

# INTERNATIONAL TRANSPORTATION ELECTRIFICATION CONFERENCE INDIA

📍 ICAT CONVENTION CENTRE, MANESAR

**DECEMBER 16 - 18, 2021.**

AN HYBRID EVENT



IN PERSON



VIRTUAL



4<sup>th</sup> EDITION

**ITECINDIA** 2021

*E-Mobility for AatmaNirbharBharat*

**INTERNATIONAL TRANSPORTATION ELECTRIFICATION CONFERENCE**

# AatmaNirbhar Bharat in -Mobility

75  
Azadi Ka  
Amrit Mahotsav

## ITEC INDIA 2021

Will present an array of papers across different topics in parallel technical sessions from both India & abroad











The past decade has seen a revolution in mobility technologies and COVID 19 has changed the way we perceive personal mobility

Developed economies are adopting mobility solutions based on Autonomous, Connected, Electric and Shared (ACES) technologies.

Emerging economies like India must forge their own paths to meet the goals of sustainable development in the context of our energy security, economic development and growing aspirations of all citizens.

There is a need to redefine ACES for India as Affordable, Connected & Shared, Environment Friendly(incl Electrification) and Safe.

 <p>ECOSYSTEM ENABLERS: INTELLIGENT MOBILITY SOLUTION,INFRASTRUCTURE , SMART GRIDS, V2G &amp; SMART CITIES</p>	<p>ELECTRIC AND HYBRID ELECTRIC VEHICLE ARCHITECTURE</p> 	<p>ENERGY STORAGE, FUEL CELLS, BATTERY AND BATTERY MANAGEMENT</p> 	
 <p>STANDARDS, REGULATIONS &amp; POLICIES FOR HOLISTIC CARBON APPROACH &amp; RECYCLING</p>	<p><b>TOPICS/ AREAS INCLUDED BUT ARE NOT LIMITED TO</b></p>		 <p>MODELLING, SIMULATION &amp; CONTROL</p>
 <p>ELECTRIFICATION IN GOODS TRANSPORT VEHICLES (HCV'S, SEA, &amp; VERTICAL)</p>	 <p>POWER ELECTRONICS, ELECTRIC MACHINES &amp; ACTUATORS</p>	 <p>CONSUMER ASPECT AND RESEARCH</p>	





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## SAEINDIA:

SAEINDIA is India's leading resource for mobility technology. As an individual member-driven society of mobility practitioners, the ownership of SAEINDIA wrests with its members who are Individuals from the mobility community, which includes Engineers Executives from Industry, Government Officials, Academics and Students

SAEINDIA is a strategic alliance partner of SAE International registered in India as an Indian nonprofit engineering and scientific society dedicated to the advancement of the mobility industry in India

## IEEE IAS:

Institute of Electrical and Electronics Engineers – Industry Applications Society

One of the largest special interest societies within the Institute of Electrical and Electronics Engineers (IEEE), the IAS focuses specifically on the unique needs of industry and commerce. IAS is a source of professional power to its nearly 14,000 worldwide members.

Through a network of over 370 chapters globally, regional events and national and international conferences, the society keeps members abreast of current developments in the area of technology in electricity and electronics. IAS enriches both its individual members and the industry as a whole through the sharing of specific industry-related solutions.

## Exposition Details

EACH EXHIBITOR WILL GET 9 SQ M OCTONORM STALL  
2 NOS DIRECTOR CHAIR | 1 TABLE | 3 SPOT LIGHTS

### COST PER STALL

PHYSICAL EXHIBITION STALL	₹ 1,00,000*
VIRTUAL EXHIBITION STALL	₹ 25,000*

\*18% GST applicable on the above rates

## Exposition Stall Layout



Please scan QR code for complete Stall Layout or  
Visit : [www.saeindia.org/events/itecindia-2021/](http://www.saeindia.org/events/itecindia-2021/)





## Ansys EV Workshop

Learn to Validate Electric Powertrain Design Using Physics-based Simulation

Date: December 15, 2021 : Time: 9:00 am – 4:30 pm (IST)

Venue: Dhawan Hall, ICAT Convention Centre, Manesar



Electric Powertrain development has challenges of addressing the complex design requirements within stringent development time. Engineers across the world are increasingly adopting the physics-based simulation in their design workflows. With new advances in simulation techniques, the physics-based simulation has even found to be very effective for sub-system and system validation.

### Course Outline and Content :

#### Topic 1 :

Improving battery reliability and performance through electro-thermal analysis.

