INDIAN INSTITUTE OF TECHNOLOGY INDORE

Department of Physics, *Organizes*

30 Days Active Learning Training on

Recent Advancement of Materials Physics, Nanomaterials Science and Engineering

February 01- March 01, 2022

Sponsored by Science and Engineering Research Board

(*VIRTIKA:* ACCELERATE VIGYAN SCHEME)

ABOUT IIT INDORE

Indian Institute of Technology Indore, located in Madhya Pradesh, known as IIT Indore, is an institute of national importance established by the Government of India in 2009. The Centre for Advanced Electronics at IIT Indore has been initiated in 2020 with a vision of establishing a center of excellence that will focus on research in multidisciplinary areas of Advanced Electronics, Engineering, Physics, Chemistry and Materials Science. The discipline offers the PhD degrees. Recently, IIT Indore debuted with a rank of 351-400 in the Times Higher Education World University Rankings, 2019, 2nd among Indian institutes.

DETAILS COURSE SYLLABUS

Theory and computations, Modern quantum theory for solids, Introduction to Semiconductors, Physics of Semiconductors, Electronics; Materials Physics and Materials Science Energy Materials, Li-ion Battery Technology, H_2-storage Technology, Corrosion Engineering, Computer Simulations at Different Time Scales, Multiscale Aspects of Materials, Creating New Materials, Introduction to Porous Semiconductor materials, Fundamentals of Materials Science and Engineering, Solar Cell, Transistors, Introduction to Phase-Field Method and Its Formalisms, some examples related to microstructure evolution.

OBJECTIVES

i) To provide the participants with a working knowledge of semiconductors, electronics, materials science, Li-ion battery, energy storage technology, microstructure-property relations and atomistic modeling of nanostructures.

ii) To provide the participants with the mathematical tools needed for quantitative characterization of microstructure and calculation of effective properties.

iii) To provide the participants with a working knowledge of the various tools and techniques needed to characterize and design heterogeneous materials using both micromechanics and nano-mechanics techniques.

COURSE FACULTY

- Dr. Srimanta Pakhira (Assistant Professor, IITI)

COURSE MODULE

This is an active *online* learning-based course and comprised of lectures, tutorials, and hand-on training/demonstrations .

CERTIFICATE

Participants who successfully complete the course will be awarded with a certificate.

TARGET PARTICIPANTS

This course is tailor made for the students, researchers, and faculty members from any academic background. It is a basically online internship program sponsored by SERB, Accelerate Vigyan, Virtika, Govt. of India.

REGISTRATION PROCESS

Interested participants need to submit **online** form or the scan copy of as per format attached through E-mail to: *spakhira@iiti.ac.in*. Number of participants are limited to 06 on first come first basis.

https://docs.google.com/forms/d/1I9QSov1egLmdQEm3mJIr43b4xMHZY-ib7SerGcjohVc/edit

REGISTRATION FEE

- The fee is ₹ 3,000 for all the students and postdoc.
- The fee is ₹ 5,000 for teachers and non-teachers from other government organizations.
- The fee is ₹ 10,000 for participants from private organizations.

Note: The fees includes service tax.

Online Registration Link: 'Internship_Accelerate_Vigyan_Registration_Form' OR https://docs.google.com/forms/d/1I9QSov1egLmdQEm3mJIr43b4xMHZY-ib7SerGcjohVc/edit

Registration Deadline: January 21st, 2022.
Notification of Acceptance: By January 26, 2022
Duration of Course: February 01 to March 01, 2022

MODE OF CONDUCT OF COURSE: ONLINE

Mode of payment

Online Payment: Please click or copy & paste below link.
https://forms.eduqfix.com/indoreiit/add?formType=9263526567614218

Bank Transfer: Registration fee can be paid through NEFT/IMPS to the below A/c number:
Name of the Beneficiary: Registrar, IIT Indore
Name of Bank: Canara Bank
Branch: Simrol, Indore
Account No. 1476101027440
IFSC Code: CNRB0006223

COURSE COORDINATORS AND EVENT ORGANIZER:

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