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KUMARAGURU COLLEGE OF TECHNOLOGY

Department of Mechanical Engineering

Mechanical Engineering Association

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EDITORS PORTFOLIO

Dear Readers,

It gives us immense pleasure to present this edition of our Department Newsletter, highlighting the academic, professional, research, and developmental activities of our faculty members.

This issue reflects the department's continued commitment to excellence. Our faculty have actively contributed as **Resource Persons**, sharing their expertise across various platforms. The department has also organized **Programmes for Faculty** to enhance teaching, research, and professional skills.

We are pleased to showcase faculty participation in **Faculty Development Programmes** and **Industry Visits**, which have enriched their knowledge and strengthened industry-academia interaction. Faculty members have also contributed to innovation through **Patents** and supported scholarly research by undertaking **Paper Review** responsibilities for reputed journals and conferences.

The department has further promoted practical learning and collaboration through **Industry Projects** and the signing of **Memoranda of Understanding (MoUs)**, creating opportunities for research, training, internships, and knowledge exchange.

We sincerely appreciate the efforts of all faculty members who have contributed to this newsletter. We hope it provides valuable insights into our activities and achievements and look forward to your continued support and encouragement.

Warm regards,

Editors





Programs Organized for Faculty





Dr. M. Balaji, Associate Professor, participated in an Outbound Training Program on **"Leadership Training Series"** held at NALS, Coonoor, The Nilgiris, from 8 June 2026 to 10 June 2026. The programme was attended by 5 faculty members from our institution and 9 faculty members from Kumaraguru College of Liberal Arts and Science (KCLAS). The training focused on developing leadership capabilities through experiential learning activities, with particular emphasis on physical fitness, mental resilience, teamwork, collaboration, and effective leadership practices.

Guest Lecture

An Online Guest Lecture titled **"From Campus to Corporate: Winning the First 100 Days"** was coordinated on 14 July 2026, by **Mr. R. S. Mohan Kumar**, Assistant Professor II, and **Dr. V. R. Muruganantham**, Associate Professor, and attended by 50 students. The lecture was delivered by **Dr. Guru Selvaraj,** Chief Mentor, who shared valuable insights on the transition from campus to the corporate world.





INDUSTRY VISIT



A team from Kumaraguru College of Technology (KCT) visited **Lakshmi Precision Technologies (LPT) Limited**, Coimbatore, on 17 July 2026 to

explore industry–academia collaboration in automation technology. The KCT team comprising **Dr. R. Manivel**, Associate Dean – Research; **Dr. N. Sangeetha**, Senior Associate Professor; and **Dr. M. Thirumalaimuthukumaran**, Assistant Professor III, interacted with LPT representatives **Mr. Jeyakumar,** Director – Operations, and **Dr. C. N. Jayaprakasan,** Associate Vice President – R&D. Discussions focused on developing an automated system for joining broken yarn, including its operational stages, SolidWorks modelling, process requirements, and simulation using SolidWorks and ADAMS. The teams also explored the possibility of an MoU for future collaborative activities.







Mr. K. Manikanda Prasath, Assistant Professor II, along with **Mr. Sivahari D,** Final Year B.Tech Textile Technology student, as part of the CII DxEdge Digital Maturity Assessment Initiative, visited **SSHREE THREADS INDIA** and **FunDen**, Karur, on 30 and 31 July 2026, respectively.



At SSHREE THREADS INDIA, the team interacted with **Mr. Sellandi** Periasami, Proprietor, and assessed opportunities for digital transformation in production, quality, inventory, and supply chain operations.



