
Department of
MECHANICAL ENGINEERING



SPARK

NEWSLETTER



Learn Beyond

KPR Institute of
Engineering and
Technology

(Autonomous, NAAC "A")

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About SPARK · Issue 1

SPARK is the quarterly newsletter of the Department of Mechanical Engineering, KPRIET. This issue covers July – September 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

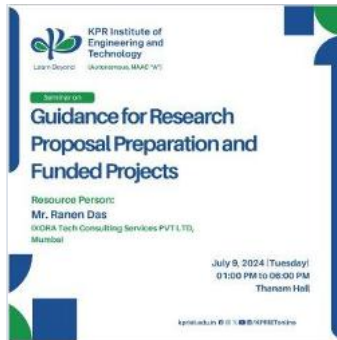


Events Organized

6 programmes organized by the Department during July – September 2024

Seminar on Guidance for Research Proposal Preparation and Funded Projects

09 July 2024 | Seminar · Thanam Hall · Resource Person: Mr. Ranen Das, IXORA Tech Consulting Services Pvt. Ltd., Mumbai



Event Brochure

Faculty members and researchers attended a seminar on preparing competitive research proposals and identifying the right funding sources. Mr. Ranen Das explained the essential components of a successful proposal – clarity, systematic presentation and alignment with funding priorities – along with the requirements and evaluation criteria of major funding agencies. He described the funded schemes available to academicians and shared examples of successful proposals. The interactive Q&A session gave participants practical guidance and encouraged them to pursue innovative, externally funded research projects.



Seminar on Scientific Working by Prof. Dr.-Ing. Thomas Carolus

19 July 2024 | Seminar · Thanam Hall · Resource Person: Prof. Dr.-Ing. M.Sc. Thomas Carolus, Chair – Fluid Mechanics and Turbomachinery, University of Siegen, Germany



Event Brochure

The department welcomed Prof. Dr.-Ing. Thomas Carolus, Chair of Fluid Mechanics and Turbomachinery at the University of Siegen, Germany, for a seminar on scientific working. A distinguished researcher in aerodynamic noise and acoustic fan design with more than 100 publications, he shared advances in noise reduction, energy-efficient fan design and turbomachinery performance, along with international research practices. Technical discussions continued from 17 July to 9 August 2024, giving faculty and students the opportunity to interact with him, exchange ideas and explore research collaborations.



Seminar on Technology Readiness Levels and their Importance in Project Mapping

24 July 2024 | Seminar · Veena Hall · Resource Person: Dr. Prashant R. Nair, Head – IQAC, Amrita Vishwa Vidyapeetham, Coimbatore



Event Brochure

Dr. Prashant R. Nair of Amrita Vishwa Vidyapeetham explained how Technology Readiness Levels (TRLs) are used to assess the maturity of research and innovation, from fundamental research and experimental validation to demonstration and deployment. He showed how integrating TRLs into project planning helps monitor milestones, identify technology gaps and align academic research with industrial and societal needs. Faculty members and researchers gained practical insight into building effective project roadmaps and improving the translational potential of their work.



MTMx Alumni Interaction Series: Importance of CAM in Industries

01 August 2024 | Alumni Interaction · Resource Person: Mr. Nandhakishore K, Senior Sales Executive, Mastercam India Pvt. Ltd. (Alumnus, 2015–2019 batch)



Event Brochure

Launching the MTMx Alumni Interaction Series, alumnus Mr. Nandhakishore K of Mastercam India spoke on the importance of computer-aided manufacturing in modern industries. He explained how CAM improves productivity, precision and product quality across the automotive, aerospace, electronics and consumer-goods sectors, and demonstrated how CAM software such as Mastercam integrates with CAD systems and CNC machines. Sharing his own career journey, he also guided students on the skills needed to succeed in advanced manufacturing, strengthening alumni–student engagement.



MTMx Alumni Interaction Series: Women in Mechanical Engineering – A Key to Future Advancements

01 August 2024 | Alumni Interaction · II Classroom · Resource Person: Ms. Dharani S, Graduate Engineer Trainee, Emerson Process Management, Chennai (Alumna, 2020–2024 batch)



Event Brochure

Sixty-nine students and a faculty member attended an alumni interaction with Ms. Dharani S of Emerson Process Management on the evolving role of women in mechanical engineering. She spoke about gender equality, diversity and inclusivity in engineering education and the workplace, and shared her own experiences of career opportunities, professional challenges and skill development. Her practical guidance on career planning, workplace expectations and building professional confidence resonated strongly with students. The event supported SDG 4, SDG 5 and SDG 9.



One Credit Course: Introduction to Technical Acoustics

05 – 07 August 2024 | One Credit Course · Instructor: Prof. Dr.-Ing. M.Sc. Thomas Carolus, Chair – Fluid Mechanics and Turbomachinery, University of Siegen, Germany



Event Brochure

Students had the rare opportunity to learn technical acoustics from an international expert in a three-day one credit course taught by Prof. Dr.-Ing. Thomas Carolus of the University of Siegen, Germany. The course introduced the fundamentals of sound, sound measurement and noise sources in machines, with particular focus on the aerodynamic noise generated by fans and turbomachinery and the design approaches used to reduce it. Drawing on his research, Prof. Carolus connected theory with real engineering problems, giving students valuable exposure to a specialised field and to international teaching practice.



Faculty Publications

4 journal articles

Journal Publications

1. Muthukumaran, N. and Arulmurugan, B. (2024) 'Microstructural analysis and mechanical characterization of dissimilar welds between nickel-based and steel-based superalloys post-cryogenic treatment using hotwire GTAW', *Journal of Adhesion Science and Technology*, 38(24), pp. 4439–4466.
2. Kumar, P., Rajeswari, M., Saravanakumar, P., Arunkumar, S. and Stalin, P. (2024) 'Study on a solar water heater performance under the influence of nanofluid', *EMERG: Energy. Environment. Efficiency. Resources. Globalization*, 10(2), p. 7.
3. Natarajan, U. and Subramaniam, R.B. (2024) 'An experimental investigation on a CI engine with magnesium-doped zinc oxide nano-additives in fish oil biodiesel blends', *Journal of Thermal Analysis and Calorimetry*, 149(21), pp. 11793–11805.
4. Mani, S.K., Selvaraj, S., Sivanantham, G., Arockiasamy, F.S., Iyyadurai, J. and Mani, M. (2024) 'Advancements in chemical modifications using NaOH to explore the chemical, mechanical and thermal properties of natural fiber polymer composites (NFPC)', *International Polymer Processing*, 39(4), pp. 406–432.

Student Achievements

Our students bring home prizes, medals and trophies



Secured Runner-up position @ Engine Kart Vehicle Championship, Season 03



Secured 3rd place in Robo Race (Line Follower) @ TechnoVIT'24, VIT Chennai



Secured 3rd place @ International Silambam Championship 2024

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