



Mech'Časopis

**Edition 11**

**July 2025**

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## **About the Department of Mechanical Engineering**

The Department of Mechanical Engineering was established in the year 2005. The Department is accredited by NBA New Delhi. We are witnessing remarkable growth and opportunities for the students especially recent advancements in materials, automation, and AI integration, 3D printing and also provide innovative solutions across various industries. The Department has highly qualified, experienced faculty members in different fields of specialization, driving student development in academic pursuits and career placement.

Our alumnus are working in remarkable positions in several Industries like DRDO, SIEMENS Renault Nissan, TVS Tyres, Mercedes Benz, Altair, TVS – Sundram Fasteners, Bosch, Tataelxi, Motherson Automotive, TAFE, etc. Our focus is on preparing students to unlock the vast potential of Mechanical Engineering and to provide our students with a comprehensive education that combines theoretical learning with hands-on experiences, enabling them to address the challenges of our society effectively through Total Quality Education.

## **About Mech'Časopis**

The name Mech'Časopis is taken from the Croatian language; Časopis (Pronounced as Chasopis) means Newsletter. This newsletter brings the outline of the students and faculty achievements with the activities of the department.



# DEPARTMENT OF MECHANICAL ENGINEERING

## VISION, MISSION, PEO'S & PSO'S



### VISION

To make Department of Mechanical Engineering the unique of its kind in the field of Research and Development activities in the prominent field of Mechanical Engineering in this part of the world.

### MISSION

To impart highly Innovative and Technical Knowledge in the field of Mechanical Engineering to the urban and unreachable rural student folks, through "Total Quality Education".



### PROGRAM EDUCATIONAL OUTCOMES (PEO'S)

**PEO -1:** Graduates of the Programme will excel in Technical Knowledge and apply Innovative Skills in the field of Mechanical Engineering.

**PEO -2:** Graduates will contribute to Technological Development and Research Activities through "Total Quality Education".

**PEO-3:** Graduate of the Programme will accomplish Leadership Qualities and Social Responsibilities through "Life Long Learning".



### PROGRAM SPECIFIC OUTCOMES (PSO'S)

**PSO -1:** Graduates will be able to create and analyze the Research and Development activities related to design and manufacturing.

**PSO- 2:** Graduates will be able to design, develop need based products in Mechanical Engineering and allied Industries.

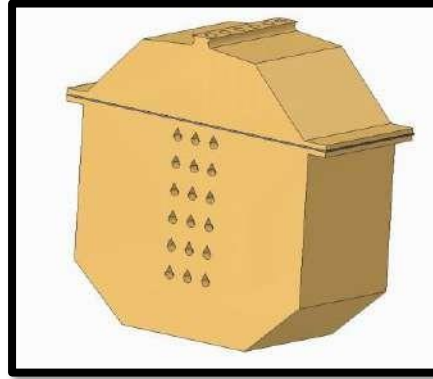
# Department of Mechanical Engineering

## Major Achievements

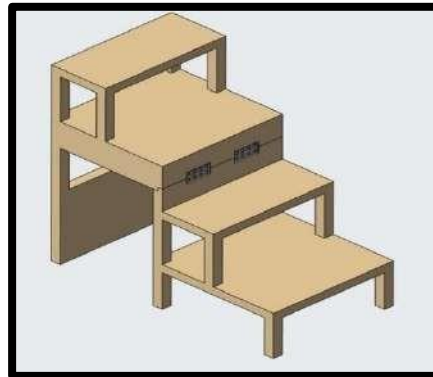
# Design Patent Granted

**\*10 Design Patent Granted During the Academic Year 2024-2025\***

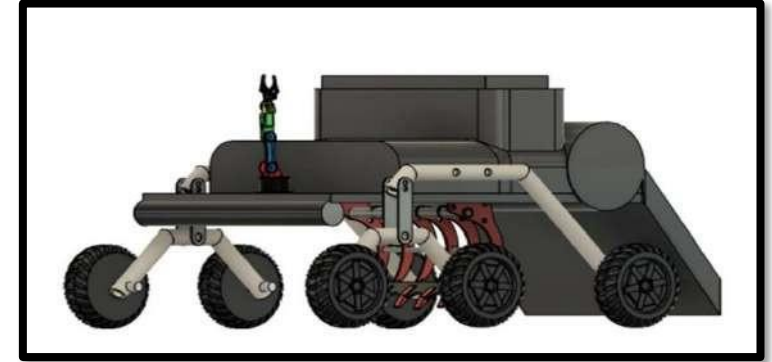
A Design patent titled “ Polygon shaped burring stand” (426068-001/ Date 07/08/2024) was granted to  
Dr.M.Prithiviraj AP/Mech  
Dr.S.Senthil Prof/Mech



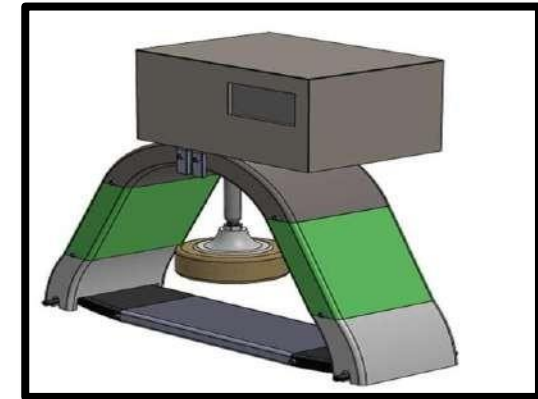
A Design patent titled “Potable Chair cum Ladder” (428054-001/ Date 23/08/2024) was granted to  
Dr.B.K.Parrthipan AP/Mech  
Dr. B.Balavairavan AP/Mech  
Dr.P.Narayansamy ASP/Mech  
Dr.S.Thangakasi rajan ASP&HoD /Mech  
Dr.S.Senthil Prof/Mech



A Design patent titled “ TYRE” (432140-001/ Date 28/09/2024) was granted to  
Dr.M.Prithiviraj AP/Mech  
Dr.S.Senthil Prof/Mech



A Design patent titled “ Agribot - Growing Smarter” (430824-001/ Date 18/09/2024) was granted to  
Dr.B.K.Parrthipan AP/Mech

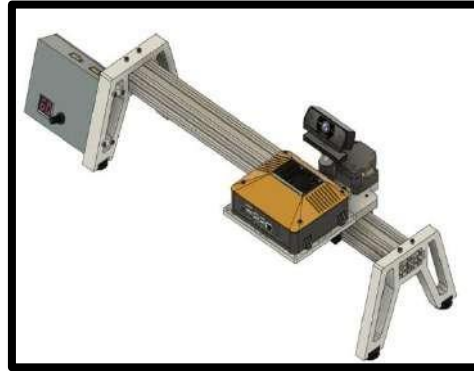


A Design patent titled “ CBR Device” (453137-001/ Date 27/03/2025) was granted to  
Dr.B.K.Parrthipan AP/Mech

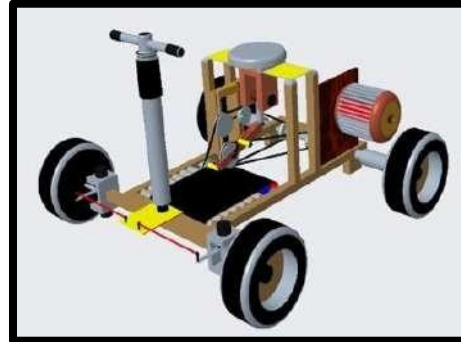
# Design Patent Granted

**\*10 Design Patent Granted During the Academic Year 2024-2025\***

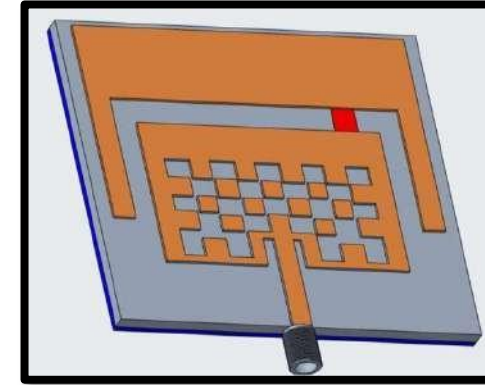
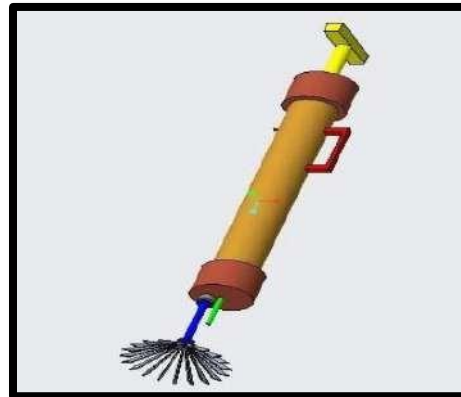
A Design patent titled “Yarn Breakage Detection Device with Integrated Camera Slider” (439468-001/ Date 04/12/2024) was granted to Dr.R.Sakthivel Murugan AP/Mech



