PRAGATI ENGINEERING COLLEGE

(AUTONOMOUS)

1-378, ADB Road, Surampalem, E.G. District, A.P.-533 437

(Approved by AICTE & Permanently Affiliated to JNTUK Kakinada & Accredited by NBA & NAAC with 'A 'Grade)

(Recognized by UGC under sections 2(f) & 12(b) of the UGC Act, 1956)

Learning is Supreme Deity Ph: (08852) 252233, 252234, 252235, Fax: (08852) 252232, Website: www.pragati.ac.in

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D.No: 2-46-21, Near D-Mart, Kakatiya Nagar, Kakinada. Ph: 0884-2355900, Fax: 2363900

Academic year: 2023-24

Date: 21.01.2024

CIRCULAR

We are happy to inform you that the Lecture on **"ELECTRIC VEHICLES AUTOMATION"** is scheduled to be conducted by Electric Vehicles Club. The Lecture will be delivered by K.S.BHARATH (22A35A0235) of III-EEE-B.

Interested Students can participate in the event as per the Schedule time below at Mechanical block MS-10.

Date & Time of Event : 22.05.2024 @ 2:00 PM

Venue : Mechanical Block -MS-13

HOD-EEE

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ELECTRICAL VEHICLES CLUB REPORT

ELECTRIC VEHICLES AUTOMATION

Electric vehicle automation involves the intricate integration of electric propulsion systems with advanced autonomous driving technologies. The technical aspects of this convergence encompass several key components and systems, each playing a critical role in achieving a seamless and efficient fusion of electric vehicles (EVs) and automation.

1. Electric Propulsion System:

Battery Technology: EVs rely on advanced battery technologies, usually lithium-ion batteries, to store and supply electrical energy. These batteries power electric motors that drive the vehicle.

Power Electronics: Converters and inverters manage the flow of electricity between the battery and the electric motor, ensuring optimal efficiency and performance.

2. Autonomous Driving Systems:

Sensors: Lidar (Light Detection and Ranging), radar, and cameras are essential sensors for autonomous vehicles. Lidar provides detailed 3D mapping of the surroundings, radar detects objects and their velocity, while cameras offer visual input for recognition.

Inertial Measurement Units (IMUs): IMUs measure accelerations and angular rates, providing crucial data for vehicle positioning and navigation.

GPS and GNSS: Global Positioning System (GPS) and Global Navigation Satellite System (GNSS) contribute to accurate localization and navigation, especially in open areas or when additional precision is required.

3. Connectivity and Communication:

V2X (Vehicle-to-Everything): Vehicles equipped with V2X technology can communicate with each other and infrastructure (V2I), sharing real-time data. This communication enhances safety and aids in traffic optimization.

Wireless Networks: Robust connectivity through 4G, 5G, or other wireless networks enables continuous communication between vehicles and centralized systems.

4. Control and Decision-Making Algorithms:

Artificial Intelligence (AI): Machine learning algorithms process data from sensors, continuously learning and adapting to various driving scenarios. AI algorithms are responsible for decision-making, allowing the vehicle to navigate complex environments autonomously.

Computer Vision: Image recognition and computer vision technologies enable the vehicle to interpret visual information from cameras, identifying objects, pedestrians, and traffic signs.

5. Safety and Redundancy Systems:

Redundant Systems: To ensure reliability, critical components such as sensors and controllers often have redundant backups, minimizing the risk of system failure.

Fail-Safe Mechanisms: Autonomous electric vehicles are designed with fail-safe mechanisms to handle unexpected situations. This includes protocols for safe stops and handover to human control if needed.

6. Integration Challenges and Solutions:

System Integration: Achieving seamless integration of electric propulsion and autonomous systems requires careful coordination between hardware and software components.

Cybersecurity: Protecting the vehicle's software and communication systems from cyber threats is a critical consideration in ensuring the safety and reliability of autonomous electric vehicles.

As the development of electric vehicle automation progresses, research and innovation focus on refining these technical elements. Collaborations between automotive manufacturers, technology companies, and regulatory bodies play a pivotal role in establishing industry standards and addressing challenges related to safety, reliability, and interoperability.

