



SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)



DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING

ELECTRIC VEHICLE CLUB ANNUAL REPORT

(Academic Year: 2024 to 2025)



Submitted by
Mr.B.Parthiban
Assistant Professor
Club Coordinator



Preface

The EV Club of the Department of Electrical and Electronics Engineering at Sri Manakula Vinayagar Engineering College serves as a progressive technical platform dedicated to fostering awareness, innovation, and research-oriented learning in the field of sustainable mobility and emerging transportation technologies. The club provides a structured environment where students gain a comprehensive understanding of modern energy-efficient systems, sustainable engineering practices, and evolving mobility solutions through systematic technical engagement and collaborative learning. Guided by faculty coordinators and actively supported by student members, the club organizes expert talks, technical discussions, design challenges, workshops, project-based learning activities, and industry interaction sessions to bridge the gap between academic knowledge and real-world applications. It encourages analytical thinking, system-level understanding, design optimization approaches, and innovation-driven project development, thereby strengthening students' technical competence and problem-solving abilities. By promoting teamwork, leadership qualities, research orientation, and professional ethics, the EV Club plays a vital role in preparing students to contribute effectively to the advancement of sustainable technologies and to meet the growing demands of the modern engineering landscape with responsibility and technical excellence.

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ABOUT THE INSTITUTION

Sri Manakula Vinayaga Educational Trust was founded to provide quality and affordable education to the weaker sections of society. The trust established Sri Manakula Vinayagar Engineering College (SMVEC) in 1999. SMVEC is an autonomous institution affiliated to Pondicherry University. It offers 13 undergraduate, 8 postgraduate and 11 Research programme in engineering. SMVEC has been accredited by NAAC with “A” grade and NBA. The institution is also accredited by TATA consultancy services. The college has a good placement record with students getting job offers from top companies in India and abroad. SMVEC students have won many awards and accolades for their academic achievements.

Vision

To be globally recognized for excellence in quality education, innovation and research for the transformation of lives to serve the society.

Mission

M1: Quality Education : To provide comprehensive academic system that amalgamates the cutting edge technologies with best practices.

M2: Research and Innovation : To foster value-based research and innovation in collaboration with industries and institutions globally for creating intellectuals with new avenues.

M3: Employability and Entrepreneurship : To inculcate the employability and entrepreneurial skills through value and skill based training.

M4: Ethical Values : To instill deep sense of human values by blending societal righteousness with academic professionalism for the growth of society.

DEPARTMENT VISION AND MISSION

Vision

To promote proficiency in the field of Electrical and Electronics Engineering by creating a stimulating environment for research, innovation and entrepreneurship

Mission

- **Quality Education:** To impart high quality technical education with problem solving capabilities by innovative pedagogy in emerging technologies
- **Industrial and Societal Needs:** To cater the dynamic needs of the industry and society by strengthening industry - institute interaction.
- **Research and Innovation:** To nurture the spirit of research attitude by carrying out innovative technologies pragmatically.
- **Placement and Entrepreneurship:** To inculcate the professionalism in career by advancing synergetic skills to compete in the corporate world.



"Commanding circuits. Controlling motion. Creating change."

ABOUT ELECTRIC VEHICLE CLUB

Electric Vehicles club serves as a place of community for students to discuss, learn, and working on projects related to Electric Vehicles. Members of the Electric Vehicles club are offered with a range of programs and activities such as seminars, project competitions and exposition. The club is supported the students in strategizing and organising activities that will help them knowledge and skills in Electric Vehicles. The clubs aims to guide students and prepare them to pursue their professional careers in industries specialising in Electric Vehicles.

Objectives and Functions of Electric Vehicle Club

- To develop basic understanding of Electric Vehicles.
- To develop basic understanding of electric motors, battery technology.
- To aid in enhancing management skills by organizing events and working in teams.
- To give students hands-on learning experience in the field of electric vehicle and battery management system.
- To aid students to build proto-types of electric vehicles
- To conduct technical programmes such as training, workshops, internships, and expert talks in relevant areas.
- Provide detail budgeting for making electric vehicle proto-types.
- Model components or modules of electric vehicles using appropriate software
- Take part in electric vehicle competitions.
- The EV club can organize awareness campaigns, workshops, and presentations to introduce and educate the college community about electric vehicles. These initiatives can cover topics such as EV technology, benefits, charging infrastructure, government incentives, and the role of EVs in combating climate change.
- The EV club can organize educational workshops and seminars on campus to deepen the understanding of EV technology, charging infrastructure, and related topics.
- The EV club can foster collaboration and networking among students, faculty and industry professionals interested in electric vehicles.