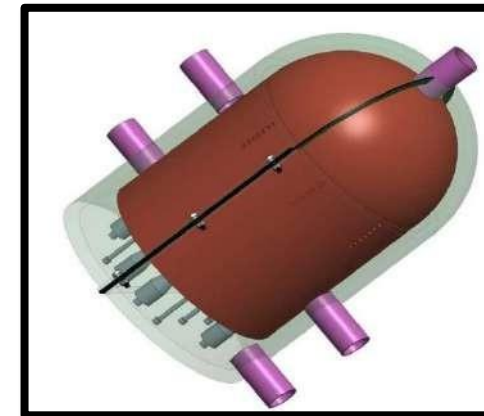
A Design patent titled “Four Wheel Electric Vehicle With Treadmill” (432343-001/ Date 30/09/2024) was granted to  
Dr.S.Thangakasi rajan ASP&HoD /Mech  
Dr.B.K.Parrthipan AP/Mech  
Dr.M.Murugananthan AP/Gen.Engg  
Dr.R.Sakthivel Murugan AP/Mech  
Dr.S.Senthil Prof/Mech



A Design patent titled “Toilet Cleaner” (435097-001/ Date 21/10/2024) was granted to  
Dr.B.K.Parrthipan AP/Mech



A Design patent titled “Micro strip Antenna ” (448815-001/ Date 21/02/2025) was granted to  
Dr.B.K.Parrthipan AP/Mech



A Design patent titled “ Anaerobic Digester” (446844-001/ Date 04/02/2025) was granted to  
Dr.B.K.Parrthipan AP/Mech

# UTILITY PATENT GRANT AND PUBLISHED

**\*1 Utility Patent grant and 2 utility patent Published During the Academic Year 2024-2025\***



**Mr.R.Sakthivel murugan, Mr.N.R.Madhan, Dr.S.Senthil , Dr.S.Thangakasirajan Dr.B.Balavairavan Dr.B,K.Parrthipan Dr.P.Narayanasamy Dr.K.Murugananthan Mr.A.Sankaranarayanamurthy Dr.M.Pritivraj, Mr.D.Palanikumar, Dr.Muthunatarajan , Utility patent titled “Design and fabrication of Engineering Graphics Teaching Models through the integration of Design for interchangeability and Design for Additive Manufacturing” (202541001295) on 31.01.2025.**

**Dr.B.Balavairavan Dr.B,K.Parrthipan Dr.S.Thangakasirajan Dr.P.Narayanasamy Published the Utility patent titled “IoT - Driven Robotic Arm for injecting Medication to Pet animals ” (202441080467) on 14.11.2024.**

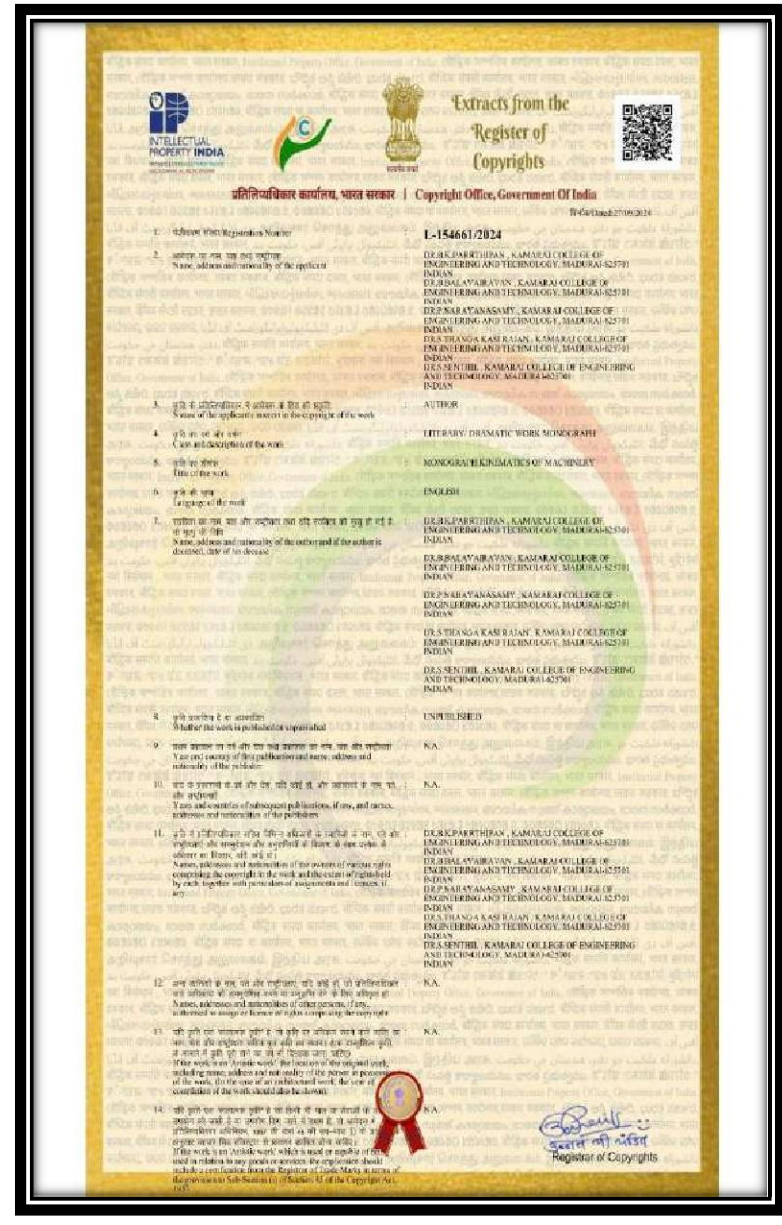
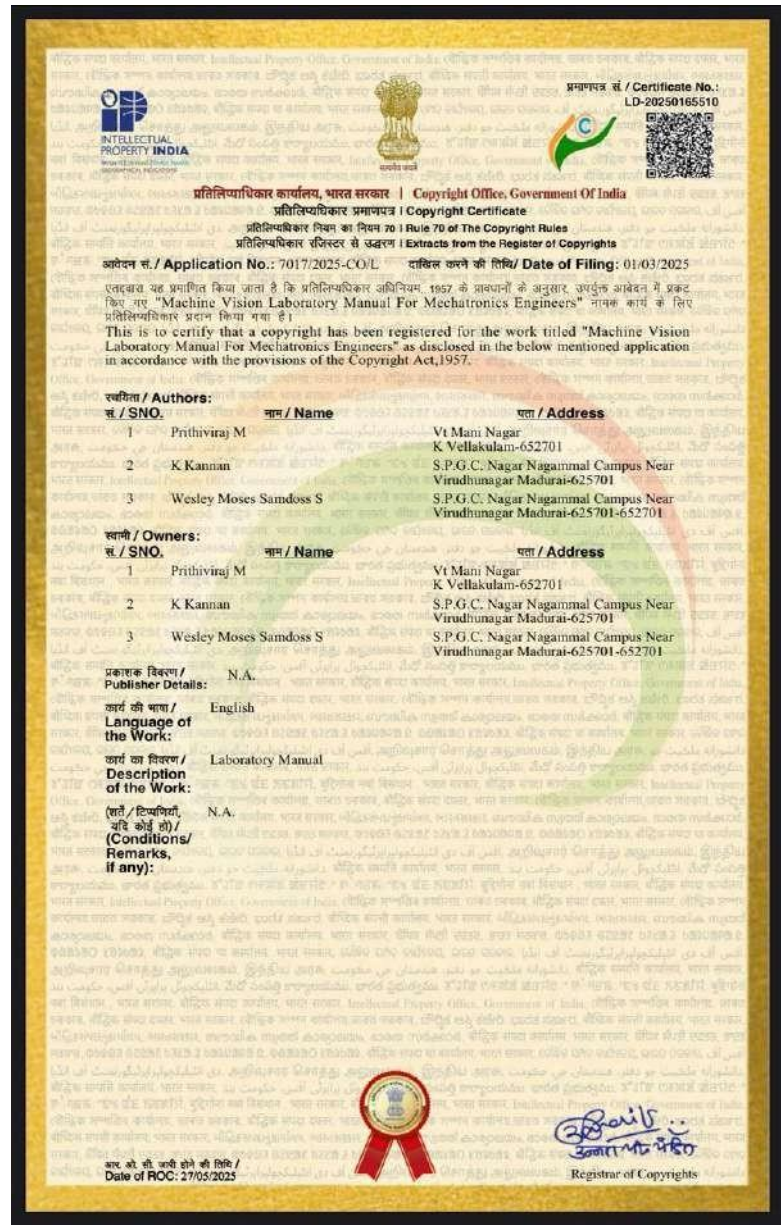
**A Utility patent titled “Development of Basalt, Kevlar, Fabric , MWCNT, and Date Palm Filler Bio - Epoxy Composite for Aircraft Structures” (202341059455 / Dated 05.09.2023) was granted to Dr.P.Senthamaraikannan AP/Mech**

