
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 2023.



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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

9 programmes organized by the Department during July – September 2023

Awareness Programme on GATE Examination: Preparation Strategies

18 July 2023 | Awareness Programme · Marigold, KPRIET · Resource Person: Mr. R. Manojkumar, M.Tech. (Thermal Engineering), NIT Kurukshetra – Alumnus (2015–2019 batch)



Event Brochure

More than 25 mechanical engineering students attended an awareness programme on preparing for the GATE examination. The session was led by department alumnus Mr. R. Manojkumar of the 2015–2019 batch, who cracked GATE with an All-India Rank of 5150 and went on to NIT Kurukshetra. He walked students through the exam pattern, subject-wise weightage for mechanical engineering, smart study planning and the opportunities GATE opens up in higher studies and public-sector careers. Hearing from a senior who had succeeded first-hand gave students both practical strategies and fresh motivation to begin their preparation early.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
GENERAL APTITUDE	15	15	15	15	15	15	15	15	15	15	15	15
ENGG. MATHS	15	15	13	14	13	13	13	13	13	13	13	13
PRODUCTION ENGG.	13	17	14	16	15	15	17	17	17	17	17	17
THERMAL ENGG.	12	10	10	10	10	10	9	9	9	9	9	9
STRENGTH OF MATERIALS	11	6	6	8	10	9	10	10	10	10	10	10
FM&HM	4	6	8	5	8	9	9	9	9	9	9	9
THEORY OF MACHINES	7	9	11	9	7	7	7	7	7	7	7	7
HEAT TRANSFER	6	8	6	10	7	7	7	7	7	7	7	7
IM & OR	6	4	6	6	5	5	5	5	5	5	5	5
ENGG. MECHANICS	4	4	5	3	3	3	3	3	3	3	3	3
MACHINE DESIGN	5	6	6	4	4	4	4	4	4	4	4	4

Guest Lecture on the Role of Mechatronics and Automation in Mobility

28 July 2023 | Guest Lecture · Raagam Hall · Resource Person: Ms. Deepti Singh, Senior Manager – EE Systems, Renault Nissan Technology & Business Centre India



Event Brochure

The department hosted Ms. Deepti Singh, who brings 15 years of experience at Nissan, for a guest lecture on how automation and mechatronics are transforming mobility. She explained the pivotal role of sensors, actuators and intelligent control in modern vehicles and shared how automation is reshaping transportation, manufacturing and allied sectors. Drawing on real examples from the automotive industry, she showed students how mechanical, electrical and software disciplines now come together in every vehicle, and encouraged them to build interdisciplinary skills for careers in the mobility sector.



IWS Guest Lecture on Challenges and Opportunities in Robotic Welding

12 August 2023 | Industry-Oriented Guest Lecture · in association with the Indian Welding Society · Resource Person: Mr. S. Ramanathan, Technical Project Manager, Kavin Inc. – Automation & Robotic Technology Center, Coimbatore



Event Brochure

In association with the Indian Welding Society, the department organised a guest lecture on robotic welding for about 72 participants. Mr. S. Ramanathan of Kavin Inc. highlighted why welding automation is becoming essential across industries and introduced the robots, manipulators and controllers used in robotic welding cells. He outlined the topics of the follow-up sessions – robot safety, selection of robots and axes, accessories, teach-pendant and offline programming, simulation software and fixture design – which would be supported by hands-on training. The lecture laid the foundation for the department's robotic welding initiatives.

Seminar on Fundamentals of F1 Car Design: Safety and Aerodynamics

19 August 2023 | Seminar (Online) · organised with the Office of Alumni Relations · Resource Person: Mr. Jagadeesh S P, Vehicle Performance Analyst – Formula 1, England (Alumnus, 2014–2018 batch)



Event Brochure

Alumnus Mr. Jagadeesh S P, now a vehicle performance analyst in Formula 1, returned virtually to share the engineering behind the world's fastest cars. The safety segment covered crash structures, occupant protection and safety systems, while the aerodynamics module explained airflow management, downforce generation and drag reduction. He also showed how real-time data acquisition drives every decision on the track and highlighted sustainability trends shaping the sport. Students came away with a deeper appreciation of how safety, aerodynamics and data combine in modern vehicle design.

Guest Lecture on Product Life Cycle Management with Software Tools

22 August 2023 | Guest Lecture · for IV Year students of U19MEP30 – Product Life Cycle and Management · Resource Person: Mr. G. Sureesh, Assistant Manager – R&D, RANE (Madras) Ltd., Chennai



Event Brochure

Final-year students studying Product Life Cycle and Management attended a guest lecture by Mr. G. Sureesh, Assistant Manager – R&D at RANE (Madras) Ltd. He took students through the stages of product development and explained Advanced Product Quality Planning (APQP) as practised in the automotive industry. He then showed how PLM software tools manage design data, engineering changes and approvals across the life cycle, helping companies shorten development time and maintain quality. The session linked course theory to the systems used daily in industry R&D.

