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INVEST INDIA
NATIONAL INVESTMENT PROMOTION
AND FACILITATION AGENCY



ADVANCED CHEMISTRY CELL (ACC) MANUFACTURING MASTERCLASS

17th, 18th, 19th, 25th, 26th June 2021

Date

5-Day Virtual Masterclass

- Day 1*: June 17, 2021
- Day 2: June 18, 2021
- Day 3: June 19, 2021
- Day 4: June 25, 2021
- Day 5*: June 26, 2021

Days marked with * are optional.

Time (IST)

- Day 1: 4.00 pm to 6.30 pm
- Day 2 to Day 5: 2.00 pm to 8.30 pm

Mode of Training

- Online

Recommended Prerequisites

- Day 1 – Energy Storage Technology Overview

Certificate

- Yes

Fee Structure

- Day 1-3: INR 35,000+ taxes
- All 5 Days: INR 50,000+ taxes

Group Discount

10% discount for 3 and more participants.

Contact

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Link to Register

<https://indiaesa.info/>

OVERVIEW

India has become one of the fastest growing markets for advanced energy storage technology supporting the exponential growth expected in its electric vehicle, stationary storage market over the next 5 years.

With IESA estimating the India market to grow over 500GWh (2020-27) considering ESS & EV opportunities, around \$5 billion investments are expected to be attracted supporting 50+GWh capacities for multiple li-ion battery gigafactories.

The Indian government is strongly backing this market via the recently launched National Mission for Transformative Mobility & Battery Storage (NMTMBS) with Production Linked Incentive (PLI) scheme for advanced battery manufacturing through ACC program by NITI Aayog. Importantly, most State Governments too are focused on manufacturing of advanced energy storage technologies and its adoptions.

The Advanced Energy Storage Manufacturing Masterclass is a program designed to guide rising decision-makers and investors from the energy sector to set up gigafactories by sharing the latest research and development, market analysis, technology updates, and for introducing them to the manufacturing process, supply chain, government policies and benefits, export-import, safety and testing as well as skills development.

WHO SHOULD PARTICIPATE

- Business Decision Makers
- Business Executives
- Department Heads
- Energy Storage Investors
- Supply Chain, Raw Materials Companies
- Manufacturing Equipment and Battery Component Suppliers

OBJECTIVES

- Get an overview of the energy storage technologies, technology parameters
- Understand central and state government policies and schemes
- Learn about demand generation and applications in the energy storage sector
- Become familiar with the Indian energy storage and e-mobility market
- Understand the manufacturing process of gigafactories
- Figure out required equipment, components, and raw material
- Learn active material processing and other manufacturing technologies
- Be trained in cell-module-pack manufacturing process
- Understand safety 7 standards requirements
- Learn about recycling, disposal and second life options
- Get familiar with export, import, and shipping procedures
- Participate in R&D initiatives, skills development, and manufacturing roundtables

DAY 1

Technology Overview

- Role of Energy Storage Technologies in Power Systems
- Classification of Technologies
- Battery Performance Metrics
- Energy vs. Power
- Comparison of Technologies
 - Batteries and Types
 - Thermal Energy Storage
 - Mechanical Storage
 - Pumped Hydro Storage
- Advanced Lead-acid Batteries
- Lithium-ion Batteries
- Flow Batteries
- High Temperature Batteries
- Next Generation Technologies
- Supercapacitors
- Battery Management System
- Hydrogen Storage Scope
- Research & Development

DAY 2

Government Policies

- Overview of ACC Battery Manufacturing PLI Scheme
- Support by Other Government Agencies like DHI, MEITY, DST
- Investment Options
- Other Government Incentives
- Key State Government Policies to Support Manufacturing

Key Policy for Demand Generation

- Key Demand Drivers
- Policy & Regulatory Landscape
- Key Stakeholders

Intro to Energy Storage Market

- Global Energy Storage Market Overview (US, Europe, China)
- India Stationary Market Overview (RE Integration, Grid Stability, T&D deferral, Behind the Meter Applications)
- India EV Market Overview (E-mobility & Charging Infra)
- Indian Manufacturing Landscape
- Li-ion & Other Manufacturing Announcements

ACC Agreement

- The Programme Agreement
- The Tripartite State Support Agreement

DAY 3

Setting up Gigafactories

- Detailed Overview of the Li-ion Manufacturing Process
- Typical Floorplan for Gigafactories
- Equipment and Machinery Requirements
- Gigafactory CAPEX Estimates
- Labor & Skill Requirements
- Key Stakeholders
- Major Announcements in India

Equipment Requirements for Gigafactories

- Material Handling and Mixing
- Coating & Drying Machinery
- Cutting of Electrodes
- Cell Assembly
- Electrolyte Filling & Formation
- Process Automation
- Dry Room Requirement

Raw & Processed Materials Overview

- Key Raw and Processed Material Requirements for Different Chemistries
 - Li, Mn, Ni, Co, Cu, Al, C, Fe, P
- Global Raw Material Resource Availability
- Indian Raw Material Resource Availability
- Understanding Value Additions in Processed Materials
- Purity Requirements
- Active Materials Processing
 - Cathode, Anode
 - Sourcing at Scale vs Buying from Traders
 - Global Demand and Supply of Battery Materials

Other Battery Manufacturing Overview

- Vanadium Redox Flow Batteries
- Zinc-based Batteries
- Metal Air Batteries

DAY 4

Assembling Process (Cell – Module – Pack Manufacturing)

- Cell Prototyping, Testing and Pack Manufacturing Facility
- Sorting, Bracket Locking, Welding, Sub-pack EOL Testing, Module Assembly
- BMS/PCB Installation, Pack EOL Testing

Safety and Performance Testing

- Need for Safety
- Evolution of Safety Standards
- Overview of Safety Testing
- Need for Performance Testing
- Selection of Batteries for Different Applications

Second Life

- Why Second-life Batteries?
- Economics of Second-life Batteries
- Key Applications
- Process of Selecting and Assembling
- Special Aspects / Precautions Necessary

Recycling, Disposal

- Need for Circular Economy
- Existing and Upcoming Regulations
- Recycling Process Overview
- Economics of Recycling
- Advanced Concepts such as Re-lithiation
- Overview of Current Market Players

Export-Import

- Overview of Current Export Import Scenario
- Anticipated Changes in Taxes and Duties
- Safety Norms

DAY 5

Global and Indian R&D Initiatives Roundtable

Skill Development Roundtable

Manufacturing Roundtable

Q&A

- Launched in 2012
- Premier Alliance in India on Storage and E-mobility
- 100+ members
- 20+ Strategic Partnerships with Global Alliances
- 25+ Network Events
- Leverage International Partnerships
- Online and Classroom Trainings on Technology, Business, Policy & Regulatory
- Knowledge Platform
- Market Research and Strategy Support
- Business Support & Tender Assistance
- Showcase your Product, Solution, and Services

- Established in 1998
- Global presence in United States, India, Japan, Canada, Mexico, and Vietnam
- Works closely with clients to navigate the wholesale and retail electricity markets
- Provides
 - Software solutions to manage energy grid and requirements
 - Advisory and consulting services focused on asset optimization and energy market participation efficiency
- Supports third-party asset manager of approximately 10,000MWs of renewable and conventional generation resources across all ISOs in the United States and Ontario, Canada

CONTACT

For more information visit



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You can also write to us at



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