# COPY RIGHTS GRANTED

**\*2 Copy rights Granted During the Academic Year 2024-2025\***

**A Copy rights titled “ Machine Vision Laboratory Manual for Mechatronics Engineers ”**  
**( LD-20250165510 ,Dated 01.03.2025)**  
**was granted to**  
**Dr.M.Prithviraj AP/Mech**

**A Copy rights titled “Monograph of Kinematics of Machinery”**  
**( L-154661/2024, Dated 27/09/2024)**  
**was granted to**  
**Dr.B.K.Parrthipan AP/Mech**  
**Dr. B.Balavairavan AP/Mech**  
**Dr.P.Narayansamy ASP/Mech**  
**Dr.S.Thangakasirajan ASP&HoD/Mech**  
**Dr.S.Senthil Prof/Mech**



# Events Organized

# Events Organized 2024 25



**Guest Lecture on “Funding Opportunities in MSME” On 19.07.24  
by Er.G.Simiyon, Assistant Director, MSME, Tirunelveli**

# Events Organized 2024 25



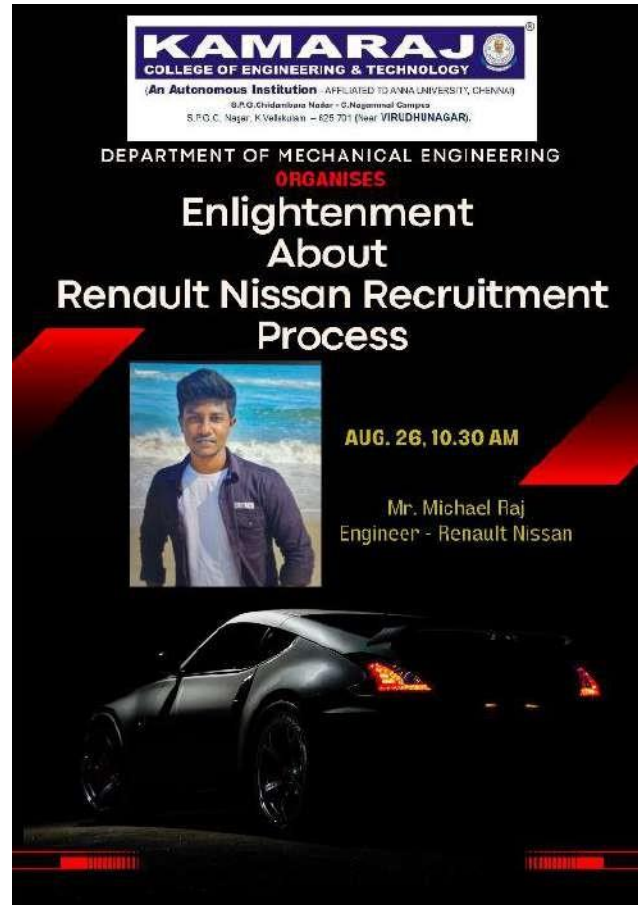
**Guest Lecture on “Organisation Culture” On 20.07.24 by  
Mr.K.Harimalairajan, Manufacturing Engineer, Caterpillar India Pvt.  
Ltd., IITM Research Park, Chennai.**

# Events Organized 2024 25



**Guest Lecture on “Technical aspects of Cooling system” On 16.08.24 by Er.D.Sivaramakrishnan, Cooling Specialist Engineer, Siemens Gramesa Renewable Energy, Bangalore.**

# Events Organized 2024 25



**Guest Lecture on “Enlightenment About Renault Nissan Recruitment Process” on 26.08.24  
by Mr. Michael Raj, Engineer, Renault Nissan**

# Events Organized 2024 25



**Guest Lecture on “Work Ethics” On 25.09.24 by Er.R.Vignesh Senior Product Engineer, Daimler Truck Innovation centre India Private Limited, Bangalore.**

# Events Organized 2024 25



**Seminar on “Next Gen Engineering in IoT: A New Era of Smart Products & Systems” On 26.09.24 by Er.A.Kesavan, Quantanics Techserv Private Limited.**

# Events Organized 2024 25



**Guest Lecture on “Job Opportunities in BIM for Mechanical Engineer”  
On 05.10.24 by M.Dhanush Kumar, S.Harish and G.Alphose Sam Anto**

# Events Organized 2024 25



**Guest Lecture on “Industry Expectation” On 05.11.24 by Er.Jaideep Kumar, Customer Support Analyst, Aptean, Madurai.**

# Events Organized 2024 25



**Guest Lecture on “How to enhance employability in Core Engineering” On 16.11.24**

**by**

**Mr.Thiyagarajn, Engineering Manager, Caterpillar India Pvt Ltd, Chennai.**

**Mr.Harimalairajan, Manufacturing Engineer, Caterpillar India Pvt Ltd, Chennai.**

**Mr.Lakshminarayanan Loganathan, Caterpillar India Pvt Ltd, Chennai.**

# Events Organized 2024 25



**Guest Lecture on “Innovative Thinking and Career Opportunities” On 07.12.24 by Mr.N.Vijayakumar, Deputy General Manager, Mahindra General Manager, Mahindra & Mahindra, Chennai.**

# Events Organized 2024 25



**Management Development Awareness Programme on “Export Policies, programmes and documentation” On 09.12.24 to 12.12.24 by Mrs. Amelia Betsy, ISS Deputy Director, MSME-DFO, GOI, Ministry of MSME, Chennai.**

# Events Organized 2024 25



**Guest Lecture on “Expectations of Engineering Industries in today’s market” On 23.01.25 by Mr.Sundar & Mr.Prabhu, TFT Engineering and Manufacturing Services.**

# Events Organized 2024 25



**Essay Writing on “Essay Writing – Building a Better World: Innovation and Infrastructure” On 21.02.25 by Mr.D.Palani Kumar, AP/GE, KCET.**



**Workshop on “Essential AI and E Tools for Researchers” On 06.03.25 to 07.03.25 by Dr.Guru Karthik Babu, ASP/EEE, KCET**

# Events Organized 2024 25



**Technical Contest on “Tech Fest” On 18.03.25 by CA.V.K.Dharmarajan,  
Secretary, KCET**

# Events Organized 2024 25



**Menak Mitras (BIS Government Connect Campaign on “World Consumer Rights Day Celebration” On 21.03.25 and 24.03.25 by Hemalatha P Panicker, Scientist, Bureau of Indian Standards, Madurai Branch.**

# Events Organized 2024 25



**Employment Development Programme on “Geometric Dimension and Tolerance” On 21.03.25 by Mr.R.Manoharan, Deputy General Manager, TAFE, Chennai**

# Events Organized 2024 25



**Guest Lecture on “Industry Expectations” On 25.03.25  
by Mr. Muthu Manikandan. Senior engineer, Chainsys.**

# Events Organized 2024 25



**Guest Lecture on “Awareness on Building Information Modeling (BIM)”  
On 28.03.25 by Er. A. Muthuraja (2013 Passed out batch/ Mech),  
Information Engineering (BIM), Riyadh, Saudi Arabia**

# Events Organized 2024 25



**Presentation Contest on "Slide Master" On 28.03.25 by  
Dr.B.Balavairavan, AP/MECH, KCET**

# Events Organized 2024 25



**Guest Lecture on “Introduction to Automation for Manufacturing” On 01.04.25 by Er.S.Karthekeyan, Design Engineer, NTTF, Bangalore**

# Events Organized 2024 25



**Guest Lecture on “Shop Floor Immersion Using 5S” On 02.04.25 by Mr.S.Rangaraj, Senior Manager, (Retd.), Ramco Cements.**

# Students Achievements and Awards

# Grants Fetched by Students Project

**Final year student B. Siva Sethu Rajan (21UME025) and Dr. B.K. Parrthipan, AP/Mech received a grant of Rs:7500/-** under the Tamil Nadu State Council for Science and Technology (TNSCST) Student Project Scheme 2025 for their project titled '**EEE272: An Innovative Design for a Smart Projector Using Raspberry Pi**'."



**Final year students P. Vignesh kumar (21UME038), V. Sakthivel (21UME040), Nijo Prasad (21UME036), and Dr. M.Prithviraj, AP/Mech received a grant of Rs:7500/-** under the Tamil Nadu State Council for Science and Technology (TNSCST) Student Project Scheme 2025 for their project titled '**EME121: Design and fabrication of low impact-resistant waterproof car cover in mitigating Chennai flood damage**'"



Final year Mechanical Engineering students M.Ganesh Shree (21UME043), S.Kiran, S. Mithun and Faculty Mentor Dr. P. Narayanasamy, ASP/MECH, presented their project titled "Sustainable Utilization of Rubber Industry Scrap in Low-Cost Composites for Lightweight Applications" at Niral Thiruvizha, Anna University Regional Campus – Madurai on 21.05.2025.



