PROJECT EXHIBITION

Date and Time:	24-11-2023
Objectives	• Encourage students' creativity, technical skills, and ability to solve real-world problems in a limited time frame aim to offer practical exercises to reinforce theoretical concepts • To improve students' ability to identify problems and come up with effective solutions. • To promote teamwork, communication, and collaboration among students.
Coordinator Details	Assistant professor. Shehanas K Salim ,MBCCET
Participants Details	No of participants : 150
Outcome	• Students gain hands-on experience in applying theoretical knowledge to real-world problems. • Students develop critical thinking and problem-solving skills. • Students develop research, data collection, and analysis skills • Students become proficient with specific tools, technologies, or techniques..
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INTRODUCTION

High temp thermal managrment of lithium ion battery

Lithium-ion batteries have become the preferred energy storage solution in various applications such as electric vehicles, portable electronics, and renewable energy systems due to their high energy density, long cycle life, and efficiency. However, their performance and safety are significantly influenced by temperature. At elevated temperatures, typically above 45°C, lithium-ion batteries face accelerated degradation, increased internal resistance, electrolyte decomposition, and a higher risk of thermal runaway, which can lead to catastrophic failure. As global demand for high-power battery systems continues to rise, particularly in environments exposed to high ambient temperatures or intense cycling conditions, effective thermal management becomes critical. This project focuses on understanding the thermal behavior of lithium-ion batteries under high-temperature conditions and developing efficient thermal management strategies to ensure optimal performance, safety, and longevity of the battery systems.

Compact domestic electric power generated using biogas

With the growing demand for sustainable and decentralized energy solutions, biogas has emerged as a promising renewable energy source, particularly in rural and semi-urban areas. Biogas, primarily composed of methane and carbon dioxide, is produced through the anaerobic digestion of organic waste such as kitchen scraps, agricultural residues, and animal manure. This project focuses on designing a compact, household-level biogas system capable of generating electricity for domestic use. By converting readily available organic waste into clean energy, this system not only addresses the issue of waste management but also provides an affordable and eco-friendly alternative to conventional fossil-fuel-based power. The project aims to demonstrate how small-scale biogas generation can contribute to energy self-sufficiency, reduce carbon emissions, and improve the quality of life in off-grid or energy-deficient communities.

DRONE PROJECT

Drones, also known as unmanned aerial vehicles (UAVs), have revolutionized modern technology by offering versatile applications across a wide range of industries, including agriculture, surveillance, delivery, disaster management, and aerial photography. These remotely or autonomously controlled flying machines are equipped with sensors, cameras, GPS, and control systems that allow for precise navigation and task execution. This project focuses on the design, development, and testing of a drone capable of performing specific tasks efficiently, while highlighting key aspects such as flight stability, payload capacity, real-time data transmission, and automation. The aim is to explore the potential of drone technology in solving real-world problems by creating a cost-effective and adaptable UAV platform that can be modified for various applications depending on user requirements.

PO JUSTIFICATION

PO1 – Engineering Knowledge

Justification: Students apply fundamental concepts of mathematics, science, and engineering to develop and showcase their projects.

PO2 – Problem Analysis

Justification: Projects usually solve real-world problems. The process involves identifying and analyzing complex problems.

PO3 – Design/Development of Solutions

Justification: Projects are typically centered around designing innovative or optimized engineering solutions.

PO4 – Conduct Investigations

Justification: Involves experimentation, analysis, data collection, and validation as part of developing and testing project outcomes.

PO5 – Modern Tool Usage

Justification: Projects often incorporate software tools, simulation platforms, and modern engineering equipment for implementation and demonstration.

PO9 – Individual and Team Work

Justification: Most projects are done in groups, encouraging effective teamwork and collaboration.

PO10 – Communication

Justification: Requires clear and professional presentation of project concepts, methodology, and results—both written and oral.

