THE

ACEE COMMETTE EVENT REPORT

ON

EXPERT INTERACTION ON E-MOBILITY

&

SUSTAINABILITY

SUBMITTED BY

ACEE COMMETTE SECRETARIES

Mr. Gaikwad Aditya Avinash

Ms. Jadhav Prachi Mahesh

UNDER THE GUIDANCE OF

Mr. Gajul Harsh Vinod

ACEE COMMETTE PRESIDENT

AND

Prof. A. L. Barkade

ACEE COMMETTE CORDINATOR

AMBITIOUS CANAL OF ELECTRICAL ENGINEERING,

DEPARTMENT OF ELECTRICAL ENGINEERING,

PRADNYA NIKETAN EDUCATION SOCIETY, PUNE

NAGESH KARAJAGI ***ORCHID*** COLLEGE OF ENGINEERING &

TECHNOLOGY, SOLAPUR 413002

(AN AUTONOMOUS INSTITUTE)

(AFFILIATED TO DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE)

2026– 2027

Event Report: Expert Interaction on E-Mobility & Sustainability

Institution: Nagesh Karajagi Orchid College of Engineering & Technology, Solapur
Event Name: Expert Interaction on E-Mobility & Sustainability
Title: 7,000+ km Electric Car Journey: Outreach on E-Mobility, Sustainability & Practical Case Studies
Outreach Campaign: The SunPedal Ride
Resource Person / Expert: Mr. Sushil Reddy (IIT Bombay Alumnus – Energy Science & Engg.; HEC Paris Alumnus – Sustainability & Social Innovation; Guinness World Record & India Book of Records Holder)
Target Audience: S.Y., T.Y., B.Tech Electrical, Mechanical & Allied Engineering Students, and Faculty Members)
Date of the Event: 22nd October 2026
Duration of the Event: 10:00 AM to 12:00 PM
Venue: ARC Hall NKOCET Solapur
Organized By: Ambitious Canal of Electrical Engineering (ACEE)
Name of the Event Coordinator: Mr. Gajul Harsh Vinod
Faculty Coordinator: Prof. A.L. Barkade (ACEE Coordinator)
Head of Department: Dr. P.R. Padghan (HOD, Electrical Engineering)

Objective of the Program:

1. Demystify Clean Mobility Transitions: To educate students on global sustainability frameworks (Net Zero paradigms, 1.5^\circ\text{C} climate thresholds) and the critical necessity of vehicle electrification.
2. Hands-on Field Engagement: To provide an experiential bridge through an outdoor physical inspection of an endurance-tested EV on the college grounds.

Overview:

The Department of Electrical Engineering, through the Ambitious Canal of Electrical Engineering (ACEE) at NKOCET, Solapur, organized an expert interaction session featuring Mr. Sushil Reddy, clean mobility advocate and founder of The SunPedal Ride. As part of his nationwide initiative to promote sustainability, Mr. Reddy conducted a 7,000+ km endurance electric car journey spanning 60 days and 15+ university stops across South India.

Key Outcomes:

1. Practical EV Technology Comprehension: Students gained an applied engineering understanding of electric vehicle drivetrains, power electronics conversion stages, regenerative braking, and motor architectures.
2. Inspiration for Clean-Tech Careers: The session inspired undergraduate students to identify prospective core capstone design projects, explore start-up avenues in e-mobility, and align their academic preparation with the national clean energy transition.

Activity
Expert Interaction on E-Mobility & Sustainability

Executive Summary:

The Department of Electrical Engineering, under the auspices of the Ambitious Canal of Electrical Engineering (ACEE), is organizing an expert technical interaction and clean energy outreach session titled "7,000+ km Electric Car Journey: E-Mobility & Sustainability Outreach" on 22nd October 2026 from 10:00 AM to 12:00 PM.

The session features prominent energy engineer, sustainability evangelist, and record-holding endurance driver Mr. Sushil Reddy. As part of his broader 7,000+ km, 60-day South India electric car expedition covering 15+ premier universities to champion zero tail-pipe mobility, Mr. Reddy is making a designated university stopover at NKOCET, Solapur. The program combines a classroom masterclass on vehicular electrification, battery technology, and total cost of ownership (TCO) with an interactive outdoor inspection and live demonstration around his endurance-run electric car.

Distinguished Speaker Profile & World Record Credentials:

Mr. Sushil Reddy is an internationally acclaimed clean mobility advocate and Energy Engineer:

Academic Background: B.Tech in Energy Science and Engineering from IIT Bombay (2013 Batch); Master's Degree in Sustainability and Social Innovation from HEC Paris

Official Guinness World Record Holder: Officially certified by Guinness World Records for achieving the longest journey made by a motorized bicycle: 11,812.42 km (7,339.89 miles), traversed across the United States between Winston-Salem, North Carolina, and Houston, Texas (15 August 2021 – 17 January 2022)

India Book of Records Holder: Honored for completing the maximum distance covered in an electric car by an individual in India.