## Paper Publication by Students

**Second Year Mechanical Engineering Students D.M.Sahi (23UME014), M.Varunesh Bala (23UME024), S.Yokahariharan (23UME012) along with Dr.M.Prithiviraj AP/Mech Published the Article Titled “Crashworthiness Characterization on Thin-Walled Tube with Rubberized Coir Filled in Quasi-Static Loading” in “Material Circular Economy” Science , Engineering and Sustainability, Springer Nature. Published online : 13.09.2024**



# Patent granted

## A Design Patent Titled “Personal Protective Equipment for Pesticide Spraying”

(414705-001 / Date 24/04/2024) was granted to Final Year Mechanical Engineering Students (2020-2024 Batch)

Mr. A.Akash (920420UME047)

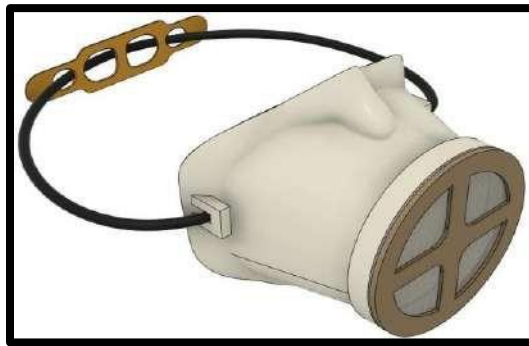
Mr.C.Chandrakumar (920420UME046) &

Mr.S.P.Subramanian (920420UME048)

Along with Faculty members

Dr. R. Sakthivel Murugan AP/Mech

Mr.N.R.Madhan AP/Mech





# Patent granted

A Design patent titled “An Innovative Design in Luggage rack with foldable solar panel ” (408543-001/ Date 23/02/2024) was granted to

Third Year Mechanical Engineering Students

Mr.G. Anand

Mr.M. Dinesh Karthick and

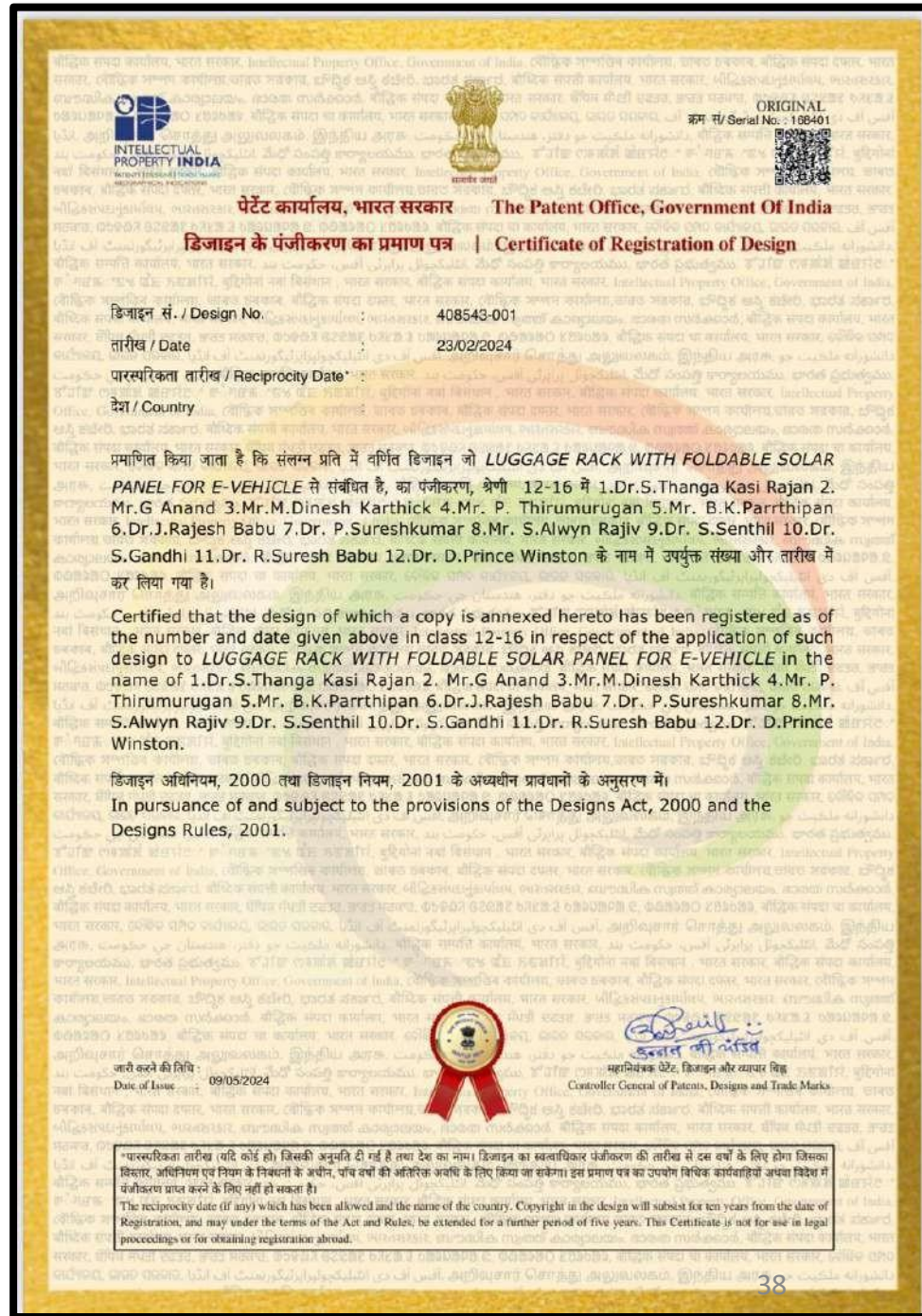
Mr.P. Thirumurugan

along with Faculty members

Dr.S.Thangakasirajan ASP&HoD/Mech

Dr.S.Senthil Prof/Mech

Mr.B.K.Parrthipan AP/Mech



# Patent granted

A Design patent titled “Potable Chair Cum Ladder” (428054-001/ Date 23/08/2024)

was granted to Mr.Aniket Lakra

Mr.V.Aathi

Mr.V.Naveen Sarathi

Third Year Mechanical Engineering Students along with Faculty members

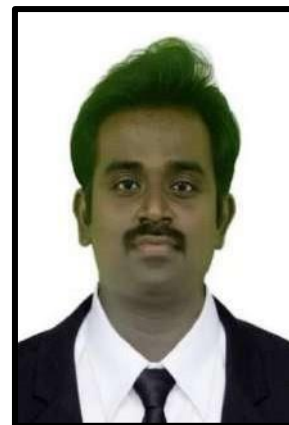
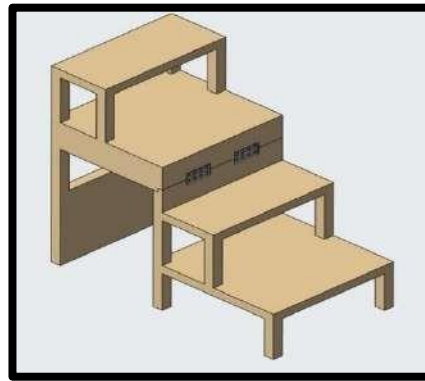
Dr.S.Thangakasirajan ASP&HoD/Mech

Dr.S.Senthil Prof/Mech

Mr.B.K.Parrthipan AP/Mech

Dr.B.Balavairavan

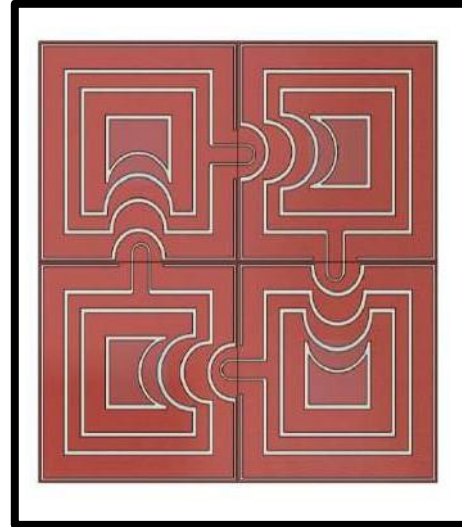
Dr.P.Narayansamy



पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वव्यवहार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अवधिक अवधि के लिए किया जा सकता है।  
 The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years: This Certificate is not for use in legal proceedings or for obtaining registration abroad.