Guest Lecture on the Role of Design of Machine Elements in Automobile Industries

24 August 2023 | Guest Lecture · III Mech A Classroom · Resource Person: Mr. Suresh Kumar P, Founder & Managing Director, BAS Institute & Inspection Services



Event Brochure

Students explored the mechanical heart of the automobile in a guest lecture by Mr. Suresh Kumar P, Founder and Managing Director of BAS Institute & Inspection Services. He explained how Design of Machine Elements shapes the functionality, durability and safety of vehicles – from shafts, gears and bearings to fasteners and springs – and how design decisions are validated through inspection and testing in industry. The session connected the core DME course directly to automotive practice and gave students a clearer picture of how classroom calculations become reliable vehicle components.



Two-Day Software Workshop on ANSYS Workbench

25 – 26 August 2023 | Workshop · in association with the Centre for Machining and Material Testing (CMMT) · Resource Person: Ms. Kavya L, NVH Simulation Engineer, Volvo Group Ltd., Bengaluru



Event Brochure

The department, together with the Centre for Machining and Material Testing, conducted a two-day hands-on workshop on ANSYS Workbench for beginner and intermediate learners. Theory sessions introduced the finite element method, meshing, boundary conditions and solution set-up, while hands-on sessions guided participants through structural, thermal and modal analyses on practical components. Participants learned to interpret results and validate simulations, building confidence in using one of industry's most widely used simulation tools for their academic projects and research.



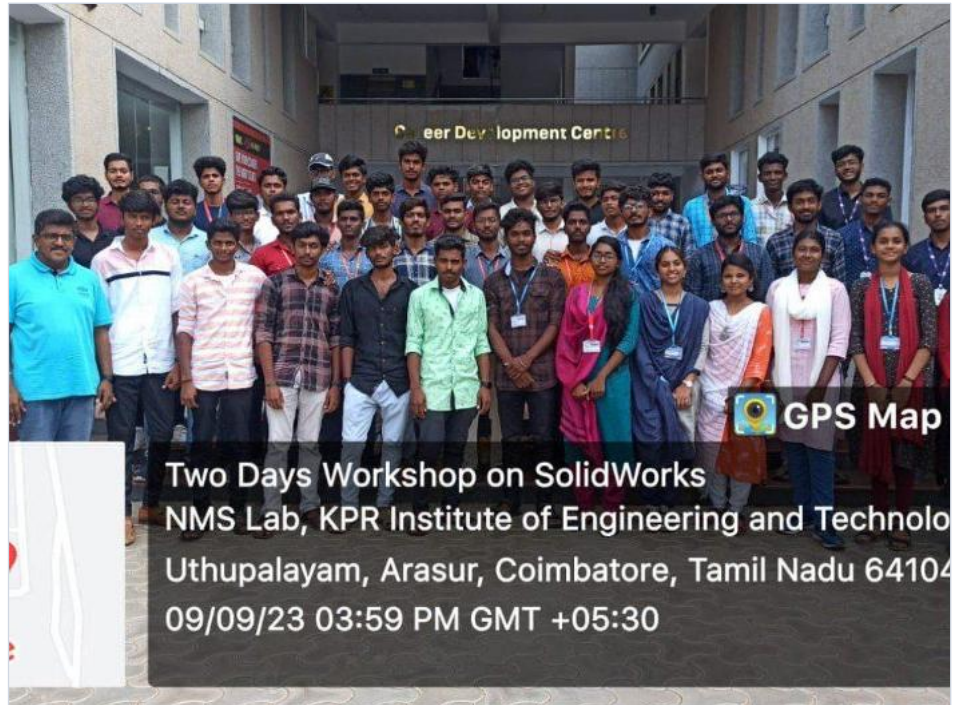
Two-Day Workshop on SolidWorks

08 – 09 September 2023 | Workshop · NMS Lab · Trainers: Dr. N. Karthi and Dr. S. Gokulkumar · Industry Expert: Mr. V. Murali, Head – R&D, Shanthi Gears Pvt. Ltd., Coimbatore



Event Brochure

A two-day SolidWorks workshop attracted 63 external participants from 14 institutions. Sessions led by Dr. N. Karthi and Dr. S. Gokulkumar covered part modelling, assembly design, drafting and design best practices, with plenty of hands-on exercises. On Day 2, Mr. V. Murali, Head of R&D at Shanthi Gears Pvt. Ltd., shared how CAD is used in real product development. Participants gained a deeper understanding of SolidWorks and its applications in engineering design, and the strong turnout marked a milestone for the department's outreach programmes.