OFFICE BEARERS AND STUDENT MEMBERS

S.No	Name	Position
1.	Mr.B.Parthiban – Assistant Professor / EEE	Faculty Coordinators
2.	Mr.S.Mugunthan – Assistant Professor / EEE	
3.	Gokul	President
4.	DharaniKumar	Vice President
5.	Gaushik	Secretary
6.	Shreekanth	Treasurer
7.	Malaravan	Joint Secretary
8.	Jaiadithiyan	
9.	Kiruthik	Joint Treasurer
10.	Mathiyarasan	
11.	Neeraja	Executive Members
12.	Baranidharan	
13.	Ashok kumar	
14.	Ayishu	Technical Member



Mr.B.Parthiban
Assistant Professor
Faculty Coordinator



Gokul
President



DharaniKumar
Vice President



Gaushik
Secretary



Malaravan
Joint Secretary



Kiruthik
Joint treasurer

S.NO	NAME OF THE STUDENT	Year
1	ElamparuthiK	IV
2	Gayathry R	IV
3	Gunapriya S	IV
4	Karthikeyan P	IV
5	Kaveeya K	IV
6	Nirmal D	IV
7	Raghul R	IV
8	Ramanakrishnan s	IV
9	Gokularamanane S	III
10	Hemachandasanam S	III
11	Dhiviya S	III
12	Gopika J	III
13	Abhinayaa M	III
14	Arokia anandu prasanthu A	III
15	Arunpradaap S	III
16	Aswinkumar A	III
17	D.Naveenkumar	III
18	Arunaish.R	III
19	Saileshwar.T	III
20	Nathesh.N.B	III
21	Mohamed Harun Rasheed.S	III
22	Vishva P	III
23	Harinee	III
24	Iyyappan	III
25	Ramesh Kumar. P	III
26	Ragul A	III
27	Mohamed Abdul Kalam.K	III
28	Herwin	III
29	Karmukilan. A	III
30	S. Ramya	III
31	A. Balakumaran	III
32	M.Sivapothiskalicafran	III
33	Callis Joseph. E	III
34	Mohamad Kaseem M	III
35	Thogesh.M	III
36	P.Gopikrishnan	III
37	Srilogeshwaran S	III
38	Mukesh Kumar R	III
39	Thiruvengadam P	III
40	Karthikraja S	III
41	Gunanidhi R	II
42	Hariharaan S	II
43	Hitesh S	II
44	Isreya B	II
45	Iyyanar D	II
46	Iyyapadass R	II
47	Jaiadithyan V	II
48	Kamesh V	II
49	Durga J	II
50	Ganesh S	II

51	Gautham S	II
52	Gokul S	II
53	Gokuladharshini Z	II
54	Karthika S	II
55	leena shree T	I
56	logeshwar S	I
57	Madhavan S	I
58	Manju E	I
59	Meesala Praveen	I
60	Midhun L	I
61	Sanjay R	I

ELECTRICAL VEHICLE - CENTRE OF EXCELLENCE

Sri Manakula Vinayagar Engineering college and TVS Training & Services signed a Memorandum of Understanding (MoU) to establish a Centre of excellence in Electric Vehicle. The centre of Excellence laboratory will be set up at the SMVEC campus and training will be provided by TVS Training & Services.

The MoU was signed by Dr.V.S.K.Venkatachalapathy, Director cum Principal, Sri Manakula Vinayagar Engineering college, and Mr. Mohammed Samiuddin, Deputy General Manager, TVS - Training & Services on 28.3.2024.

This centre of Excellence will be equipped with state-of-the-art facilities to provide a conducive environment for research and is expected to make a valuable contribution to the development of electrical vehicle technology. It will serve as a hub for research, innovation, and collaboration in electric vehicle cutting-edge technology.

Also, it will provide a platform for the exchange of knowledge and idea to facilitate the development of skills and expertise in this field. TVS - Training & Services will take care of Training, Assessment and placement support.

Shri. M. Dhanasekaran, Chairman and Managing Director SMV trust, Dr. K. Narayanaswamy, Secretary, Shri. D. Rajarajan, Treasurer, Controller of Examinations, Dean Academics, Dean Research and Development, Dean Placement, Deans of various schools, Heads of various departments had participated in this MoU signing event.



MoU for Electrical Vehicle - Centre of Excellence was signed by Dr.V.S.K.Venkatachalapathy, Director cum Principal, Sri Manakula Vinayagar Engineering college, and Mr. Mohammed Samiuddin, Deputy General Manager, TVS - Training & Services

Preamble for Electric Vehicle -Centre of Excellence

Sri Manakula Vinayagar Engineering College and TVS Training & Services signed a Memorandum of Understanding (MoU) and established a Centre of Excellence in Electric Vehicles.

This centre of Excellence has been equipped with state-of-the-art facilities to provide a conducive environment for research. With the investment of Rs.50 lakhs, Electric Vehicles Centre of Excellence is focussed on areas like BLDC/PMSM Motor Testing, Battery Management System, Cell Tester, ADAS Simulator and EV car setup.