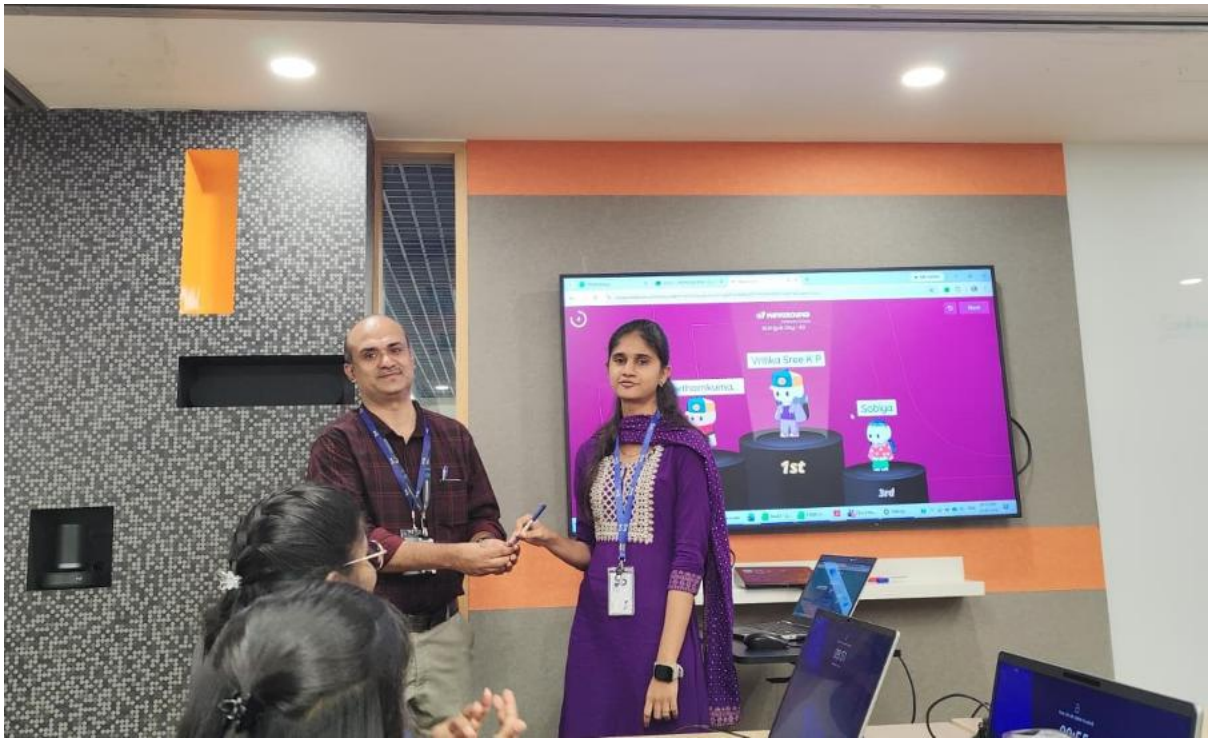
At FunDen, Karur, the team interacted with **Ms. Sriniti Sankari Asokan,** Co-Founder and Managing Partner, and explored digital solutions for customer engagement, event management, operational efficiency, and data-driven decision-making.

Faculty as Resource Person



Dr. B. N. Sreeharan, Assistant Professor III, served as the **Resource Person** for a series of **Power BI Training Programmes** conducted for **Emerald Jewel Industry India Limited**, Coimbatore, on 13, 20, and 27 June 2026, and 4 July 2026.





He also delivered **Power BI training sessions** for **SLB**, Coimbatore, on 23, 24, 29, and 31 July 2026, with an additional session scheduled subsequently. The training programmes focused on Power BI, data visualization, and business intelligence, enabling participants to develop practical skills in data analysis and interactive dashboard creation. The sessions received appreciation from the organizers for their effectiveness

and industry relevance, reflecting the department's commitment to strengthening academia–industry collaboration through professional training and knowledge sharing.

PAPERS REVIEWED



Dr. B. N. Sreeharan, Assistant Professor III, reviewed a manuscript titled **"Influence of Shielding Gas Mixtures on Mechanical Properties of AISI 316L Stainless Steel Structure Fabricated through Wire-Arc Additive Manufacturing."** for the international journal Physica Scripta, published by IOP Publishing.



Dr. K. K. Arun, Assistant Professor III, reviewed a manuscript titled **"ViTfuse_GNN: Vision Transformer-based Fusion with Graphical Neural Network for Detection of Intrusions in Multimedia Healthcare** for the International Journal of Inventive Engineering and Sciences (IJIES) published by Blue Eyes Intelligence Engineering & Sciences Publication (BEIESP). He also served as a reviewer for the Journal of Automation and Automobile Engineering published by MAT Journals Pvt. Ltd., reviewing the manuscript titled **"The Emergence of Industry 5.0: A Value-Driven Approach to Sustainable and Human-Centered Industrial Transformation."**

PATENT



A patent application titled **"An Integrated Industrial Automation and Performance Optimization System"** was filed with the Controller General of Patents, Designs & Trademarks, Government of India, under Application No. 202621073699 on 13 June 2026. The invention focuses on an integrated approach to enhancing industrial automation and performance optimization through advanced engineering solutions. The inventors include **Mr. R. S. Mohan Kumar**, Assistant Professor II, along with researchers and professionals from other institutions.

