

***DEPARTMENT OF MECHANICAL  
ENGINEERING***

***NEWS LETTER & MAGAZINE***

***DEC -2025***

# Moral and social Value Event - 1:

The Department of Mechanical Engineering organizes Moral and social value event on An innovative approach to effective communication and conflict management emphasizes active listening supported by empathy and emotional intelligence. Digital collaboration tools and data-driven feedback help identify misunderstandings early and promote transparency. Design thinking techniques encourage viewing conflicts as solvable problems rather than personal disputes. Open dialogue combined with cultural sensitivity builds trust and mutual respect among stakeholders. Continuous reflection and learning transform conflicts into opportunities for new professional journey and continue to inspire their peer.

**JEPPIAAR INSTITUTE OF TECHNOLOGY**  
(An Autonomous Institute)  
"Self Belief | Self Discipline | Self Respect"  
Sunguvarchatram, Sriperumbudur, Chennai-631 604.

**DEPARTMENT OF MECHANICAL ENGINEERING**

**MORAL AND SOCIAL VALUE EVENT**

**INNOVATIVE APPROACH TO EFFECTIVE COMMUNICATION AND CONFLICT MANAGEMENT**

**S. VIDHYA**  
Counselling psychologist

**K. RAMYA**  
Clinical psychologist

**Head Of The Department**  
Mr.S.Arun ME, (PhD)

**Faculty Coordinator:**  
Mr.Ajith Kumar M.E.MBA.(PhD)

DATE : 04/12/2025 || TIME : 1.30-2.30 ||  
VENUE : Lecture Hall 9

Logos: JEPPIAAR INSTITUTE OF TECHNOLOGY, NAAC A+, NEA, Ministry of Education INNOVATION CELL, INSTITUTION'S INNOVATION COUNCIL, and a row of 17 UN Sustainable Development Goals icons.

## Event Photo's



## Moral and social Value Event - 2:

The Department of Mechanical Engineering organizes a Moral and Social Values–based event focusing on Sustainable Technologies for Smart Cities, with special emphasis on wastewater management and energy solutions. The event highlights ethical responsibility, environmental stewardship, and social well-being through engineering innovations. It creates awareness on sustainable wastewater treatment, renewable energy integration, and resource-efficient technologies. Experts and participants discuss how engineering decisions can positively impact society and future generations. The program encourages students to adopt sustainable and value-driven approaches in solving urban challenges.

The poster is for a 'Moral and Social Value Event' organized by the Department of Mechanical Engineering at Jeppiaar Institute of Technology. The event is titled 'Sustainable Technologies for Smart Cities: Waste, Water, and Energy Solutions' and is scheduled for 11:00 AM to 11:45 AM on Thursday, 11/12/2025. The guest speaker is Dr. Veeramani G., a Professor and Head of the Department of Management Studies. The department's Head is Mr. S. Arun M.E. (PhD) and the Faculty Coordinator is Mr. Ajith Kumar ME, MBA, (PhD). The poster features the institute's logo, accreditation marks (A+ NAAC and NBA), and logos for the Ministry of Education's Innovation Cell and the Institution's Innovation Council. At the bottom, there is a row of 17 icons representing various Sustainable Development Goals (SDGs).

**JEPPIAAR INSTITUTE OF TECHNOLOGY**  
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**"Self Belief | Self Discipline | Self Respect"**  
Sunguvarchatram, Sriperumbudur, Chennai-631604.

**DEPARTMENT OF MECHANICAL ENGINEERING**  
**MORAL AND SOCIAL VALUE EVENT**  
**Sustainable Technologies for Smart Cities: Waste, Water, and Energy Solutions**

**11:00 AM TO 11:45 AM**

**11/12/2025 (THURSDAY)**

**DR VEERAMANI G**  
MA, MBA( HRM), MBA (FIN), PGDHR, DLL, PhD  
(UGC NET& SLET qualified)  
Professor -Head , Department of management studies  
Jeppiaar institute of technology  
kunnam Sriperumbudur chennai

**HEAD OF THE DEPARTMENT**  
**Mr. S.ARUN M.E, (PhD)**

**FACULTY COORDINATOR**  
**Mr. AJITH KUMAR**  
ME,MBA,(PhD)

Ministry of Education's INNOVATION CELL (GOVERNMENT OF INDIA)

