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Learn Beyond

**KPR Institute of
Engineering and
Technology**

(Autonomous, NAAC "A")

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Ms. R. Gokul

CONTENTS



**Department
Events**



**Faculty
Publications**



**Students
Achievements**



**Students
Placement**

SPARK



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

The Department of Mechanical Engineering is committed to,

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

PROGRAM EDUCATION OBJECTIVES (PEO)

Graduates of BE Mechanical Engineering four years after graduation will:

- **PEO1:** Excel in their professional career with competencies in the field of mechanical and allied engineering.
- **PEO2:** Apply modern research and simulation tools to solve industrial and societal needs.
- **PEO3:** Practice professional and ethical values in respective organizations and society.

PROGRAM SPECIFIC OUTCOMES (PSO)

Graduates of Mechanical Engineering should:

- **PSO 1:** Design, develop and implement advanced mechanical systems by applying engineering principles for improved performance and less human effort.
- **PSO 2:** Apply quality tools to ensure quality, articulate maintenance principles and demonstrate managerial skills to comprehend the mechanical engineering processes, products and services.

DEPARTMENT EVENTS

PROGRAMS ORGANIZED

- The Department of Mechanical Engineering organized an awareness program on GATE Examination preparation strategies for more than 25 mechanical engineering students on July 18, 2023, at Marigold, KPRIET. The primary objective of this session is to raise awareness about the GATE Examination within the student community. Our speaker, Mr. R. Manojkumar from the National Institute of Technology, Kurukshetra, delivered a talk on the specified topic. He is an alumnus of mechanical department from the 2015-2019 batch and successfully cracked the GATE exam with an All-India Rank (AIR) of 5150.

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Department of Mechanical Engineering

Awareness Program on GATE Examination: Preparation Strategies

Resource Person:
Mr. Manoj Kumar R
Pursuing M. Tech. - Thermal Engineering
NIT, Kurukshetra
GATE Rank: 5150
Mech. 2015 - 2019 Batch

Date: 18 July 2023
Time: 11:00 AM
Venue: Marigold

MECHANICAL ENGINEERING SUBJECT WISE WEIGHTAGE

	2015	2016	2017	2018	2019	2020	2021	2022	2023
GENERAL APTITUDE	15	15	15	15	15	15	15	15	15
ENGINEERING MATHEMATICS	25	25	25	25	25	25	25	25	25
PRODUCTION ENGINEERING	15	15	15	15	15	15	15	15	15
THERMAL ENGINEERING	15	15	15	15	15	15	15	15	15
STRENGTH OF MATERIALS	15	15	15	15	15	15	15	15	15
FLUID MECHANICS	15	15	15	15	15	15	15	15	15
THEORY OF MACHINES	15	15	15	15	15	15	15	15	15
HEAT TRANSFER	15	15	15	15	15	15	15	15	15
WELDING	15	15	15	15	15	15	15	15	15
MECHANICAL DESIGN	15	15	15	15	15	15	15	15	15

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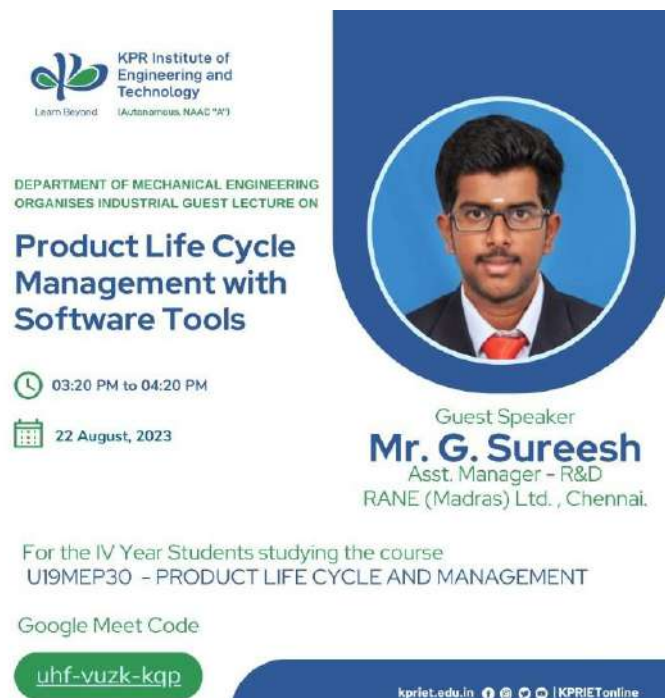
- The Department of Mechanical Engineering organized a guest lecture on the topic "The Role of Automation in Enhancing Mobility" on July 28, 2023, in the Raagam Hall at KPRIET. The speaker for the event was Ms. Deepti Singh, who boasts a remarkable 15 years of experience at Nissan Company. During the lecture, Ms. Singh passionately delved into the pivotal role that automation plays in revolutionizing the realm of mobility. She shared her extensive knowledge and insights, shedding light on how automation is reshaping transportation, manufacturing, and various other sectors.



