

A Short Term course on **Electric Vehicle Powertrains**

October 16-24, 2023

Eligibility

Faculty Members / Research Scholars / B.Tech / students who are actively involved in the field of basic or allied sciences or engineering.

Industry professionals who are actively involved in R&D.

General Information

- **No registration fees.**
- **For registered participants, link will be sent separately.**

For Registration:



Contact:

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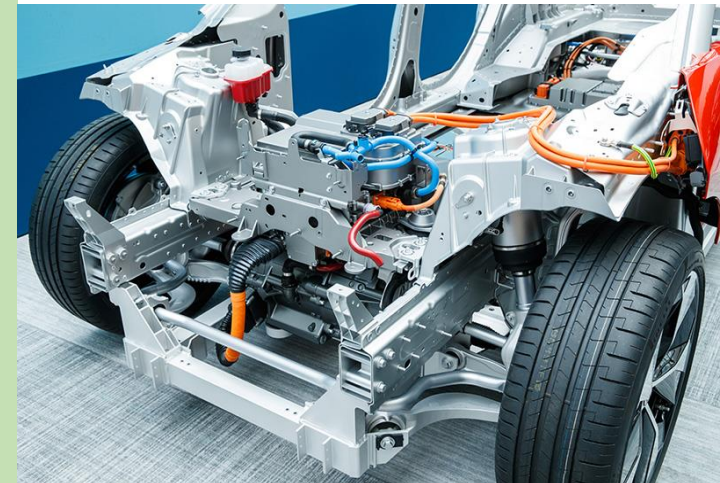
VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

School of Mechanical Engineering

A Short Term course on **Electric Vehicle Powertrains** **(Online mode)**

October 16-24, 2023



In association with



Funded by



Vellore Institute of Technology (VIT)

Vellore Institute of Technology was founded in 1984 as Vellore Engineering College by the Founder and Chancellor Dr. G. Viswanathan. University status was conferred in 2001 by MHRD Govt. of India in recognition of its excellence in academics, research and extracurricular initiatives.

Ranking & Accreditation

Vellore Institute of Technology (VIT) has emerged as one of the best institutes of India and is aspiring to become a global leader. Quality in teaching-learning, research and innovation makes VIT unique.

- ❖ Engineering and Technology subject areas of VIT are the 240th best in the World and the 9th best in India, and eight subjects of VIT are within the top 500 in the world (as per QS World University Rankings by Subject 2023)
- ❖ The 8th best University, the 11th best research institution and the 11th best engineering institution in India (NIRF Ranking, Govt. of India 2023)
- ❖ Ranked among the top 601-700 Universities of the world and one of the top 3 Institutions in India (Shanghai ARWU Ranking 2022)
- ❖ NAAC Accreditation with A++ grade (3.66 out of 4)
- ❖ The 173rd best Institution in Asia (QS - Asia University Rankings 2023)

School of Mechanical Engineering (SMEC)

The School of Mechanical Engineering is one of the oldest and most prestigious schools of VIT. This school started functioning right from 1984, the year in which our institution began. The School of Mechanical Engineering offers 3 undergraduate and 6 post-graduate programs. The school has a team of highly qualified faculty members, many holding PhDs from elite institutes across the globe, to teach and train this country's best minds. The pride of the school lies in the significant research funding received from several National and International agencies such as DST, DRDO, MNRE, CSIT, CVRDE, CPDO, IE, AR&DB, BRNS, ISRO, UGC, NRB, Royal Academy of Engineering etc. The Department of Science and Technology, Govt. of India has recognized the school for its research activities and supported it in 2003, 2010 and 2022 under the FIST scheme. The school has modern facilities, enabling cutting-edge research in a wide spectrum of niche technological areas. The school is ranked 501-600 in the World as per THE World University Subject Ranking in 2021. Mechanical and Manufacturing Engineering is ranked within the top 10 in India and top 251-300 in the world as per QS World University Rankings by Subject 2023.

Objectives of the workshop

- ✓ To understand the fundamental concepts of electric vehicles
- ✓ To understand working of different electric motors drives used in Electric Vehicles
- ✓ To select appropriate motor and converter for EV applications
- ✓ To study of the modelling and simulation of EV using MATLAB
- ✓ To address the underlying concepts and methods behind vehicle dynamics

Course Content

1. Basics of Electric Mobility – EV and HEV
2. Overview of Battery Management System Functional Architecture in Electric Vehicle Application.
3. Motors and Motor Controllers- Motor Control Circuitry-Control Systems for EV- Intelligent Control Systems for EV
4. EV charging systems- Components - Methods - EV charging stations
5. Modelling and Simulation of EV Powertrain components in MATLAB
6. Electric Vehicle Dynamics

Course Content & Speakers

Session 1 (October 16, 2023, 5pm to 7pm):

- ❖ Basics of Electric Mobility – EV and HEV

Dr. Karthikeyan Subramanian,

Head/Domain Lead- Fuel Cell Electric Vehicle, Advanced Engineering Ashok Leyland, Chennai

Session 2 (October 17, 2023, 5pm to 7pm):

- ❖ Overview of Battery Management System Functional Architecture in Electric Vehicle Application.

Dr. B. Ashok, Associate Professor & Head
Department of Automotive Engineering, SMEC, VIT, Vellore

Session 3 (October 18, 2023, 5pm to 7pm):

- ❖ Motors and Motor Controllers- Motor Control Circuitry-Control Systems for EV- Intelligent Control Systems for EV

Dr. Denis Ashok S, SMEC, VIT, Vellore

Session 4 (October 19, 2023, 5pm to 7pm):

- ❖ EV charging systems- Components - Methods - EV charging stations.

Dr. D. Elangovan, Deputy Director - TIFAC-CORE
Professor - School of Electrical Engineering, VIT, Vellore

Session 5 (October 20, 2023, 5pm to 7pm):

- ❖ Modelling and Simulation of EV Powertrain components in MATLAB

Dr. S. Krishna

Assistant Professor Sr.
Department of Automotive Engineering, SMEC, VIT, Vellore

Session 6 (October 24, 2023, 5pm to 7pm):

- ❖ Electric Vehicle Dynamics

Dr. P. Sakthivel

Associate Professor, Department of Automotive Engineering, SMEC, VIT, Vellore