INSTITUTION'S INNOVATION COUNCIL (Ministry of Higher Education)

17 Sustainable Development Goals (SDGs) icons



## EVENT PHOTO'S



## ***Workshop on “Young Innovators for the Next Generation Space Era”:***

***The Department of Mechanical Engineering organizes a workshop on “Young Innovators for the Next Generation Space Era” to inspire students toward advanced space technologies. The event focuses on innovation in aerospace systems, propulsion, materials, and space sustainability. Experts share insights on emerging opportunities and challenges in the evolving space sector. The workshop encourages creativity, problem-solving, and interdisciplinary thinking among young engineers. It aims to nurture future-ready innovators who can contribute to the global space ecosystem.***

The poster is for a workshop titled "Young Innovators for the Next Generation Space Era" organized by the Department of Mechanical Engineering at Jeppiaar Institute of Technology. The institute is an autonomous institution located in Sunguvarachattram, Sriperumbudur, Chennai - 631604. It features logos for NAAC A+ accreditation, NBA accreditation for CSE, IT & ECE, and the Ministry of Education's Innovation Cell. The workshop is in collaboration with Space Kidz India. The program manager is Ms. Haashika Raj, and the faculty coordinator is Mr. B. Kotteeswaran M.E., (Ph.D), Assistant Professor/Mech. The student coordinators are S. Hemamalini, III year/MECH. The event is held in Lecture hall - 14 on 15/12/25 from 10:30am to 11:30am. The poster also includes a row of 17 UN Sustainable Development Goals icons at the bottom.

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**DEPARTMENT OF MECHANICAL ENGINEERING**  
**Young Innovators for the Next Generation Space Era**  
(In Collaboration with)  
**Space kidz India**