It will serve as a hub for research, innovation, and collaboration in electric vehicle cutting-edge technology. Also, it will provide a platform for exchanging knowledge and ideas to facilitate the development of skills and expertise in this field for Students and Faculties. This centre of excellence provides value-added Industrial training with placement support.



Details of Students Training:

Batch Z	Start Date	End Date	Duration	Department	No. of students
1	26.8.2024	02.9.2024	5 Days	EEE	10
				MECH	12
				MCTR	07
				ICE	01
2	2.9.2024	09.9.2024	5 Days	EEE	12
				MCTR	08
				CSEBS	10
3	10.9.204	14.9.2024	5 Days	EEE	14
				ECE	04
				CSEBS	12
4	18.9.2024	24.9.2024	5 Days	EEE	19
				ECE	01
				MECH	10
5	25.9.2024	01.10.2024	5 Days	ECE	06
				CSE	13
				IT	10
				EEE	01
6	3.10.2024	10.10.2024	5 Days	EEE	09
				ECE	06
				CSE	05
				IT	10
7	6.01.2025	10.01.2025	5 Days	EEE	15
				ECE	15
8	20.01.2025	24.01.2025	5 days	EEE	30
9	27.01.2025	31.01.2025	5 days	EEE	19
				IT	11
10	17.3.2025	21.03.2025	5 days	EEE	15
				ECE	15
11	24.3.2025	28.03.2025	5 days	EEE	30
Total					330

Students training:

Already, 11 batches of 5-days 'Training Program on Electric Vehicles' have been completed for students through the Electric Vehicle-Centre of Excellence laboratory and training has been provided by TVS Training & Services Ltd., Chennai. In this regard, we are submitting details of number of students attended Training Program on Electric Vehicles from respective department: -

Sl.No	Department	No. of students Batch-(1 to 11) attended
1	Electrical and Electronics Engineering	174
2	Electronics and Communication Engineering	47
3	Computer Science & Engineering	18
4	Information technology	31
5	Instrumentation and Control Engineering	1
6	Mechanical Engineering	22
7	Computer Science and Engineering and Business system	18
8	Mechatronics	15
Total		330

Electric Vehicle - Centre of Excellence

	Electric motor testing for PMSM and BLDC
	Cell testing upto 8 channels
	Battery pack equalizer with Active balancer with Bluetooth and Cell Assembler
	Electric vehicle station

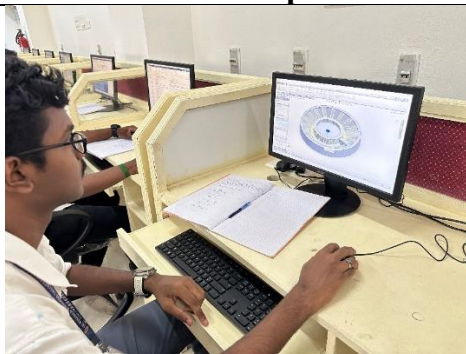


BMS continuously monitors battery voltage, current, and temperature to ensure safe operation.



Advanced Driver Assistance System (ADAS) simulator

Hands on experience through MATLAB and Ansys Simulation software

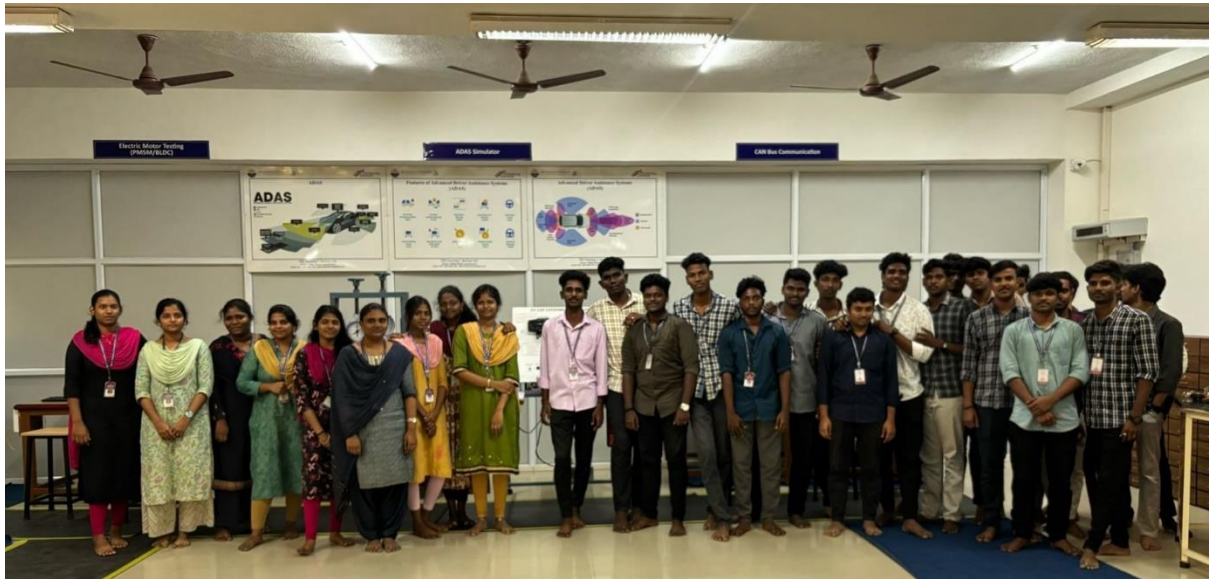


Students training:

This is for your kind information that our institution had signed a MoU with TVS Training and Services Ltd., Chennai on 28.3.2024 for Electric Vehicle-Centre of Excellence laboratory in our college premises. Electric Vehicle Laboratory with state-of-the-art equipment and infrastructure setups installation work has been completed at August month of this year. Already, six batches of 5-days '**Training Program on Electric Vehicles**' have been completed for students through the Electric Vehicle-Centre of Excellence laboratory and training has been provided by TVS Training & Services Ltd., Chennai. In this regard, we are submitting details of number of students attended Training Program on Electric Vehicles from respective department: -



5-days 'Training Programme on Electric Vehicles' for students through the Electric Vehicle-Centre of Excellence laboratory in our college premises.



The 11th batch of the 5-day **Training Program on Electric Vehicles** was conducted from **March 24, 2025, to March 28, 2025.**



The tenth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **March 17, 2025, to March 21, 2025.**



The ninth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **January 27, 2025, to January 31, 2025.**



The eighth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **January 20, 2025, to January 24, 2025.**



The seventh batch of the 5-day **Training Program on Electric Vehicles** was conducted from **January 6, 2025, to January 10, 2025.**



The sixth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **October 3, 2024, to October 10, 2024.**



The fifth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **September 25, 2024, to October 1, 2024.**



The fourth batch of the 5-day **Training Program on Electric Vehicles** was conducted from **September 18, 2024, to September 24, 2024.**



The third batch of the 5-day Training Program on Electric Vehicles was conducted from September 10, 2024, to September 14, 2024.



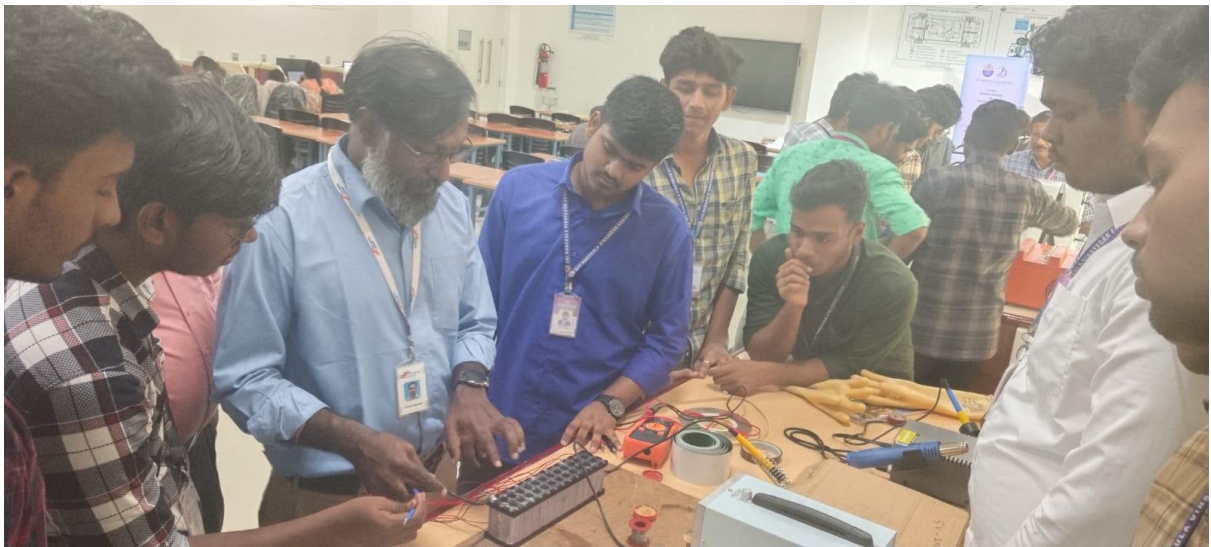
The second batch of the 5-day Training Program on Electric Vehicles was conducted from September 2, 2024, to September 9, 2024.



The first batch of the 5-day Training Program on Electric Vehicles was conducted from August 26, 2024, to September 2, 2024.

