

COGNIZANCE

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DEPARTMENT OF MECHANICAL ENGINEERING

(HALF YEARLY NEWSLETTER)



VISION OF THE INSTITUTE

Strive continuously for academic excellence by providing best contemporary, functional education and endeavoring to attain supreme engineering educational excellence, through sincerity of motive and focused efforts.

MISSION OF THE INSTITUTE

To prepare students to succeed in informationdirected and technology-driven global economy to become global citizens through effective teaching and learning process with strong practical exposure.

VISION OF THE DEPARTMENT

Our vision is to achieve the transcendence standard quality education in mechanical engineering with sound technical knowledge, practical skills and to develop the technocrats to cater the needs of socio-economical development of the country.

MISSION OF THE DEPARTMENT

M1: Facilitate students to learn technical fundamentals and practical skills. M2: Provide exposure to interdisciplinary and

emerging technologies. M3: Develop interest in research, innovation and

M3: Develop interest in research, innovation and entrepreneurship.

ABOUT THIS ISSUE

Department of Mechanical Engineering, PIEMR is proud to announce the second issue of its periodical newsletter. This newsletter covers recent activities held within the department, research work and projects. It also highlights future events that are planned by the department.

INSIDE THIS ISSUE

Message from Director Message from HOD Activities and Events

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MESSAGE FROM DIRECTOR

Dr. Manojkumar Deshpande Director PIEMR, Indore

Within this half-yearly newsletter, you will find a comprehensive snapshot of our journey and accomplishments during the first six months of the year. It highlights the significant progress made across different teams and initiatives, underscoring the power of our unified vision and focused execution. Your individual contributions, combined with our collaborative spirit, have been instrumental in achieving these results. I want to express my sincere appreciation for your dedication and the value you bring to our organization. As we embark on the second half, let's continue to build on this strong foundation, embracing new challenges with enthusiasm and working together to reach even greater heights of success. Your engagement is key to our future.

MESSAGE FROM HEAD OF DEPARTMENT

Prof. Lokesh Kumar Boriwal HOD, Department of Mechanical Engineering PIEMR, Indore

This edition of our half-yearly newsletter is a vibrant reflection of our shared vision, our collaborative spirit, and the remarkable progress we have made together. The stories and updates within these pages underscore the impact of your dedication and the power of teamwork in achieving our organizational objectives. Your passion for excellence and your commitment to our collective success are truly valued and deeply appreciated. As we move forward, let's continue to foster an environment of open communication, mutual respect, and shared purpose. I am excited about the opportunities that the second half of the year holds and confident that, together, we will continue to achieve remarkable things. Thank you for being an integral part of our journey.



ADVANCED SENSORS AND VISION SYSTEMS

Advanced sensors and vision systems are revolutionizing the way mechanical engineers design, operate, and maintain machinery. These technologies serve as the "eyes and ears" of modern machines, enabling them to collect, analyze, and respond to real-time data with exceptional precision and efficiency.

Sensors are critical in monitoring various physical parameters such as temperature, pressure, vibration, speed, and load. In mechanical systems, they play a vital role in ensuring predictive maintenance, by identifying anomalies before they lead to equipment failure. This helps reduce downtime, improve safety, and extend the lifespan of mechanical components.

Vision systems, often powered by artificial intelligence, are used to interpret visual information for tasks like quality inspection, object recognition, alignment, and measurement. These systems use cameras and image processing software to detect even minute defects in manufactured parts—something that's difficult to achieve with the human eye. In high-precision industries like aerospace and medical devices, this level of accuracy is critical.

Together, sensors and vision systems enable smart automation. Machines can self-adjust, optimize their performance, and interact with their environment, making production more adaptive and efficient. Engineers integrate these technologies into manufacturing lines, robotic systems, and mechatronic devices to achieve higher productivity and consistent quality.

The integration of these systems is also central to the evolution of Industry 4.0, where real-time monitoring, data analytics, and autonomous decision-making are redefining manufacturing.For mechanical engineers, mastering these technologies means gaining a competitive edge and playing a key role in shaping the intelligent factories of the future.





ACTIVITIES AND RECENT EVENTS

TRANING SESSION ON 3D SCANNING

Our recent Training Session on 3D Scanning provided participants with valuable insights and practical skills in this rapidly evolving technology. The session covered the principles of 3D scanning, different scanning methodologies, and the software used for data processing and model generation. Attendees had the opportunity to work with 3D scanners, gaining hands-on experience in capturing real-world objects and creating digital 3D models. This training equips our team with the ability to accurately digitize physical objects for various applications, including reverse engineering, quality inspection, and rapid prototyping. The session fostered a deeper understanding of the potential of 3D scanning in enhancing our workflows and driving innovation across different departments. We plan to offer further advanced sessions based on the positive feedback received.



EXPERT LECTURE BY MR. ASHISH DHOBLE ON DESIGN

We recently hosted an insightful Expert Lecture on Design by the renowned Mr. Ashish Dhoble. Mr. Dhoble, with his extensive experience and expertise in Design. Mr. Dhoble's specific area of design if known, e.g., product design, automotive design, etc.], shared his valuable perspectives on the latest trends, innovative methodologies, and the crucial role of design thinking in today's world. Students and faculty members were captivated by his engaging presentation and the real-world examples he shared. The interactive Q&A session provided a fantastic opportunity for attendees to delve deeper into specific design challenges and gain practical advice. This lecture served as an inspiring platform, encouraging a deeper appreciation for the power of design and its impact on innovation and user experience. We extend our sincere thanks to Mr. Dhoble for sharing his expertise and inspiring our community.



EXPERT LECTURE BY MR. ARJUN SINGH ON CALIBRATION AND TESTING

We recently hosted an insightful Expert Lecture on Calibration and Testing by Mr. Arjun Singh, a distinguished professional in the field. Mr. Singh shared his extensive knowledge and practical insights into the critical aspects of ensuring accuracy and reliability through effective calibration and rigorous testing procedures. Attendees gained a deeper understanding of the importance of these processes in maintaining quality standards and regulatory compliance across various industries. The lecture covered key methodologies, best practices, and emerging trends in calibration and testing. The interactive Q&A session allowed participants to address specific queries and benefit from Mr. Singh's expertise. This session was invaluable in highlighting the significance of precision and accuracy in engineering and manufacturing. We thank Mr. Singh for sharing his expertise and enriching our understanding of this vital domain.

