Department of

MECHANICAL ENGINEERING

SPARK

NEWSLETTER

KPR Institute of Engineering and Technology

Learn Beyond

(Autonomous, NAAC "A")

Editorial Board

Editor in Chief Dr . S . Ramesh Babu

Editor Dr . S . Gokulkumar

Student Editors Mr. M. S. Siva Prasad (IV Year)

Mr. V. K. Manoj (IV Year)

Mr. B. Sanjay (III Year)

Ms. R. Gokul (III Year)

About SPARK · Issue 4

SPARK is the quarterly newsletter of the Department of Mechanical Engineering, KPRIET. This issue covers April – June 2024.

CONTENTS

Issue 4 · April – June 2024

Events, research and achievements of the Department of Mechanical Engineering

2
Editorial Board

4
KPR Institute of Engineering and Technology

5
Department of Mechanical Engineering
Vision and mission of the department

6
Events Organized
Workshops, expert talks, courses and competitions

8
Faculty Publications
Journal articles, book chapters and patents

8
Student Achievements
Prizes, medals and trophies won by our students

KPR INSTITUTE OF ENGINEERING AND TECHNOLOGY

KPRIET, established in 2009, is recognized for its high standards in engineering and technology. Supported by 250+ dedicated faculty and advanced facilities, KPRIET offers comprehensive programs across undergraduate, postgraduate, and research levels. Its commitment to global standards is evident in its NBA accreditation and partnerships with international institutions.
KPRIET is a dynamic environment for cultivating skilled professionals equipped for modern challenges.

VISION & MISSION

Vision:

To become a premier institute of academic excellence by imparting technical, intellectual and professional skills to students for meeting the diverse needs of industry, society, the nation and the world at large

Mission:

- Commitment to offer value-based education and enhancement of practical skills. Continuous
- assessment of teaching and learning processes through scholarly activities. Enriching research
- and innovation activities in collaboration with industry and institutes of repute.

- Ensuring the academic processes to uphold culture, ethics and social responsibilities.

DEPARTMENT OF

MECHANICAL ENGINEERING

The Department of Mechanical Engineering, established in 2009, is committed to advancing technical education through a robust curriculum and research-driven approach. With over 400 students, the department offers undergraduate, postgraduate, and Ph.D. programs. Supported by 30 faculty members, 80% with Ph.D. degrees, and NBA accreditation since 2023, it provides students with essential industry skills and global perspectives.

Vision

To be recognized as a premier centre in the field of mechanical engineering education, research and development to meet the changing needs of industry and society.

Mission

Provide fundamental and skill-based education in mechanical engineering through innovative practices in teaching and learning

Establish centres of excellence in collaboration with reputed industries, professional bodies and research laboratories

Promote entrepreneurship with leadership qualities, ethics, and human values for the society at large

Events Organized

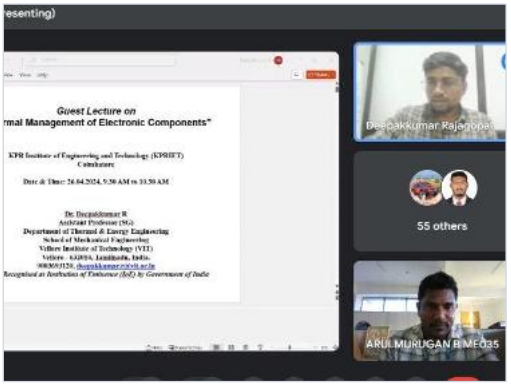
2 programmes organized by the Department during April – June 2024

Guest Lecture on Thermal Management of Electronic Components

26 April 2024 | Guest Lecture (Online) · for III Mech A & B · Resource Person: Dr. R. Deepak Kumar, Associate Professor, SMEC, Vellore Institute of Technology, Vellore

Event Brochure

Third-year students attended an online guest lecture on keeping modern electronics cool, delivered by Dr. R. Deepak Kumar of VIT Vellore. He explained heat generation in electronic devices and walked through cooling strategies including heat sinks, thermal interface materials and liquid cooling systems, before discussing emerging trends and challenges in the field. Students and faculty actively participated in the discussion. The lecture underlined how effective thermal management is critical to the reliability and performance of electronic devices – an area where mechanical engineers play a key role.



One Credit Course: Introduction to Robotic Welding

13 – 14 May 2024 | Industry-Oriented One Credit Course · Thanam Hall · in association with the Indian Welding Society · Chief Guest: Mr. S. Ramanathan, Technical Product Manager, Kavin Inc., Coimbatore

Event Brochure

Second-year students completed a two-day industry-oriented course on robotic welding. On Day 1, chief guest Mr. S. Ramanathan of Kavin Inc. stressed the growing importance of robotic welding in modern manufacturing, followed by sessions on robotic systems, programming fundamentals and safety protocols. Day 2 was entirely practical: under expert guidance, students set up robotic welders, programmed welding tasks and troubleshot common problems. The course concluded with a demonstration of advanced robotic welding techniques, and students showcased their new skills through a series of welding tasks.

Faculty Publications

6 journal articles

Journal Publications

1. Michael Joseph Stalin, P., Rao, P.N., Palaniappan, M., Kumar, P.M. and Udhayakumar, K. (2025) 'Effective thermal performance assessment for prismatic triangular solar air heater integrated with fins and turbulators', *Numerical Heat Transfer, Part A: Applications*, 86(22), pp. 8129–8145.
2. Saravanakumar, S., Prakash, K.B., Dinesh, D., Kumar, P.M., Fouad, Y., Soudagar, M.E.M., Ali, M.M. and Bashir, M.N. (2024) 'Optimizing friction stir processing parameters for aluminium alloy 2024 reinforced with SiC particles: A taguchi approach of investigation', *Journal of Materials Research and Technology*, 30, pp. 4847–4855.
3. Almeshaal, M., K Babu, P., Chinnasamy, S., P, M.K. and Subramanian, S. (2025) 'Influence of different melting points of phase change material on photovoltaic phase change materials system performance: an energy, exergy, and environmental point of view', *Energy Technology*, 13(7), p. 2400286.
4. Sathish, S., Makeshkumar, M. and Bharathi, M. (2025) 'Improvement of physical, chemical, mechanical, and morphological properties of Luffa cylindrica fiber reinforcement composites using Java seed filler', *Biomass Conversion and Biorefinery*, 15(6), pp. 9679–9689.
5. Raj, N.M., Kumar, N.M., Nagaraja, S. and Paulsingarayar, S. (2024) 'An Investigation about Microstructures, Mechanical Properties and Corrosion Behaviour of the TIG-MIG Hybrid Welded Dissimilar UNS 2205 and is 2062 Steels', *Key Engineering Materials*, 979, pp. 93–102.
6. Sivanantham, G., Sivaraj Vijaya, G., Murugan, A., Selvaraj, S., Thangavelu, K., Mani, S.K., Marappan, S.S., Elango Sunitha, S.S. and Purushothaman Geetha, V. (2024) 'Characterization and physicochemical properties of lignocellulosic fibers from fishtail palm (Caryota mitis) leaf stalks', *Composites and Advanced Materials*, 33, 26349833241256968.

Student Achievements

Our students bring home prizes, medals and trophies

Won awards in AQUA SHOWDOWN @ IIT Madras

Won awards in ROBO SOCCER @ Coimbatore Institute of Technology

SPARK

Department of
MECHANICAL
ENGINEERING

Learn Beyond

KPR Institute of
Engineering and
Technology

(Autonomous, NAAC "A")