

Jan-Jun 2025



**MANGALAM
COLLEGE OF ENGINEERING**



DEPARTMENT NEWSLETTER

Momentum

DEPARTMENT OF MECHANICAL ENGINEERING

From HoD's Desk

VISION

To be a center of excellence in Mechanical Engineering by creating innovative and socially responsible technocrats to meet the global challenges.

MISSION

1. To provide qualitative technical knowledge in the domain of Mechanical Engineering to compete in the global scenario.
2. To nurture socially committed Mechanical Engineers through value based education.
3. To enhance the research ability of knowledge seekers for the changing needs of society.

*Dear Students and Esteemed Colleagues,
The second half of the academic year 2024–25 has been a period of meaningful academic engagement, innovation, and professional growth for the Department of Mechanical Engineering. Our continued focus has been on creating opportunities that connect engineering education with contemporary industrial practices and emerging technological developments.*

During this period, students demonstrated their capabilities through project presentations, exhibitions, CAD modelling competitions, and other technical events at different levels. Their participation reflects the growing culture of innovation and application-oriented learning within the department.



Faculty members, meanwhile, continued to strengthen their expertise through Faculty Development Programmes, NPTEL courses, research publications, and professional activities.

The department also facilitated interaction with experts from academia and industry through talks, seminars, and workshops covering diverse areas of mechanical engineering. These engagements have enriched the learning experience and encouraged students to explore new dimensions of their discipline.

*I congratulate our students and faculty for their dedication and achievements. Their collective efforts continue to strengthen the academic environment of the department. Let us carry this momentum forward with renewed commitment towards **excellence, innovation, research, and responsible engineering practice.***

Dr. Arun Jose

Department Activities

- Expert Talk on Surface Engineering of Metallic Biomaterials conducted on 01 March 2025. Resource Person: Dr. Jithin Vishnu, Postdoctoral Researcher, Centre for Flexible Electronics and Advanced Materials, Amrita Vishwa Vidyapeetham.
- Expert Talk on Strategic Design Insights conducted on 17 March 2025. Resource Person: Mr. Jign Philip, Product Development and Design Engineer, Planigo Busbar FZC, UAE.
- Seminar on Total Quality Management System: Relevance in Industries conducted on 26 March 2025. Resource Person: Er. A. Narayanan, Consultant Chartered Engineer, Zed Assessor & Business.
- Technical Talk on Non-Destructive Testing conducted on 27 March 2025. Resource Persons: Mr. Deepu Thampy and Mr. Kevin AK, ARK Welding Academy.
- Workshop on Enhancing the Performance of Vapour Compression Refrigeration Systems conducted on 31 March 2025. Resource Person: Mr. Arun Kumar R, Assistant Professor, Amrita School of Engineering.
- Seminar on Introduction to Powder Metallurgy conducted on 02 April 2025. Resource Person: Dr. Arun Raphael, Assistant Professor, Department of Mechanical Engineering, Faculty of Engineering and Technology, SRM Institute.

PROGRAM EDUCATIONAL OBJECTIVES

Domain knowledge: Graduates will be able to solve the contemporary issues and challenges in mechanical engineering by applying their strong base in Mathematics, Science and Engineering.

Lifelong learning: Graduates shall have a passion to engage in lifelong learning process through self study, continuing education and professional studies in engineering.

Creative skillset: Graduates will become an effective innovator, to address social, technical and business challenges by enhancing their technical competencies, communication skill and team spirit.

PROGRAM SPECIFIC OBJECTIVES

PSO 1: Able to identify, formulate design and analyze the contemporary challenges and engineering problems in the realm of Design, Industrial and Thermal sciences, utilizing latest technology.

PSO 2: Able to provide solutions by incorporating innovative ideas on product design and development to conquer the challenges in core Mechanical sectors, business and other related fields.

