Issue 1 | Volume 2 | AUGUST 2025

THE MECHAZINE

DEPARTMENT OF MECHANICAL ENGINEERING

NATIONAL ENGINEERING COLLEGE

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.R. Nagar, Kovilpatti - 628503

HOD'S MESSAGE

It is my pleasure to introduce this magazine **MECHAZINE**, a testament to the NEC, Mechanical Engineering Association's unwavering dedication to fostering innovation, collaboration, and excellence in our field. As the Head of the Department of Mechanical Engineering, I am honoured to witness the Association's continuous efforts in promoting cutting-edge research, knowledge sharing, and community building. This technical magazine will provide a glimpse of student and faculty contributions made during academic year 2024-2025.

This publication embodies our department's mission to inspire and empower the next generation of mechanical engineers, equipping them with the skills, expertise, and vision required to tackle complex global challenges. The Association's commitment to promoting interdisciplinary dialogue, industry partnerships, and student engagement is truly commendable.

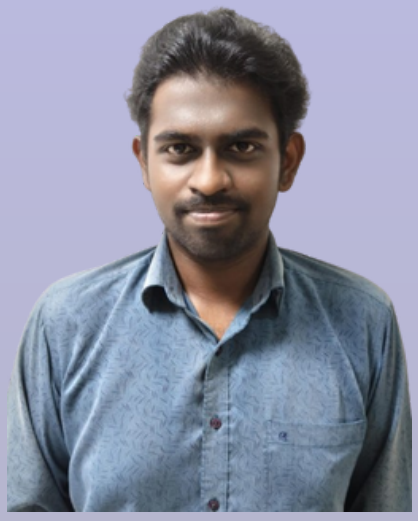
I extend my gratitude to the Mechanical Engineering Association's leadership, members, and contributors for their tireless efforts in making this magazine a reality. Your passion and commitment to advancing our field are invaluable.

I invite you to explore this magazine, and I am confident that it will inspire thought-provoking discussions, spark new ideas, and strengthen our community's resolve to shape a better future through mechanical engineering. At the end, I would like to thank editorial board members and hope that our collective efforts stimulate further progress in this domain of activity with strong determination at both national and international levels.

We welcome you for any suggestion and contribution for the betterment of this magazine in the forthcoming editions.

Sincerely,
Dr S IYAHRAJA,
Head of the Department/Mechanical Engineering,
National Engineering College,
K R Nagar, Kovilpatti - 628503

EDITOR'S NOTE



It is with great pride and enthusiasm that we present Issue 1, Volume 2 of THE MECHAZINE (August 2025), the official magazine of the Department of Mechanical Engineering, National Engineering College, Kovilpatti. This edition is a sincere reflection of the department's unwavering commitment to academic excellence, innovation, and the holistic development of budding mechanical engineers. This magazine brings together a rich collection of faculty research contributions, student achievements, professional activities, internships, industrial exposure, and vibrant association events conducted during the academic year 2024–2025. Each section highlights how classroom learning is seamlessly integrated with practical application, industry relevance, and creative exploration. The featured technical events and professional chapter activities demonstrate the department's continuous efforts to keep students aligned with emerging technologies and real-world engineering challenges.

A special mention goes to the Student's Corner, which showcases exceptional creativity and technical proficiency, emphasizing how modern tools and interdisciplinary skills can elevate engineering beyond conventional boundaries. Such contributions reflect the talent, curiosity, and dedication nurtured within our department. We express our heartfelt gratitude to the Head of the Department, faculty members, contributors, and reviewers for their constant guidance and support. We also commend the editorial team for their hard work and commitment in bringing this magazine to life. We hope THE MECHAZINE inspires readers to think critically, innovate responsibly, and strive for excellence in their engineering journey.

Sincerely,
BENIAL RAVEN D,
President - Mechanical Engineering Association,
National Engineering College,
Kovilpatti - 628503.

ABOUT THE DEPARTMENT

VISION:

- Producing globally competitive Mechanical Engineers with social responsibilities.

MISSION:

- Imparting quality education by providing excellent Teaching-Learning environment.
- Inculcating qualities of continuous learning, professionalism, team spirit, communication skill and leadership with social responsibilities.
- Promoting leading-edge research and development through collaboration with academia and industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

- PEO1: Graduates will have successful profession in Mechanical/Allied Industries or Research/Academics or Business Enterprise.
- PEO2: Graduates will be able to broaden their horizons beyond Mechanical Engineering to address the societal and environmental concerns.
- PEO3: Graduates will have the attitudes and abilities of leaders to adapt the changing global scenario.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

- PSO1: Apply the concepts of Engineering Design to design, analyze and develop the mechanical components and systems using the different analytical/CAD/experimental tools.
- PSO2: Apply the concepts of Thermal Engineering to design, analyze and develop the flow and energy systems using the different analytical/experimental/software tools.
- PSO3: Apply the concepts of Production, Industrial Engineering and Management for analysis, optimization and development of mechanical systems.