# Patent granted

A Design patent titled “Wall Tiles (SET)” (414781-001/ Date 25/04/2024) was granted to Mr.N.Hariharan Third Year Mechanical Engineering Students along with Faculty members Dr.S.Thangakasirajan ASP&HoD/Mech Mr.B.K.Parrthipan AP/Mech



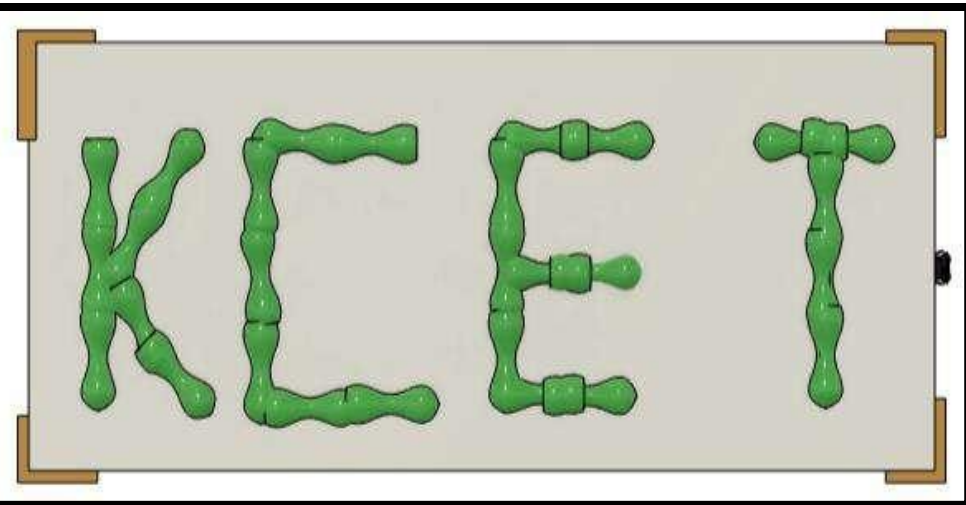
# Patent granted

A Design patent titled "LED Light Board" (416790-001/ Date 14/05/2024) was granted to Mr.N.Hariharan

Third Year Mechanical Engineering Students along with Faculty members

Dr.S.Senthil Prof/Mech

Mr.B.K.Parrthipan AP/Mech



# UTILITY PATENT PUBLISHED

**Dr.S.Thangakasirajan  
ASP&HoD/Mech**

**Dr.B.Balavairavan AP/Mech**

**Dr.K.Muruganandam AP/Mech**

**Dr.B.K.Parrthipan AP/Mech**

**Dr.S.Senthil Prof/Mech**

**Published the**

**Utility patent titled “The**

**Transformation of rubber waste into environmentally friendly self - adhesive rubber sticky putty”**

**(202441027215 / CBR No 22566 ) on  
12.04.2024.**

**Dr.B.Balavairavan AP/Mech**

**Dr.B.K.Parrthipan AP/Mech**

**Published the**

**Utility patent titled “Low cost  
Mobile Robot” (202441020632 /  
CBR No 18905 ) on 05.04.2024.**

**IV Year Mechanical Engineering  
Students**

**Mr. Alwyn Joshua**

**Mr. Ramakrishnan**

**Mr. Ashraf Mohammed Along**

**with**

**Dr.B.Balavairavan AP/Mech**

**Dr.B.K.Parrthipan AP/Mech**

**Dr.P.Narayanasamy ASP/Mech**

**Dr.S.Thangakasirajan**

**ASP&HoD/Mech**

**Dr.S.Senthil Prof/Mech**

**Published the**

**Utility patent titled IoT Driven  
Robotic Arm for injecting  
Medication to Pet animals  
(202441027215 / CBR No 22566 )  
on 12.04.2024.**

**Dr.B.K.Parrthipan AP/Mech**

**Published the**

**Utility patent titled “An App for  
Country Egg Detector ”**

**(202441025103 / CBR No 21428 )**

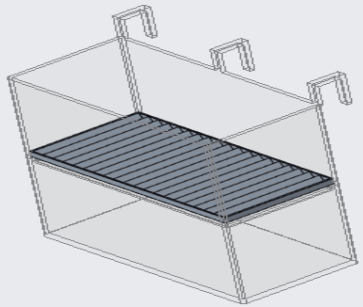
**on 05.04.2024**

# Design Patent Filed by Students

**Second, third and Final year students Filed their project work as Design Patent**

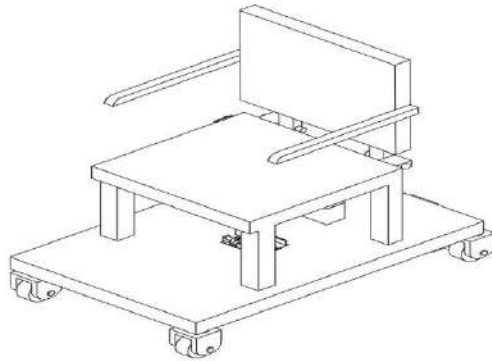
## Fish Breeding Box

(427514-001 Date : 20.08.2024 )

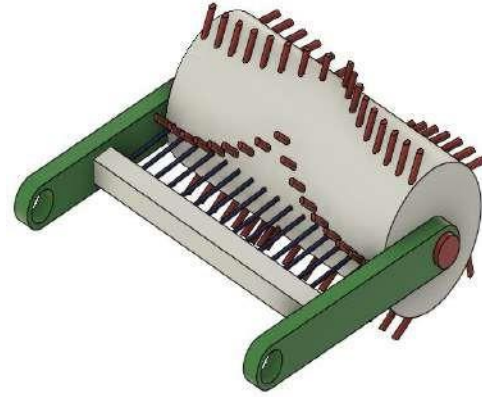


## Smart Wheel chair

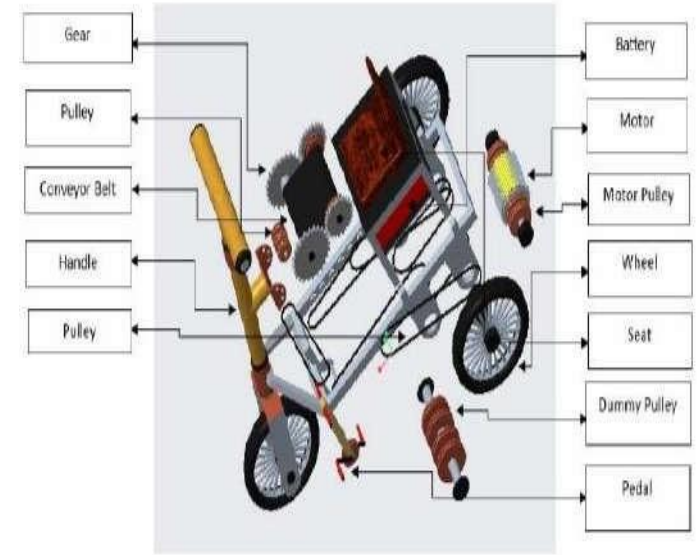
(429405-001 Date : 05.09.2024)



A novel spike weed puller with pigeon anterior view profiled structure for pulling out of plants and unwanted grass. (410715-001 Date : 16/03/2024)

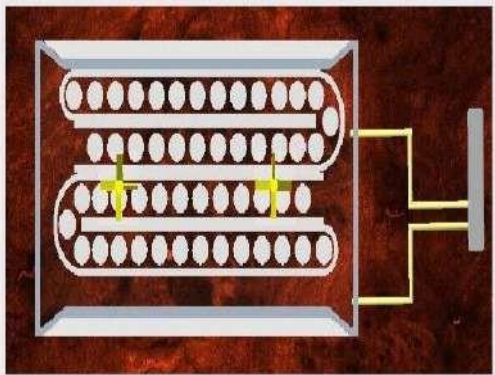


## Electric Tricycle with Treadmill (434639-001 Date : 17/10/2024)



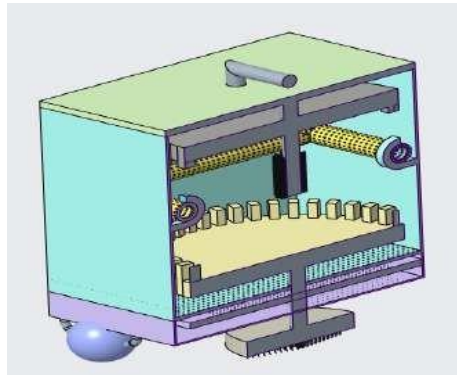
## Battery Cooling System for E-Vehicle

(434839-001 Date : 18.10.2024)