FACULTY DEVELOPMENT PROGRAMMES



Mr. P. D. Devan, Assistant Professor II, successfully completed two Faculty Development Programmes (FDPs) focused on emerging technologies. He completed the FDP on **"Fundamentals of AI and Physical AI"**, organized by the Tamil Nadu Centre of Excellence for Advanced Manufacturing (TANCAM) in association with Kumaraguru College of Technology, from 11 to 15 May 2026 at the TANCAM SPOKE – Kumaraguru College of Technology. He also completed a 5-Day Online FDP on **"Advanced Electric Vehicle Systems & Powertrain"**, organized by SkyySkill Academy from 16 to 20 June 2026, covering electric vehicle technologies and powertrain systems. The programmes provided exposure to emerging developments in Artificial Intelligence, advanced manufacturing, and electric mobility.

The department organized a Six-Day FDP on **"Industrial Automation and Robotics"** from 1 to 6 June 2026, covering PLC, SCADA, IIoT, Industry 4.0, robotics, AI, machine vision, CNC automation, digital twins, and additive manufacturing through expert sessions and hands-on training.



The participants were **Dr. N. Sangeetha**, Senior Associate Professor; **Dr. K. Krishnamoorthi**, Assistant Professor III; **Mr. S. Subbiah**, Assistant Professor

II; **Mr. S. Sivakumar**, Assistant Professor II; **Dr. K. K. Arun**, Assistant Professor III; **Mr. P. D. Devan**, Assistant Professor II; **Dr. C. Velmurugan**, Professor; **Mr. R. S. Mohan Kumar**, Assistant Professor II; and **Dr. S. Thirumurugaveerakumar**, Associate Professor. The programme was supported by KCT Management, AICTE IDEA Lab, and Info Careers Pvt. Ltd., Chennai.





Dr. M. Thirumalaimuthukumaran, Assistant Professor III, successfully completed a five-day online Faculty Development Programme (FDP) on **"Sustainable Advanced Manufacturing Technologies: Micromachining, Biomanufacturing, and Additive Manufacturing (SAMT-2026)"**, conducted from 20 to 24 July 2026. Organized by Annant Gyan Knowledge Solutions Pvt. Ltd., the programme provided insights into emerging areas of sustainable manufacturing, including micromachining, biomanufacturing, and additive manufacturing technologies. The FDP provided exposure to current developments in advanced manufacturing and supported continued professional development in teaching and research.

STUDENT CONTRIBUTIONS

INDUSTRY PROJECT



As part of the industry–academia collaboration initiative, a student project team from Kumaraguru College of Technology (KCT) visited ZF Wind Power Coimbatore Private Limited on 21 July 2026 to present their proposed Lifting Fixture Design for the safe handling of heavy CNC cutting tools. The project was carried out under the guidance of **Dr. M. A. Vinayagamoorthi**, Assistant Professor III, with technical support from Mr. Sudhakar V, Sr. Manager – Segment Solutions, SECO Tools. The student participants, **Harish Kumar J (24BME041)** and **Nethra A (24BME071)**, presented the design concept, CAD modelling, material selection, engineering calculations, safety considerations, and manufacturability aspects of the fixture. Industry experts reviewed the proposed solution and provided suggestions for improvement, particularly on developing a scalable and standardized design for multiple tool variants. The interaction provided students with practical exposure to design validation, product development, and industry-oriented engineering practices.

DEPARTMENTAL ACTIVITIES

MoU Signed

Kumaraguru College of Technology (KCT), Coimbatore, signed a Memorandum of Understanding (MoU) with **Lakshmi Electrical Drives Limited (LEDL)**, Coimbatore, on 30 June 2026 to strengthen industry–academia collaboration in research, innovation, and skill development. The MoU was signed by **Dr. G. M. Ramachandran,** Chief Executive Officer, Lakshmi Electrical Drives Limited, and **Dr. M. Ezhilarasi**, Principal, Kumaraguru College of Technology.

