



“Workshop on Electrochemical Techniques”

Dates: 17 - 21st February 2020

Venue: Seminar Hall, Department of Physics

Who can participate? Ph. D. students, Undergraduate & Post-graduate students of MNIT Jaipur **only**, who are interested in learning various scientific techniques necessary for doing research in the broad areas of physics, materials chemistry, materials science, and engineering.

Aim and scope of the workshop: The workshop is addressed to the students and scientists interested in the area of electrochemical energy generation, storage, and electrochemical sensing. The aim of the workshop is to provide an overall idea of some popularly employed techniques in electrochemistry as well as the fundamental principles of electrochemical technology and their application to specific problems. The workshop will include five modules, with theoretical and practical aspects, each of which will conclude with a discussion and summary. Considering thermodynamic and kinetic principles behind potential and current concepts, live practical demonstrations using actual experiment set up are also proposed to facilitate their comprehension. This workshop will provide comprehensive coverage of the aforementioned field, with topics focusing on the fundamentals, technologies, and practical applications including latest developments in batteries, supercapacitors, electrochemical sensing, and photo-electrochemical water splitting for hydrogen generation.

This workshop is an attempt to provide answers to the queries of the scholars and to make their research work easier, need-based and more scientific.

The workshop will include 2 hours' theory component and 2-3 hours of an exercise/assignment component (as needed) each day on the related topics. Tentative time schedule of the workshop is as follows:

Date/Time	Title/Topic
17. 02. 2020 (3:00-5:00pm)	Fundamentals of Electrochemistry & Electrochemical technology: Introduction to different Voltammetry techniques, Electrochemical Impedance Spectroscopy etc.
18. 02. 2020 (3:00-5:00pm)	Practical Demonstration of various Electrochemical Techniques for Data Acquisition and hands on experience
19. 02. 2020 (3:00-5:00pm)	Techniques for Analysing Electrochemical Data with respect to Batteries and Supercapacitors
20. 02. 2020 (3:00-5:00pm)	Nanostructured Design Strategy of Electrode Materials in Achieving Optimum Performance
21. 02. 2020 (3:00-5:00pm)	Electrochemical Techniques for Heavy Metal Ion Sensing and Photoelectrochemical (PEC) Water Splitting for Hydrogen Generation

There are no participation fees, and the maximum number of participants is limited to 40 students only. The participants will be selected based upon their statement-of-purpose filled in the registration form. A performance report/certificate will be issued to the successful candidates.

Contact: mnit.phy@gmail.com

[Register Here](#)

Before 14-02-2020

Also, check the details of upcoming workshops on the next page.



Details of the Series of Workshops

Dates: January-April 2020

Venue: Seminar Hall, Department of Physics

Aim and scope of the workshops: Below mentioned workshops will focus on the essential tools for experimental research in the broad areas of physics, material science, chemistry, and other allied streams. Training sessions on scientific writing tools like MS-Word, Excel, PowerPoint, Grammarly, Reference Manager, Mendeley, LaTeX, gnuplot and analytical techniques like XRD, SEM, TEM, STM, and AFM will be conducted. These tools and techniques are widely used in experimental research in various streams of science and engineering. Details of the fabrication methods for nanomaterials and thin films are considered crucial for the design and development of new devices. Cyclic voltammetry is generally used to study the electrochemical properties of an analyte in a solution. LabVIEW is a powerful tool for customization of the experimental setups for efficient data acquisition and data analysis. The scope of these workshops includes basic and working knowledge on various characterization techniques along with lectures, tutorials, demonstrations and hands-on experience on some of these techniques.

On successful completion, the student will be able to compile reports/manuscripts based upon the analysis of his own/standard data using these technique(s).

Each workshop will include 2 hours' theory component and 2-3 hours of an exercise/assignment component (as needed) each day on the related topics.

Tentative schedule of the workshops:

S. No.	Name of the activity	Duration	Registration links
1.	Workshop on Basic Research Tools	20-24 January, 2020	Register Here
2.	Workshop on Nanomaterials and Thin-Film Fabrication	27-31 January, 2020	Register Here
3.	Workshop on X-ray diffraction	10-14 February, 2020	Register Here
4.	Workshop on Electrochemical Techniques	17-21 February, 2020	Register Here
5.	Workshop on Electron Microscopy	16-20 March, 2020	Register Here
6.	Workshop on Programming with LabVIEW	30 March – 03 April, 2020	Register Here
7.	Workshop on AFM and STM	06–10 April, 2020	Register Here

There will be no participation fees for all these workshops. The participants will be selected based upon their statement-of-purpose filled in the registration form. A performance report/certificate will be issued to the successful candidates.

For further details please contact: mnit.phy@gmail.com

Co-ordinators:

Prof. Kanupriya Sachdev, Dr. Srinivasa Rao N., Dr. Subhayan Mandal, Dr. Kamendra Awasthi, Dr. Manoj Kumar, Dr. Anirban Dutta, and Dr. Debasish Sarkar