**Ms. Haashika Raj**  
Program Manager,  
Space Kidz India

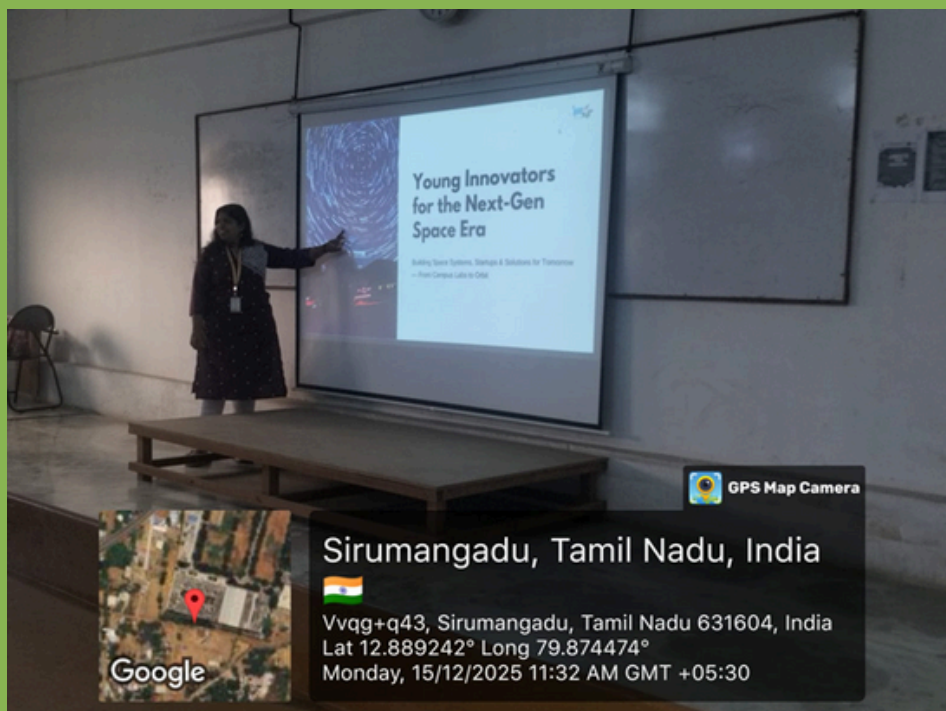
**S. Hemamalini**  
III year / MECH

**Lecture hall - 14 | Time - 10:30am to 11:30am**  
**Date : 15/12/25**

**FACULTY COORDINATOR**  
**Mr.B.Kotteeswaran M.E., (Ph.D)**  
Assistant Professor/Mech

**STUDENT COORDINATORS**  
**S.Hemamalini**  
III year/MECH

### ***EVENT PHOTO's***





GPS Map Camera

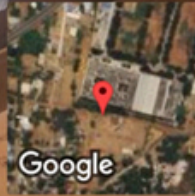
Sirumangadu, Tamil Nadu, India



Vvqg+q43, Sirumangadu, Tamil Nadu 631604, India

Lat 12.889163° Long 79.874386°

Monday, 15/12/2025 11:40 AM GMT +05:30




Google





# ***SEMINAR ON DESIGN THINKING IN ELECTRIC VEHICLE BATTERY PACKAGING AND THERMAL SAFETY***





*The Department of Mechanical Engineering organizes a seminar on “Design Thinking in Electric Vehicle Battery Packaging and Thermal Safety.” The seminar focuses on innovative design methodologies for efficient battery packaging and robust thermal management systems.*

*Experts discuss safety challenges, heat dissipation strategies, and reliability of EV battery systems. The event emphasizes user-centric design, sustainability, and compliance with safety standards. It aims to enhance students’ understanding of next-generation electric vehicle technologies and safe engineering practices.*


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**JIT CONNECT ALUMNI ASSOCIATION**  
®  
**DEPARTMENT OF MECHANICAL  
ENGINEERING**  
Organizes  
SEMINAR  
ON  
**DESIGN THINKING IN ELECTRIC VEHICLES BATTERY  
PACKAGING AND THERMAL SAFETY**  
**RESOURCE PERSON**



