

NANOTECHNOLOGICAL BASIS FOR ADVANCED SENSORS

Overview

Nano scale science and technology is a young and burgeoning field that encompasses nearly every discipline of science and engineering. This arena of nanotechnology focuses on building materials and devices with control down to the level of individual atoms and molecules. Such capabilities result in properties and performance far superior to conventional technologies and, in some cases, allow access to entirely new phenomena only available at such scales. The rapid growth of the field in the past two decades has been enabled by the sustained advances in the fabrication and characterization of increasingly smaller structures.

With rapid advances in areas such as molecular electronics, synthetic bio-molecular motors, DNA-based self-assembly, and manipulation of individual atoms via a scanning tunneling microscope, nanotechnology has become the principal focus of a growing cadre of scientists and engineers and has captured the attention and imagination of the general public. This field is anticipated to be a major scientific discipline of the near future and hence equipping the current generation with the essentials in nanotechnology would be an essential step towards achieving fruitful research solutions using nanotechnology toolbox. The course on "Nano technological basis for advanced sensors" would comprise of theoretical and practical insights into the field by internationally acclaimed academics, researchers and practitioners with proven knowledge, experience, and expertise in teaching, research and training in the field of nanotechnology.

Modules	Investigating and Manipulating Materials in Nano scale, Characterization Methods of Nanoparticles, Environmental fate of nanomaterials, Introduction to Sensor's Science and Technology, Techniques for Preparation and Characterization of Sensor Materials, Future Prospectus of Bionanosensors
Duration	6 Working days: 16-21 st May 2016
Participants	Number of participants for the course will be limited to fifty
You Should Attend If	This course is designed for B.Tech / M.Tech / PhD students of Biotechnology, Chemical, Metallurgical and Materials, Nanotechnology, Environmental and Biomedical Engineering, who are likely to be benefited by learning the fundamental aspects of nanomaterials synthesis, characterization and their application in biosensors and environmental pollution detection. Faculty members and Research Associates are also welcome. This is an excellent opportunity for the participants to learn details of various characterization techniques and sensor science in order to pursue advanced studies and research in areas related to biomaterials.
Course Fees	The participation fees for taking the course is as follows: Participants from abroad : 100 US \$ Industry/ Research Organizations: 5000/- INR Academic Institutions: 2000/- INR (Students : Rs 1000/-) The above fees include all instructional materials, computer use for tutorials and assignments, internet facility. The participants will be provided with accommodation on payment basis.

The Faculty



Prof. Piet Lens is Professor of Environmental Biotechnology at the Pollution Prevention and Resource Recovery Chair Group of the Department of Environmental Engineering and Water Technology of UNESCO-IHE, Netherlands.

His research focuses on biofilms, sulfur biotechnology, metal speciation, bioavailability and removal, natural treatment systems, anaerobic wastewater and waste gas treatment for resource recovery and reuse.



Dr. Raj Mohan B is an Associate Professor in the Department of Chemical Engineering, NITK Surathkal. Research interests include biosynthesis of quantum dots and other nanoparticles, air pollution control and monitoring, Environmental

pollution mitigation using nanomaterials Bioremediation of contaminated Soils etc.

Dr. Krupadam is a Senior Scientist at National Environmental Engineering Research Institute (NEERI), Nagpur and Faculty of Academy of Scientific & Innovative Research (AcSIR), New Delhi, India. Receipt of National Award for Technology Innovation in the field of Polymer Science & Technology (for research and development on molecularly imprinted polymers). Research interests include Environmental Molecular Science; Computational Materials Chemistry; Green Chemistry and Technology; Molecularly Imprinted Polymers; Environmental Impact Assessment

Dr. Udaya Bhat K is an Associate Professor in the Department of Metallurgical and Materials Engineering, NITK Surathkal. Research interests include Surface Engineering (HVOF, Electrodeposition, Electroless deposition, E-beam sputtering, DC-Magnetron sputtering, Friction based processes, Dip Aluminising), High Temperature Degradation of Materials, Materials Characterization and tools (TEM, XRD, SEM), Solar Energy Harvesting

Dr. Arun M. Isloor, Associate Professor, Dept. Of Chemistry, NITK Surathkal, stands in the 5th position under material research category in our country. His research interests include Membrane technology, Medicinal Chemistry, Nanomaterials, Organic synthesis, Organic electronics

Dr. Hari Prasad Dasari is Assistant Professor in the Department of Chemical Engineering, NITK Surathkal. Research interests include Solid-Oxide Fuel Cells. Solid-Oxide Electrolysis cells (Hydrogen Electrode development), Heterogeneous Catalysis & catalyst development, Ceria-based materials, Nano-materials synthesis, processing and characterization

Dr. P E Jagadeeshbabu is Assistant Professor in the Department of Chemical Engineering, NITK Surathkal. Research interests include Drug Delivery System, Kinetic Modeling, Nano Particle synthesis and its application, Hybrid Membranes.

Course Coordinator:

Dr. Raj Mohan B

Principal Co-ordinator

Phone: +91-9739939986

E-mail: rajmohanbala@gmail.com