

Smt. S. R. Patel Engineering College - Unjha
Activites : Visit to Shah-Schulman Center for Surface
Science and Nanotechnology

Place:- Dharmsinh Desai University, Nadiyad

Duration: 28th Feb, 2015

No of Student: 06

Faculty: Prof. Harshad C. Patel

Roll No	Student Name	Sem	Branch
12ME10	Patel BHAUMIKKUMAR	6	Mechanical
12CL49	PATEL VIRENKUMAR	6	Civil
12CL31	PATEL MIHIL	6	Civil
12CL24	PATEL DHARMIKKUMAR	6	Civil
12CL25	PATEL JIMMIKUMAR GOVIDBHIA	6	Civil
12CL01	PATEL ARPIBEN	6	Civil



About : Shah-Schulman Center for Surface Science and Nanotechnology

Shah-Schulman Center for Surface Science and Nanotechnology was established in April 2008 under a unique model: a partnership between University, Government and the Industry.

The Shah-Schulman Center for Surface Science and Nanotechnology (SSCSSN) is established in the Faculty of Technology, Dharmsinh Desai University (DDU), Nadiad, Gujarat, India with initial funding from Industries & Mines Department, Government of Gujarat. Dharmsinh Desai University is one of the most reputed technology institutes in industrially affluent state of Gujarat in Western India. It has trained scientists and engineers to provide a leadership in academia and industry since 1968.

The SSCSSN is an R & D center that accommodates about 18 sophisticated instruments to carry out research and analysis in Surface Science and Nanotechnology. There are 3 core faculties and 5 associated faculties and 8 research scholars involved in the functioning of R&D activities of the Center. SSCSSN is established on a truly joint partnership of academia, industry and government. With inputs from industrial advisory board, comprising 25 industrial partners of diverse industrial background (See Annexure-I), in short span of 5 years since its establishment, Center has earned 4 Government sponsored research projects and 4 Industry funded projects. SSCSSN has 6 registered PhD students and in past 4 years published more than 20 research publications in international peer reviewed journals, having average impact factor more than 2.50.

SSCSSN has entered in to tri-partite agreement with University of Florida and Columbia University under the IUCRC program of National Science Foundation, USA. Dept. of Science & Technology-India will support this program in India. Under this program 25 companies have joined SSCSSN as Industry Advisory Board Members for Industry oriented research activities. SSCSSN-DDU is one of the first such partners from Gujarat to enter into this NSF sponsored International program.

The Faculty of Technology has the distinction of being the oldest and the biggest amongst all the faculties of Dharmsinh Desai University. It started as an Institute (Dharmsinh Desai Institute of Technology) offering Diploma and Degree Programs in Chemical Engineering in 1968. Subsequently over the years other degree programs were added. It became the first Autonomous Institute of Gujarat in 1990 and in 2000 it was declared a Deemed University. In the year 2005 it became a part of Dharmsinh Desai University.

Mission and Vision

Mission

To promote growth and enhancement of value-added high quality research carried out by students and faculty on Surface Science and Nanotechnology in a world-class Center at DDU and to promote the growth of scientists and engineers for the industrial development of Gujarat and technological development of India by innovative research, applications as well as teaching and training programs.

Vision

To be a Premier Research and Development Center in the country in the area of Surface Science and Nanotechnology and to Provide Leadership and Guidance in this area to industry and academia by high-quality teaching and research programs and enhance Center's visibility by publications in national and international reputable journals and generate intellectual property for the Center in emerging technologies, and prepare the students of today and tomorrow for technological challenges of 21st Century.

List of Instruments at SSCSSN-DDU

1. X-Ray Diffractometer (XRD)- Bruker AXS
2. Langmuir Blodgett Film balance & Surface Potential Measurement- KSV NIMA
3. Brewster Angle Microscope- KSV NIMA
4. Force Tensiometer/ Dynamic Contact Angle-Biolin Scientific
5. Optical Tensiometer/Goniometer- Biolin Scientific
6. Maximum Bubble Pressure Tensiometer/ Dynamic Surface Tension (DST) - Biolin
7. Dynamic Light Scattering (DLS)(Particle size/Zeta Potential measurement)- Malvern
8. Atomic Force Microscope (AFM)- NT-MDT
9. Differential Thermal Analysis- Thermo Gravimetry Analysis (DTA-TGA) – Mettler Toledo
10. Differential Scanning Calorimetry (DSC)- Mettler Toledo
11. Stopped Flow & T- Jump Flow Apparatus – BioLogic Instruments
12. Ion Chromatography (IC)- Dionex (Thermo Fisher)
13. Water Purification System-Millipore
14. Lyophilizer/Freeze Dryer- Martin Christ
15. Gas Chromatography-Mass Spectrometer (GC-MS)- Agilent
16. Rheometer (MCR-101, Anton Paar)

Sample analysis Charges

Sr. No.	Analysis/Techniques	Charges
1	XRD	2000/- with interpretation 1200/- only scan
2	Dynamic Light Scattering, Particle Size	1200/-
3	Zeta Potential	1200/-
4	Gas Chromatography	1000/-
5	Gas Chromatography – Mass Specto.	1500/-
6	Contact Angle Measurement	1000/-
7	Equilibrium Surface Tension (EST)	1000/-
8	Dynamic Surface Tension	1000/-
9	Thermogravimetry (TG) & DTA	1200/-
10	Differential Scanning Calorimetry (DSC)	1200/-
11	Fast Reaction kinetics with Stopped Flow	2000/-
12	Fast Reaction kinetics with Stopped Flow and Temperature jump	3000/-
13	Surface Pressure & Surface Potential of a Monolayer	1000/-
14	Monolayer film deposition on Substrates	500/- (additional to above)
15	UV-Vis NIR Solid Sample	1500/-
16	UV-Vis NIR Solid Sample with Temperature	2500/- (for max. 3 hrs and Rs. 500/- per each extra hour)
17	Wettability of Powders/Solids	500/-
18	Liquid Penetration Measurement	500/-
19	Freeze Drying (Lyophilisation)	100/- per hour
20	Atomic Force Microscopy	3600/- (3 micrographs only per sample) 500/- (Extra for Sample) 300/- (Extra for Sample Preparation)

Discount:

- (1) 50% Discount for the Samples from industrial Founding Members (IFM).
- (2) 50% Discount for the Samples from Academic, Universities, research Institutes and Industry Advisory Board Members (IAB).
- (3) We do not accept cash please pay through “at par” cheque or Demand draft payable at Nadiad in favour of Shah-Schulman Center for Surface Science and Nanotechnology.
- (4) To avail Student’s Discount, Application must produce a letter from HOD, Dean, Director or Principal of Academia.