**CHIEF PATRON**  
**Dr.N.MARIE WILSON**  
CHAIRMAN





**PRINCIPAL**  
**Dr.J VENU GOPALA KRISHNAN**


**DIRECTOR IQAC**  
**Dr.S.SHENBAGA EZHIL**


**Mr.J.JMERLIN DASS**  
EV Line Incharge  
Infac India Pvt.Ltd. - Padappai

**FACULTY COORDINATOR**  
**Mr.D.AJITH KUMAR**  
AP/MECH

 **04/12/2025**

 **12:30 pm - 01:30 pm**

 **Lecture Hall 09**



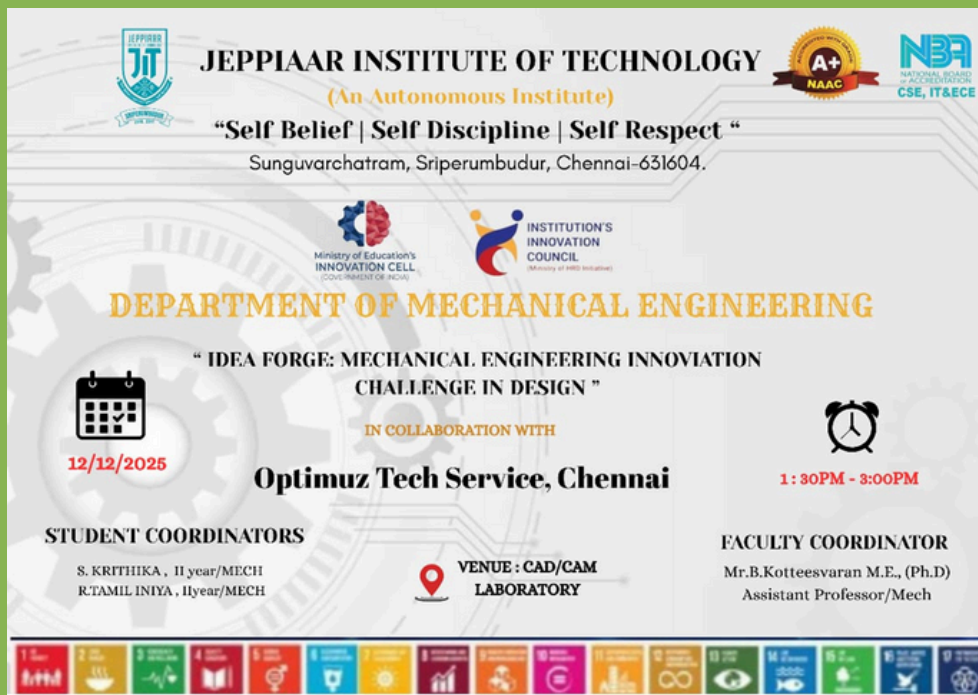
## EVENT PHOTO'S





# ***IDEA FORGE – a Mechanical Engineering Innovation Challenge in Design***

***The Department of Mechanical Engineering organizes IDEA FORGE – a Mechanical Engineering Innovation Challenge in Design to foster creativity and problem-solving skills among students. The event provides a platform for transforming ideas into practical engineering design solutions. Participants apply design thinking, analytical skills, and innovative approaches to real-world mechanical problems. Expert mentoring and peer collaboration encourage multidisciplinary innovation. IDEA FORGE aims to nurture future-ready engineers with strong design and innovation capabilities.***



The poster is for the 'IDEA FORGE: MECHANICAL ENGINEERING INNOVIATION CHALLENGE IN DESIGN' event. It features a light blue background with a faint gear pattern. At the top, it displays the logos of JEPPIAAR INSTITUTE OF TECHNOLOGY (An Autonomous Institute), NAAC A+ accreditation, and NBA CSE, IT&ECE accreditation. Below these, the motto 'Self Belief | Self Discipline | Self Respect' is written, followed by the address 'Sunguvarchatram, Sriperumbudur, Chennai-631604.' The central text identifies the event as organized by the 'DEPARTMENT OF MECHANICAL ENGINEERING' in collaboration with 'Optimuz Tech Service, Chennai'. The date '12/12/2025' is shown with a calendar icon, and the time '1:30PM - 3:00PM' is shown with an alarm clock icon. The venue is 'CAD/CAM LABORATORY'. Student coordinators are listed as S. KRITHIKA (II year/MECH) and R.TAMIL INIYA (II year/MECH). The faculty coordinator is Mr.B.Kotteesvaran M.E., (Ph.D), Assistant Professor/Mech. The bottom of the poster features a row of 17 colorful icons representing various Sustainable Development Goals.

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**DEPARTMENT OF MECHANICAL ENGINEERING**  
“ IDEA FORGE: MECHANICAL ENGINEERING INNOVIATION CHALLENGE IN DESIGN ”  
IN COLLABORATION WITH  
**Optimuz Tech Service, Chennai**

**STUDENT COORDINATORS**  
S. KRITHIKA , II year/MECH  
R.TAMIL INIYA , II year/MECH

**VENUE : CAD/CAM LABORATORY**

**FACULTY COORDINATOR**  
Mr.B.Kotteesvaran M.E., (Ph.D)  
Assistant Professor/Mech

**12/12/2025**  
**1:30PM - 3:00PM**

# Professional Society – SAE

*The Department of Mechanical Engineering, in association with the professional society SAE, organizes a seminar on “Human-Centered Design Thinking in Automotive Product Development.” The seminar emphasizes user-focused design approaches to enhance safety, comfort, and performance in automotive systems. Industry experts share insights on integrating customer needs with engineering innovation. The event highlights the role of empathy, usability, and sustainability in modern vehicle development. It aims to equip students with design thinking skills aligned with current automotive industry practices.*

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**SAE**  
&  
**DEPARTMENT OF MECHANICAL  
ENGINEERING**

**Organizes  
SEMINAR**

**ON  
HUMAN – CENTERED DESIGN THINKING IN AUTOMOTIVE  
PRODUCT DEVELOPMENT**

**RESOURCE PERSON**

**CHIEF PATRON**  
**Dr.N.MARIE WILSON**  
CHAIRMAN



**PRINCIPAL**  
**Dr.J VENU GOPALA KRISHNAN**

**DIRECTOR IQAC**  
**Dr.S.SHENBAGA EZHIL**

**Mr.T.MADHESHWARAN**  
Quality Assurance Engineer  
SL Lumax Pvt.Ltd. - Irungattukottai

**FACULTY COORDINATORS**  
**Mr.D.AJITH KUMAR**  
**Mr.S.JASPER**

 **17/12/2025** **01:30 pm - 03:00 pm** **Lecture Hall 09**



## *EVENT PHOTO'S*





*The Department of Mechanical Engineering, in association with the professional society ASME, organizes a seminar on “Design Thinking Approach for Enhancing Driver Safety and Comfort.” The seminar focuses on user-centric design principles to improve ergonomics, safety systems, and driving experience. Experts discuss innovative solutions integrating engineering design with human factors. The event highlights the importance of empathy, usability, and technology in modern vehicle design. It aims to equip students with practical insights into designing safer and more comfortable automotive systems.*