Gallery-Electric Vehicle Centre of Excellence





Gallery-Electric Vehicle Centre of Excellence



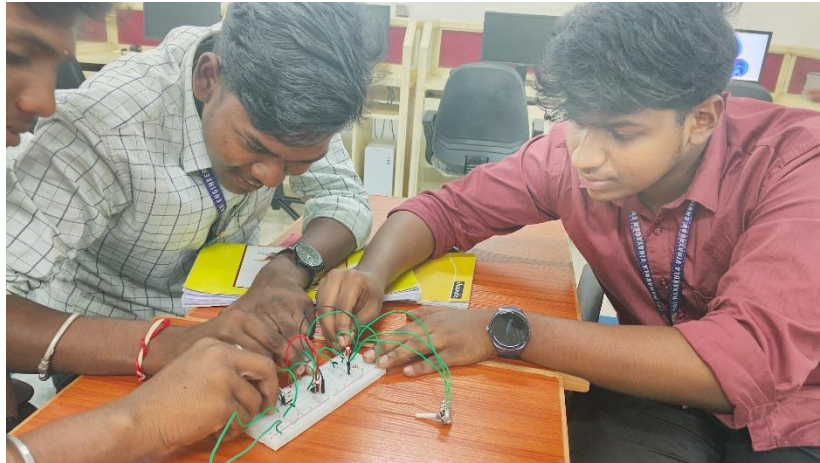
Gallery-Electric Vehicle Centre of Excellence



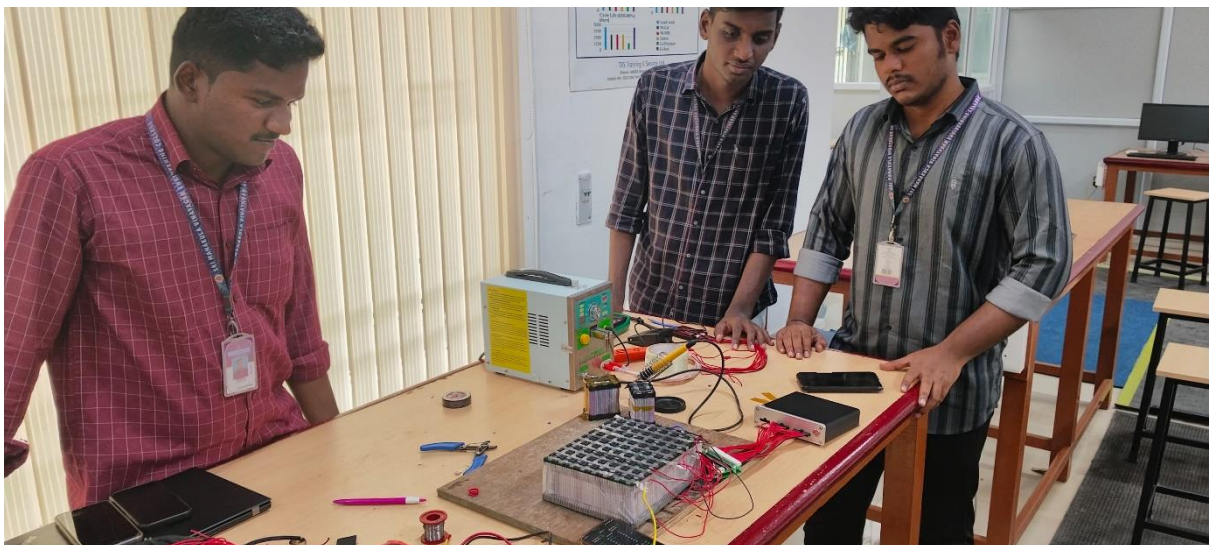
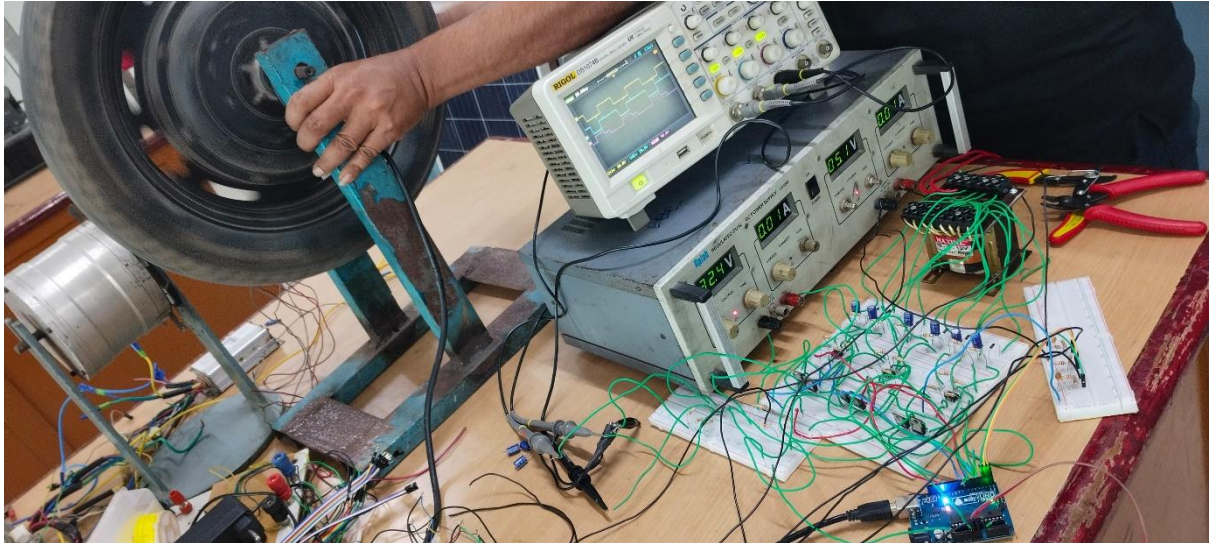
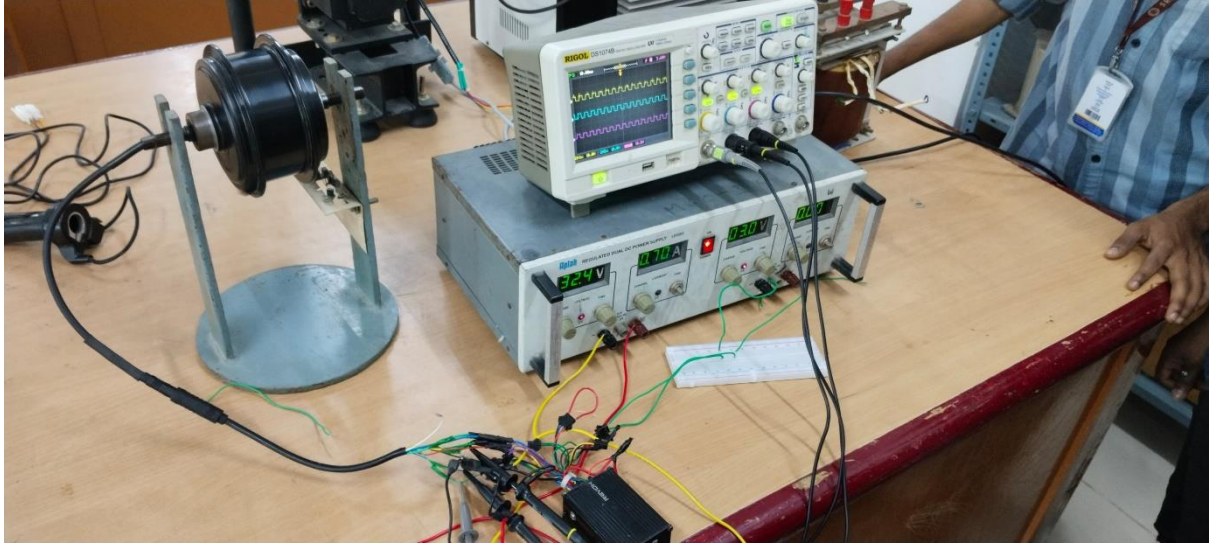
Gallery-Electric Vehicle Centre of Excellence



