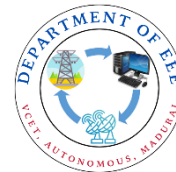




Velammal College of Engineering & Technology, Madurai – 625 009

(Autonomous)

Department of Electrical & Electronics Engineering



**CENTRE OF EXCELLENCE
on
ELECTRICAL DRIVE SYSTEM IN ELECTRIC VEHICLE**

CoE Head

Dr. A. Shunmugalatha, HoD/EEE & Dean (Academics)

Incharges

Dr. A. Radhika, Associate Professor/EEE

Dr. B. Kiruthiga, Associate Professor/EEE

Members

Dr. S. Muthulakshmi, Assistant Professor/ EEE

Dr. A. Madhan, Assistant Professor/ EEE

Technicians

Mrs. K. Nagarani

Mr. M. Logesh Raja

Industry Partner

Vi Micro System Pvt Ltd, Chennai.

Centre of Excellence - Electrical Drives System in Electric Vehicle Laboratory

- Centre of Excellence - Electrical Drives System in Electric Vehicle Laboratory worth **Rs.72.09 Lakhs** has been established.
- An electric vehicle (EV) electrical drive system converts energy from the vehicle's battery into mechanical power to drive the wheels.
- The critical components of an EV drive system include the electric motor, power electronics, the battery pack, and a controller.
- The development of Electric drive system in electric vehicles technologies and faster adaptation has generated a great deal in improving the sustainability of the transportation model.
- Electric mobility has experienced a significant advance in the last decades due to technological advancements, bringing a dramatic change to our societies and transforming our lives.

- This is particularly true in the current times where mankind faces serious risks due to the well-known pandemic and global warming.
- This Centre of Excellence - Electrical Drives System in Electric Vehicle Laboratory is a premier interdisciplinary platform for students, researchers, practitioners and educators and discuss the most recent innovations, trends, and concerns, as well as practical challenges in the fields of Electric Vehicle Technologies.
- The scope of the topics covered by Centre of Excellence includes major aspects of electrical parts, mechanical design and communication technologies required for Electric drive system in electric vehicle system

Impact:

- Improves technical proficiency and practical skills of students in core subjects.
- Supports research and project work in emerging electrical and electronics technologies.
- Strengthens the institute's capacity to offer industry-relevant training

The facilities in the center are

1. 2 Wheeler Electric Vehicle Training Systems
2. Tricycle EV Development Systems (View – 3 W)
3. BLDC Hub Motor test Bed set Up
4. 5 KW LLC Based Electrical Vehicle Quick Charger with Front End PFC Correction
5. Battery Management Systems
6. NX (CAD/CAM/CAE/MCD)Software for Electrical Vehicle
7. Siemens SimcenterAmesim Software for Electric vehicle
8. 3 ϕ Inverter with MPPT DC-DC boost Converter and Bi Directional Battery Charger for 48 V BLDC motor
9. 3 Phase Thyristorized Drive for DC Motor
10. Closed Loop Control of Chopper Fed DC Motor Drive
11. Embedded Control of Slip Ring Induction Motor Using Static Kramer Drive
12. Speed Control of Single Phase Induction Motor Drive Using 3 Phase to Single Phase Matrix Converter
13. Speed Control of Brushless Dc Drive
14. Embedded Control of Switched Reluctance Motor Drive
15. PLC Based Four Quadrant Operation of 3 Phase Squirrel Cage Induction Motor Drive
16. Speed Control of 3 Phase Multilevel Inverter Fed Squirrel Cage Induction Motor Drive

Electrical Drives System in Electric Vehicle Laboratory Make details

Sl.No.	Name of the Laboratory	Name of the major equipment	Name of the manufacturer
1.	Centre of Excellence - Electrical Drives System in Electric Vehicle Laboratory	Tricycle EV Development Systems (View – 3 W), BLDC Hub Motor test Bed set Up, 5 KW LLC Based Electrical Vehicle Quick Charger With Front End PFC Correction, Battery Management Systems, NX (CAD/CAM/CAE/MCD) Software for Electrical Vehicle, Siemens Simcenter Amesim Software for Electric vehicle, 3 ϕ Inverter with MPPT DC-DC boost Converter and Bi Directional Battery Charger for 48 V BLDC motor, 3 Phase Thyristorized Drive for DC Motor, Closed Loop Control of Chopper Fed DC Motor, Drive Embedded Control of Slip Ring Induction Motor Using Static Kramer Drive, Speed Control of Single Phase Induction Motor Drive Using 3 Phase to Single Phase Matrix Converter, Speed Control of Brushless Dc Drive, Embedded Control of Switched Reluctance Motor Drive, PLC Based Four Quadrant Operation of 3 Phase Squirrel Cage Induction Motor Drive, Speed Control of 3 Phase Multilevel Inverter Fed Squirrel Cage Induction Motor Drive	VI Microsystems , Chennai



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Center of Excellence on Electrical Drive Systems in Electric Vehicles Inauguration