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**ASME**  
®  
**DEPARTMENT OF MECHANICAL  
ENGINEERING**  
Organizes  
SEMINAR  
ON  
**DESIGN THINKING APPROACH FOR ENHANCING DRIVER  
SAFETY & COMFORT**



**CHIEF PATRON**  
**Dr.N.MARIE WILSON**  
CHAIRMAN

**RESOURCE PERSON**  
**Mr.M. MICHEL ESHIP**  
Quality Engineer  
Moon Light India Pvt.Ltd. - Sriperumbudur

**PRINCIPAL**  
**Dr.J VENU GOPALA KRISHNAN**

**DIRECTOR IQAC**  
**Dr.S.SHENBAGA EZHIL**

**FACULTY COORDINATORS**  
**Mr.D.AJITH KUMAR**  
**Mr.B.KOTTEESVARAN**

 **13/12/2025**

 **11:00 am - 12:00 pm**

 **Lecture Hall 09**



## EVENT PHOTO'S





# Club Activity – IEEE RAS

*The Department of Mechanical Engineering, in association with the IEEE RAS Club, organizes a seminar on “Driven Ideas for User-Centric Automotive Solutions.”*

*The seminar focuses on innovative, user-focused approaches in automotive design and intelligent systems. Experts share insights on integrating robotics, automation, and human-Centered design in modern vehicles. The event emphasizes safety, comfort, and smart mobility solutions driven by user needs. It aims to inspire students to develop advanced automotive solutions aligned with future mobility trends.*

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**IEEE RAS**  
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**DEPARTMENT OF MECHANICAL ENGINEERING**  
Organizes  
SEMINAR  
ON  
**DRIVEN IDEAS FOR USER – CENTRIC AUTOMOTIVE SOLUTIONS**  
**RESOURCE PERSON**



**CHIEF PATRON**  
**Dr.N.MARIE WILSON**  
CHAIRMAN



**PRINCIPAL**  
**Dr.J VENU GOPALA KRISHNAN**

**DIRECTOR IQAC**  
**Dr.S.SHENBAGA EZHIL**

**Mr.J.JEFF NORMAN**  
MEP BIM Engineer  
Alkoory Solutions - Abu dhabi

**FACULTY COORDINATOR**  
**Mr.D.AJITH KUMAR**  
AP/MECH

 **13/12/2025**

 **09:30 am - 10:30 pm**

 **Lecture Hall 14**



## EVENT PHOTO'S



# ***FACULTY DEVELOPMENT PROGRAM – RECENT ADVANCEMENTS IN MECHANICAL ENGINEERING***

***The Department of Mechanical Engineering organizes a Faculty Development Program (FDP) on “Recent Advancements in Mechanical Engineering.”***

***The program focuses on emerging technologies, modern research trends, and innovative teaching practices. Experts from academia and industry share insights on advanced materials, manufacturing, energy systems, and automation. The FDP promotes knowledge exchange and professional growth among faculty members. It aims to enhance academic excellence and research capabilities in the field of mechanical engineering.***

***PARTICIPANT’S COUNT: 190***

***RESOURCE PERSONS:***

***DAY 1 - Dr. K. Jeyakumar, Senior Principal Scientist / CSIR - Trivandrum • DAY – 2 Dr. R. Ganapathy Srinivasan, Asso. Prof / Veltech MultiTech Dr. Rangarajan Dr. Sakunthala Engineering college***

