



Indian Institute of Technology Delhi
TEQIP-III Sponsored Short-Term Online Course
“Nanostructured Materials for Energy, Environment
and Healthcare Applications”
IIT Delhi, New Delhi. 9th – 13th November 2020

About IIT Delhi

IIT Delhi is one of the oldest technological institute in India. The institute has nearly 35 academic units that impart knowledge on Engineering, Science, Design, Social Science, among others. IIT Delhi has been instrumental in providing solutions to technological and societal problems through its academic and research activities. IIT Delhi has been consistently placed among top academic universities around the globe, and as per the recent QS University ranking, the institute stands at 61st in the list of Engineering and Technology domain. Recently, IIT Delhi has been elevated to the status of “Institution of Eminence” by Govt. of India.

Scope of the Course

The aim of this course is to deliberate upon the chemistry of nanostructured materials through a guided series of online lectures and demonstrations. The course will include lecture sessions with emphasis on interdisciplinary research in the frontier areas of nanotechnology; Energy, Environment and Healthcare. Deliberation on modern methods of synthesis and characterization of nanomaterials. A few live demonstration sessions will also be conducted where the participants can learn the practical aspects of nanochemistry introduced during the lectures. The certificates for participation will be provided only on getting 80% attendance to the course.

Learning Outcomes

- ✚ Design and develop the desired nanostructured materials
- ✚ Understand the structure-property relationship for applications of nanomaterials
- ✚ Initiate a research activity in the field of nanostructured materials. The participants would be able to draft an effective research proposal in the area of nanomaterials
- ✚ Promoting newer research endeavour in the challenging domain of nanomaterials

Course Contents





Lectures: Introduction to nanostructures and nanomaterials; Nanomaterials for energy conversion and storage applications including photovoltaics, solar water splitting, supercapacitors and batteries; Nanomaterials for environmental remediation applications such as detoxification of environmental pollutants, carbon dioxide reduction; Nanomaterials for healthcare applications with the focus on state of the art sensor devices.

Demo Session: Demonstrations on Quantum dots synthesis, Characterization using UV-Vis absorption and PL, Water splitting experiment including device fabrication, DSSC solar cell fabrication, and measurement; Fabrication of supercapacitor devices and electrochemical measurements; Raman-based differentiation of pharmaceuticals using Open source visual programming, machine learning, and data visualization.

Course Coordinator

Prof. Pravin P. Ingole, Associate Professor, Department of Chemistry, IIT Delhi.
E-mail: ppingole@chemistry.iitd.ac.in Phone: 011-2659-7547

Course Faculty

Prof. Ashok K. Ganguli, Department of Chemistry	Prof. Sameer Sapra, Department of Chemistry	Prof. Pravin P. Ingole, Department of Chemistry	Prof. Soumik Siddhanta, Department of Chemistry
			

Target Audience

The course is designed for the faculty members of TEQIP-III institutes. Participants (students, faculty members and industry employees) from non-TEQIP-III institutions are also welcome to register by paying fees.

Registration

Batch Size: The course is limited for 50 faculty participants from TEQIP-III institutes and the registration will be considered on **FIRST COME, FIRST SERVE basis. No registration fee for TEQIP-III participants.** However, a refundable security deposit of ₹2,000, for completion of registration process is mandatory.

For the non-TEQIP-III participants' mandatory registration fee for participation as follows:

- ₹ 5,000/- + 18% GST – Research Scholars
- ₹ 10,000/- + 18% GST – Faculty
- ₹ 30,000/- + 18% GST – Industry participants

Fee/ Security Money is payable online to the IITD CEP Account. Account details as follows:

Name of Account holder	IITD CEP Account
Account number	36819334799
Name of the Bank	SBI, IIT Delhi
IFS Code	SBIN0001077
SWIFT Code	SBININBB547
MICR Code	110002156IITD
PAN no.	AAATI0393L
GSTN	07AAATI0393L1ZI

Important Dates

Deadline for registration	30th October 2020
Confirmation of registration	02nd November 2020
Deadline for payment	05th November 2020

Registration Form

Please send the signed and scanned copy of this form as a PDF to ppingole@chemistry.iitd.ac.in

Nanostructured Materials for Energy, Environment and Healthcare Applications

(9th – 13th November 2020)

(Please fill the form using block letters)

Name of applicant: _____

Designation: _____

Department: _____

Institute/Organization: _____

Address: _____

E- mail ID: _____

Mobile number: _____

Place: _____

Date: _____

Signature of applicant (with date)

Declaration (Applicable for TEQIP-III participants)

Dr./Prof./Ms/Mr _____ is a faculty member at _____ (Institute Name)

and is permitted to attend the course on “**Nanostructured Materials for Energy, Environment and Healthcare Applications**” by IIT Delhi from 9th – 13th November 2020.

Signature of Head (with date & official seal)

AFFIX YOUR
RECENT
PASSPORT
SIZE
PHOTOGRAPH