VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI

MECHNOVA

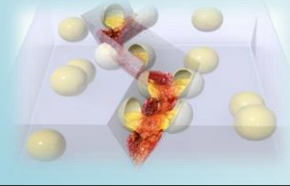
JUNE 2025

VOL 13, ISSUE 3

LATEST IN MECHANICAL ENGINEERING!!

Self-Healing Materials for Aerospace Applications

Engineers at the University of Illinois have developed a polymer-based material that can autonomously repair cracks and punctures in aircraft structures. The material contains microcapsules filled with healing agents that are released upon damage, bonding the broken parts within minutes. This self-healing technology enhances the durability and safety of aerospace components, reducing maintenance costs and extending the operational life of aircraft.



INSIDE THIS ISSUE:

VISION

"To become a centre of excellence in Mechanical Engineering, producing innovative and creative mechanical engineers to meet the global challenges"

MISSION

1. To Provide a platform to the students towards attaining quality education in Mechanical Engineering.

2. To Educate students about professional & ethical responsibilities and train them to build leadership and entrepreneurship qualities for their career development.

3. To Create opportunities and guide students in acquiring career-oriented jobs in the field of Mechanical Engineering.

INDUSTRIAL VISIT – S4 ME (2023-27 BATCH)

Students of S4 Mechanical Engineering (2023–2027 batch) undertook an industrial visit to Fertilisers and Chemicals Travancore Limited (FACT), Cochin Division, Ambalamedu, Kochi, on 5th April 2025. A total of 16 students, accompanied by one faculty member and a parent, participated in the visit.

The visit was aimed at providing the students with first-hand exposure to large-scale industrial operations and helping them understand the application of core mechanical engineering principles in real-world scenarios. FACT, one of India's largest public sector fertilizer companies, offered valuable insights into various aspects such as process automation, mechanical equipment handling, quality control systems, and industrial safety protocols.

During the visit, students were able to observe critical operations in ammonia and urea production, heat exchangers, fluid flow systems, and machinery maintenance activities. The interaction with plant engineers gave them a better understanding of operational challenges and solutions in a high-demand production environment.

VIMAL JYOTHI ENGINEERING COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

KTU UNIVERSITY EXAM TOPPERS
8TH SEMESTER (2021-25) BATCH

Joel Sunny
SGPA 9.74

Sayooj Rajan
SGPA 9.59

Jyothihish Bijith
SGPA 9.47

CONGRATULATIONS

SAE 7TH EDITION BICYCLE DESIGN CHALLENGE 2025-26 WORKSHOP

Students from the Department of Mechanical Engineering actively participated in the workshop session of the SAE 7th Edition Bicycle Design Challenge 2025–26, organized by SAEINDIA Southern Section.

The workshop was conducted on 24th and 25th May 2025 at Velammal Institute of Technology, Chennai. It provided valuable insights into the design and development process for the upcoming challenge and offered hands-on sessions led by industry professionals.

The participating team included SAE student members Thomas V.S (Captain), Adyuth Rajeev, Abhay Anil, Anujith T, CK Abhinav Anilkumar, Edwin K Jiji, and AB Abraham, under the mentorship of Faculty coordinators Mr. Appu C Kurian and Mr. Shaminmuth K K.

This participation marks the department's continued commitment to encouraging innovation, technical competence, and experiential learning through national-level competitions.

Program Educational Objectives (PEO'S)

PEO1: Graduates will be able to pursue successful professional career in Mechanical Engineering with sound technical and managerial capabilities.

PEO2: Graduates will have skills and knowledge to formulate, analyze and solve problems in mechanical engineering to meet global challenges.

PEO3: Graduates will be capable of pursuing mechanical engineering profession with good communication skills, leadership qualities, team spirit and professional ethics to meet the needs of the society.

PEO4: Graduates will sustain an appetite for continuous learning by pursue higher education and research in the allied areas of science and technology.

Program Outcomes (POs)

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyse complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8: Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

Program Specific Outcomes (PSOs)

PSO1: Ability to design and develop mechanical systems tailored for various engineering applications.

PSO2: Capability to effectively use resources to improve mechanical system performance

Mr. Arunlal M P (Asst. Prof, ME)

Student Editors:

Mr. Sayooj Rajan (S8 ME), Mr. Joel Sunny (S8 ME)