PUBLICATIONS

5

FACULTY NAME	TITLE	PUBLISHED DATE	IF SCI, IMPACT FACTOR
Mahesh Kumar, A Andrews, Murali Karthick, Gowtham S, Saravanan P	Integrated Improved Complete Ensemble Empirical Mode Decomposition and Continuous Wavelet Transform Approach for Enhanced Bearing Fault Diagnosis in Noisy Environments	16/06/2025	-
C Veera Ajay, Thoufiq Mohammed K	Analyzing the synergistic effects of hard ceramic SiC and Sn on the mechanical properties and wear performance of stir-cast eutectic A356 aluminium alloy composites	24/07/2025	1.6
Michael Thomas Rex F & Veera Ajay C	Optimisation of plasma spray parameters for enhanced microhardness and wear resistance of WC/Cr3C2 coatings on SS316 using response surface methodology	24/07/2025	1.5


National Engineering College
(Autonomous Institution)
K.R.Nagar, Kovilpatti - 628 503.
Estd : 1984
THIRU.K.RAMASAMY
1936 - 2019
DEPARTMENT OF MECHANICAL ENGINEERING- 2026 BATCH
Congratulations
To our young engineers who have been selected for two month summer internship program in
Department of Mechanical Engineering
IIT Tirupathi
14th May 2025 to 11th July 2025
PONE SORNA MUGESH P
III Year MECH
MAHESHKUMAR M
III Year MECH
www.nec.edu.in

INTERNSHIPS

National Engineering College

(Autonomous Institution)
K.R.Nagar, Kovilpatti - 628 503.

Estd : 1984

DEPARTMENT OF MECHANICAL ENGINEERING- 2026 BATCH

Congratulations

To our young engineer who has been selected for
3 to 6 month summer internship program in

Bureau of Indian Standards
(Bangalore Branch Laboratory)

with stipend of Rs. 20,000 per month

Benial Raven D
III Year MECH

www.nec.edu.in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THIRU.K.RAMASAMY
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41
1984 - 2025
YEARS OF ACADEMIC EXCELLENCE
NEC ALUMNI ASSOCIATION
Organizes
Online Webinar on
Cyber security in Manufacturing
Registration link -
https://alumni.nec.edu.in/events
26/07/2025
11:00 am - 12:30 pm
Seminar Hall [Mech. Dept.]
Resource Person
Mariskarthick M
2021 batch MECH Dept
Senior Security Analyst
Eventus Security, Saudi Arabia
K.R. Innovation Centre
DST-iTBI
nirf 2024
Engineering Band 151-200
NBA
Tier - 1
NAAC
A GRADE
4 STAR
TNEA Counselling Code
4962

INAUGURATION

The Department of Mechanical Engineering at National Engineering College, Kovilpatti, hosted the Inaugural Function of the Mechanical Engineering Association (MEA) for the academic year 2025–2026 on 1st August 2025. The ceremony was graced by Chief Guest Mr. R. Sundararajan, DGM (Civil–Safety), Chennai Metro Rail Ltd., and presided over by the Principal and the HoD. The event began with a warm welcome and the formal introduction of the MEA office bearers, followed by engaging speeches that highlighted the evolving role of mechanical engineers in modern industries. Alumni speaker Mr. Ramesh Lakshmanaperumal, from the United Nations, shared valuable insights on global career pathways.

A major highlight of the function was the release of the departmental magazine "MECHAZINE 2025", featuring technical articles, research contributions and student–faculty achievements. The Chief Guest applauded the editorial team for their effort in creating a meaningful platform for creativity and technical expression. The programme concluded with a vote of thanks, setting a positive tone for a year enriched with seminars, workshops, and innovative student activities under MEA.

LOGO DESIGN CONTENT

The Mechanical Engineering Association of National Engineering College organized an inspiring Logo Design Contest on 30th August 2025, aimed at developing a unique visual identity for the department. The competition encouraged students to showcase their creativity, originality, and design thinking beyond academics. A total of 37 impressive entries were received, reflecting the artistic talent and enthusiasm of the participants.

The department adopted a transparent and democratic online voting system through Google Forms, enabling both students and faculty to select their preferred design. Between 30 August and 3 September, 123 votes were cast. The logo designed by **Reffino D** (2310018), Third Year, emerged as the winner with 27.01% of the votes, while Vishwas Selvam B, Second Year, secured the runner-up position with 19.93% votes. The winning logo will officially represent the Department of Mechanical Engineering in all future events, posters, and publications.

The contest was appreciated for fostering creativity, encouraging student participation, and strengthening departmental identity. With its success, the MEA looks forward to organizing more such engaging and innovative activities in the future.

