THE OHIO STATE UNIVERSITY

INDIAN INSTITUTE OF TECHNOLOGY ROPAR

A GIAN course on

Bio & Nanotechnology and Biomimetics

December 12-16, 2016

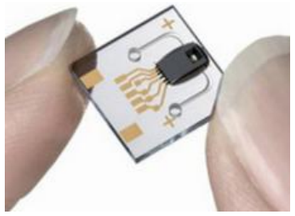
Sponsored by: MHRD Govt. of India

Organized by:

Department of Mechanical Engineering

Indian Institute of Technology Ropar

Nangal Road, Rupnagar, Punjab 140001, Website: www.iitrpr.ac.in

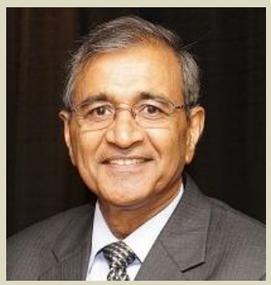


GIAN GLOBAL INITIATIVE OF ACADEMIC NETWORKS

MHRD Govt. of India सत्यमेव जयते

Course Overview

This one week course provides attendees with a basic working knowledge of bio & nanotechnology and biomimetics. *Nanotechnology* is associated with physical, chemical and biological systems at size scales, ranging from individual atoms or molecules to bulk materials. It encompasses a wide range of emerging technological applications including MEMS, NEMS, biological systems (BioMEMS/BioNEMS). The discovery of novel materials, processes, and phenomena at the nanoscale and the development of new experimental and theoretical techniques for investigations provide fresh opportunities for scientific and technological developments in nanostructured materials and nanosystems. Biologically inspired design or adaptation or derivation from nature is referred to as "biomimetics." It means mimicking biology or nature.



About Speaker: **Prof Bharat Bhushan** is presently an Ohio Eminent Scholar and the Howard D. Winbigler Professor in the College of Engineering, also the Director of the Nanoprobe Laboratory for Bio- & Nanotechnology and Biomimetics and affiliated faculty in John Glenn College of Public Affairs at **Ohio State University, Columbus, Ohio.** His research interests include fundamental studies with a focus on scanning probe techniques in the interdisciplinary areas of bio/nanotribology, bio/nanomechanics and bio/nanomaterials characterization and applications to bio/nanotechnology, and biomimetics. He is an internationally recognized expert of bio/nanotribology and bio/nanomechanics using scanning probe microscopy, and is one of the most prolific authors. He is considered by some a pioneer of the tribology and mechanics of magnetic storage devices. He has authored **9 scientific books, 90+ handbook chapters, 800+ scientific papers (h-index: 104);** ISI Highly Cited Researcher in Materials Science since 2007 and in Biology and Biochemistry since 2013; ISI Top 5% Cited Authors for Journals in Chemistry since 2011), and 60+ technical reports. He has also edited **50+ books** and holds more than **20 U.S. and foreign patents**. **Bhushan.2@osu.edu**, **https://nlbb.engineering.osu.edu/**

Host Faculty: **Dr. Navin Kumar** is an Associate Professor and Head in the Department of Mechanical Engineering at IIT Ropar. Prior to joining IIT Ropar, he was working as a Research Scientist at Stevens Institute of Technology, New Jersy, USA. He has completed masters in Mechanical Engineering from IIT Kharagpur and Ph.D. (Mechanical Engineering) from IIT Delhi. Dr. Navin Kumar's research interests are related to both theoretical and experimental aspects of mechanics and dynamics of nano, biological and bio materials and structures, Bone Properties Characterization, Biomedical Engineering, Biomechanics, Biomimetics, Biomedical Instrumentation, smart structures and materials, fault diagnosis and condition monitoring. **http://www.iitrpr.ac.in/smmee/nkumar**

Modules

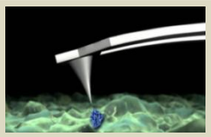
Bio & Nanotechnology, Nanocharacterization Techniques, Principles of Nanotribology and Nanomechanics, MEMS/NEMS & Bio-MEMS/Bio-NEMS Materials and Devices, Biomimetics – Bioinspired Surfaces

Mode of Registration

STEP 1: One time web registration at GIAN portal
http://www.gian.iitkgp.ac.in/GREGN/index
by making a onetime non-refundable payment of Rs. 500/-. **STEP 2: Course registration:** After the mandatory web registration, please make full payment of the course fee and fill the course registration form provided in the following link:
https://goo.gl/forms/aAKXU3A6UEdDaSWs2

Course Fee details and process:

Students: 2000/- , Industry/Research Organization: 8000/-,
Academic Institutions: 5000/-, Foreign participants: $500.
Participants have to submit his/her details with registration fee in the favor of **Registrar, IIT Ropar. Account no: 30836125653; IFSC Code: SBIN0013181; Bank: SBI; Branch Name: IIT Ropar
**Thirty five participants will be accommodated in IIT Ropar hostel on first come first serve basis on payment, the others will be accommodated in the nearby hotel.



Course coordinator

Dr. Navin Kumar
Associate Professor and Head
Department of Mechanical Engineering
IIT Ropar
Telephone +91 1881 242170 (Office),
+91 9501212380
Email: nkumar@iitrpr.ac.in