***DAY – 3 Dr. G. Navaneetha Krishnan, Asso. Prof / QIS college of Engineering and Technology***

***DAY – 4 Dr. N. Muthuselvakumar. Asst.Prof/ Kongunadu College of Engineering and Technology***

***DAY -5 Dr. T.P.D Rajan, Senior Principal Scientist/ CSIR – Trivandrum***



# BROCHURE:

**Speakers**

  
**Dr. K. Jayasankar, Ph.D**  
 Senior Principal Scientist,  
 CSIR - National Institute for Interdisciplinary  
 Science and Technology- Trivandrum

  
**Dr. R. Ganapathy Srinivasan, M.E, Ph.D**  
 Associate Professor,  
 Vel Tech Multi Tech Dr. Rangarajan  
 Dr. Sakunthala Engineering College -  
 Chennai

  
**Dr. G. Navaneethakrishnan, M.E, Ph.D**  
 Associate Professor,  
 QIS College of Engineering and  
 Technology - Andhra Pradesh

  
**Dr. N. Muthu Selvakumar, M.E, Ph.D**  
 Assistant Professor,  
 Kongunadu College of Engineering and  
 Technology - Tiruchirappalli

  
**Dr. T. P. D. Rajan, M.Sc, M.Tech, Ph.D**  
 Chief Scientist,  
 CSIR - National Institute for  
 Interdisciplinary Science and Technology-  
 Trivandrum

**FDP Course Content**

This FDP provides a comprehensive overview of the latest developments across core and advanced domains, including:

- Smart manufacturing
- Advanced materials
- Additive manufacturing
- Robotics
- Sustainable energy technologies.

The speakers of this FDP made pioneering contributions to these fields. The program is aimed at bringing the researchers, faculty from academia, and industry professionals under one roof and paving a platform for knowledge transfer.

Registration Link:  
<https://forms.gle/wFWiSajDivxj9meA8>

**DATE : 09.12.2025 - 13.12.2025**  
**Timing : 7.00 PM - 8.00 PM**  
**Mode : Online**

**Department of Mechanical Engineering Organises**

**FACULTY DEVELOPMENT PROGRAM ON**

**RECENT ADVANCEMENTS IN MECHANICAL ENGINEERING**




**Faculty Members From AICTE Approved Engineering colleges are Eligible**

**NO REGISTRATION FEE !!**  
E- Certificates will be provided to all the participants !!

**FDP Co-ordinator:**  
 Mr. S. Jasper, M.E.(Ph.D.)  
 Assistant Professor,  
 Mechanical Engineering,  
 Jeppiaar Institute of Technology,  
 Mob No : 7708556585




**Vision**

*Jeppiaar Institute of Technology aspires to provide technical education in futuristic technologies with the perspective of innovative, industrial, and social applications for the betterment of humanity.*

**Mission**

- To produce competent and disciplined high-quality professionals with the practical skills necessary to excel as innovative professionals and entrepreneurs for the benefit of society.
- To improve the quality of education through excellence in teaching and learning, research, leadership, and by promoting the principles of scientific analysis, and creative thinking.
- To provide excellent infrastructure, serene, and stimulating environment that is most conducive to learning.

**Chief Patron**

**Dr. N. Marie Wilson**  
Chairman

**Patrons**

**Dr. J. Venu Gopala Krishnan**  
Principal

**Dr. S. Shenbaga Ezhil**  
IQAC Director



## EVENT PHOTO'S:

T.P.D. Rajan (Presenting)

### Lightweight Metallic Materials

7:15 PM | qkh-xaqa-koe

People

- Mute all
- Add people
- Subramanian Chandra...
- Sunil Kumar
- SURESH KOLANJ...
- T.P.D. Rajan
- T.P.D. Rajan Presentation
- Vaisakh P S
- venugopal kurup

7:15 PM | qkh-xaqa-koe

Dr. Muthu Selvakumar N PhD., (Presenting)

### ENVIRONMENTAL LOADS ON OCEAN STRUCTURES

7:35 PM | pkb-cvdj-twp

People

- Mute all
- Add people
- Search for people
- IN THE MEETING
- Contributors 50
- JASPER S (You) Meeting host
- Akhil Sugathan
- ANANDHAKUMAR S
- anbu pichandi
- Anand D