Founder, The SunPedal Ride: An ongoing global outreach movement building grassroots conversations on net-zero emissions, renewable energy transition, and clean transportation through zero-emission endurance expeditions.

Field Track Record: Over 50,000+ kilometers driven in electric vehicles across diverse terrains and charging conditions throughout India.

Detailed Session Modules & Technical Topics Covered:

Module 1: Global Climate Frameworks & E-Mobility Drivers
Contextualizing global carbon budgets, the Paris Agreement (1.5^\circ\text{C} threshold), and India's Net-Zero 2070 decarbonization roadmap.
Well-to-Wheel vs. Tank-to-Wheel emissions: Objective comparison between Battery Electric Vehicles (BEVs) and Internal Combustion Engine (ICE) platforms.

Module 2: Electric Vehicle Drivetrain & Systems Design
Architectural overview of EV sub-assemblies: Inverters, DC-DC buck/boost converters, onboard chargers (OBC), and regenerative braking dynamics.

Module 3: Battery Systems, Safety & Thermal Engineering
Comparative evaluation of cell chemistries: Lithium Iron Phosphate (LFP) vs. Nickel Manganese Cobalt (NMC).
In-depth engineering inquiry into battery fires: Thermal runaway triggers, dendrite growth, mechanical abuse, and BMS protective thresholds.
Charging infrastructure standards: Slow AC Level-2 charging vs. High-power DC Fast Charging (CCS-2 protocol), grid loading, and peak demand implications.

Module 4: Practical Lessons from 50,000+ km Across India
Real-world operational case studies: Tackling range anxiety, elevation impacts, thermal ambient extremes, and charging app aggregators (e.g., PlugShare).
Quantitative economics: Calculation of running cost per kilometer, Total Cost of Ownership (TCO), and fleet depreciation models.

Module 5: Interactive Outdoor Demonstration
Physical inspection of the endurance-run electric car.
Live review of dashboard energy telemetry, regenerative braking feedback, and overnight campus charging logistics.

Organizing Committee & Institutional Support:

Chief Patron: Dr. S. S. Metan (Vice-Principal, NKOCET, Solapur)
Program Convener: Dr. Pavan R. Padghan (Head, Department of Electrical Engineering)
Faculty Coordinator: Prof. Aishwarya L. Barkade (ACEE Coordinator)
Student Lead Coordination: Mr. Harsh Gajul & ACEE Council
Campus Facilities Provided: Overnight Guest House accommodation and designated campus 16A/32A EV charging support.

Conclusion:

The expert interaction and clean mobility outreach session conducted by Mr. Sushil Reddy under The SunPedal Ride concluded with resounding success, delivering valuable real-world exposure to the students and faculty of the Department of Electrical Engineering at NKOCET, Solapur. By connecting core engineering theory with practical field experience from over 50,000 km of endurance EV driving, the session effectively demystified battery safety, powertrain configurations, and the economic landscape of sustainable transportation. The interactive quiz and subsequent live outdoor demonstration around the electric vehicle provided students with actionable insights into industry challenges and motivated them to pursue projects and careers in clean-tech innovation. The ACEE Committee and the Department of Electrical Engineering express sincere gratitude to Principal Dr. J. B. Dafedar, Head of Department Dr. Pavan R. Padghan, and the college administration for providing the logistical support, campus EV charging, and guest house facilities that made this national-level interaction possible.

Photos of the Programme:



Vice Principal Dr. S. S. Metan extending a warm floral welcome to Mr. Sushil Reddy.



Vice Principal Dr. S. S. Metan's address





Mr. Sushil Reddy delivering an expert lecture on electric car design, real-world case studies from his 7,000+ km endurance journey.







Mr. Sushil Reddy demonstrating electric vehicle subsystems and components to students during the outdoor interactive session.

Pradnya Niketan Education Society Pune's
NAGESH KARAJAGI ORCHID COLLEGE OF ENGINEERING & TECHNOLOGY, SOLAPUR
An Autonomous Institute
Approved by AICTE, New Delhi, Govt. of Maharashtra & Affiliated to DBATU, Lonere
E-mail: office@orchidengg.ac.in, Website: www.orchidengg.ac.in, Phone No. (0217) 2990051/ 9423084363
Post Box No. 154, Gut No. 16, Solapur-Tuljapur Road, Tale Hipparaga, Solapur- 413 002
(With CGPA 3.32)





Prof. A.L. Barkade
(ACEE Faculty Coordinator)

Dr. P.R. Padghan
(HOD Electrical Engineering Dept.)