



**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
ACADEMIC YEAR 2021-22(EVEN SEMESTER)**

INTERNAL SEMINAR-REPORT

Department of EEE has organized Internal Seminar on "IOT BASED ELECTRIC VEHICLES" for second, third and final year EEE students on 6.4.2022.

Beneficiaries: Total:42:(II Year EEE Students)

Time: 3.00 P.M to 4.15 P.M

Venue: Smart classroom-Department of EEE

Resource Person (Internal):

Mr.R.Sundaramoorthi, Assistant Professor/EEE

The main objective of the internal seminar:

- **To understand the important theory aspects of Electric vehicles.**
- **To provide Comprehensive understanding of the functions and operations of Internet of Things and components.**
- **To impart technical skills to the students and make them to prepare projects and technical presentation.**

Mr.R.Sundaramoorthi, AP/EEE has welcomed all the second year EEE students. Before starting the presentation, he interacted with students about basic Introduction about Electric vehicles, Internet of Things and current trends in Electrical Engineering. The entire session was segregated with four sections such as Electric vehicle scenario, Hybrid Electric vehicle components, Internet of Things and current research areas in IoT based Electric vehicles. In addition, job opportunities and EV market scenario questions and questions and answer session was also included during the presentation. During his initial part of the session, he started with basic questions related to Internet of things(IoT) based Electric vehicles(EV) and comparison between conventional and Battery Electric vehicles. All the Second year students have interacted well and answered.

Then, he introduced about classification of Electric vehicles such as Battery Electric vehicle, Hybrid Electric vehicle and Plug-in Hybrid Electric vehicle. He explained how hybrid Electric vehicle works and all the components involved in HEV with current research problems. Next, he briefly explained about battery and its types, graphical representation between various batteries. He pointed out the main parameters and terminals of battery such as (a)Capacity (b)specific Energy (c)Energy density (d)Specific power (e)Energy Efficiency (f)State of Charge(g)Depth of Discharge. Then he started to present the most important part of EV such as Battery Management system and wireless techniques.

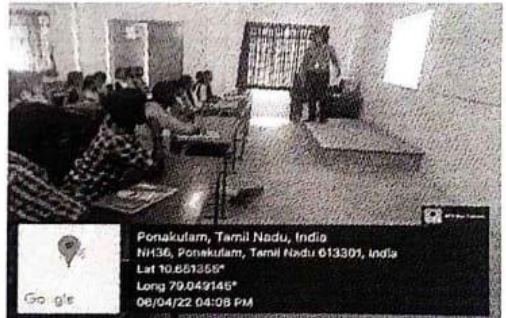
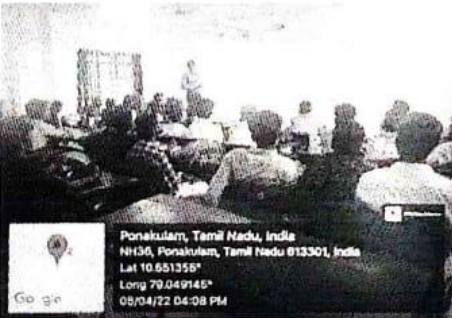
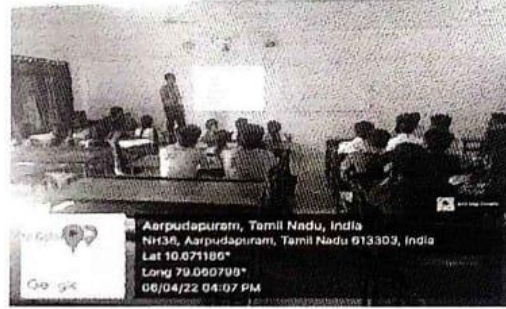
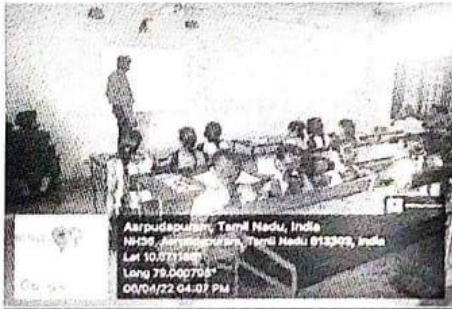
In the next part of the session, he has broadly explained about basics concepts of IoT and associated Components. He pointed out The Internet of Things (IoT) which describes the network of physical objects that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet. He has introduced about the IoT Modules and described how these devices range from ordinary household objects to sophisticated industrial tools by means of low-cost computing, the cloud, big data, analytics and mobile technologies with minimal human intervention. Then, he explained about Industrial IoT (IIoT) refers to the application of IoT technology in industrial settings, especially with respect to instrumentation and control of sensors and devices that engage cloud technologies. He mentioned that, industries have used machine-to-machine communication (M2M) to achieve wireless automation and control. But with the emergence of cloud and allied technologies (such as analytics and machine learning), industries can achieve a new automation layer and with it create new revenue and business models. IIoT is sometimes called the fourth wave of the industrial revolution, or Industry 4.0.

In the final part of the session, he explained about IoT applications in Electric vehicles to measure and analyzes the functions of battery Management systems. He has briefed about the different techniques of estimating state of charge (SOC), state of health (SOH) mechanisms and applications. The following parameters are involved in SOC and SOH(a)Voltage (b)Current (c)Temperature (d)Power. He has given broad idea of different features and specifications of BMS. .Before concluding the session, he has given idea about research aspects in EV and projects areas of Hybrid Electric vehicles. At the end of the session, students from second year and final year interacted and asked questions about Converters importance and scope of job opportunities in EV and future development of energy storage systems.

OUTCOME:

- Students will be able to emphasize theoretical knowledge on Internet of Things and Hybrid Electric vehicles.
- Students can be able to understand the different types of Electric vehicles, Components of Hybrid Electric vehicles and IoT that allow the students to observe applications in this field.
- Students shall select IoT based Hybrid Electric Vehicle area for their Project work, Paper Publication, Conference presentation and PCE activities.

SNAPSHOTS



Mr.R.Sundaramoorthi AP/EEE delivering lecture during Internal Seminar

Sundaramoorthi
13/4/2022
FACULTY INCHARGE

Sundaramoorthi
13/4/22
HOD/EEE

J. Rajan
13/4/2022
PRINCIPAL