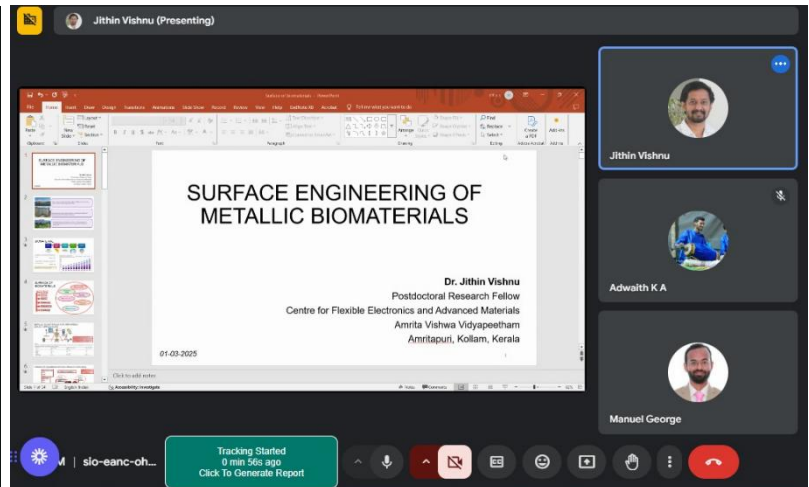
Faculty Corner

- Mr. Premjith S Attended ATAL FDP on Smart Farming: Role of Technology in Millets Production 13 to 18 January 2025.
- Mr. Johan George Cherian Attended ATAL FDP on Smart Farming: Role of Technology in Millets Production 13 to 18 January 2025.
- Mr. Premjith S Attended ATAL FDP on Advances in Metal Additive Manufacturing: Today, Tomorrow and Beyond 27 January to 01 February 2025.
- Mr. Rajeeve K Mohan Attended ATAL FDP on Advances in Metal Additive Manufacturing: Today, Tomorrow and Beyond 27 January to 01 February 2025.
- Mr. Navish Kumar Attended ATAL FDP on Advances in Metal Additive Manufacturing: Today, Tomorrow and Beyond 27 January to 01 February 2025.
- Mr. Johan George Cherian Attended ATAL FDP on Advances in Metal Additive Manufacturing: Today, Tomorrow and Beyond 27 January to 01 February 2025.
- Dr. Manuel George Attended ATAL FDP on Advances in Metal Additive Manufacturing: Today, Tomorrow and Beyond 27 January to 01 February 2025.
- Dr. Manikandan H Attended FDP on Navigating the Energy Transition: Climate Nexus: Strategies for Greening the Grid 10 to 15 February 2025.
- Dr. Rabi J Attended FDP on Navigating the Energy Transition: Climate Nexus: Strategies for Greening the Grid 10 to 15 February 2025.
- Mr. Premjith S Completed NPTEL course on Basics of Mechanical Engineering 2 January to April 2025.
- Dr. Manikandan H Completed NPTEL course on Cryogenic Hydrogen Technology February to April 2025.
- Dr. Manikandan H Completed NPTEL course on Design Practices for Intelligent Product Design February to April 2025.