Two-Day Workshop on OpenFOAM Essentials: A Journey into Computational Fluid Dynamics

22 – 23 September 2023 | Workshop · NMS Lab · Resource Person: Mr. P. Balamurugan, CFD Engineer, Einnel Technologies, Chennai



Event Brochure

The department introduced participants to open-source CFD through a two-day workshop on OpenFOAM. Mr. P. Balamurugan of Einnel Technologies explained how liquids and gases flow, interact and influence objects, and guided participants through installing OpenFOAM, creating geometry, generating meshes, setting boundary conditions and solving flow and heat-transfer problems. Post-processing sessions showed how to visualise and interpret results. Participants left with practical, licence-free simulation skills that they could apply immediately to coursework and research.



Faculty Publications

4 journal articles and 4 book chapters

Journal Publications

1. Noyon, A.R., Karim, S., Rouf, A., Jamal, M., Layek, R.K., Sivanantham, G. and Uddin, E. (2023) 'Fabrication of biodegradable kraft paper from buffing dust and jute fiber: Green solutions for packaging', *Polymer Engineering & Science*.
2. Gokulkumar, S., Suyambulingam, I., Divakaran, D., Priyadharshini, G.S., Aravindh, M., Iyyadurai, J., Edwards, M.S. and Siengchin, S. (2023) 'Facile exfoliation and physicochemical characterization of biomass-based cellulose derived from Lantana aculeata leaves for sustainable environment', *Macromolecular Research*, pp. 1–16.
3. Kumar, K.R., Gokul, M. and Kumar, M. (2023) 'Investigations on Mechanical Properties and Characterisation of Polylactic Acid/Aluminium Metal Infill Polymer Composites Manufactured by Fused Deposition Modelling', *Journal of Materials Engineering and Performance*, pp. 1–14.
4. Prakasam, M.J.S., Murugesan, P., Pasupathi, M.K., Rapuru, L., Balaji, P. and Murugesan, V. (no date) 'Investigating the Performance of a Flat Plate Solar Water Heating System using CeO₂/Water Nanofluid—A Holistic Approach', *Journal of Enhanced Heat Transfer*.

Book Chapters

1. Kannan, T., Arulmurugan, B., Balaji, D., Ramesh, R., Logeaswaran, M., Boopathy, S.M. and Mouliswer, P. (2023) 'Design and analysis of automatic toilet cleaning machine for Indian style toilets', in *AIP Conference Proceedings*. AIP Publishing, Vol. 2764, No. 1.
2. Bhuvaneshwari, V. (2023) 'Micromechanics of Nanomaterials Based Polymer Nanocomposites', in *Mechanics of Nanomaterials and Polymer Nanocomposites*. Singapore: Springer Nature Singapore, pp. 193–211.
3. Arulmurugan, B., Balaji, D., Bhuvaneshwari, V., Dharanikumar, S. and Rajkumar, S. (no date) '4D print today and envisaging the trend with patent landscape for versatile applications', in *Handbook of Smart Manufacturing*. CRC Press, pp. 201–215.
4. Balaji, D., Priyadharshini, M., Arulmurugan, B., Bhuvaneshwari, V. and Rajkumar, S. (no date) 'Artificial Intelligence with Additive Manufacturing', in *Handbook of Smart Manufacturing*. CRC Press, pp. 77–91.

Student Achievements

Our students bring home prizes, medals and trophies



Secured 2nd place @ Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala



Won the Memorial Trophy @ Erode Handball Association



Secured 1st place @ ISNEE Motorsports, SISTec, Ratibad, Bhopal

Student Placements

25 students placed in reputed companies

S.NO	ROLL NO	NAME OF THE STUDENT	COMPANY NAME
1	20ME025	Dheepak G	AKKODIS
2	20ME049	Kavin Kishore K	SEYYON
3	20ME054	Madhumithra C	AKKODIS
4	20ME077	Senthil L	AKKODIS
5	20ME095	Vishnu P G	SEYYON
6	711321208025	Skywindurai R	TEREX
7	20ME001	Aahash S	MASTRO ENGINEERING
8	20ME002	Abhinav V	BSH RD
9	20ME003	Abhinesh S	AUTODESK INDIA Pvt Ltd
10	20ME007	Arulkumar M	BSH
11	20ME014	Bavan Rakesh S	LENNOX
12	20ME020	Deepak S R	TRIVIKRAM FLOWTECH
13	20ME021	Dhanushh M S	TRIVIKRAM FLOWTECH
14	20ME023	Dharani S	PROPEL
15	20ME041	Kabilan M	BSH
16	20ME058	Narendran Sriramoo	VISION EDUCATION TRUST
17	20ME063	Pragadeeshwara	BULL MACHINE
18	20ME066	Sabaree R	BULL MACHINE
19	20ME067	Sabaridharan B	BSH
20	711321208001	Ajay M	TRIVIKRAM FLOWTECH
21	711321208005	Gokulshankar K	BSH
22	711321208007	Jaivin M	BSH
23	711321208013	Manickam M N	BSH RD
24	711321208014	Manikandan A	PRICOL
25	711321208034	Vijay G	BSH

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