MECHAZINE

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We are delighted to present the September 2023 edition of Mechazine, a chronicle of the Department of Mechanical Engineering's vibrant endeavors during May to August 2023. This period witnessed a harmonious blend of academic excellence, innovation, and practical exposure. From insightful alumni talks and impactful industrial visits to hands-on workshops and notable student achievements, each event contributed to enriching our academic ecosystem. Our students actively participated in prestigious competitions and internships, demonstrating their technical competence and creativity. Faculty members engaged in continuous learning through national workshops and training programs, reflecting our commitment to growth and excellence. We extend our gratitude to all contributors and invite you to explore the highlights that define our collective journey of learning and innovation.

THE HEAD SPEAKS:

It gives me immense pride to present this edition of Mechazine, capturing our department's vibrant journey from May to August 2023. From alumni insights and research showcases to hands-on workshops and student achievements, each initiative reflects our commitment to excellence. We continue to inspire innovation, practical learning, and holistic development. I congratulate the faculty and students for their enthusiastic participation and look forward to greater milestones in the months to come.

— Dr. M. Venu

Head, Dept. of Mechanical Engineering

Department Activities and Achievements

The Department of Mechanical Engineering was abuzz with vibrant activities and commendable achievements during May–August 2023.

- FETHON 2K23, a tech event held in May, brought together students from mechanical and civil engineering streams to showcase their coding skills. With 27 teams participating, the event helped break the myth that coding is only for computer science students.
- On May 13, the department celebrated Researchers Day to promote a research culture. Students and faculty presented their findings, fostering collaborative discussions and innovation. Another highlight was the Cognitive Quest 2K23 held in August, where third-year students organized an orientation program with technical events to welcome second-year peers.
- Team KRONOS brought laurels by winning the Best Innovation Award at the Dr. G. Padmanabham Memorial Electric Two-Wheeler Design Competition organized by SAEINDIA Southern Section in July. This recognition underlined the department's focus on innovation and sustainability.
- Several workshops were also conducted, including those on venture capital funding, automobile engineering, and refrigeration systems. Students also excelled individually—Mr. B. Anjani Kumar secured a bronze medal at a state-level Canoeing & Kayaking Championship.
- These initiatives reflect the department's multi-faceted approach to learning—merging theory, hands-on skills, research, and co-curricular excellence to nurture industry-ready graduates.

Workshop Window

The Department of Mechanical Engineering organized and participated in a range of workshops aimed at enhancing practical and entrepreneurial skills among students and faculty.

- A standout event was the workshop on Bluetooth Technology and Device Drivers, held at VEDIC, Bengaluru from June 10–12, where participants gained hands-on experience in embedded systems, Linux kernel programming, and communication protocols such as UART and I2C.
- On August 3, 2023, a session on Angel Investment and Venture Capital was conducted by Dr. M.K. Kaushik. This helped early-stage innovators understand funding mechanisms and pitch preparation. It was followed by a workshop on Vapour Compression and Absorption Refrigeration Systems on August 10, led by Mr. N. Kaliprasad Varma from Reliance Industries, who offered both theoretical and industry-specific insights.
- To build programming proficiency, the department also held a Python Programming Workshop on August 16–17, targeting interdisciplinary applications in Mechanical Engineering. Additionally, Automobile Engineering training was provided by ARC Global on August 18–19.
- Workshops like the IDEATE Instructional Design Program, ILEA Workshop on Leadership, and SPARK TANK 2023 – Idea Pitching Competition enriched both technical and soft skill domains, reinforcing the department's focus on holistic student development.

Industrial Visits

Industrial exposure is a vital aspect of engineering education, and the Department of Mechanical Engineering ensured that both students and faculty engaged with real-world practices during May–August 2023.