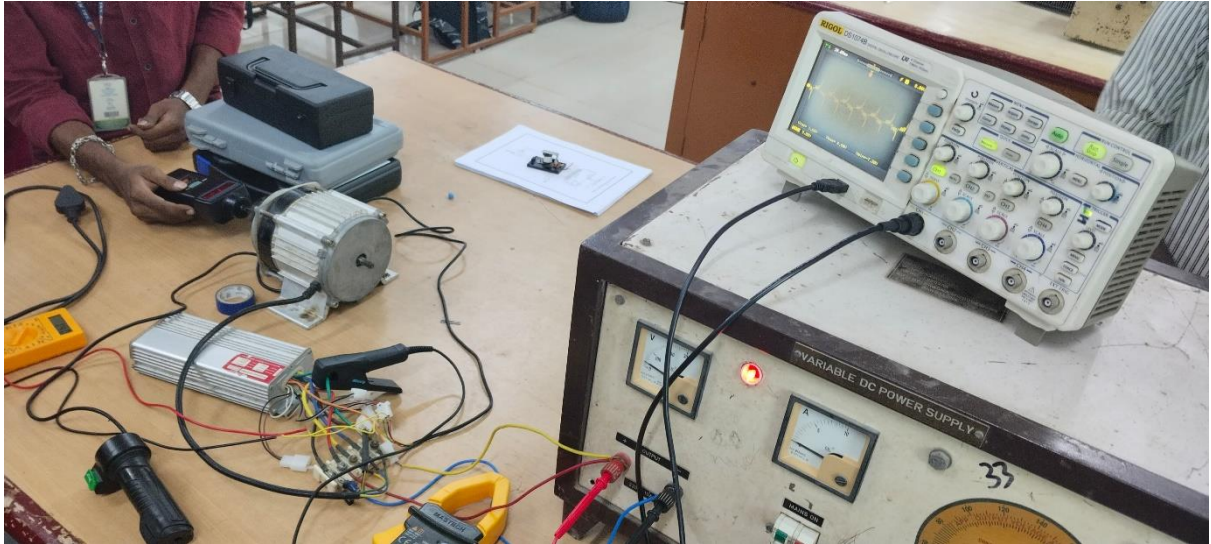
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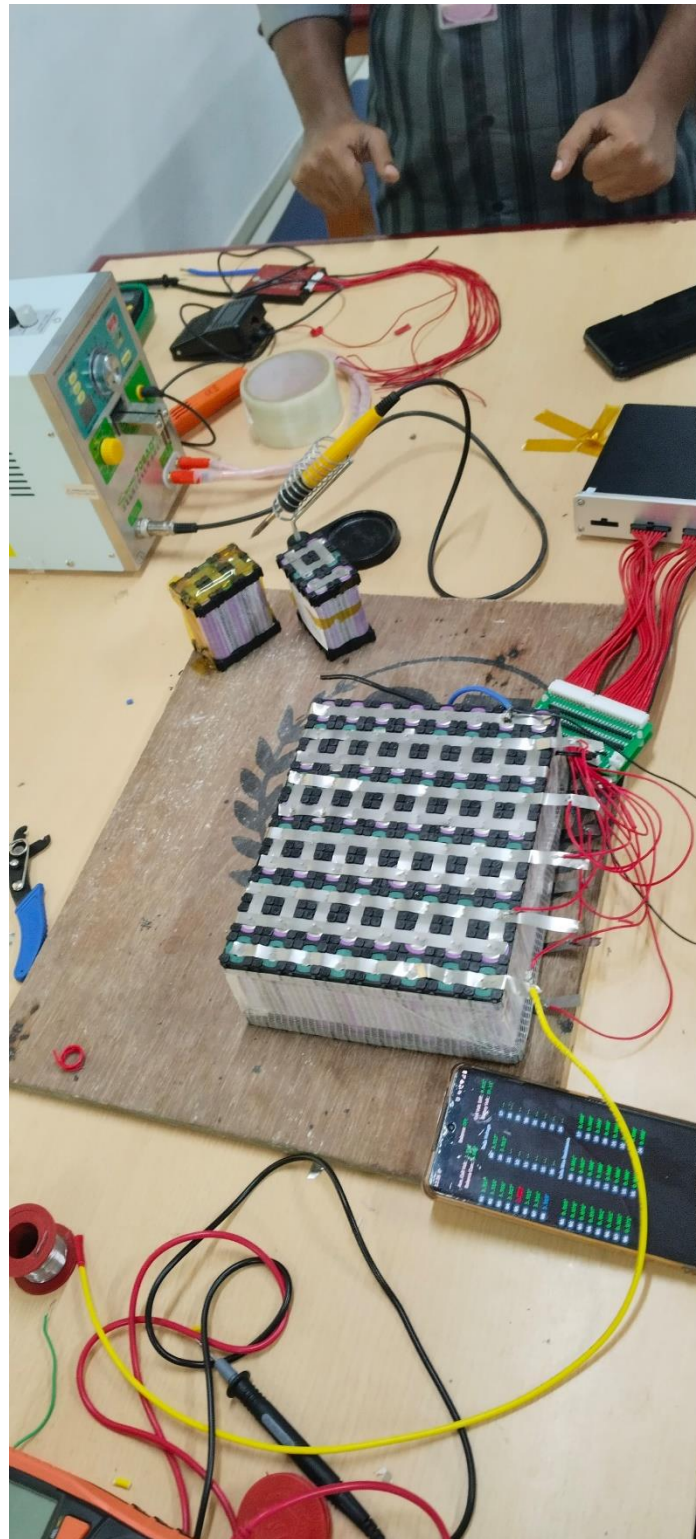
Gallery-Electric Vehicle Centre of Excellence



