resolution Imaging and Tissue Engineering.
- Protein Dynamics & Neurodegenerative Diseases.
- Optoelectronic and Photonic Devices.
- Nonlinear Optics.
- Nanomaterials & Nanotechnology.
- Devices for Healthcare.
- Simultaneous Diagnosis and Therapy, Drug delivery.
- Time-dependent Density Functional Theory and Molecular Dynamics Simulations.
- Optical Engineering and Holography.
- Bio-imaging (speckle) Techniques.
- Interferometry & Speckle Metrology.
- Atomic and Molecular Spectroscopy.

In the last week of the event, a scientific writing session is also planned to help young researchers to refine their scientific writing and critical reading skills.



# FACULTY DEVELOPMENT CENTRE

(A MHRD, GOI FUNDED CENTRE SANCTIONED UNDER PMMMNMTT)

INDIAN INSTITUTE OF TECHNOLOGY

(INDIAN SCHOOL OF MINES)

DHANBAD 826004, JHARKHAND, INDIA

APPLICATION FOR ADMISSION TO THE

REFRESHER PROGRAMME IN SUBJECT: .....

PHOTO

## FOR THE COLLEGE/UNIVERSITY/INSTITUTE TEACHERS (YEAR 2018-2019)

(Part A: To be filled by the candidate)

1. Name (block letters): .....
2. Designation: .....
3. Office Address: .....
4. Phone No.: ..... Mobile No.: ..... Email: .....
5. Pay Scale: ..... Current Basic Pay: ..... Grade Pay: .....
6. Date of Birth: ... DD/MM/YYYY ... Male  / Female  / Trans Gender  (Please tick appropriate box)
7. Category: SC  /ST  /OBC  /GENERAL  (Please tick appropriate box)
8. Teaching Experience: ..... (Years)..... (Months) in .....(Subject)  
(Please submit xerox copy of **appointment letter**)  
If confirmed, date of confirmation as permanent Lecturer/Sr. Lecturer/ Asst. Prof.....
9. For outstation participants only: Whether accommodation is required: YES/NO. If NO please give your local address:  
.....
10. Any other relevant details: .....
11. **Declaration:** I certify that I fulfil the eligibility criteria and details given above are true to the best of my knowledge and I accept to follow the terms and conditions (enclosed overleaf) of the Faculty Development centre, Indian Institute of Technology (ISM), Dhanbad.

Date:

Place:

Full Signature of the Applicant

## (Part B: To be filled by Employer)

1. This application of Dr./Mr./Mrs./Ms ..... a Lecturer/Sr. Lecturer/ Asst. Prof. In this College/Universities/Institute, w.e.f. .... is being recommended and forwarded to the Co-Ordinator(s), Faculty Development Centre, IIT(ISM) Dhanbad for attending Refresher/ Orientation Programme. If selected, he/she will be fully relieved for the entire period of the programme.
2. This is to certify further that our University/College or Institute is affiliated with the university for the last 5 years.

Place:

Date:

Phone No.:

Signature of the Director/ Registrar/Principal/HOD  
(with seal)



# FACULTY DEVELOPMENT CENTRE

(A MHRD, GOI FUNDED CENTRE SANCTIONED UNDER PMMMNMTT)

INDIAN INSTITUTE OF TECHNOLOGY

(INDIAN SCHOOL OF MINES)

DHANBAD 826004, JHARKHAND, INDIA

## TERMS AND CONDITION FOR REFRESHER PROGRAMME AT FDC-IIT(ISM) DHANBAD

- 1. Eligibility:** Teachers in continuous service of the University/Institute in Applied Physics/ Physics, Chemistry, Biomedical Engineering, Material Science, Biotechnology, Electronics, Electrical, and other allied Engineering Branches, etc. are eligible for Refresher Programme.
- 2. Nature of Support:**
  - a. Registration Fee:** NIL.
  - b. Boarding & Lodging: FREE.** This will cover food, and accommodation on shared basis of outstation participants.
  - c. TA/DA: The participants will be paid TA/DA as per MHRD, GOI norms.** All outstation participants shall be paid one time to and fro III<sup>rd</sup> AC railway fare from their place of posting to Dhanbad and back through shortest route only on successful completion of the programme. The participants are required to submit the original railway tickets for the to and fro journey.
- 3.** All the participants are required to bring **two passport-size photographs**.
- 4.** The programme will be full time through six days a week and classes will be conducted even on holidays except Sundays. The detailed programme shall be provided during registration.
- 5.** Each participant has to deliver a seminar of 15 minutes duration followed by 5 minutes of discussion on any topic related to the theme of the programme. Multimedia LCD projector and overhead projector are available for use. The participants have to bring their own materials (slides in CDs/Pendrive) ready for projection. The time and date of seminar shall be notified during the programme.
- 6.** All participants must register themselves positively on the Inaugural Day at the FDC, IIT (ISM) Dhanbad failing which the selection to participate shall stand cancelled.
- 7.** The participants will also be requested to submit their opinion and suggestions (feedback) on the various components of the programme as well as seminars on the fellow participants.
- 8.** The participants are required to attend all the sessions of the programme sincerely. **No leave shall be granted during the programme.**
- 9.** Only those participants who will complete the programme in all respects shall be eligible to receive the certificate of participation. In case of any default on the part of the applicant, the Co-Ordinator(s), FDC, IIT(ISM) Dhanbad, has all the rights to cancel the admission or withhold payment of TA/DA and the certificate. In such a case no queries will be entertained.
- 10. The teachers of colleges that do not yet come within the purview of section 12(B) of the UGC act, but have been affiliated to a university for at least two years, will be permitted to participate in the programmes. However, they will not be paid TA/DA and other allowances for attending these programmes.**
- 11.** Hard copy of complete application in all aspects along with all the documents should reach to any of the Programme Co-Ordinators of Faculty Development Centre, IIT (ISM), Dhanbad at following address:
  - a. Dr. Umakanta Tripathy**, Programme Co-ordinator, Faculty Development Centre, Department of Applied Physics, Indian Institute of Technology (Indian School of Mines), Dhanbad-826004, Jharkhand, India, Ph: 0326-223-5180 (O); 09471192489 (Mo), Email: tripathyu@gmail.com; utripathy@iitism.ac.in
  - b. Prof. Anil Kumar Nirala**, Professor & Head, Department of Applied Physics, Indian Institute of Technology (ISM), Dhanbad-826004, Jharkhand, India, Ph: 0326-223-5483 (O); +91-9431125123, Email: aknirala@gmail.com; aknirala@iitism.ac.in