- Discover the inner workings of the automobile industry's mechanical marvels with a captivating session on the 'Role of Design of Machine Elements in Automobile Industries,' featuring the distinguished Suresh Kumar P, Founder and Managing Director of BAS Institute & Inspection Services. The automotive landscape is a fusion of innovation and precision engineering. At the heart of this intricate ecosystem lies the Design of Machine Elements (DME), a field that shapes the functionality, durability, and safety of vehicles. Suresh Kumar P, a visionary leader with a profound understanding of this domain, will take participants on an enlightening journey into the significance of DME within the context of automobile manufacturing. This session is a must-attend for engineering professionals, students, and enthusiasts who are keen to deepen their understanding of the intricate mechanics behind automobiles.



- The guest lecture on 'Product Life Cycle Management with Software Tools' was held on the 22nd of August 2023 from 3:20 PM to 4:20 PM. The session aimed to provide insights into the various stages of product development and how software tools, particularly PLM (Product Lifecycle Management) software, play a vital role in managing and optimizing the product life cycle. Mr. G. Sureesh, Assistant Manager – R&D at RANE (Madras) Ltd., Chennai, was the distinguished guest speaker for the session. Mr. G. Sureesh delivered a comprehensive presentation on the different phases of Advanced Product Quality Planning (APQP) and how software tools, specifically PLM software, streamline the product development process.



- The 'Basis Vehicle Design: Safety and Aerodynamics' event offered a comprehensive exploration of two critical aspects of vehicle engineering. The safety segment delved into crash structures, occupant protection, and safety systems, emphasizing the importance of structural integrity and innovative safety technologies. The aerodynamics module covered the intricacies of airflow management, downforce generation, and drag reduction techniques, showcasing how aerodynamic advancements enhance both performance and efficiency. Interactive sessions and expert presentations enriched the learning experience, enabling participants to grasp the synergistic relationship between safety and aerodynamics in

modern vehicle design. Ultimately, the event fostered a deeper appreciation for the multifaceted considerations shaping the automotive industry. Attendees gained expertise in real-time data's role in decision-making. The event also spotlighted sustainability trends and future innovations, leaving participants well-equipped to appreciate Formula 1's intricate blend of technology and competition. Overall, the program successfully bridged theory and practice, empowering enthusiasts and potential engineers alike.



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DEPARTMENT OF MECHANICAL ENGINEERING
AND OFFICE OF ALUMNI RELATIONS
ORGANISES SEMINAR ON

**Fundamentals of
F1 car design &
Data Acquisition**

10:00 am
19, August, 2023

Guest Speaker
JAGADEESH S.P
An Alumnus of 2014 - 2018 Batch
Vehicle performance analyst - Formula
One, Bggin Hill, England, UK

CONVENOR
Dr. S. RAMESH BABU, HoD/Mech

COORDINATORS
Mr. N. VIGNESHKUMAR, AP (Sr.G)/Mech
Dr. M. KUMAR, AsP/Mech
Dr. S. GOKULKUMAR, AP (Sr.G)/Mech

GOOGLE MEET LINK:
<https://meet.google.com/vjp-v-kjbu-aur>

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- In collaboration with the Indian Welding Society, the Department of Mechanical Engineering orchestrated an enlightening guest lecture. The subject under focus was 'Challenges and Opportunities in Robotic Welding,' and the esteemed speaker was Mr. S. Ramanathan, a Technical Project Manager at Kavin Inc., Coimbatore. The event was scheduled for August 12, 2023, from 11:00 AM to 12:30 PM. The lecture drew a keen audience of approximately 72 enthusiasts, all eager to absorb the insights shared. Mr. Ramanathan eloquently underscored the imperative of welding automation and its burgeoning significance across industries. He adeptly delved into the diverse array of robots, manipulators, and controllers that find application in the realm of robotic welding for various purposes. Mr. Ramanathan is poised to delve into a comprehensive array of topics in subsequent sessions, which encompass the fundamentals of robotic welding, ensuring robot safety,

discerning diverse robot applications, meticulous selection of robots and axes tailored to specific applications, and the intricacies of robot accessories in alignment with varying applications. Moreover, the speaker will delve into the nuances of robot teaching, encompassing TPC (Teach Pendant Control), WOC (Welding Offline Programming), Multi-end effectors, and command logics. The practical dimension will be enriched through hands-on training, familiarizing participants with different types of robot accessories and external axis applications. The usage of simulation software, the art of fixture design, and the application of Robotic add-on software, along with their underlying principles, will also come under the spotlight.

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Department of Mechanical Engineering
Is organizing an Industry Oriented Guest Lecture on

Challenges and Opportunities In Robotic Welding

Resource Person
Mr. S. Ramanathan,
Technical Project Manager
Kavin INC., - Automation & Robotic Technology Center,
Coimbatore.