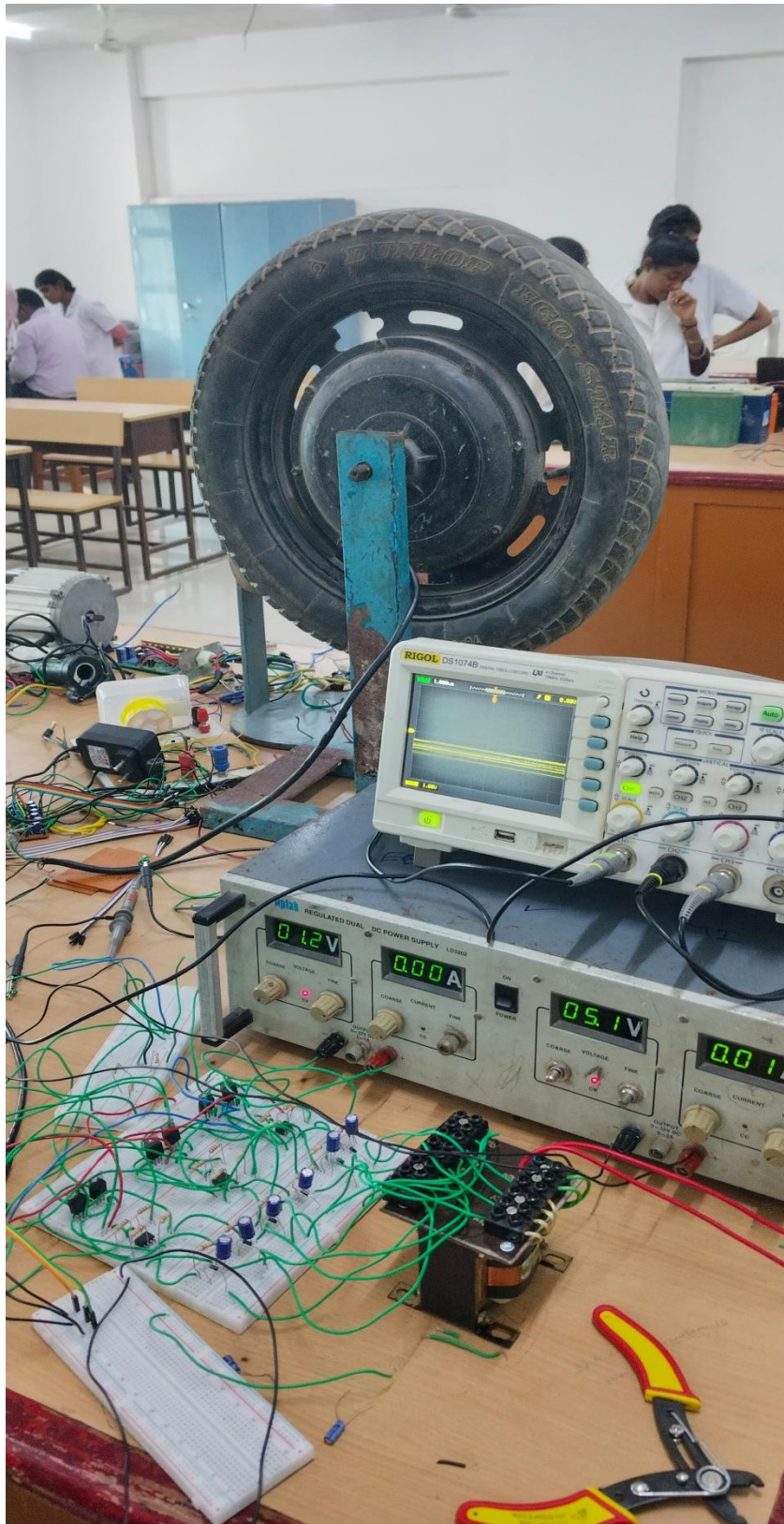
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Course Contents for ‘Training program on Electric Vehicle’