- Pack Configuration extraction and chemistry selection
- Cell Characterization through HPPC Data
- Module Thermal Management using CFD Analysis
- Drive cycle thermal analysis for battery pack
- BMS Integration and validation

#### Topic 2 :

Improving battery reliability and performance through electro-thermal analysis.

- Pack Configuration extraction and chemistry selection
- Cell Characterization through HPPC Data
- Module Thermal Management using CFD Analysis
- Drive cycle thermal analysis for battery pack
- BMS Integration and validation

#### Topic 3 :

Electric Vehicle Performance validation (System Simulation) using Reduced Order Models (ROM) from physics

- Battery & Motor ROM Integration in System Model
- Drive cycle definition and system definition
- System performance analysis

### Agenda :

Preparatory Webinars (Online)

- 1) Electric Machine Sizing and Analysis - December 8, 2021 (11:00 am - 12:00 pm IST)
- 2) Battery Electro-Thermal Modeling - December 13, 2021 (11:00 am - 12:00 pm IST)

Workshop :

- 09:00 - 10:00 : Overview of EV Component, Subsystem and System Validation  
10:00 - 11:30 : Topic 1: Improving battery reliability and performance through electro-thermal analysis  
11:30 - 12:30 : Topic 2: Design of robust and efficient electric machines  
12:30 - 14:30 : Lunch Break + Other Sessions  
14:30 - 15:00 : Topic 2: Design of robust and efficient electric machines Contd...  
15:00 - 16:00 : Topic 3: Electric Vehicle Performance validation (System Simulation) using Reduced Order Models (ROM) from Physics Based Simulation  
16:00 - 16:30 : Open Discussions and Q&A

## Pre-Conference Hands-on Workshop :

Electric Vehicle System Design and Optimization using Simulation-Based Approach

Date: 15 December 2021 : Time: 9:30 am – 4:30 pm (IST)

Venue: Uldev, ICAT Centre 2, Manesar

Objective: This is a presentation session followed by a hands-on workshop where attendees will understand and experience

- The value of using a vehicle system level simulation model for doing design trade-off studies.
- How a single simulation platform helps throughout the vehicle system design cycle.



In this program, we will first understand the workflows for developing: Vehicle simulation models, Battery Management Systems, and Motor Control. Later we will simulate different vehicle and component level use cases in the hands-on session. You will receive trial MATLAB license for ~10 days for trying out different use cases in and post the workshop. Preparatory session would be conducted on 10th Dec 4 PM-5 PM

### Course Benefits:

With the help of electric vehicle example and hands-on workshop, attendees will experience:

- How to optimize the closed-loop vehicle system simulation model to meet design goals
- How to parameterize and size different components of Electric Vehicle powertrain
- How to model and parametrize battery model and develop Battery Management System
- How to simulate different motors and develop motor control software

**Who Should Attend:** Engineering professionals involved in automotive system design, development, and testing, including:

- System Engineers, Control Design Engineers
- Modeling and Simulation engineers
- HILS Test engineer

Course Outline:

Duration	Agenda
09:30 PM – 12:30 PM	Technology Sessions: <ul style="list-style-type: none"><li>• Building simulation models for Hybrid / Electric Vehicle</li><li>• Addressing challenges involved in Battery Modeling and developing Battery Management Systems</li><li>• Addressing challenges involved in design and implementation of motor control algorithms</li></ul>
01:30 PM – 4:30 PM	Hands-on workshop on Modeling and Simulation of Electric Vehicle (EV): <ul style="list-style-type: none"><li>• Experimenting with different variants of multiple EV components.</li><li>• Vary parameters of control algorithm to experiment on vehicle performance.</li><li>• Perform design trade-off studies for electrical subsystems using vehicle system level model.</li></ul>



## DELEGATE FEE:

DELEGATE	IN-PERSON #	VIRTUAL #
SAEINDIA MEMBER	₹6,000	₹3,000
NON-MEMBER	₹8,000	₹4,000
ACADEMIA	₹3,000	₹1,500
AUTHOR	₹2,000	₹1,000
AUTHOR-STUDENT@	₹1,000	₹1,000
START-UP *	₹2,000	₹1,000
OVERSEAS DELEGATE	USD 50	USD 50

\*NEED A START-UP CERTIFICATE

# 18% GST APPLICABLE ABOVE THESE RATES

@ NEED BONAFIDE CERTIFICATE FROM INSTITUTIONS

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