



# PANIMALAR ENGINEERING COLLEGE

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POONAMALLEE, CHENNAI- 600 123.



## DEPARTMENT OF MECHANICAL ENGINEERING

### NEWSLETTER-THE TORQUE

.... Ready to be driven

Vol. 20 | Issue #1  
Mar 2025



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**VISION**

The Department of Mechanical Engineering will be globally recognized as a pioneer for its excellence in teaching and research in the field of Mechanical and allied Engineering disciplines.

**MISSION**

M1: To provide world-class education and pioneering research opportunities, enabling students and faculty to contribute meaningfully to society through innovation and excellence.

M2: To advance engineering and science by fostering technological innovation, academic excellence, and strong industry collaborations for impactful research and technology transfer.

M3: To develop skilled, innovative, and entrepreneurial graduates who drive national and global sustainable development.

#### FROM THE HOD'S DESK

I am very happy that our Mechanical Engineering Department is releasing this newsletter as a forerunner to the departmental activities for this semester. It is of utmost importance that students are exposed to knowledge beyond the fundamentals across various fields, as this will greatly aid their future endeavors. This newsletter will serve as a valuable platform for both faculty and students to stay updated with the latest developments in technology and research. I am confident that it will inspire our students to enhance their skill sets and broaden

## SMART INDIA HACKATHON - 2024

Keerthi Ramanaa K M, Prasanna V, Manoj Kumar S, and Thenmozhi P of Mechanical Engineering Students showcased their technical expertise and problem-solving abilities by participating in the **Smart India Hackathon** held at **KIET Institute, Ghaziabad**, from **10th to 15th December 2024**. Competing against several talented teams from across the country, they demonstrated innovation, dedication, and strong collaboration throughout the event.



At the end of the week-long hackathon, the team emerged victorious, securing the **First Prize**. This remarkable achievement not only highlights their skills and hard work but also brings pride to their institution.



Their success at a national-level competition like Smart India Hackathon reflects their commitment to excellence and serves as an inspiration to their peers and juniors.

## INAGURATION - ENFUSE

The **Department of Mechanical Engineering** at **Panimalar Engineering College** proudly inaugurated the **ENFUSE Student Chapter** for the academic year **2024-2025** on **October 1, 2024**, with an enthusiastic gathering of over 150 Mechanical Engineering students. This milestone event marked a pivotal step in the institution's ongoing commitment to promoting **energy awareness, sustainability, and industry engagement** among students. The session commenced with a warm welcome address by **Dr. N. Poyyamozhi**, followed by the official inauguration led by distinguished dignitaries — **Er. B. Paneer Selvam** (Vice President, ENFUSE), **Er. B. Murugavel** (Joint Secretary, ENFUSE), and **Dr. L. Karthikeyan** (Head of the Department, Mechanical Engineering, Panimalar Engineering College).

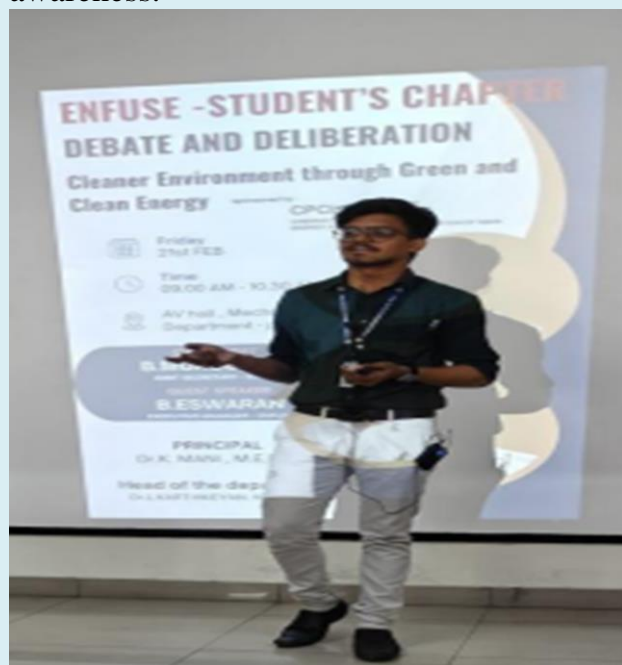


In his insightful keynote, **Er. B. Paneer Selvam** spoke on the evolution towards **Industry 5.0**, linking it with the foundations laid by **Industry 4.0**, and highlighted the increasing role of **digitalization and automation** in today's industrial landscape. **Er. B. Murugavel** followed with an informative session on the fundamentals of **energy and fuel**, while also presenting an overview of the **ENFUSE chapter's mission, structure, and future activities**, emphasizing student involvement and growth opportunities. The event concluded with a **vote of thanks** by **Mr. Akshay P. Raj**, a first-year ENFUSE member. The program was smoothly coordinated by **Mr. Naveen Kumar D**, **Mr. Gokul Raj V**, **Mr. Harish Kumar K**, and **Mr. Bharanidharan V J**, who served as the chapter's Secretaries and Office Bearers. The successful launch set the tone for a promising year of initiatives focused on energy



