



KLS Vishwanathrao Deshpande Institute of Technology

[Accredited by NAAC with "A" Grade]

(Approved by AKTE, New Delhi. Affiliated to VTU, Belagavi)

(Recognized Under Section 2(f) by UGC, New Delhi)

Udyog Vidya Nagar, Haliyal – 581329, Dist.: Uttara Kannada

Phone: 08284-220861

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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Activity Report

On

Technical Talk on "EV and HEV System Technology"

Title of the Event: Technical Talk on "EV and HEV System Technology"

Date: 25-10-2025

Venue: Online Mode – Google meet (link- <https://tel.meet/vpt-isvf-ymc>)

Organized by: Prof. Prakash Chavan

Target Audience: 5th Semester Students and Faculty Members

Objective of the Event:

The main objective of this technical talk was to enhance the knowledge of students and faculty members about the recent advancements in **Electric Vehicle (EV)** and **Hybrid Electric Vehicle (HEV)** technologies, their system architecture, and their role in promoting sustainable and green mobility.

Resource Person:

Dr. Sanjeev K. Nayak (NITK)

EDU Manager, Alstom Bangalore

Dr. Nayak is a renowned expert in the field of Electric and Hybrid Vehicle Systems and shared valuable insights into the design, components, energy management systems, and technological trends shaping the future of transportation.

Event Summary:

The session began with a formal welcome address by **Prof. Prakash Chavan**, who warmly welcomed the **Principal**, **Dr. V. A Kulkarni sir**, **Deans**, **Heads of Department**, **Prof. Smt. Rajeshwari N**, faculty members, and students.

The distinguished speaker, **Dr. Sanjeev K. Nayak**, delivered an engaging and informative presentation on EV and HEV system technologies, covering topics such as powertrain design, battery management systems, energy efficiency, and challenges in the transition towards electric mobility.

Students interacted enthusiastically during the Q&A session, asking thought-provoking questions about real-world applications, recent innovations, and career opportunities in the EV sector.

The session concluded with a **vote of thanks** delivered by **Prof. Prakash Chavan**, expressing gratitude to the resource person, Principal, faculty, and students for their active participation and support.



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KLS V D I T

Haliyal, Uttara Kannada Dist., Karnataka – 581329

Transferring Through Technology



Department of Electrical and Electronics Engineering

Organizes



Technical Talk

On

“EV and HEV System Technology”

Dr. Sanjeev K. Nayak

EDU Manager Abtom Bangalore

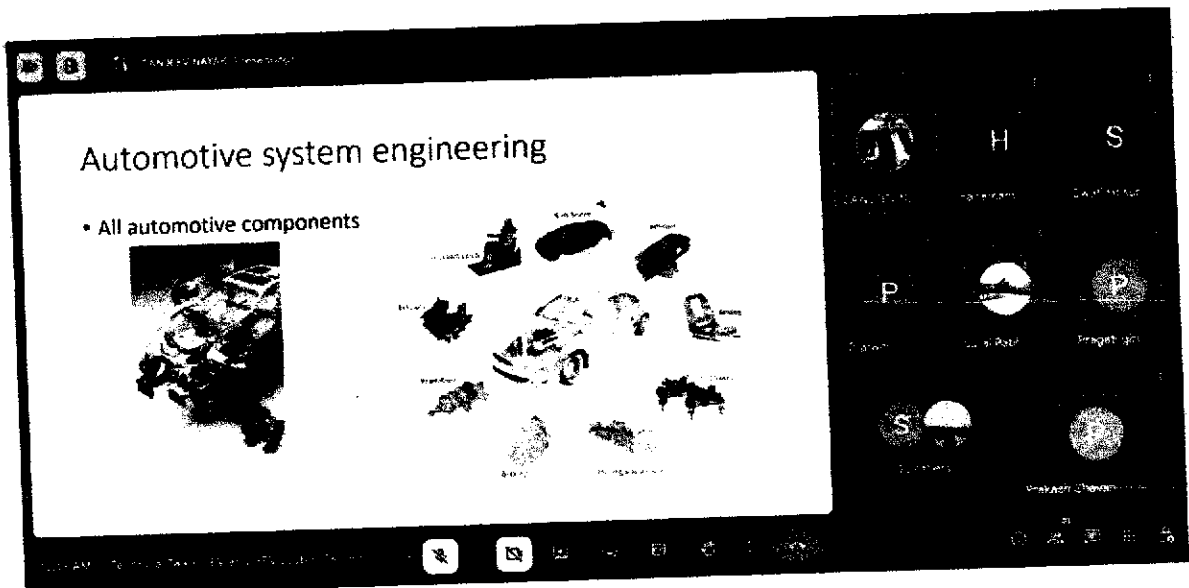


Prof. Prakash Chavan
Event Coordinator

Prof. Rajeshwari N
MOD

Dr. V. A. Kulkarni
Principal

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Energy Density & Power Density

Energy density is the amount of energy that can be stored in a given system, substance, or region of space.

- Energy density can be measured in energy per volume or per mass.

Power density is the amount of power (the rate of energy transfer) per unit volume.

- Energy transformers including batteries, fuel cells, capacitors, power supply units etc.

Ragone Plot

Specific power, Wh/kg vs Specific energy, Wh/kg

Regions: Supercapacitor, Fuel cell, Battery, Flywheel & Flywheel, Capacitor, Fuel cell & Fuel cell.

Outcome of the Event:

- Students gained practical insights into the working principles and future trends of EV and HEV systems.
- The session encouraged interest in sustainable and renewable energy-based transportation technologies.
- Faculty and students received valuable exposure to the latest industrial developments and research directions in electric mobility.

Conclusion:

The technical talk was highly informative and successful in meeting its objectives. It served as an excellent platform for students to bridge the gap between theoretical learning and industry practices related to Electric and Hybrid Vehicle technologies.

[Signature]
25/10/25
Event Coordinator

[Signature]
28/10/25
HOD

[Signature]
Principal

HEAD
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Battery and EV battery

Electrochemical device

- Primary battery and Fuel cell, rechargeable battery
- Secondary batteries: Rechargeable battery**
 - Lithium-Ion (Li-ion)
 - Nickel Cadmium (Ni-Cd)
 - Nickel-Metal Hydride (Ni-MH)
 - Lead Acid

RECHARGEABLE VS NON RECHARGEABLE

Navigation icons for Battery and EV battery slide.

Vehicle and Types

- Individual source
- Hybrid sources

WDAP-5
India's First
Dual Fuel Diesel + Electric Locomotive

Technical and Design details