WATER ROCKETRY

The event AQUA THRUST was a technical competition conducted as part of the activities of the Mechanical Engineering Association. Participants were challenged to design and build a water rocket using simple materials such as plastic bottles, fins, and nozzles. The rockets were propelled using a mixture of pressurized air and water, simulating real-world rocket propulsion principles in a safe and controlled manner. The event consisted of two major rounds: Design and Launch Round: Teams designed and launched their rockets to achieve maximum altitude and distance. Accuracy Round: Participants aimed to land their rockets within a specified target zone to test precision control and stability. Each team was evaluated based on their design innovation, flight performance, and understanding of engineering principles involved.

First Place: Gurusivabalan R, Senthil Kumaran P and Balaji – Second Year
Second Place: Mariswaran M and Abdul Bashith J – Second Year

NEC ISHRAE STUDENT CHAPTER INSTALLATION

The Installation Ceremony of the NEC ISHRAE Student Chapter for the academic year 2025–2026 was successfully organized by the Department of Mechanical Engineering, National Engineering College, Kovilpatti, in association with the ISHRAE Madurai Chapter on 09 August 2025. The event marked the formal induction of the newly elected student office bearers and aimed to create awareness about ISHRAE and its role in shaping future HVAC&R professionals.

The program began with a warm welcome address by the Head of the Department, highlighting the importance of student chapters in bridging the gap between academic learning and industry requirements. Mr. A. Velmurugan, President of ISHRAE Madurai Chapter, served as the Installation Officer and officially inducted the office bearers, motivating students to develop leadership qualities, teamwork, and technical competence.

The event featured two insightful keynote sessions. Dr. M. S. Govardhanan delivered a talk on “About ISHRAE,” emphasizing student activities, technical resources, and industry exposure. Er. K. Thamilarasu addressed “Opportunities in the HVAC Field,” sharing insights on sustainability, energy efficiency, and diverse career paths. The ceremony strengthened industry–academia collaboration and inspired students to actively participate in ISHRAE activities for professional growth

PHOTOREALISTIC VISUALIZATION OF NATIONAL ENGINEERING COLLEGE ENTRANCE USING BLENDER SOFTWARE

A remarkable demonstration of creativity and technical skill was showcased by **Mr. Deepak Kumar M** of Final year, through his project titled "Photorealistic Visualization of National Engineering College Entrance using Blender Software." The project involved creating a highly realistic digital replica of the college entrance by meticulously modeling architectural elements, roads, greenery, and surroundings using advanced visual effects techniques. By effectively applying texturing, lighting, shading, and rendering workflows in Blender, the student achieved an impressive level of photorealism that closely resembles the real campus environment.

This project stands as a fine example of how modern VFX tools can be used beyond entertainment, extending into architectural visualization and design communication. The dedication, attention to detail, and technical proficiency displayed reflect the student's strong grasp of both artistic creativity and engineering precision.

Such outstanding work highlights the quality of talent nurtured by the department, which continuously encourages students to explore interdisciplinary skills, embrace emerging technologies, and transform ideas into impactful visual outcomes

MAXVAL
TECHNOLOGIES PVT. LTD.

Engineering My Future: A Journey to Maxval Technologies

As a mechanical engineering student with a deep passion for design and automation, my time at National Engineering College has been about more than just textbooks; it has been about building a foundation for the real world. Today, I am proud to share that I have secured a placement as a Core Engineer at M/s. Maxval Technologies Pvt Ltd, Navi Mumbai. My journey to this moment was shaped by hands-on experiences. From my internship at DCW Limited, where I analyzed mechanical operations in industrial plants, to my to my personal project building a 5-axis robotic arm using 3D-printed parts, I constantly sought to apply engineering principles to practical solutions. Certifications in sustainability and CAD design from Dassault Systems further honed the technical skills I would eventually need for my placement. The rigorous selection process at Maxval - ranging from designing 2D/3D panel layouts in AutoCAD to assessments on Engineering Graphics and Strength of Materials—was a direct test of what we learn in our classrooms. I was able to navigate the tool testing and mathematical calculations with confidence, largely due to the department's relentless focus on practical CAD proficiency and fundamental engineering concepts. During the technical interview, which probed into specific topics like material selection and core strength of materials concepts, I found myself relying heavily on the knowledge imparted by our faculty. The department's curriculum does not just teach theory; it trains us to think like engineers, ensuring I was prepared to answer questions on material conditions and design logic effectively.

I am deeply grateful to the Department of Mechanical Engineering and the Placement Centre for bridging the gap between student life and professional capability. From organizing the initial pre-placement talk to preparing us for the final HR rounds, their guidance provided the platform I needed to launch my career.

Maha Naveen Kumar K (Batch of 2026),
Department of Mechanical Engineering

EDITORIAL TEAM

Benial Raven D
4th Yr MECH

Sathya Seelan G
4th Yr Mech

Thanga Jaga Mathesh I.M
3rd Yr Mech

Reffino D
3rd Yr Mech