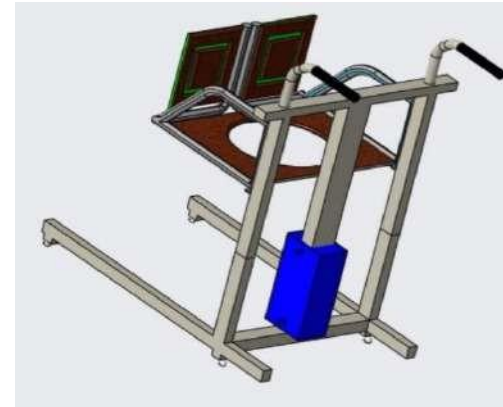
## Integrated Dishwasher and Floor Cleaner

(435479-001 Date : 24/10/2024)

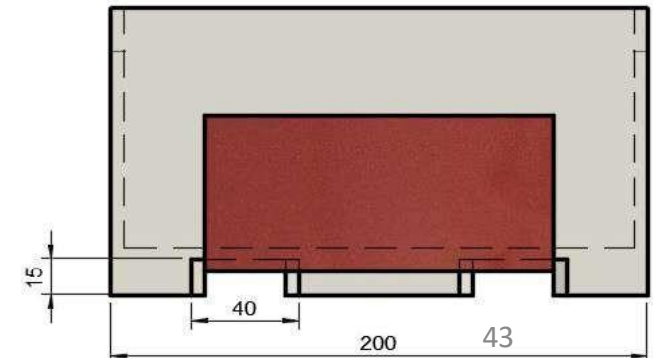


## Hydraulic Actuated Patient Lifting chair

(431118-001 Date : 20/09/2024)



Design of medical tray box with enhanced stability for automatic lifting and delivery operation in medical shop (410256-001 Date : 12.03.2024)

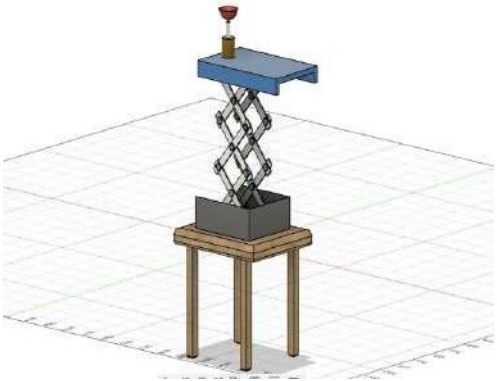


# Design Patent Filed by Students

**Second, third and Final year students Filed their project work as Design Patent**

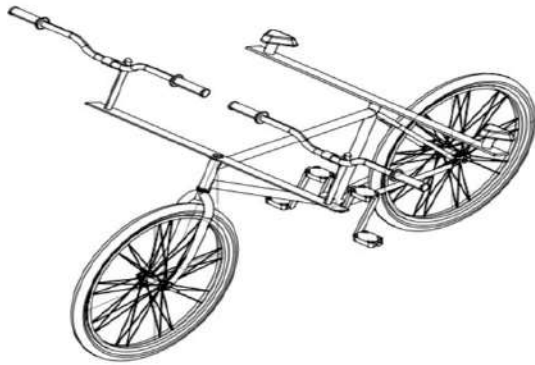
## Ceiling fan cleaning setup

(389444-001 Date : 03/07/2023)



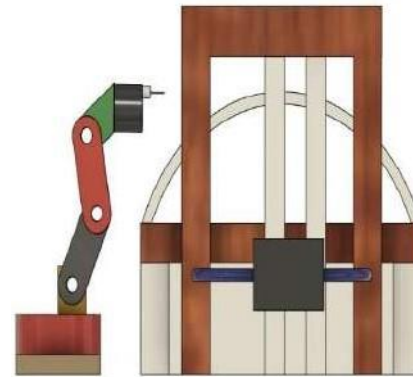
## Two-member bicycle

(391170-001 Date : 26/07/2023)



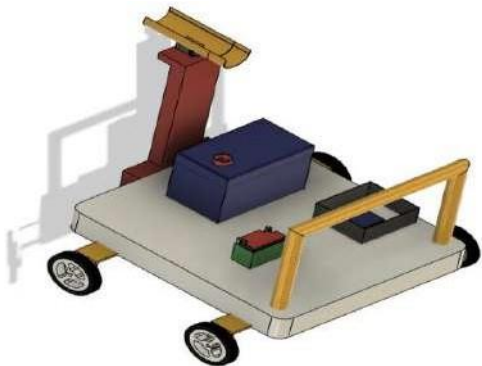
## IOT Enabled automatic syringe injection setup for pet animals

(410445-001 Date : 13/03/2024)



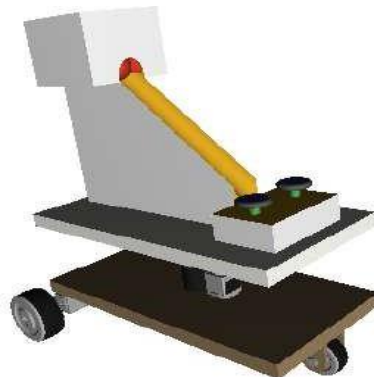
## Autonomous Fire Fighting Robot

(409798-001 Date : 08/03/2024)



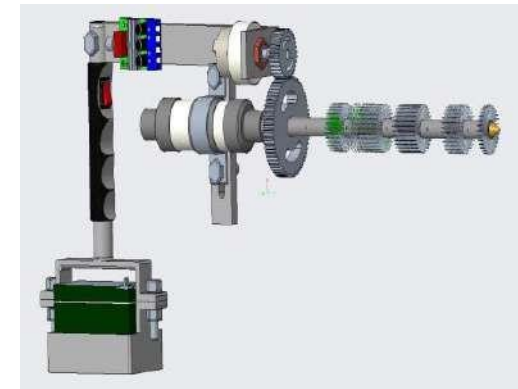
## Pesticide sprayer agribot

(413985-001 Date : 18/04/2024)



## 3D printed Low weight portable bottle cleaner.

(412683-001 Date : 05/04/2024)



# Conference presentation in NIT - Calicut

Second year Mechanical Engineering students **Mr. D.V.Sahi, Mr.M.Varuneshbala, Mr.B.Mayilkani, Yogahariharan** along with Guide **Dr. B. Balavairavan AP/ Mech, Dr.B.K.Parrthipan AP/Mech Dr.S.Thangakasirajan ASP&HoD/Mech** presenting paper titled **“Effect of Corona Treatment on Physico-chemical, Mechanical, Water Barrier, and Biodegradation Properties of PVA/Vigna mungo Husk Powder Reinforced Biofilms”** in International conference (MEEHCON'24) organized by NIT, Calicut on 20.12.2024&21.12.2024.

Seond Year year Mechanical Engineering students **M.Aravind kumar , K.Ashwin** along with Guide **Dr. B. Balavairavan AP/ Mech, Dr.B.K.Parrthipan AP/Mech Dr.S.Thangakasirajan ASP&HoD/Mech** presenting paper titled **“Development and Characterization of Cocos Nucifera Shell (CNS) Biochar Reinforced Vinyl Ester Composites”** in International conference (MEEHCON'24) organized by NIT, Calicut on 20.12.2024&21.12.2024.



Second year Mechanical Engineering students **Mr.S.Arun Prakash, Mr.J.Sharukesh** presenting poster titled **“ Review on Gravitational Energy Storage”** in International conference (MEEHCON'24) organized by NIT, Calicut on 20.12.2024 & 21.12.2024.



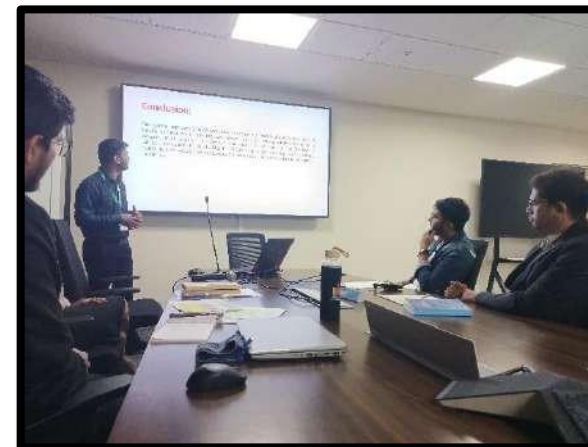
Final year Mechanical Engineering student **Mr.V.Sakthivel** presenting poster titled **“ Design and Fabrication of Low impact Resistant Waterproof Car Cover in mitigating of Flood Damage”** in International conference (MEEHCON'24) organized by NIT, Calicut on 20.12.2024 & 21.12.2024.



# Conference presentation in NIT – Rourkela & IIT Hyderabad

Final-year Mechanical Engineering students J. Alwyn Joshua (21UME014), S. Ramachandran (21UME027), and A. Asraf Mohamed (21UME017), along with third-year student Balaji (22UME025) and Dr. B. Balavairavan, AP/Mech, presented their project titled **“Robotic Arm System for Injecting Medication to Pet Animals Through Real-Time Vision”** at the International Conference on Automation and Machine Learning Using Robots and Artificial Intelligence Methods (AMLURAIM), organized by the Department of Mechanical Engineering, National Institute of Technology, Rourkela, Odisha, on February 12, 2025 hybrid mode.

