

Skill Development and Hands-on Training on Fabrication and Testing of Supercapacitors

on 22nd-24th December 2025

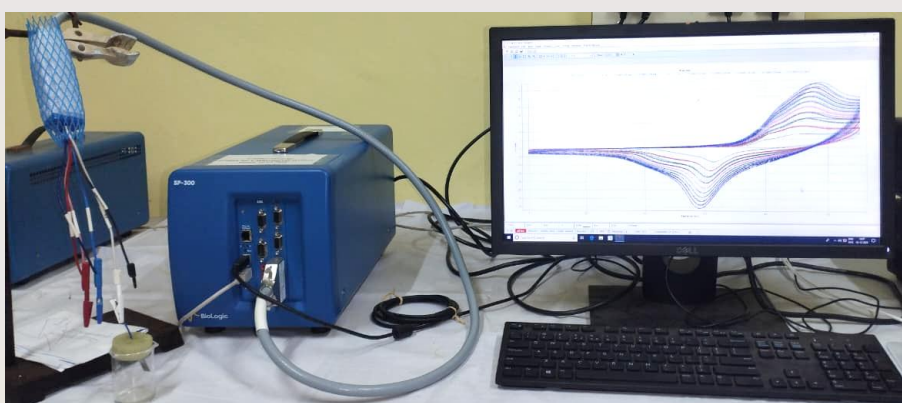


Organized by

Department of Materials Science, School of Chemistry
Madurai Kamaraj University, Madurai- 625 021, Tamil Nadu, India.

Sponsored by RUSA-MKU

Electrochemical workstation

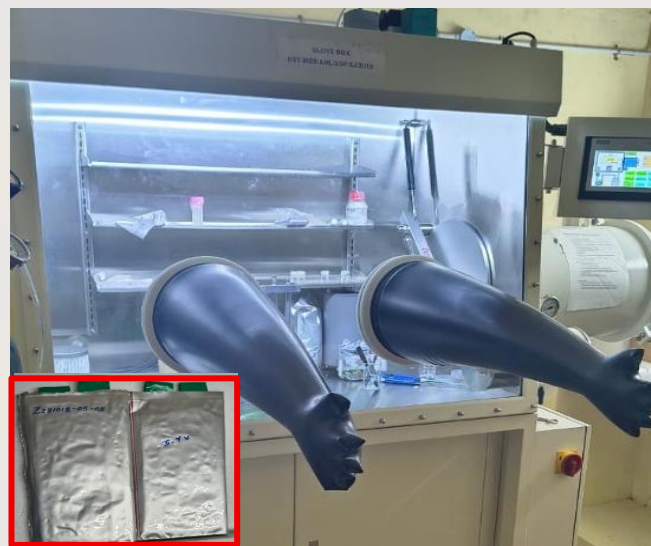


1. CV, GCD
2. EIS
3. Cyclic stability
4. Device Fabrication
5. Testing

Coin cell and Pouch cell fabrication



Glove Box



About the Program

This 3-day intensive training program is designed to address the growing global demand for efficient and sustainable energy storage systems, focusing specifically on supercapacitors as a vital area of modern research. The workshop provides a comprehensive, practical platform for postgraduate students, Ph.D. scholars, and young faculty members who are engaged in or planning to start research in electrochemistry, nanomaterials, and energy.

The program is structured to guide participants through the entire workflow of supercapacitor material development, from foundational theory to final performance analysis of device



Skill Development and Hands-on Training on Fabrication and Testing of Supercapacitors

on 22nd-24th December 2025



Core Program Structure:

1. **Theoretical Foundation:** The fundamental working principles and different types of supercapacitors, including **EDLC** (Electric Double-Layer Capacitors), **Pseudocapacitors**, and **Hybrid systems**.
2. **Materials:** The electrode materials such as **carbon-based materials**, **metal oxides**, and **conducting polymers**.
3. **Device Fabrication:** Complete device assembly process. This includes key techniques for **electrode coating**, proper **cell assembly**, and the critical selection and preparation of **electrolytes**.
4. **Electrochemical Evaluation:**
 - **Cyclic Voltammetry (CV)**
 - **Galvanostatic Charge–Discharge (GCD)**
 - **Electrochemical Impedance Spectroscopy (EIS)**
5. **Data Analysis:** Finally, participants will learn how to analyze the data, such as specific **capacitance**, **energy density**, and **power density**.

Objective of the Skill Training Course

- **Understand** the fundamental principles, mechanisms, and classifications of supercapacitors.
- **Fabricate** a complete supercapacitor device, including electrode preparation, electrolyte selection, and final cell assembly.
- **Operate** key electrochemical testing equipment to perform CV, GCD, and EIS measurements.
- **Analyze** raw electrochemical data to accurately calculate and interpret essential performance metrics like capacitance, energy density, power density, and cycle life.
- **Strengthen** their foundational knowledge in applied electrochemistry, enabling them to design and carry out independent mini-projects in energy storage.

Madurai Kamaraj University established the **Department of Materials Science** under the School of Chemistry to promote advanced education and research in emerging areas of material technologies. Recognizing the growing importance of nanoscience, energy materials, thin films, and smart materials, the department was set up to provide focused training and interdisciplinary research opportunities. With strong support from national funding agencies like **UGC, DST, SERB, RUSA, ANRF, CMRG, DRDO and CSIR**.

Who can apply?

Final year B.Sc. and M.Sc. Students, Research scholars, who are interested in Fabrication and Testing of Supercapacitors can apply for this training programme.

There is **no registration fee**. The **last date to register is 19.12.2025**, and only **40 seats** are available, making early registration essential. Participants will be **notified of their selection via email on 20.12.2025**. During the program, **working lunch will be provided**, while participants are expected to **arrange their own accommodation**. Upon successful completion of the training, all attendees will be awarded a **Certificate of Participation**.

For registration (Form link): <https://forms.gle/MY13zy1zppVdkLRF7>

For further information please contact:

Dr. M. JEYANTHINATH

Organizing Secretary

Skill Development and Hands-on Training on Fabrication and
Testing of Supercapacitors

Associate Professor

Dept. of Materials Science, School of Chemistry

Madurai Kamaraj University, Madurai- 625 021

Email: dmisc.skill@gmail.com, jeyanthinath.chem@mkuniversity.ac.in

Contact: +91-98944 95373; 87782 54852



SCAN ME