The collaboration covers joint research, technical knowledge sharing, industrial visits, expert lectures, seminars, skill development programmes, prototype development, and academic publications.

The partnership also provides opportunities for KCT faculty members to conduct upskilling and reskilling programmes for LEDL employees, while engineers and scientists from LEDL will contribute industry expertise through knowledge-sharing sessions.

The MoU will remain effective for two years and includes provisions for confidentiality, intellectual property, and periodic review of collaborative activities.

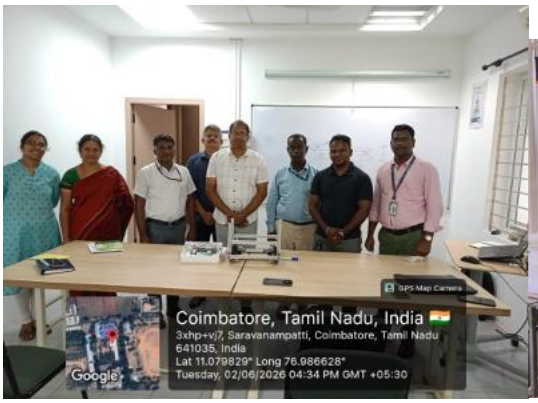
SNAP SHOTS



Outbound Training Program on “Leadership Training Series” held at NALS, Coonoor, The Nilgiris



Power BI Training Program for Industry Professionals





Six-Day Faculty Development Programme on Industrial Automation and Robotics





KCT Students Present Lifting Fixture Design at ZF Wind Power

Vision, Mission, POs, PSOs and PEOs

KUMARAGURU college of technology
COIMBATORE – 641 049

Institute Vision:

The vision of the college is to become a technical university of International Standards through continuous improvement.

Institute Mission:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

Department of Mechanical Engineering

Department Vision*:

To achieve global recognition for the programs of the department by promoting innovation, sustainability, and leadership, contributing to the society.

Department Mission*:

1. To promote innovation in the Mechanical Engineering through curriculum, focusing on sustainability and ethical practices.

2. To create an active learning ecosystem for acquiring knowledge and skills in Mechanical Engineering.

3. To facilitate research in mechanical systems and sustainable technologies that have an impact on industry and society.

** Focused SDGs are: 4, 8, 9, 12, 13, 17*

B. E. MECHANICAL ENGINEERING

Program Educational Outcomes (PEO's):

PEO 1: Graduates to pursue careers in Mechanical engineering and allied fields.

PEO 2: Graduates to engage in the execution of multi-disciplinary engineering activities.

PEO 3: Graduates to pursue professional development programs in Mechanical Engineering Science and Management.

Program Outcomes (PO's):

1. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

4. Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Engineering Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. The Engineer and The World: Apply contextual knowledge to assess societal, health, safety, legal, cultural, and environmental issues, and demonstrate the knowledge of and need for sustainable development.

7. Ethics: Apply ethical principles and commit to professional ethics, responsibilities, and norms of engineering practice, including inclusive and diverse behavior.

8. Individual and Collaborative Teamwork: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.

9. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, including writing reports, design documentation, making presentations, and giving/receiving clear instructions.

10. Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.

11. Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change, including adaptability and tech awareness.

Program Specific Outcomes (PSO's):

1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.

2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

M. E. INDUSTRIAL AUTOMATION AND ROBOTICS

PROGRAM EDUCATIONAL OBJECTIVES(PEOs):

PEO1: Graduates will be on roles in implementing cutting edge automation technologies by integrating intelligent systems and driving advancements in industrial processes.

PEO2: Graduates will excel as professionals by applying concepts of industrial robotics and advanced engineering principles to develop innovative and sustainable solutions.

PEO3: Graduates will engage in lifelong learning as educators and researchers in the field of industrial automation.

PROGRAM OUTCOMES (POs)

PO1: An ability to independently carry out research/investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

Students should be able to demonstrate a degree of mastery over the area as

PO3: per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Apply advanced engineering techniques, modern automation tools, and emerging technologies to solve complex industrial problems efficiently.

PO5: To collaborate effectively in interdisciplinary teams, demonstrating leadership and ethical responsibility in automation and robotics projects.

PO6: An ability to continuously engage in lifelong learning and professional development to adapt to technological advancements in industrial automation and robotics.