Final-year Mechanical Engineering students G.R.Srivasan (21UME034), M.Kannan (21UME015), and V.Pragathiswaran (21UME043), along with Mr.R.Sakthivelmurugan, AP/Mech, presented their project titled **“ Improving Photogrammetry System through the Development of Low –Cost Data Acquisition Device Setup for the construction of Complex Geometries”** at the 10<sup>th</sup> International Conference on Research and Design organized by Indian Institute of Technology, Hyderabad on January 8<sup>th</sup> -10<sup>th</sup> 2025.



# Achievements in Students Co-Curricular Activities

The Final and Second year mechanical students Shafiq Ahamed.K (21UME028), O.B.Kausik (21UME026), P.Veerendra Sevak (21UME006) J.Sharukesh (23UME026) along with Dr. M.Prithiviraj AP/Mech presented a Conference paper titled "Design and fabrication of a Coupling System Wind Turbine with electric vehicle for Dynamo-based Battery Charging System", in online and "Won Best Paper Award" in Empowering a Digitally Sustainable Future: Harnessing Technology for a Better World 2025, organized Collaboratively by INTI International University & ASET College of Science & Technology, Date: March 26.03.2025.



# Achievements in Students Co-Curricular Activities



Third year mechanical student **Mr.V.Aathi (22UME014)** **Won the first prize in "CAD MODELING"** along with cash prize **Rs.750/-** in National Level Students Technical Symposium IMPLEZ 2K25, Held at KLN college of Engineering on 13.02.2025.



Third year Mechanical students, **S.Vigneshwar(22UME005), B.Paramasivan (22UME018)** attended National Level Technical Symposium TORQUEX25 and **Won Third prize in the Decode designer (CAD Modelling)** along with a Cash prize of **Rs.700/-** held at S.I.T College of Engineering, Kariapatti on 08.03.2025.



Third year mechanical student **Mr.V.Aathi (22UME014), Mr.Aniket Lehra (22UME020), Mr.V.Naveen Sarathi (22UME022)** **Won the first prize in "Paper Presentation along with cash prize Rs.750/-** in National Level Students Technical Symposium IMPLEZ 2K25, Held at KLN college of Engineering on 13.02.2025.



The IV-year mechanical students **Kiran.S (21UME013), Karan.V (21UME030), Siva Balan.K (21UME009)** along with **Dr.K.muruganandhan AP/Mech** presented a paper and won second prize for the paper titled **DESIGN OF NEXTGEN WASTE COLLECTION INTERFACE** in the International Conference on Advances in Biotechnology: Leveraging AI Tools for Future Innovations (BLAIT 2025) organized by P.S.R. Engineering College, Sivakasi, Date:13.03.2025.



Third year Mechanical student **R. K. Dhanush (22UMEC013)** won **First prize in "Quiz competition"** conducted by **STATISTA '25** Inter-Collegiate Competitions by Department of Statistics, GVN College, Kovilpatti on 18.02.2025 .

# Students Co-Curricular and Extra Curricular Activities



DEPARTMENT OF MECHANICAL ENGINEERING  
(Accredited by NBA, New Delhi)

*Congratulations!*

Our Department Students in College Cricket Team won second place and cash award of Rs.30,000/- in CM Trophy.



IV Mech  
Mr. V. Chendru  
(21UME010)



IV Mech  
Mr. A. Balagurun  
(21UME042)



II Mech  
Mr. V. Sivakumar  
(23UME027)

SKILL IS ONLY DEVELOPED BY HOURS AND HOURS OF WORK



Final year mechanical engineering students **AlitiaB. almeda**, and **M.Ganesh shree** Won the Third prize on the paper presentation in National Level Technical Symposium "TEK CLUSTER'24" organized by kongu Nadu college of Engineering and Technology, Trichy on 21.09.2024. Won cash prize of Rs. 1000/-



Third year mechanical student **R.K.DHANUSH ( 22UME013)** received certificate of merit to become top 20th place in 6km marathon held at virudhunagar by good well scouts group on 28.07.2024.



Final year Mechanical Engineering student **\*Mithun\***. Completed 10KM in **\*CYCLOTRON\*** and **\*5KM** in **MARATHON\*** organization by Maa Madurai Team on 10.08.2024.



Final year Mechanical Engineering student **Mr. P. Thirumurugan** participated in 5km marathon organised by MAA Madurai vizha on 11.11.2024.

# NPTEL /International Certification courses



**NPTEL ONLINE CERTIFICATION**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**M ARAVIND KUMAR**  
for successfully completing the course  
**Computational Fluid Dynamics**

with a consolidated score of **48** %

Online Assignments	17.25/25	Proctored Exam	30.41/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **96**

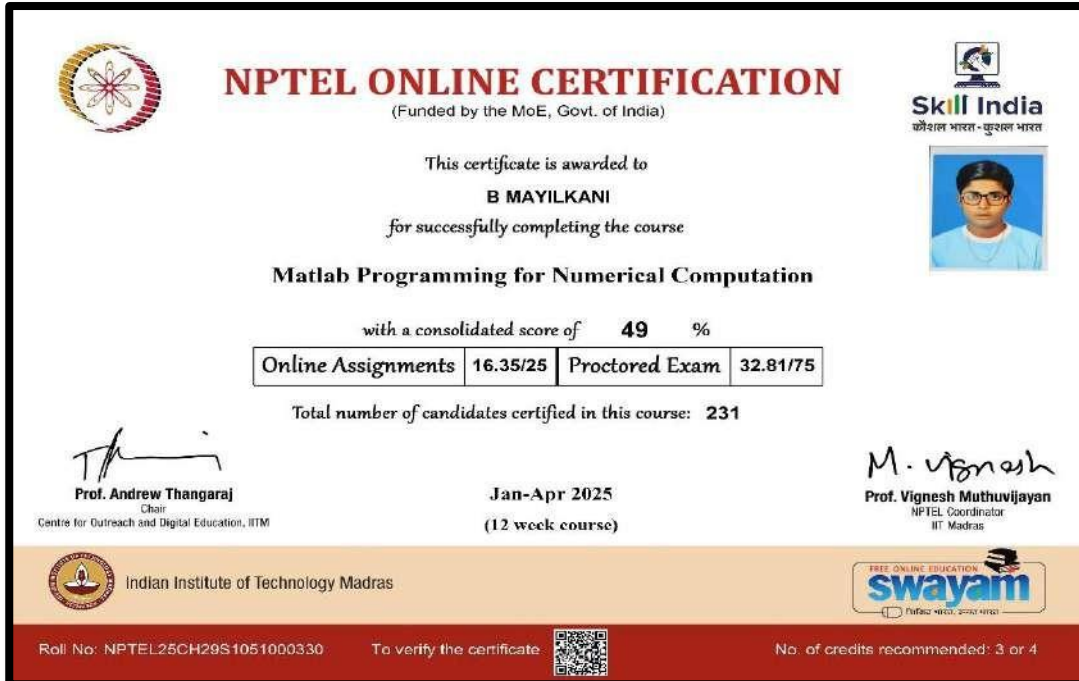
Jan-Apr 2025  
(12 week course)

Prof. Andrew Thangaraj  
Chair  
Centre for Outreach and Digital Education, IITM

M. Vignesh  
Prof. Vignesh Muthuvijayan  
NPTEL Coordinator  
IIT Madras

Indian Institute of Technology Madras

Roll No: NPTEL25CH18S1151000037 To verify the certificate  No. of credits recommended: 3 or 4



**NPTEL ONLINE CERTIFICATION**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**B MAYILKANI**  
for successfully completing the course  
**Matlab Programming for Numerical Computation**

with a consolidated score of **49** %

Online Assignments	16.35/25	Proctored Exam	32.81/75
--------------------	----------	----------------	----------


Total number of candidates certified in this course: **231**

Jan-Apr 2025  
(12 week course)

Prof. Andrew Thangaraj  
Chair  
Centre for Outreach and Digital Education, IITM

M. Vignesh  
Prof. Vignesh Muthuvijayan  
NPTEL Coordinator  
IIT Madras

Indian Institute of Technology Madras

Roll No: NPTEL25CH29S10510000330 To verify the certificate  No. of credits recommended: 3 or 4



**aws** academy

**Karan V**

Certificate of Completion for  
AWS Academy Graduate - AWS Academy Cloud Foundations

Course hours completed  
20 hours

Issued on  
10/14/2024

Digital badge  
<https://www.credly.com/go/2i1bxuTV>

**Final Year Mechanical Engineering Student Mr.Karan.V successfully completed the “AWS Academy, International Graduate Certification course on – AWS Academy Cloud Foundations” .**

# VALUE ADDED COURSES COMPLETED 2024-2025 (ODD)



**31 III Year Mechanical Engineering Students successfully completed the Value added course on “Internet of Things” from 08.07.2024 to 13.07.2024. Resource person : Er. A.Kesavan, CEO and Director, Quantanics Techserv, Madurai.**



# VALUE ADDED COURSES COMPLETED 2024-2025 (EVEN)

## IMTEX, Visit by Students



All II Year Mechanical Engineering Students successfully completed the Value added course on “CNC Machines” from 20.01.2025 to 25.01.2025.  
Venue : NTTF Peeneya, Bangalore.

