

### **About Kurukshetra:**

Kurukshetra is a place of religious pilgrimage and historical significance. It is the land of Mahabharata and the place where sermons of 'Bhagwad Gita' were delivered. In medieval period, Thanesar, the old city, was the seat of power of Harshwardhana. The famous tourist spots are Brahasarovar, Jyotisar, Dharohar, Shek Chehli's Tomb, Panorma, Sannihit Sarovar, Kalpana Chawala Planitarium, etc. Kurukshetra is well connected with rail/road. It is a railway junction on Delhi-Ambala section and is situated on National Highway No. 1 (G. T. Road). It is approximately 160 km from Delhi and 100 km from Chandigarh. NIT Kurukshetra is about 10 km from Pipli and 6 km from Kurukshetra railway station.

### **About NIT Kurukshetra:**

National Institute of Technology, Kurukshetra (founded as Regional Engineering College, Kurukshetra in 1963) was conferred upon the status of Deemed University on June 26, 2002. Institute has B.Tech., M.Tech., MBA and MCA Courses in various disciplines with an annual intake of about 1500 students. Institute also offers excellent facilities for advanced research in the emerging areas of Science and Technology leading to Ph.D. degree. The Institute has well qualified and dedicated faculty along with finest supporting staff, laboratories and other infrastructure. The syllabus and the curricula are constantly being updated to meet the growing demands and need of the country in different areas of technology. The infrastructure is geared to enable the Institute to turn out technical personnel of a high quality.

### **About Department of Physics:**

The Department offers curricula consisting the basic principles of Physics besides emerging areas of Technology to the students of all B. Tech

branches and a number of courses are offered as Non Departmental Electives in the 7th & 8th semesters as well. The Department also runs two 4-semesters M.Tech. programme in Instrumentation and Nanotechnology and offers Ph.D. in different areas to keep synergy with the evolving innovations and developments in various fields of experimental and theoretical Physics. Apart from this, the department has highly sophisticated instruments facilities. The faculty members hold various R & D Projects and also deliver expert lectures on different platforms.

### **Course Convener:**

**Dr. R.P. Chauhan**

Professor Department of Physics  
N.I.T. Kurukshetra-136119

**Dr. Anurag Gaur**

Asstt. Professor, Department of Physics  
N.I.T. Kurukshetra-136119

### **Course Coordinators:**

**Dr. Prakash Chand**

Asstt. Professor, Department of Physics  
N.I.T. Kurukshetra-136119

**Dr. Ashok Kumar**

Asstt. Professor, Department of Physics  
N.I.T. Kurukshetra-136119

### **Important Dates:**

**Last date of Registration:** Oct. 15, 2019

**Notification about selection:** Oct. 16, 2019

**Confirmation from participants:** Oct. 17, 2019

### **Registration form should be sent to:**

Email: [anesd2019@gmail.com](mailto:anesd2019@gmail.com) Ph. 01744-233496,  
Mobile: 9896087178, 9896306873

## **One week Short-Term Course (October 19-23, 2019)**

On

## **Advanced Nanomaterials for Energy Storage Devices (ANESD-2019)**



**Members:**

**Prof. Ashavani Kumar**

**Prof. Neena Jaggi**

**Dr. C.R. Marriyappan**

**Dr. Y. Dwivedi**

**Dr. A.K. Tripathi**

*Organized by:*

**Department of Physics  
National Institute of Technology  
Kurukshetra-136119 (Haryana), India**

**REGISTRATION FORM**  
Short Term Course on  
**Advanced Nanomaterials for Energy Storage  
Devices (ANESD-2019)**  
October 19-23, 2019

Name: \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Designation: \_\_\_\_\_

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

Address for correspondence:  
\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Qualifications: \_\_\_\_\_

Teaching Experience: \_\_\_\_\_ Years

Industrial Experience: \_\_\_\_\_ Years

Accommodation required: Yes/No

**Payment Details:**

Draft No. : \_\_\_\_\_

Issuing Bank: \_\_\_\_\_

Amount \_\_\_\_\_ Drawn on \_\_\_\_\_

(Signature of applicant)

**Sponsoring Authority:**

Name: \_\_\_\_\_

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

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

Recommended: \_\_\_\_\_

Signature of Head of Institution with Seal

**Introduction:**

There has been an ever-increasing and urgent demand for vigorous development of not only clean, renewable, and sustainable alternative energies, but also advanced, low-cost, and environment friendly energy conversion and storage devices. This satisfies the needs of modern society and emerging ecological concerns while continuous advancement in electrochemical energy storage technology. Electrochemical energy storage technologies, including supercapacitors and lithium ion batteries have attracted significant attention for applications such as portable electronics and hybrid electric vehicles. Even though lithium ion batteries are having high energy density, it is limited due to low power density and limited cycle lives as compared to supercapacitors. Supercapacitors, also known as electrochemical capacitors or ultra-capacitors, have been considered as one of the most promising next-generation energy storage devices.

**Objectives of the Course:**

The objective of this programme is to educate the young teachers and researchers about the advanced nanomaterials for energy storage devices and to disseminate practical knowledge about this field. The course includes a series of informative lectures followed by laboratory visit to demonstrate the various characterization techniques. STC will also help to bring together eminent national academicians, research scholars, students from universities, research institutes, engineers and technocrats from industries on a single platform to share their knowledge, expertise, research and experience in the emerging area of energy storage devices. Further, the course is expected to provide opportunities for the researchers to find collaborators for future teamwork.

**Course Content:**

An overview of advanced functional materials for energy storage devices, Various characterization techniques e.g. X-Ray Diffraction, High Resolution Transmission Electron Microscopy (HRTEM), Scanning Electron Microscopy (SEM), Scanning Probe Microscopy (SPM), Cyclic Voltammetry (CV), Galvanostatic Charge/Discharge (GCD) and Electrochemical Impedance spectroscopy (EIS) using potentiostat instrument with EC Lab software.

**Who should attend:**

Faculty members/research/M.Tech. students from academic institutes approved by the AICTE/UGC/MHRD and Scientists/Engineers working in Private/Public/Government Organizations/Industries, etc. can attend the course.

**How to Apply:**

Interested participants should submit the complete application form in a prescribed format along with the registration fee in the form of demand draft in favor of "Director, NIT Kurukshetra" payable at **SBI, NIT Kurukshetra (IFSC-SBIN0006260)** should reach the Course Coordinator on or before Oct. 15, 2019.

**Registration Fees:**

Academic Faculty:	<b>3000.00 INR</b>
Students:	<b>1000.00 INR</b>
Industry Participants:	<b>6000.00 INR</b>

Participants will be provided meals and tea during the sessions. However, accommodation can be arranged in hostel/guest house on nominal payment basis subject to the availability. No TA/DA will be paid to the participants. Participants will be selected on first-come-first serve basis up to a maximum of 30. The brochure with registration form can be downloaded from Institute website [www.nitkr.ac.in](http://www.nitkr.ac.in)