- In August, second-year students visited Ananda Fisheries to understand the role of mechanical systems in fish processing and cold storage technologies. Another group from the same batch toured Hitech Print Systems Limited, a high-security printing facility, where they observed automation in confidential printing.
- Third-year students visited casting industries in Vijayawada, including Kusalava International and UEM Pistons India Pvt. Ltd., gaining insights into cylinder liner manufacturing and piston production for automotive applications. These visits offered practical exposure to machining, foundry practices, quality control, and process automation.
- Faculty development also remained a focus. Several faculty members attended national-level programs such as the Faculty Induction Program at VEDIC, a 3D printing workshop at NIT Bhopal, and MATLAB EXPO 2023 in Hyderabad. Notably, faculty also participated in a hands-on workshop in Bengaluru focused on Bluetooth technology and Linux device drivers.

FAREWELL MOMENTS 2023

Parent Meet

To foster greater engagement between the institution and the families of students, the Department of Mechanical Engineering organized two parent meetings in June 2023.

- The first meeting, held on June 10, targeted parents of second-year students (2021 batch). It focused on academic progress, special training programs, upcoming workshops, internships, and placement-oriented activities. Faculty members presented detailed reports on student achievements and addressed parental concerns related to curriculum and career preparedness.
- The second parent meeting took place on June 17 for the first-year batch (2022 batch). The agenda emphasized building a collaborative support system to ensure both academic and personal development. The department highlighted initiatives in skill development, soft skills training, and exposure to emerging technologies.

These meetings served as a platform for transparent communication and mutual collaboration. Parents appreciated the department's proactive approach and the efforts taken to prepare students for industry challenges.

TechPulse

- World’s First Hydrogen-Powered Commercial Train Fleet – Germany

In May 2023, Germany expanded its hydrogen-powered train fleet, aiming for zero-emission regional rail transport. This advancement promotes sustainable mechanical and transport engineering practices.

- China’s Fusion Reactor “Artificial Sun” Breakthrough

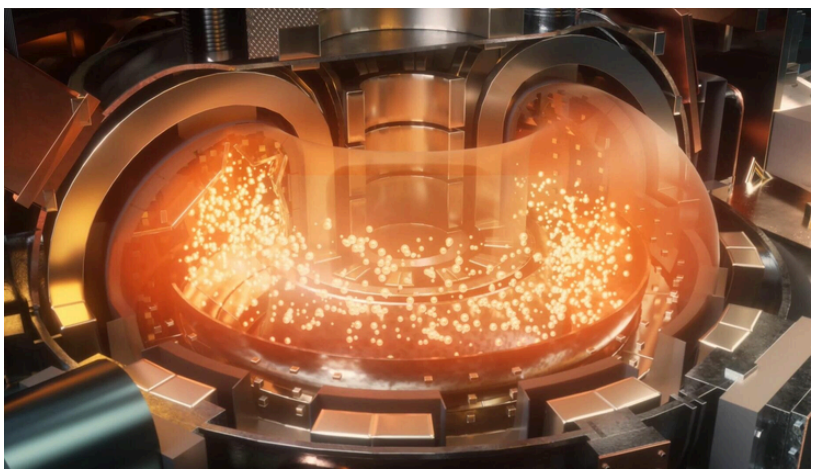
In July, China’s EAST Tokamak set a record by sustaining 100 million°C for over 400 seconds, pushing the limits of fusion energy and high-temperature material science.

- ISRO’s Chandrayaan-3 Lunar Soft Landing Mission (August 23, 2023)

India made history as the first country to land near the Moon’s south pole. ISRO’s Chandrayaan-3 showcased advancements in autonomous landing systems, propulsion control, and lightweight composite materials.

