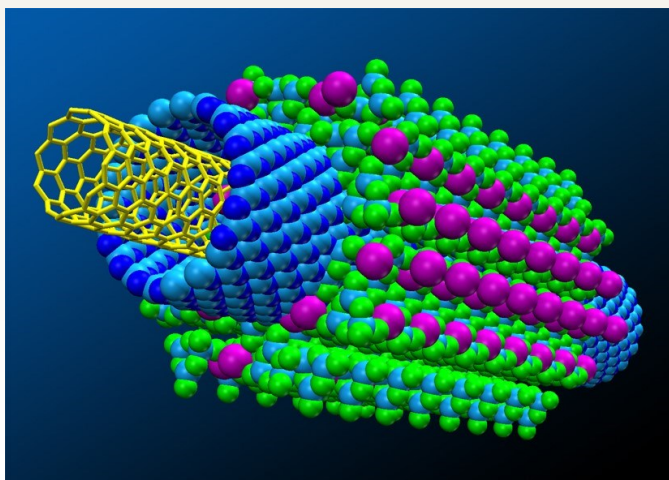




**BHARTIA VIDYA BHAVAN'S**  
**SARDAR PATEL COLLEGE OF ENGINEERING**  
(An autonomous institution affiliated to University of Mumbai)



**Mechanical Engineering Department of SPCE**  
Organizes One Week Short Term Training Program (STTP) on  
**Nanoscience and Nanotechnology:**  
**Fundamentals, Synthesis and Applications**  
02<sup>nd</sup> - 07<sup>th</sup> January 2017



**Under Technical Education Quality Improvement Program**

**Organizing Body**

<b>Dr. P. H. Sawant</b>	Principal
<b>Dr. M. M. Murudi</b>	Vice Principal
<b>Dr. Nilesh Raykar</b>	Head of Mechanical Engineering Department
<b>Dr. Kiran S. Bhole</b>	Course Coordinator
<b>Prof. Sharad Valvi</b>	Course Co-Coordinator
<b>Prof. Haseen Shaikh</b>	Course Co-Coordinator

**ADDRESS FOR CORRESPONDENCE :**

**BHARTIYA VIDYA BHAVAN'S SARDAR PATEL COLLEGE OF ENGINEERING, MECHANICAL ENGG DEPARTMENT**  
**BHAVAN'S CAMPUS, MUNSHI NAGAR, J.P.ROAD , ANDHERI(W), MUMBAI 400 058**  
PH: 91-22-262 32 192 / 262 89 777 | FAX: 91-22-262 37 819 | [www.spce.ac.in](http://www.spce.ac.in)

## SARDAR PATEL COLLEGE OF ENGINEERING

Sardar Patel College of Engineering (SPCE) under the management of the Bhartiya Vidya Bhavan, was founded by Kulapati Dr. K. M. Munshi. It was established to meet the growing demand for engineering talent.

The foundation stone of the college was laid on 17<sup>th</sup> September 1961 by Shri. Y. B. Chavan (the then Chief Minister of Maharashtra who later became the Defence Minister of India.)

The college was inaugurated by the first Prime Minister of Independent India, Pandit Jawaharlal Nehru in 1962. The college is dedicated to Sardar Vallabhbhai Patel, an eminent nation builder of independent India.

The college is autonomous and affiliated to the University of Mumbai for the full-time degree, post graduate, and research programs. The institute has set high standards for aspiring engineering students and also meets the need of quality education in the challenging world of business.

Over the last 50 years the college has gained an excellent reputation in the field of Technical Education.

SPCE is one of the few colleges that have received Grade 'A+' rating for its aided courses from the Govt. of Maharashtra which certifies the spirit of excellence that the institute has symbolized and always practiced. Institute celebrated its

## ABOUT NANOSCIENCE AND NANOTECHNOLOGY TRAINING PROGRAMME

### Why the course on Nanotechnology?

Nanotechnology is gaining importance rapidly as a most powerful technology. Its immense potential promises the possibility of significant changes in near future. Nanomanufacturing and nanotechnology primarily deal with the synthesis, characterization, and exploration of nanostructured materials. These materials are characterized by at least one dimension in the nanometer ( $1\text{nm} = 10^{-9}\text{m}$ ) range. Nanostructures constitute a bridge between molecules and infinite bulk systems. Individual nanostructures include clusters, quantum dots, nanocrystals, nanowires, nanotubes, and nanosheets. In automotive, aerospace, defence and sports industries the use of nano systems result in reduction in weight and size of the components which further increases the efficiency and comfort levels. Towards biomedical applications as size of nanomaterials is similar to that of most biological molecules and structures; therefore, nanomaterials can be useful for both in vivo and in vitro biomedical research and applications. Thus far, the integration of nanomaterials with biology has led to the development of diagnostic devices, contrast agents, analytical tools, physical therapy applications, and drug delivery vehicles. This course intends to provide the theoretical and practical knowledge and experience in the field of nanomanu-