Coordinator
Dr. B. Arulmurugan, Associate Professor
Convenor
Dr. S. Ramesh Babu, Professor & Head
Department of Mechanical Engineering.

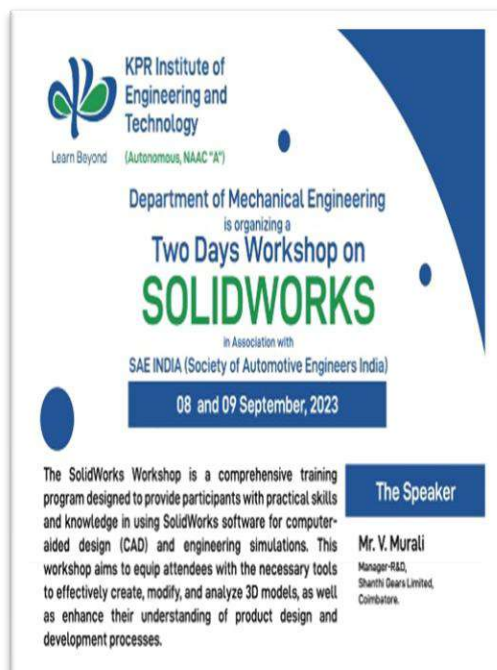
12 AUGUST 2023
11:00 AM
IV ME A Classroom

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- Two Days Software Workshop on Ansys Workbench from 25th to 26th August 2023 Organized by Department of Mechanical Engineering in Association with Centre for Machining and Material Testing (CMMT). Key Highlights of the Workshop: Designed for Beginners to Intermediate Learners and Theory Session as well as Hands-on-Session will be Covered.



- The Two-day SolidWorks Workshop held on September 8th and 9th, 2023, marked a significant milestone for our organization and the participants from various institutions who attended. This workshop was designed to provide in-depth knowledge and hands-on experience with SolidWorks, a leading software tool in the field of engineering and design. A total of 63 external participants representing 14 different institutions participated in the workshop.



- Each session was led by Dr.N.Karthi and Dr.S.Gokulkumar, ensuring that participants received comprehensive training in SolidWorks. In addition, Mr. V. Murali, the Head of R&D at Shanthi Gears Pvt Ltd, Coimbatore, delivered

his insights during the Day 2 of the workshop. Participants gained a deeper understanding of SolidWorks, its applications, and its relevance in the field of engineering and design. The knowledge and skills acquired during this workshop will undoubtedly benefit both individuals and their respective institutions.

- The 2-day workshop on Computational Fluid Dynamics with OpenFOAM is the key to understanding this fascinating science. It's an opportunity to engage with OpenFOAM software for computational fluid dynamics (CFD), and discover how liquids and gases flow, interact and influence objects. Over two days, the participants will learn to set up OpenFOAM, create, shapes, and solve fluid flow problems.



FACULTY PUBLICATIONS

INTERNATIONAL JOURNALS:

- 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*.
- **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.

- ✿ **Kannan, T., Arulmurugan, B., Balaji, D.,** Ramesh, R., Logeaswaran, M., Boopathy, S.M. and Mouliswer, P., 2023, September. Design and analysis of automatic toilet cleaning machine for Indian style toilets. In *AIP Conference Proceedings* (Vol. 2764, No. 1). AIP Publishing.
- ✿ **Bhuvaneswari, V.,** 2023. Micromechanics of Nanomaterials Based Polymer Nanocomposites. In *Mechanics of Nanomaterials and Polymer Nanocomposites* (pp. 193-211). Singapore: Springer Nature Singapore.
- ✿ **Arulmurugan, B., Balaji, D., Bhuvaneswari, V., Dharanikumar, S.** and Rajkumar, S., 4D Print Today and Envisaging the Trend with Patent Landscape for Versatile Applications. *Handbook of Smart Manufacturing*, pp.201-215.
- ✿ **Balaji, D.,** Priyadharshini, M., **Arulmurugan, B., Bhuvaneswari, V.** and Rajkumar, S., Artificial Intelligence with Additive Manufacturing. In *Handbook of Smart Manufacturing* (pp. 77-91). CRC Press.
- ✿ **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.
- ✿ PRAKASAM, M.J.S., Murugesan, P., **Pasupathi, M.K.,** Rapuru, L., Balaji, P. and Murugesan, V., Investigating the Performance of a Flat Plate Solar Water Heating System using CeO₂/Water Nanofluid–A Holistic Approach. *Journal of Enhanced Heat Transfer*.

STUDENTS ACHIEVEMENTS

The achievements of students from the Department of Mechanical Engineering in various events are displayed below.



Secured Second Prize at Indian Institute of Space Science and Technology, Kerala



Achieved Memorial Trophy at Erode handball association



Achieved First Prize at ISNEE Motorsports, SISTECH, Ratibad, Bhopal

STUDENTS PLACEMENTS

The placement achievements of the students of the Department of Mechanical Engineering in various reputed companies are listed below.

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