



# Rajarajeswari College of Engineering

(An Autonomous Institute, under Visvesvaraya Technological University, Belagavi)

Sponsored by: MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST

## Department of Electrical & Electronics Engineering



### Event Report: Value Added Course / Skill Training on “Design and Development of Electric Vehicle”

**Organized by:** Department of Electrical & Electronics Engineering, RajaRajeswari College of Engineering, Bengaluru

**Date** : 29th April to 3rd May 2025  
**Venue & Time** : EEE Lab / 09:00 AM to 04:00 PM  
**Resource Person** : Dr.P.Ebby Darney  
Professor & Head  
Department of EEE  
Rajarajeswari College of Engineering

**Program Coordinators:** Dr. R. Arul Jose, Associate Professor

#### Event Overview:

The training aimed to provide students with a strong foundation and hands-on exposure to electric vehicle technology, which is a rapidly evolving area in the electrical and automotive sectors. Each day of the course was structured with a combination of expert lectures and practical sessions to ensure a comprehensive understanding of the subject.

Day	Topic	Session Highlights
Day 1	Introduction to EVs & Industry Scenario	Inauguration, EV basics, market trends
Day 2	Powertrain and Battery Technology	Battery types, BMS, hands-on battery demo
Day 3	Motor Control & Simulation	BLDC, PMSM motors, MATLAB/Simulink simulation
Day 4	Embedded System & IoT in EV	Sensor integration, IoT monitoring using ESP32
Day 5	EV Battery & Control	Mini project, student presentations, valedictory



### Day-wise Summary

#### Day 1: Introduction to EVs & Industry Scenario

The course commenced with an inaugural session followed by an introduction to electric vehicles. Participants learned about the evolution of EVs, their types, components, and comparison with internal combustion engine (ICE) vehicles. The session also covered current EV market trends, policies like FAME II, and India's vision for electric mobility. The interactive discussions helped students understand the significance and future scope of EVs.

#### Day 2: Powertrain and Battery Technology

The second day focused on the EV powertrain structure, working principles, and battery technologies. Students explored different types of batteries including Li-ion and LFP, and learned about key parameters such as energy density and charge cycles. The role of Battery Management Systems (BMS) in ensuring safe and efficient operation was also discussed. A hands-on demonstration of battery pack assembly and BMS integration provided practical exposure.

#### Day 3: Electric Motor Control & Simulation

This session introduced students to electric motors used in EVs, including BLDC, PMSM, and induction motors. Motor control techniques, inverter functionality, and torque-speed characteristics were explained. Students practiced modeling and simulating EV motor drive systems using MATLAB/Simulink, reinforcing theoretical concepts through simulation-based learning.

#### Day 4: Embedded System and IoT in EV

Day four covered the application of embedded systems and IoT in smart EVs. Students worked with microcontrollers like Arduino and ESP32 to interface sensors for voltage, current, and temperature monitoring. They also built a basic IoT-based EV monitoring system using cloud platforms. The session provided insights into real-time diagnostics and smart vehicle communication.

#### Day 5: EV Battery & Control – Project & Valedictory



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On the final day, students worked in teams to apply their learning by developing mini-projects related to EV battery monitoring and motor control. Each group presented their work, showcasing prototypes and design models. The course concluded with a feedback session, certificate distribution, and a valedictory address by faculty members, marking a successful end to the training program.

**RAJARAJESWARI COLLEGE OF ENGINEERING**  
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Department of Electrical and Electronics Engineering


**VALUE ADDED COURSE/SKILL TRAINING**


on

**DESIGN AND DEVELOPMENT OF ELECTRIC VEHICLE**

**DATE**  
29/04/2025 to 03/05/2025

**TIME**  
09:00 AM - 04:00 PM

**VENUE**  
EEE Lab



**RESOURCE PERSON**  
Dr.P.Ebby Darney  
Professor & Head, Department of EEE,  
Rajarajeswari college of Engineering

**Dr.R.Arul Jose**  
COORDINATOR

**Dr.P.Ebby Darney**  
HOD-EEE

**Dr.R.Balakrishna**  
PRINCIPAL

ADMISSION OPEN FOR 2024-2025  
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### Conclusion:

This event successfully provided students with a valuable learning experience and motivated them to explore further in the field of Electric Vehicle. The Department of Electrical & Electronics Engineering looks forward to organizing more such informative and engaging events in the future.

Event Coordinator

Dr. R Arul Jose

  
HoD-EEE

Dr. P Ebby Darney

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