### Scope and Objectives

Participants will be benefited from the program by learning the fundamentals to recent developments of nanotechnology, learn nanomaterials characterization techniques, and will have the chance to meet and discuss their interests with lead researchers. The program will cover frontier topics including fundamentals, modeling, simulation, risk associated with nanomaterials and application of nanotechnology in energy, environmental, materials development, and health care/ biomedical fields. The lectures will be delivered by experts from IIT (Chemical/Metallurgical and Materials/VLSI& Nanotechnology/Chemistry departments), BARC, private academic institutes and other government agencies nearby. The theme has been selected to accommodate a wide range of interests to facilitate interaction among chemical engineers and interdisciplinary persons working in various academic institutes, research organization, government and private sectors.

## COURSE CONTENTS

- Fundamental of Nanoscience and Nanotechnology
- Nanofabrication Processes
- Nano-material formation- Modeling and Simulation
- Nano-Structured Materials
- Nano-materials for bioavailability enhancement of drugs
- Nano-biotechnology
- Nano-composites
- Nanotechnology for Energy and Environment
- Nanotechnology in Life science and Medicine
- Characterization and Simulation of Nano Devices
- Nano-scale Electronics
- Visit to CEN Laboratory at IIT Bombay

## FEES FOR STTP

### Registration Fee

Student	Faculty (Non-TEQIP colleges)	Faculty (TEQIP colleges)	Industry /Sponsored
Rs. 2,500	Rs. 5,000	Rs. 10,000	Rs. 15,000

The registration fees includes Course Material, Media DVD and Breakfast/Tea-snacks/Working Lunch.

**Registration fee should be paid in the form of cheque/DD drawn in the favor of “The Principal, SPCE”.**

**VENUE:** SEMINAR HALL (ROOM NO-114), Department of Mechanical Engineering, Sardar Patel College of Engineering.

## CONTACT DETAILS FOR MORE INFORMATION

CONTACT	EMAIL	MOBILE
Dr. Nilesh Raykar (HOD, Mechanical Engineering Department)	nilesh_raykar@spce.ac.in	9821637725
Dr. Kiran S. Bhole (Faculty, Mechanical Engineering Department)	kiran_bhole@spce.ac.in	9869378873
Prof. Sharad Valvi (Faculty, Mechanical Engineering Department)	sharad_valvi@spce.ac.in	9730605407
Prof. Haseen Shaikh (Faculty, Mechanical Engineering Department)	haseen_shaikh@spce.ac.in	8421443987

## WHO SHOULD ATTEND THE COURSE

This course is useful for engineers of different disciplines aspiring to know Nanoscience and Nanotechnology and its applications. The course will be most beneficial for:

- ◇ Graduates and post-graduates in any discipline of engineering and science
- ◇ Professionals in Design, Manufacturing, industry, biomedical, pharmaceuticals
- ◇ Faculty members from academic and research institutions
- ◇ Final year students of engineering and science who are aspiring for higher education

## PATRONS

<b>Dr. S. K. Mahajan</b>	(Chief Coordinator, SPFU) Director, Directorate of Technical Education (DTE), Maharashtra State, Mumbai
<b>Dr. Sessa Iyer</b>	Chairman, BOG- Sardar Patel College of Engineering
<b>Dr. P. H. Sawant</b>	Principal, Sardar Patel College of Engineering

## Registration Form

**ONE WEEK STTP under TEQIP**

**On**

**Nanoscience and Nanotechnology: Fundamentals, Synthesis and Applications**

**02<sup>nd</sup>-07<sup>th</sup> January 2017**

**SARDAR PATEL COLLEGE OF ENGINEERING**

(Government Aided Autonomous Institution)

**Department of Mechanical Engineering**

Bhavan's Campus, Andheri (West), Mumbai, 400 058 Maharashtra.

Ph: 91-22-26232192, 91-22-26289777, Fax: 91-22-2623 7819

**[www.spce.ac.in](http://www.spce.ac.in)**

Name (in Block Letter): (Mr./Mrs./Ms./Dr) \_\_\_\_\_

Designation: \_\_\_\_\_

Educational Qualification: \_\_\_\_\_ Experience: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone: Office: \_\_\_\_\_ Residence: \_\_\_\_\_ Mobile: \_\_\_\_\_

Email: \_\_\_\_\_

Cheque/DD No. and date: \_\_\_\_\_

Registration fees (amount paid): \_\_\_\_\_

Signature of Candidate: \_\_\_\_\_

**Note:** For registration pay the registration fees and send the scanned copy of filled registration form to [kiran\\_bhola@spce.ac.in](mailto:kiran_bhola@spce.ac.in)