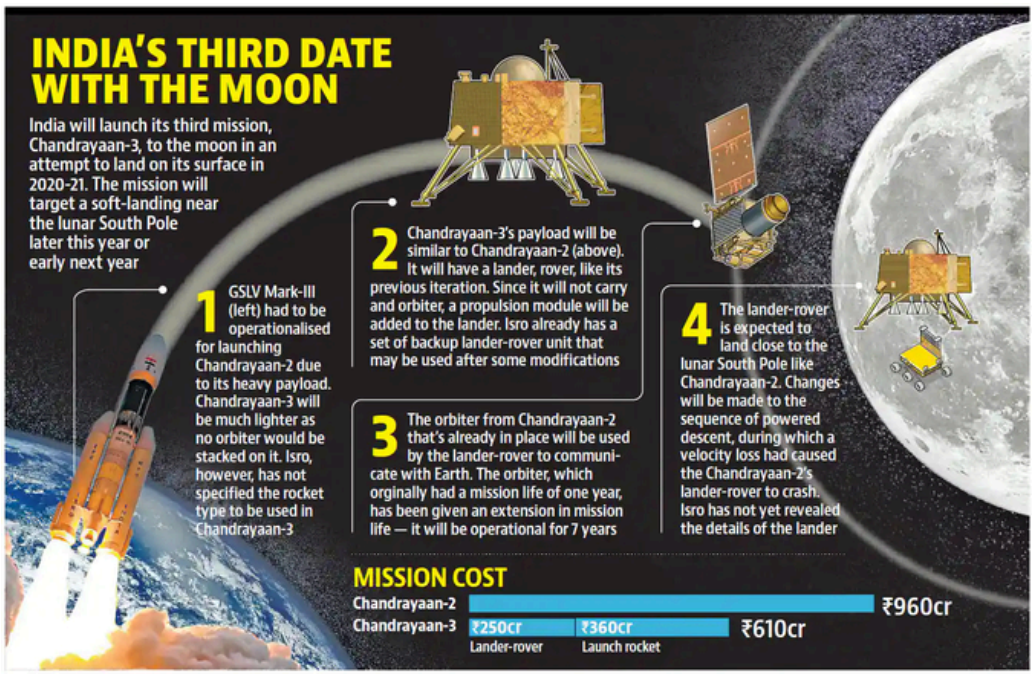
- CCMB’s Bio-ink for 3D Bioprinting (July 2023)

The Centre for Cellular and Molecular Biology (CCMB) developed a novel bio-ink suitable for 3D printing of tissue scaffolds, aiding regenerative medicine and biomedical research.



The “Artificial Sun” is a groundbreaking nuclear fusion project designed to replicate the Sun’s core energy process on Earth. Unlike conventional power plants, it uses hydrogen isotopes to fuse into helium, releasing vast energy without carbon emissions. In mid-2023, China's EAST reactor set a record by maintaining extreme heat for sustained periods—bringing us closer to a future of abundant clean energy. This achievement reflects years of global collaboration in plasma physics and superconducting magnet technology. Though challenges remain, the Artificial Sun symbolizes humanity’s quest for an energy revolution—power that’s sustainable, safe, and practically inexhaustible.

Lunar Legacy:
India’s Giant Step



On August 23, 2023, India achieved a remarkable milestone as ISRO's Chandrayaan-3 mission became the first in the world to successfully land near the Moon’s south pole—a region never explored before. The mission's Vikram lander executed a precisely planned soft landing, showcasing advancements in autonomous navigation, terrain-relative navigation, and propulsion system control. Shortly after touchdown, the Pragyan rover was deployed, beginning a detailed surface exploration to analyze lunar soil, study mineral presence, and gather valuable scientific data.

Chandrayaan-3 marked a redemption moment after the Chandrayaan-2 setback, demonstrating ISRO’s resilience and capability in mastering complex space systems with cost-effective engineering. The mission was entirely indigenous, highlighting innovations in mechanical structures, lightweight composite materials, vibration damping, and thermal protection systems. The success affirmed India’s position as a major player in global space exploration and sparked national pride and international recognition.

Beyond scientific outcomes, Chandrayaan-3 serves as a beacon of inspiration for young engineers and researchers. It exemplifies how interdisciplinary collaboration—from mechanical design to software control—can achieve extraordinary goals. The mission reflects India's evolving space capabilities and its commitment to peaceful exploration of outer space for the benefit of humanity.

The classroom is just the beginning. Real engineering begins when you step out, question norms, experiment fearlessly, and take ownership of challenges. Stay grounded, stay innovative, and lead with vision.

CHAIR:

Dr. N. Naga Krishna

EDITORS:

Mr. D. Vamsee Krishna

Mr. N. V. Manikanta

IMAGES:

DEPARTMENT PHOTOGRAPHY CLUB

STUDENT COORDINATORS:

Mr. K. Teja

Mr. N. Bhaskar

Ms. C. Anoop