Duration: 40 Hours (5 days)

Mode of Training: offline

Content outline:

SL.No	Module	Contents	No. of Hours
1	Safety	High Voltage (HV) Personal Safety - HV hazard - Awareness levels - HV boundaries - Warning labels	8
2	Electric Vehicle Architecture	Introduction to EV-Comparison between V vs Conventional Vehicle - Hybrid and Electrical vehicle architecture-Regenerative braking system – EV components	
3	ADAS (Advanced Driver Assistance System)	ADAS system, Levels, and Applications	
4	Battery Technology	Li-ion cell internal structure -Types of Battery for EV, Selection of Battery (Based on the characteristics), Battery cell Calculation- Battery Pack & Development –Battery pack construction using Spot welding-Testing of Batteries	8
	BMS (Battery Management System)	Architecture of Battery Management System -Measurement of Voltage, Current & Temperature - Algorithm for BMS-Testing of Battery pack with BMS, Simple programs using Microcontroller	8
5	Motors and Its Control	Types of Electric vehicle motors- BLDC, PMSM, Induction motor – Construction working principle & testing.	8
	Power Converters	Role of Power converters in EV, Types of Power converters for EV- DC to DC, DC to AC, AC to DC and AC to AC Converter. Testing of Power Converters, EV Power Train	4
6	CAN (Controller Area Network) in Automotive	Introduction to CAN communication, CAN Application and CAN uses	4

Outcome:

Candidates will be able to:

- Familiar in architecture of Electric Vehicle and its components.
- Compare different types of Motors& Batteries.
- Test the EV components.
- Select the major components in EV.
- Design the vehicle parameters for EV.
- Assemble and dismantle the Electric car.
- Understand the EV role in Indian Market.
- Acquire knowledge on EV Charger characteristics.
- Demonstration the HV PPE (Personal Protective Equipment) - 8 Cal/cm² kit.

Certification criteria

- Attendance – 90% Min
- Assignment completion – 100%
- Posttest assessment score – 70% Min

