



**TEQIP-III Sponsored One-Week Workshop
(Faculty Development Program) On
Multi-scale Modeling and
Simulation**

(2nd April 2018—6th April 2018)

Organized By
Department of Physics
College of Engineering, Pune
(COEP)
(An Autonomous Institute of Govt. of
Maharashtra)
www.coep.org.in

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College of Engineering Pune

College of Engineering, Pune (COEP) was established in the year 1854 and is one of the oldest and Premier Engineering Institutes in country. It is the Lead Centre under the Technical Education Quality Improvement Program (TEQIP-III) assisted by the MHRD-Gol & World Bank. The College, fondly known as 'COEP' is consistently being ranked among the Top Engineering institutes in the country in various independent surveys on technical education by various agencies. As an Autonomous Institute of Government of Maharashtra since 2003, permanently affiliated to Savitribai Phule Pune University, the institute offers B. Tech, M. Tech & PhD programs and need based short term training course in various technology verticals. The number of enrolled student for regular degree courses is around 3500, with around 350 PhD scholars engaged with various departments.

About the Department

The department of Physics is one of the basic science departments of College of Engineering Pune. The Department has highly qualified and self motivated faculty members. The faculty members have experience of working with international universities and have produced high quality research in the international journals. The subjects taught by the department are of leading significance for strengthening the fundamental understanding and development of budding engineers so as to make them well equipped for the present and future scenario.

Advisors

Prof. V.N. Pande
TEQIP, Coordinator, COEP, Pune

Dr. Jagdish W. Dadge
Head, Department of Physics, COEP, Pune

Organizing Committee

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Preamble

In engineering, mathematics and science, multi-scale modeling is the field of solving problems which have important features at multiple scales of time and/or space. Multi-scale modeling is aimed to calculation of material properties or system behavior on one level using information or models from different levels. The following levels are usually distinguished: level of continuum models (information about bulk properties included), meso-scale or nano level (information about large groups of atoms and/or molecule positions is included) coarse-grained models (information about atoms and/or groups of atoms is included), level of molecular dynamics models (information about individual atoms is included), and level of quantum mechanical models (information about electrons is included). Each level addresses a phenomenon over a specific window of length and time. Important problems include fluid, solids, polymers, proteins, nucleic acids as well as various physical and chemical phenomena like adsorption, chemical reactions, diffusion.

Objectives of the Program

Main objective of the workshop is to introduce the field of multi-scale modeling and simulation to the faculty from academic institutions, research scholars and industry personnel. The workshop will enable the participants to solve various engineering and research based problems by using multi-scale modeling and simulation tools. The workshop will contribute towards, upgrading mathematical and analytical skills of participants in the area of modeling and simulation.

Course Content/Coverage

The workshop will cover, Overview of Modeling Approaches, Classical Molecular Dynamics Simulations, Monte-Carlo Simulations, Quantum Mechanical Simulations, Density Functional Theory, introduction to multi-scale modeling and simulation tools. The workshop will handson experiance of simulations using various tools such as Quantum Espresso, LAMPS, MATLAB.

Eligibility

The workshop is open to research scholars, industry personnel and faculty members from Research Institutes, Engineering and Science colleges.

Important Information

Early registration is encouraged as the seats are limited. For selection, preference will be given to ongoing PhD students and research scholars. Registration charges are non refundable for selected participants. Accommodation will be provided on request and will charge extra.

Last date of receiving application : **27th March, 2018**

Intimation of selection on before : **28th March, 2018**

Confirmation will be Intimated only through e-mail.

The registration fees

Faculty of Academic Institute : **Rs. 3000/-**

Research Scholars : **Rs. 2500/-**

Industries Personnel : **Rs. 5000/-**

The registration fees is to be paid through Demand Draft in favor of "Director, College of Engineering, Pune" payable at Pune. Registration fee includes workshop kit, tea/snacks and lunch.

HOW to APPLY

Please send scan copies of DD and dully filled registration form to patilsr.physics@coep.ac.in and also apply ONLINE at <https://goo.gl/forms/HIZ0mMGZT9CxTLtJ3>

The brochure and registrations form can also be downloaded from our website, www.coep.org.in

Contact Person

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