Total - **42** students participated in this Event

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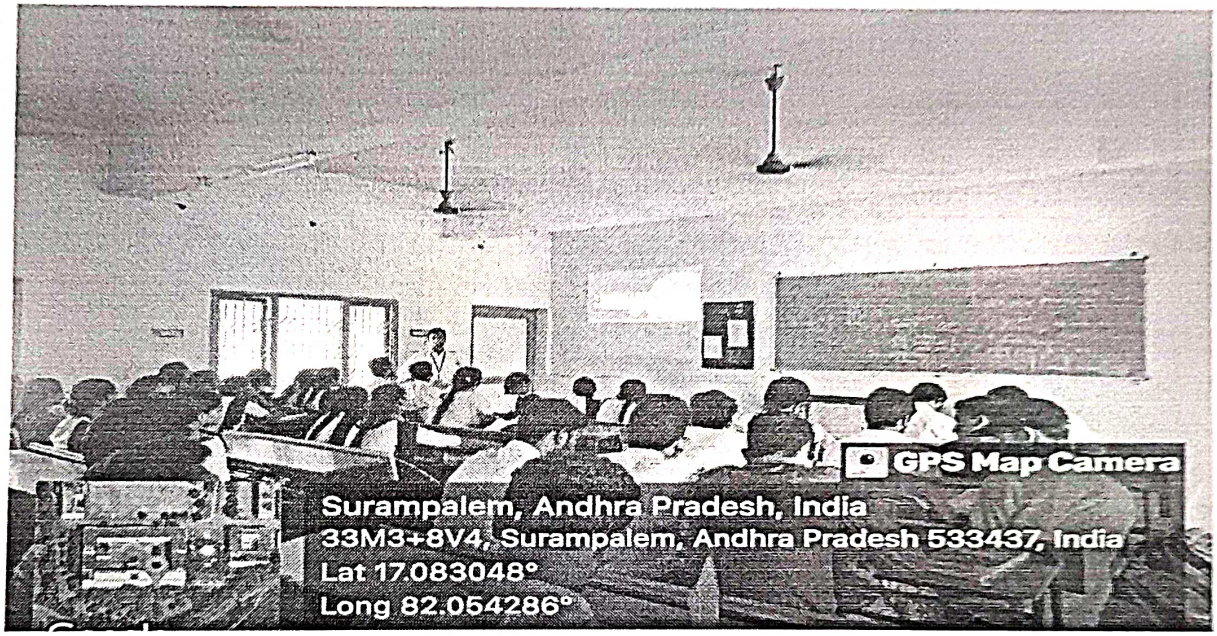
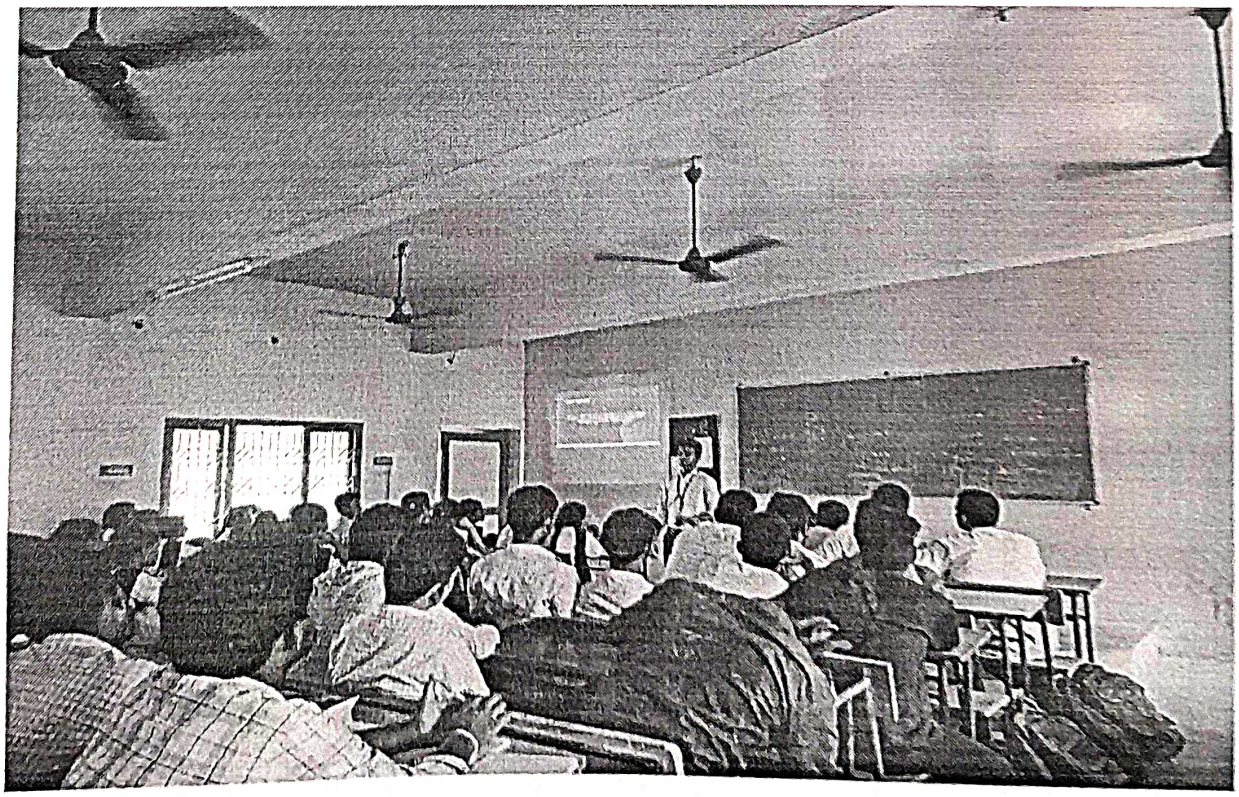
Photos:





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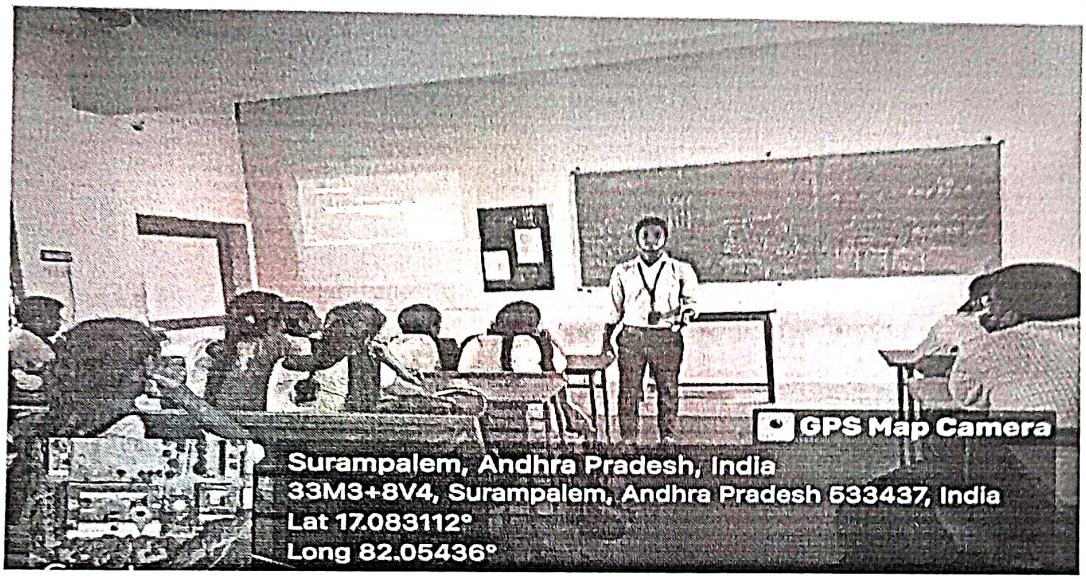

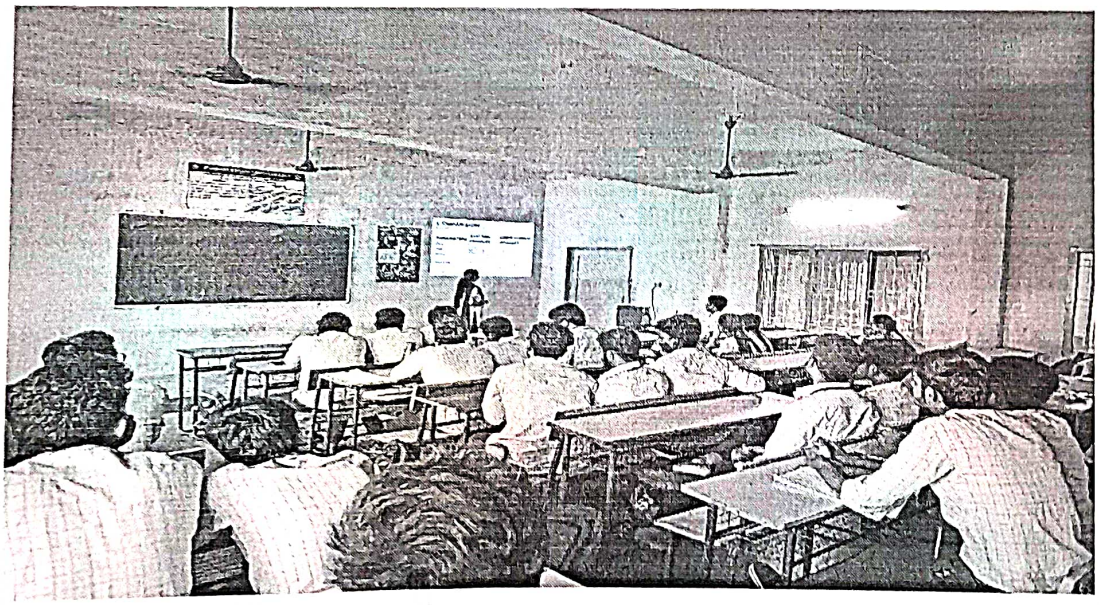

EV-CLUB CORDINATOR

HOD-EE

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Certificates:

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Attendance Sheet:

PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
DEPT. OF ELECTRICL AND ELECTRONICS ENGINEERING
ELECTRIC VEHICLES CLUB

Title of the Event :- Electric vehicle Automation

Event No :-

Speaker / Resource person of the Event :- K.S. Bharath

Date of the Event:- 22/01/24 Time :- 2:00 PM Venue :- MS-13

List of students attended

S.NO	ROLL NUMBER	NAME	BRANCH	YEAR	SIGNATURE
1.	21A31A0252	P.S.N.Sandeep	EEE	III	P.S.N.Sandeep
2.	21A31A0258	Y.N.V.Tharaka	EEE	III	Y.N.V.Tharaka
3.	21A31A0275	K.ALOK Vardhan	EEE	III	K.ALOK Vardhan
4.	21A31A0253	R.S.S.Akhil	EEE	III	R.Akhil
5.	21A31A0289	V.Pavan Kumar	EEE	III	V.Pavan
6.	21A31A0287	S.Satya Devi Sri Prasad	EEE	III	S.Satya Devi Sri Prasad
7.	21A31A0277	MD. Hafeez	EEE	III	MD.Hafeez
8.	21A31A0285	P.Peter Praveen	EEE	III	P.Peter Praveen
9.	21A31A0278	M.Chandrasekhar	EEE	III	M.Chandrasekhar
10.	21A31A0257	V.Kranthi Kumar	EEE	III	V.Kranthi Kumar
11.	21A31A02A0	Y.Manikanta	EEE	III	Y.Manikanta
12.	21A31A0273	G.Bala Murali	EEE	IV	G.Bala Murali
13.	21A31A0298	T.Ammaji Raju	EEE	III	T.Ammaji Raju
14.	21A31A0279	N.ACHYUTH	EEE	III	N.ACHYUTH
15.	21A31A0293	B.Anil Kumar	EEE	III	B.Anil Kumar
16.	21A31A0268	B.Veerababu	EEE	III	B.Veerababu
17.	21A31A0294	B.Sampath	EEE	III	B.Sampath
18.	21A31A0281	P.Vashik	EEE	III	P.Vashik
19.	21A31A0282	P.Sai Krishna	EEE	III	P.Sai Krishna
20.	21A31A0274	K.Lokesh varReddy	EEE	III	K.Lokesh varReddy
21.	21A31A0291	Y.Jai Kumar	EEE	III	Y.Jai Kumar
22.	21A31A0292	A.Bhavani Prasad	EEE	III	A.Bhavani Prasad
23.	21A31A0271	A.Suryadinesh	EEE	III	A.Suryadinesh
24.	21A31A0272	G.S.ABHISHEK	EEE	III	G.S.ABHISHEK
25.	21A31A0283	P.Srinivas	EEE	III	P.Srinivas
26.	22A35A0220	G.Mahesh	EEE	III	G.Mahesh
27.	22A35A0231	G.Nimshi	EEE	III	G.Nimshi

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ELECTRIC VEHICLES CLUB

S.NO	ROLL NUMBER	NAME	BRANCH	YEAR	SIGNATURE
1.	21A31A0259	A. Shyamala	EEE	IV	A. Shyamala
2.	21A31A0267	T. Pushpa	EEE	III	T. Pushpa
3.	21A31A0265	M. Kusuma	EEE	III	M. Kusuma
4.	21A31A0264	P. Rohini	EEE	III	P. Rohini
5.	21A31A0262	G. Pradeepthi	EEE	III	G. pradeepthi
6.	21A31A0260	B. Manjusri	EEE	III	B. Manjusri
7.	21A31A0261	D.N.V. Laheri	EEE	III	
8.	22A35A0219	A. Chandrishma	EEE	III	A. Chandrishma
9.	22A35A0227	T. Murthula Jaspa	EEE	III	
10.	22A35A0225	S. Revathi Anithaa	EEE	III	S. Revathi
11.	22A35A0223	R. Suma	EEE	III	R. Suma
12.	22A35A0226	S. Indu.	EEE	IV	S. Indu
13.	22A35A0222	Puli. Satya Sri	EEE	III	P. satyasri
14.	22A35A0220	B Tejaswi	EEE	III	B. Tejaswi
15	22A35A0228	T. Rama Tulasi	EEE	III	T. Rama Tulasi
16.	21A31A0254	P. Sricharan	EEE	III	