7:35 PM | pkb-cvdj-twp



# *Recent Innovations in Mechanical Engineering*



**R. TAMILINIYA**

*II Year Mechanical Engineering*

## *Smart Thermal Management Systems in Advanced Engineering Applications*

*Thermal management has become a critical area of innovation due to the rise of electric vehicles (EVs), high-power electronics, aerospace systems, and renewable energy technologies. Smart thermal management systems use advanced materials, sensors, control algorithms, and artificial intelligence to actively regulate heat transfer in mechanical systems. Unlike traditional passive cooling methods, these systems dynamically adapt to operating conditions to maintain optimal temperatures.*

*In electric vehicles, smart thermal systems improve battery safety, enhance driving range, and extend battery life by controlling heat generation during charging and discharging. Technologies such as phase change materials (PCMs), micro-channel heat exchangers, heat pipes, and liquid cooling loops are widely adopted. Integration with real-time sensors and predictive control algorithms allows early detection of thermal runaway risks. These advancements improve system reliability, reduce energy losses, and contribute to safer and more efficient mechanical designs*

*With the rapid advancement of high-power and high-density engineering systems, effective thermal management has become a critical design requirement. Smart Thermal Management Systems (STMS) represent a major innovation in mechanical engineering, combining advanced heat transfer techniques with sensors, control systems, and intelligent algorithms to actively regulate temperature and ensure safe, efficient operation.*

*Concept and Need*

*Traditional thermal management methods such as natural convection, forced air cooling, and conventional liquid cooling are often insufficient for modern applications like electric vehicles, aerospace electronics, data centers, and renewable energy systems. These applications generate high heat fluxes and operate under varying load conditions. Smart thermal management systems overcome these limitations by continuously monitoring temperature and dynamically adjusting cooling strategies in real time.*

### *Key Technologies Involved*

*Smart thermal systems integrate multiple advanced technologies, including micro-channel heat exchangers, heat pipes, vapor chambers, phase change materials (PCMs), and advanced thermal interface materials. Sensors such as thermocouples, infrared sensors, and MEMS-based temperature sensors provide real-time thermal data. This data is processed using control algorithms, artificial intelligence, or machine learning techniques to optimize heat dissipation and minimize energy consumption.*

### *Applications in Electric Vehicles (EVs)*

*In electric vehicles, battery thermal management is crucial for safety, performance, and lifespan. Smart thermal systems regulate battery temperature during charging, discharging, and fast-charging operations. Liquid cooling systems combined with PCMs help prevent thermal runaway and improve battery efficiency. These systems also manage heat in power electronics and electric motors, contributing to improved vehicle range and reliability.*

### *Aerospace and High-Performance Electronics*

*Aerospace systems and avionics require precise thermal control due to extreme operating conditions. Smart thermal management ensures stable performance of electronic components under high altitude, vibration, and temperature variations. Similarly, in data centers and high-performance computing systems, intelligent cooling reduces energy consumption while maintaining optimal operating temperatures.*

## ***Hydrogen Energy Systems and Fuel Cell Technology***

***Hydrogen energy is emerging as a clean and sustainable alternative to fossil fuels, making it a major innovation area in mechanical engineering. Fuel cell technology converts hydrogen into electricity through electrochemical reactions, producing only water as a by-product. Mechanical engineers play a vital role in the design of fuel cell stacks, thermal control systems, hydrogen storage tanks, and power transmission components.***

***Recent advancements include lightweight high-pressure hydrogen storage systems, improved fuel cell efficiency, and hybrid integration with electric powertrains in vehicles. Hydrogen-powered buses, trains, and industrial power units are gaining global attention as part of carbon-neutral initiatives. Mechanical engineering innovations in this field contribute to reduced greenhouse gas emissions, energy security, and sustainable transportation. Challenges such as storage safety, infrastructure development, and cost reduction continue to drive research and innovation.***

***Hydrogen energy systems represent one of the most promising pathways toward clean, sustainable, and low-carbon energy solutions. As global efforts intensify to reduce greenhouse gas emissions and dependence on fossil fuels, hydrogen has emerged as a key energy carrier due to its high energy density and environmentally friendly characteristics. Mechanical engineering plays a vital role in the development, optimization, and deployment of hydrogen energy systems and fuel cell technologies.***