## DEBATE SESSION

The Department of Mechanical Engineering at Panimalar Engineering College organized a thought-provoking debate session under the banner of the EnFuse Club on February 21, 2025. Sponsored by CPCL-EnFuse, the event took place within the college campus and centered around the theme “Cleaner Environment through Green and Clean Energy.” The session aimed to cultivate critical thinking, public speaking, and argumentation skills among students while encouraging meaningful discussions on contemporary environmental issues. Topics such as the transition to renewable energy, solar and wind power, electric vehicles, bioenergy, and community-led clean energy initiatives sparked dynamic exchanges and reflected the students’ in-depth research and awareness.



The debate featured **engaging rebuttals**, **well-informed arguments**, and **active participation** from both the audience and expert judges, who added valuable insights through their feedback. The session was a key highlight of the broader **EnFuse event**, which brought together students, innovators, and industry leaders to explore developments in sustainable energy. With keynote addresses, panel discussions, and

## THE TALK

The talk on "Future Prospects of Hybrid Solar Drying Technology" was held at the AV Hall, Panimalar Engineering College, focusing on the advancements, challenges, and future trends in hybrid solar drying systems. It emphasized the integration of conventional and renewable energy sources to enhance drying efficiency, energy sustainability, and product quality. Key discussion points included the fundamentals of hybrid solar drying, different configurations such as solar-biomass and solar-electric systems, technological innovations in heat storage and automation, and emerging trends like IoT-enabled smart drying and AI-driven optimization. The session also highlighted the challenges such as economic viability, technical limitations, and climatic dependency.



The guest speaker, **Dr. Sushovan Chatterjee**, Associate Professor and Head of Mechanical Engineering at Cooch Behar Government Engineering College, brought his rich academic and professional experience in sustainable energy and thermal systems to the session. A PhD graduate from IIT Guwahati and a Chartered Engineer, Dr. Chatterjee provided deep insights into the current developments and future scope of hybrid solar drying. The talk had a significant impact, showcasing real-world applications across agriculture, food processing, pharmaceuticals, and textiles, underlining the technology’s potential in promoting energy efficiency and sustainability in diverse industries.

## TWO-DAY WORKSHOP ON "DRONE ASSEMBLY"

The Drone Club of the Department of Mechanical Engineering, in association with AVIATORQ, organized a two-day workshop on "Drone Assembly" on September 5 and 6, 2024. The workshop aimed to provide students with hands-on exposure to drone technology, including component understanding, assembly, and basic flight operations.

Day 1 focused on theoretical aspects such as drone components, aerodynamics, and safety protocols. Day 2 involved live demonstrations, assembly guidance, testing, and real-time flight simulations, led by **Mr. Damodharan and team** from AVIATORQ.



Around **45 students** participated enthusiastically, gaining practical knowledge and valuable skills. The event concluded with a certificate distribution by **Dr. L. Karthikeyan**, HoD, Mechanical Engineering. The workshop was a resounding success, fostering technical skill development and innovation among students.

## REPORT ON KICK STARTER WORKSHOP ON 3D PRINTING

The Department of Mechanical Engineering at Panimalar Engineering College conducted a **Kick Starter Workshop on 3D Printing** on 11th and 12th September 2024 at the Mechanical CAD Lab. With the participation of 32 students, the workshop aimed to introduce the fundamentals of additive manufacturing and 3D design. The first session focused on CAD modeling, design principles, and optimization techniques, emphasizing real-world applications and the importance of design for manufacturability.



The second part of the workshop offered hands-on experience with 3D printers, where students learned about slicing software, printer calibration, and the full printing process. Each participant successfully printed simple geometric models, translating digital designs into tangible prototypes. The sessions were interactive and informative, sparking interest in advanced manufacturing technologies and encouraging students to explore career opportunities in the field of 3D printing.

*Innovation begins where imagination meets engineering.*