

# POWERING INNOVATION: ADVANCED BATTERY TESTING LABORATORY

Batteries are not considered as just a backup system for supporting power supply. They are now considered as capable alternative to fossil fuel based generators & Vehicles. To support Battery development at micro level to Grid level, ERDA has created supporting research infrastructure as well as performance evaluation facilities within the premises for evaluation of Batteries ( including Solar Battery )



## Types of Batteries:

- **Primary Battery** : Non Chargeable | Disposable
- **Secondary Battery**: Rechargeable
- **Lead Acid and Nickel Cadmium** : Cells & Monobloc up to 72V
- **Lithium other types** : Cells & Module pack up to 72V

## ERDA's Testing Capabilities:

- Capacity Test
- Temperature Factor of Capacity
- Ampere-Hour and Watt-Hour Efficiency Test
- Loss of Capacity on Storage/Charge Retention Test
- Endurance Test
- Short-Circuit Current and Internal Resistance Test
- Water Loss Test

## Upcoming Testing Facilities: Testing of Lithium Cell/Batteries used for EV applications

- Electrically Propelled Road Vehicles — Dimensions and Designation of Secondary Lithium-Ion Cells
- Performance Testing
- Reliability and Abuse Testing
- Safety Requirements for Secondary Lithium Cells and Batteries, for use in Industrial Applications

**Voltage Rating : 0 to 72V**  
**Current Rating : 0 to 600A**  
**High rate discharge : up to 2000A**  
**Capacity: 0.1 to 3000Ah**

## ERDA's R&D and Battery Components Characterization Facilities:

- Electrolyte and Electrode Material Analysis
- Battery Separator Analysis
- Coin Cell Fabrication and Analysis Facilities
- Development of Na-ion and Li-ion batteries
- Electrode and electrolyte development for batteries
- Development of battery separator
- Electrochemical Impedance Spectroscopy(EIS) Test Facility
- Thermal Conductivity Test Facility
- Scanning Electron Microscope(SEM) & Energy Dispersive Spectroscopy(EDS) Analysis
- Polarized Light Microscope for Initial Surface Study
- X-ray Diffraction Analysis(XRD)

## IS/IEC Standards

- IS 8144: 2018
- IS 1651-2013
- IS 1652-2013
- IS 13369:1992
- IS 15549:2005
- IEC 60896-11
- IS 16046-1:2018/IEC 62133-1:2017
- IS 16046-2:2018/IEC 62133-2:2017
- IS 16270-1-2023
- IS 10918-1984
- IS 16047 (Part 3) : 2018
- IEC 61960-3: 2017
- IEC 61427-1: 2023