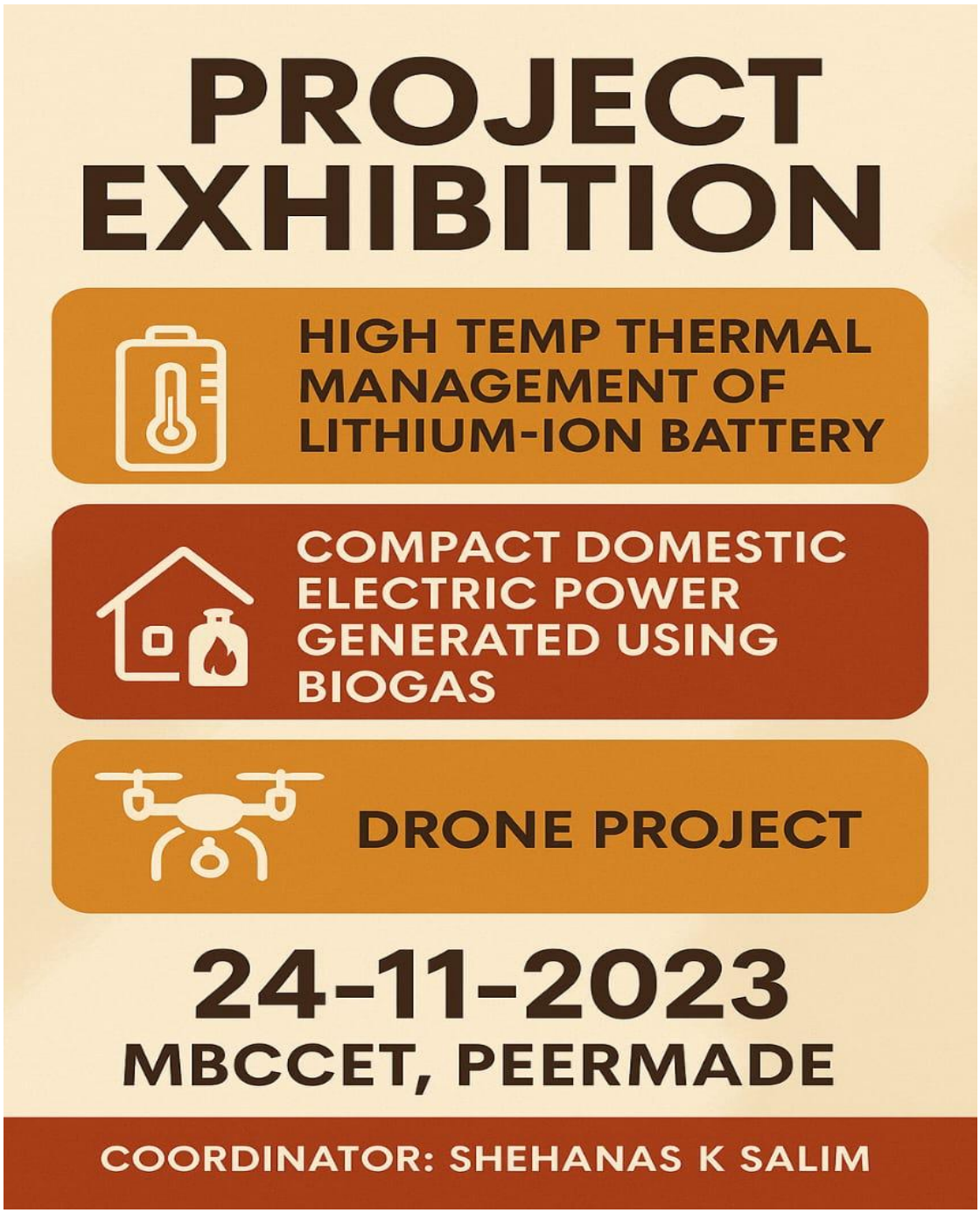
PO11 – Project Management and Finance

Justification: Students manage time, cost, and resources while planning and executing projects—key aspects of project management.

PO12 – Life-long Learning

Justification: Involves self-directed learning of tools, concepts, or technologies beyond the curriculum.

POSTER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24-11-2023
MBCCET, PEERMADE
COORDINATOR: SHEHANAS K SALIM