
Department of
MECHANICAL ENGINEERING



SPARK

NEWSLETTER



Learn Beyond

KPR Institute of
Engineering and
Technology

(Autonomous, NAAC "A")

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About SPARK · Issue 3

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



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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

3 programmes organized by the Department during January – March 2024

Two-Day Workshop on AI Tools in Scientific Writing

02 – 03 February 2024 | Workshop · Resource Person: Dr. K. S. Sowmiya Rani, Founder Scientist, Cactus Communications, Mumbai



Event Brochure

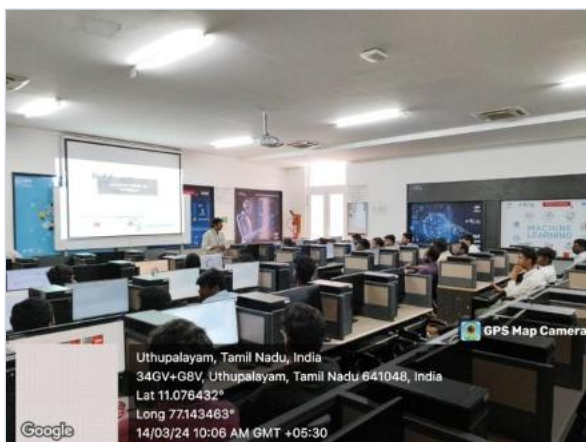
Faculty members and research scholars explored how artificial intelligence is transforming scholarly writing in a two-day workshop led by Dr. K. S. Sowmiya Rani of Cactus Communications. The sessions demonstrated AI-powered tools for literature review, data interpretation, writing assistance and research-tool integration, showing how they can identify relevant literature, extract key insights and guide research directions quickly and accurately. Equal emphasis was placed on ethics and responsible use of AI in research. Participants left with a practical toolkit for more efficient, higher-quality research communication.



Two-Day Workshop on SolidWorks – Version 2.0

14 – 15 March 2024 | Workshop · NMS Lab · Department of Mechanical Engineering

Building on the success of the first edition, the department conducted Version 2.0 of its two-day SolidWorks workshop. Thirty-three participants – internal faculty and students along with external participants – learned to use SolidWorks for computer-aided design, from sketching and part modelling to assemblies and drawings. The balanced mix of experience levels created a dynamic learning environment in which participants learned from trainers and from each other, and everyone left better equipped to use CAD in their projects.



FIESTAA '24 – National Level Techno-Cultural Fest

27 – 28 March 2024 | Techno-Cultural Fest · Department Events: Paper Presentation, Workshop on Reverse Engineering using 3D Scanning, Design Contest and Mr. Tool Man · Faculty Coordinator: Dr. Manoj Kumar



Event Brochure

The department hosted four events at FIESTAA '24, attracting 103 participants from institutions across Tamil Nadu. The paper presentation and a workshop on reverse engineering using 3D scanning ran on the morning of 27 March, followed by the design contest in the afternoon; Mr. Tool Man was held on 28 March. The 3D scanning workshop was especially popular, drawing 59 registrations, while the paper presentation, design contest and Mr. Tool Man each drew around 20 participants. The fest showcased the department's facilities and gave students a lively platform to compete and learn.



Faculty Publications

9 journal articles and 2 book chapters

Journal Publications

1. Kumar, R.V., Kumar, K.R. and Soms, N. (2024) 'Mechanical properties and failure analysis of PLA/copper composites fabricated by fused deposition modelling', *Journal of Mining and Metallurgy, Section B: Metallurgy*, 60(1), p. 33.
2. Natarajan, P., Mohanraj, M., Kumar, M. and Sathish, S. (2024) 'Experimental investigation on mechanical and tribological analysis of pineapple leaf (*Ananas comosus*) and sisal (*Agave sisalana*) fibers reinforced hybrid epoxy composites', *International Polymer Processing*, 39(2), pp. 134–142.
3. Ajithkumar, S., Arulmurugan, B. and Meiyazhagan, R. (2025) 'Welding of nickel alloys interface by finite element modeling and artificial intelligence and envisage by patent landscape', *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 19(10), pp. 6853–6884.
4. Almeshaal, M. and Kumar, P.M. (2024) 'Study on enhancing groundwater quality in a coastal area of Saudi Arabia using a curved glass solar still', *Groundwater for Sustainable Development*, 25, p. 101154.
5. Alasiri, A. and Kumar, P.M. (2024) 'Investigating the influence of solar distillation on improving the groundwater quality index in the southern region of Riyadh, Saudi Arabia', *Groundwater for Sustainable Development*, 25, p. 101155.
6. Prakash, K.B., Chinnasamy, S., Manimuthu, C. and Kumar, P.M. (2024) 'Assimilation of a novel thermal collector and phase change material in photovoltaic/thermal system-an energy and exergy based comparative study', *Journal of Energy Storage*, 81, p. 110461.
7. Felix Sahayaraj, A.M.T.S., M, T.S., Sasi Kumar, M., Sathish, S., Gokulkumar, S., Jenish, I. and Makeshkumar, M. (2024) 'Fire retardant potential of natural fiber reinforced polymer composites: A review', *Polymer-Plastics Technology and Materials*, 63(7), pp. 771–797.
8. Sivanantham, G., Divakaran, D., Suyambulingam, I., Murugan, A., MR, S. and Siengchin, S. (2024) 'Physicochemical characterization of novel biomass-based microcrystalline cellulose derived from agro-industrial residues of *Rosa indica* petals', *Physiologia Plantarum*, 176(1), p. 1.
9. Sivanantham, G., Pudukarai Ramaswamy, T., Selvaraj, S., Murugan, A., Sahayaraj Arockiasamy, F., Mani, S.K. and Uddin, M.E. (2024) 'Adapting a phenomenological model for predicting acoustical behaviour of *Camellia sinensis*/*Ananas comosus*/E-glass fibre-blended epoxy hybrid composites', *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 238(10), pp. 1956–1980.

Book Chapters

1. Prabhu, L., Sathish, S., Gokul Kumar, S., Dharani Kumar, S., Namburigha, K., Naveen Kumar, A., Ragul Kumar, M., Ravishankar, P.M., Saravanagowri, S.P. and Shobika, K.M. (2024) 'Experimental study on mechanical, chemical and acoustical properties of waste tea leaf fiber reinforced epoxy composites', in *Materials Science Forum*. Trans Tech Publications Ltd, Vol. 1112, pp. 13–25.
2. Kumar, N.M., Paulsingarayar, S., Nagaraja, S. and Kalaiselvan, S. (2024) 'Impact of Assorted Temperature on Yield and Surface Morphology of Multiple Layers of Carbon Nanotubes by Spurt Pyrolysis Techniques', in *Materials Science Forum*. Trans Tech Publications Ltd, Vol. 1119, pp. 101–110.

Student Achievements

Our students bring home prizes, medals and trophies



Won the SNS Alumni Trophy



Won the Best Skill Pad Award in Kart Racing Championship (Season 03) @ Academy of Indigenous Motor Sports (AIMS)



Won awards in ELECTRODASH @ SVNIT



Won awards in Submerge @ PRAGYAN'24, NIT Tiruchirappalli



Won awards @ HAVANA'24, Gandhi Institute of Technology and Management



Won awards in RC Plane Competition @ NIT Tiruchirappalli

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