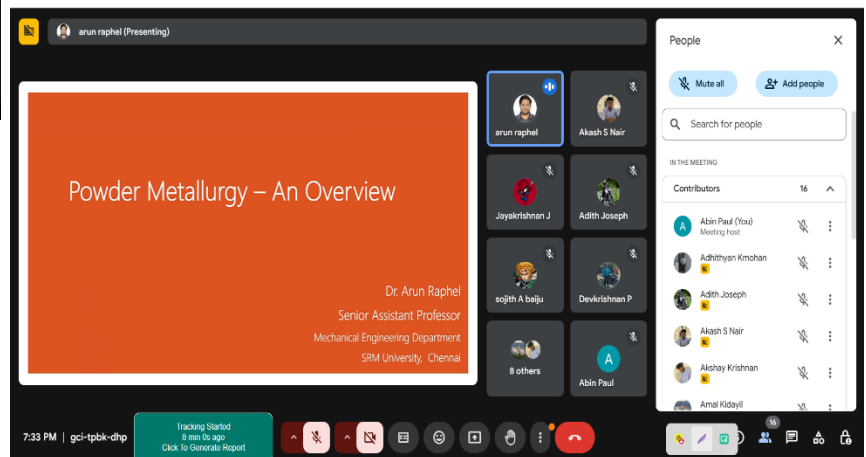
Gallery



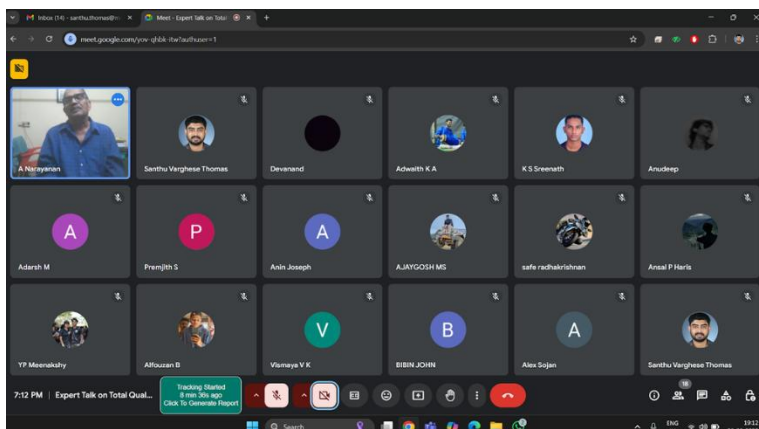
Expert Talk on Strategic Design Insights



Expert Talk on Surface Engineering of Metallic Biomaterials



Seminar on Introduction to Powder Metallurgy



Seminar on Total Quality Management System: Relevance in Industries

Gallery



Faculty Corner

- Mr. Amal R Completed NPTEL course on Design Practices for Intelligent Product Design February to April 2025.
- Mr. Johan George Cherian Completed NPTEL course on Operations Management January to April 2025.
- Mr. Rajeeve K Mohan Attended Navigating the Latest Trends in Additive Manufacturing Landscape February to March 2025.
- Dr. Rabi J Attended FDP on Mastering AI for Teaching, Research and Administration 15 May to 05 June 2025.
- Mr. Amal R Attended International FDP on Recent Advances in Impact Materials and Modern Manufacturing Processes 27 to 31 May 2025.
- Mr. Harikrishnan A R Attended International FDP on Recent Advances in Impact Materials and Modern Manufacturing Processes 27 to 31 May 2025.
- Mr. Abin Paul Attended FDP on Advanced Materials for a Sustainable Future: Innovations in Bio, Nano, Composite and Additive 16 to 21 June 2025.

Patent Published

Patent Name	Contributors
Bionic Prosthetic Knee Joint with Load-Adaptive Feedback Mechanism for Improved Human Mobility	Mr Santhu Varghese Thomas, Mr Premjith S, Dr Rabi J, Mr Harikrishnan A R, Mr Rejath Rajan, Mr Vishnu Haridas
Autonomous Mobile Robot with Real-Time Obstacle Mapping and Adaptive Path Planning	Dr Manikandan H, Mr Johan George Cherian, Mr Amal R, Mr Rahul Krishnan, Mr Albin Biju, Mr Amal Jacob
High-Speed Laser-Based Additive Manufacturing of Aerospace Components with In-Situ Defect Detection Units	Dr Manuel George, Mr Rajeeve K Mohan, Mr Ajith Kumar K T, Mr Abin Paul, Mr Anandu V Pradeep, Mr Ananthakrishnan R
Microfluidic Cooling Device for Thermal Management in High-Density Microprocessor Arrays	Mr Navish Kumar, Mr Nijo Jose, Dr Arun Jose, Mr Muhammed Nihal, Mr Ananthakrishnan B, Mr Bibin John

Students 'Corner

- Muhammad Sidan Baker C K participated in University Intercollegiate Tournament/ Championship 04 February 2025.
- Adarsh M, Aswin PA , Prabhudev P, Farsan Aksar, Suhail Shaji, Sanjai D , Joel Binoy Jose, Ananthakrishnan AR participated in Project Presentation 24 February 2025.
- Anandu V Pradeep, Vishnu Haridas participated in Project Exhibition & Competition 24 February 2025.
- Albin Biju & Amal T R participated in CAD Modelling 25 February 2025.
- Asif MS participated in Project Presentation 03 April 2025.
- Ananthakrishnan AB participated in Project Presentation 03 April 2025.



LECTUS 2025



Editorial

Dr. Arun Jose
Mr. Rajeeve K Mohan
Mr. Santhu Varghese
Anandu V Pradeep
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Vishnu Haridas
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