One day Webinar on

Lithium ion Batteries-Cell/Battery Pack Manufacturing, Testing and Standardization

19 March 2021

Organized By
Electrical Appliances Technology Division
Central Power Research Institute
(Govt. of India Society, Ministry of Power)
Prof. Sir. C.V. Raman Road, Post Box No. 8066
Sadashivanagar Post Office,
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About the Webinar

Lithium ion Batteries are gaining popularity for renewable, portable and EV applications due to their numerous advantages such as high energy density, high coulombic efficiency, longer cycle life, low self-discharge, fast charging capacity, less polluting electrode material, and light weight. Lithium ion Batteries have a higher specific energy and specific power when compared to the conventional systems such as lead acid batteries and are therefore more reliable for driving an EV over wider operating range. However, safety is one of the major challenges that have to be considered in case of lithium ion batteries for broad range of applications. With several reported instances of lithium ion battery fires and explosions, it is essential to understand the performance and safety characteristics of these batteries since they pose a serious threat to human health and life if used in an improper manner.

Various testing protocols and standards have been developed to facilitate and regulate battery use in various applications. Manufacturing of lithium ion batteries which satisfy the performance and safety requirements in accordance to the standards and test protocols developed by these bodies ensures that the products are produced in accordance with government, regulatory, or industry requirements and compliance needs and also results in uniformity in the final product. These further results in ease of designing auxiliary components such as charging stations and sockets for EV battery charging irrespective of make of the batteries.

This one-day webinar on "***Lithium ion Batteries-Cell/Battery Pack Manufacturing, Testing and Standardization***" aims to serve as an introductory course on various critical aspects related to lithium ion batteries. The webinar will also brief on the different tests performed for validating the performance, safety and abuse characteristics of these batteries with an overview of national and international standards published concerning use of lithium ion batteries in EV and renewable energy storage.

Topics to be covered

The programme aims to cover the following topics –

- ✓ ***Battery Materials and manufacturing Overview*** – Selection of Materials for Lithium ion Batteries, Fabrication of electrodes and Li-ion cell/battery pack.
- ✓ ***Safety concerns of Lithium ion Batteries*** – Introduction to Lithium ion safety issues, test protocols for abuse and reliability characteristics of Lithium ion batteries.
- ✓ ***Testing and Standardization of Lithium ion Batteries*** – Testing and certification of performance characteristics of Lithium ion batteries for Industrial and EV Applications.

Participants

The one day webinar aims to serve as an introductory session on the different aspects of lithium ion cells or battery packs. The webinar is directed towards representatives from battery manufacturers, students/researchers from university/colleges, engineers from power utilities, Research organisations, academic institutions, and manufacturers of Power Equipment, Operation & maintenance engineers and Consultants.

Faculty

Faculty for workshop include Experts from premier academic and research institutes such as CSIR and CPRI.

Pre-requisites

The Participant should have reliable internet connection and good quality headphone/speaker set with Laptop/Desktop. The participant should also have notepad/pen to note down important points.

Registration

Sl. No.	Institutions	Fee per person (₹)
01	***State Power utilities/ Government agencies***	
	Up to 5 Participants	1,500 /-
	5 – 15 Participants	1,300 /-
	15 – 30 Participants	1,200 /-
02	***Private Sector Organizations***	
	Up to 5 Participants	2,000 /-
	5 – 15 Participants	1,500 /-
	15 – 30 Participants	1,200 /-
03	Students of Educational Institutions: Minimum 5 participants	500 /-
04	Faculty members of Educational Institutions: Minimum 5 participants	1,000 /-
05	GST	18% as applicable

Registration fees mentioned is **exclusive of 18% GST**. The Registration fee includes training material-soft copy and digitally signed Electronic/Soft Copy certificate will be to the participants.

Mode of Payment

In the form of Demand Draft drawn in favour of "Senior Accounts Officer, Central Power Research Institute" payable at "Bengaluru" or RTGS on request. Bank transaction charges if any shall be borne by the respective delegate or organizations.

Sl. No.	Reference	Particulars
1	Beneficiary Name	CENTRAL POWER RESEARCH INSTITUTE
2	Bank Name & Address	STATE BANK OF INDIA, IISC BRANCH, No. 1, BUNGLOW, IISC CAMPUS, BANGALORE 560 012
3	Branch MICR No.	560002020
4	IFSC No. (11 Digit No.)	SBIN0002215
5	SWIFT Code	SBININBB425 (Only for foreign customer)
6	Beneficiary Account No.	10356553310
7	Type of Account	Savings Account
8	GST Regn. No.	29AAAAC0268P1ZF

CPRI's Profile

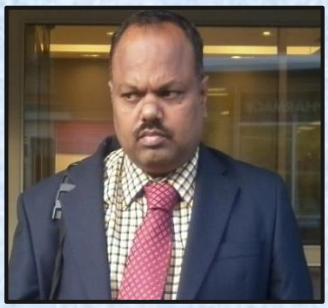
Central Power Research Institute (CPRI) set up in 1960 by the Government of India, functions as a National organization for applied research in power sector and also serves as an Independent Laboratory for testing and certification of power equipment. CPRI provides consultancy services on various facets of power sector. CPRI has expertise in the area of Simulation, System Analysis and Testing and Diagnostics. CPRI laboratories have modern equipment needed for Power system simulation, Short circuit testing, Diagnostics of equipment, Materials engineering, Seismic qualification etc. The institute has made immense contribution to the advancement of research and development in power sector besides finding solution to various problems faced by power utilities and industries in areas of transmission and distribution.

CPRI is continually setting new standards in training and continuing education from basic theoretical information to practical hands-on electrical equipment training. CPRI courses have made substantial impact on the level of training and education to India's electricity utilities, manufacturing companies, transmission and distribution companies.

Coordinator(s) Details

Dr. Kuldeep Rana (Program Co-coordinator) Dr. Kuldeep Rana is working as Scientific officer in Electrical appliances technology division of Central Power Research Institute since 2015. He is involved in R&D, certification and consultancy activities of electrochemical energy storage devices. Prior to joining the CPRI he was working as a research professor in department of Electrical and Electronic Engineering of Yonsei University, South Korea under brain Korea fellowship. He has also worked as postdoctoral fellow in Advanced Centre of Nanotechnology, SKKU South Korea and Bilkent University Turkey. He has received his Ph.D. degree in Materials Engineering from the Indian Institute of Technology, Roorkee in area of energy storage materials and devices. During his Ph.D. work he has worked as visiting researcher in department of Materials Science and Metallurgy of Cambridge University. Dr. Rana is a principle member for e- mobility, battery committee of bureau of Indian standard, Member of S&L program of Bureau of Energy Efficiency for advanced cell chemistry, drafted guidelines for batteries for the solar application with Ministry of new and renewable energy and member in Electric vehicle R&D mission.

Dr. P Chandra Sekhar Head of Division, Electrical Appliances Technology Division, CPRI Bengaluru.
He has 28 years' experience in Power Industry. He worked in Testing & Certification of Power Equipment. He also worked for RLA/LE studies for Power equipment He worked as Nodal officer for APDRP programme in Karnataka, Andhra Pradesh and Kerala. He also worked as one of the faculty for the DRUM programme. He worked in the area of R-APDRP, RGGVY and Energy Audit in the Distribution System Division. At present he is working as Joint Director and heading Electrical Appliances Technology Division (EATD). He has published Technical papers in National/International Conferences and Journals.



Registration form may be sent by email / post to

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