All II Year Mechanical Engineering Students along with Dr.R.Sakthivel Murugan AP/Mech Visited the IMTEX 2025, International Industrial Expo at Bangalore on 25.01.2025. 52

# Students Performance in 2024-25 (EVEN)

# Students Placement



**Outcomes – Students Placement**  
**Total No of Students : 44**  
**No of Students Placed : 36**  
**Average Salary : 3.08 Lakhs**

Co-Curricular Activities	II Year Mech Students (Total Strength 26)	III Year Mech Students (Total Strength 31)	IV Year Mech Students (Total Strength 44)
Participation of Paper Presentation in Symposium	20	22	10
Patent filling by Students	-	-	-
Technical and Non technical events participation	15	20	15
Paper presentation in Conference (National/International)	12	9	43

## Our Recruiters



# Students Placement (Batch 2021-2025)



**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY  
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G.Chidambara Nadar - C.Nagammal Campus  
S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

## CONGRATULATIONS !

for being placed in


**Motherson Automotive Technologies & Engineering,  
Chennai**



**R.MURALI KRISHNAN**  
IV Mech

**P.VEERANDRA SEVAK**  
IV Mech

[f](#) [i](#) [in](#) [yt](#) /kamarajeng [www.kamarajengg.edu.in](http://www.kamarajengg.edu.in)



**KAMARAJ**  
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S.P.G.C.Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

## DEPARTMENT OF MECHANICAL ENGINEERING





*(Accredited by NBA, New Delhi)*

### Congratulations

For being placed in

**ISF Industries Pvt, Ltd., CHENNAI**

**CTC : 3.6 LPA**



**IV Mech**  
Mr.M.Kannan  
(21UME015)

**IV Mech**  
Mr.N.Harisharan  
(21UME011)

**IV Mech**  
Mr.O.B.Kausik  
(21UME026)

**IV Mech**  
Mr.B.Nagendra Kumar  
(21UME023)

**IV Mech**  
Mr.K.M.Yogeshwaran  
(21UME035)



# Students Placement (Batch 2021-2025)

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G.Chidambara Nadar - C.Nagammal Campus  
S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for getting placed in  
**YOUNGSHIN AUTOMOTIVE INDIA PRIVATE  
LIMITED, CHENNAI**



K. Gokul Raj  
IV Mech



A. Dhanush Kumar  
IV Mech



K. Sivabalan  
IV Mech



N. Mohamed Ashif  
IV Mech



A. Kaliraj  
IV Mech



V. Sakthivel  
IV Mech

*Your success is well deserved, and your journey is just beginning.  
Shine bright and keep achieving!*

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G.Chidambara Nadar - C.Nagammal Campus  
S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for being placed in  
**MOTHERSON AUTOMOTIVE TECHNOLOGIES  
AND ENGINEERING, CHENNAI**



JEGATHEESH.M  
IV - Mech



KARAN.V  
IV - Mech



BALAGURU.A  
IV - Mech



DEEPAK KUMAR.C  
IV - Mech



RAMARA.A  
IV - Mech



MITHUN.S  
IV - Mech



DINESH KARTHICK.M  
IV - Mech



CTC:  
3.6 LPA

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Shine bright and keep achieving!*

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S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for being placed in  
**IDC ENGINEERING INDIA PVT LTD.,CHENNAI**



Sakthivel M  
IV - Mech



Vishnu Vardhan K  
IV - Mech



Madhav Venkadesh J  
IV - Mech



Chandhru V  
IV - Mech



Srivasan G R  
IV - Mech



Ganesh Shree M  
IV - Mech



*Your success is well deserved, and your journey is just beginning.  
Shine bright and keep achieving!*



# Students Placement (Batch 2021-2025)

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G. Chidambara Nadar - C.Nagamal Campus  
S.P.G.C. Nagar, K.Velakulam - 625 701 (Near VIRUDHUNAGAR)

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for being placed in

**HALIFAX MARINE AND OFFSHORE PVT LTD., MUMBAI**



CTC:  
5.76 LPA

**M. ARAVIND KUMAR**  
IV - Mech

*Your success is well deserved, and your journey is just beginning. Shine bright and keep achieving!*

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G. Chidambara Nadar - C.Nagamal Campus  
S.P.G.C. Nagar, K.Velakulam - 625 701 (Near VIRUDHUNAGAR)

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for getting Internship at

**M/S. RAINI INDUSTRIES, CHENNAI**



**Thirumurugan P**  
IV - Mech

*Your success is well deserved, and your journey is just beginning. Shine bright and keep achieving!*

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G. Chidambara Nadar - C.Nagamal Campus  
S.P.G.C. Nagar, K.Velakulam - 625 701 (Near VIRUDHUNAGAR)

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for being placed in

**M/S. MICRO PRECISION, CHENNAI**



**DINESH KARTHICK M**  
IV - Mech

*Your success is well deserved, and your journey is just beginning. Shine bright and keep achieving!*

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G. Chidambara Nadar - C.Nagamal Campus  
S.P.G.C. Nagar, K.Velakulam - 625 701 (Near VIRUDHUNAGAR)

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for getting Internship at

**TVS ARGOMM PVT. LTD., MADURAI**



**Alitia B. Almeda**  
IV - Mech

*Your success is well deserved, and your journey is just beginning. Shine bright and keep achieving!*

**KAMARAJ**  
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
S.P.G. Chidambara Nadar - C.Nagamal Campus  
S.P.G.C. Nagar, K.Velakulam - 625 701 (Near VIRUDHUNAGAR)

Department of Mechanical Engineering  
(Accredited by NBA, New Delhi)

Congratulations for getting Internship at

**TVS SUNDARAM FASTENERS, MADURAI**



**Kiran S**  
IV - Mech



**Ramachandran S**  
IV - Mech

*Your success is well deserved, and your journey is just beginning. Shine bright and keep achieving!*



# Students Internship

24 of Students II year Mechanical Engineering (2023-27 Batch) got Internship in Various Industries

Sl.No	Name of the Industry	Students Name
1.	Hindustan Aeronautic Limited, Bangalore	GIRIDHARAN. N THARUN RAJ. P. S MUKILARASAN. M HARISH BALA. R
2.	ISRO, Trivandrum	ARAVIND KUMAR .M
3.	Mahindra Research Valley, Chennai	DHARINEESH. S , ARUN PRAKASH. S KARTHICKEYAN. M
4.	National Institute of Technology, Tiruchirappalli. Summer Internship 2025	SAHI D.V.
5.	Nova Carbon Private Limited, Tirunelveli	SHIVAKUMAAR. M THANGAPANDIRAJA. M PON GANESH RAM. M BALAKRISHNAN. P
6.	M/s Raini Industries, Chennai	SUBRAMANI PANDI.K SIVAKUMAR. V VISHAL. M
7.	Rane Groups, Chennai	SHARUKESH. J ASHWIN. K MAYILKANI. B
8.	Schwing stetter India Pvt. Ltd , Chennai	VASANTHKUMAR. N, VARUNESHBALAA. M ESAKKI SUDHAN.E, MUTHURAJA. M MAHALINGAM. N
9.	Sona BLW Precision Forgings Limited, Coimbatore	YOKAHARIHARAN. S

Four of Final year mechanical students got internship at "TAFE Chennai for the duration of 3 months from 16.12.2024 to 16.03.2025.

Kiran .S (21UME013)  
Thirukumaran.S (21UME037)  
Vigneshwaran. P (21UME038)  
Anandh .G (21UME039)



Two of Third year mechanical students got 52 day NSDC certified internship at "Unity of Youth Foundation (UOY) – Pratham 2- Wheeler Automotive Skilling Centre, Salem from January 20<sup>th</sup> 2025.

S.Karuppasamy (22UME009)  
S.Aravindkumar (22UME031)



Expanding Horizons



Hindustan Aeronautics Limited



# INDUSTRIES VISITED BY STUDENTS



II year Mechanical Engineering students Visited the Industry “Kwaliti coils Pvt. Ltd”, Madurai along with Dr.B.Balavariavan AP/Mech and Dr.B.K.Parrthipan AP/Mech on 15.02.2025.



The following Third Year Mechanical Engineering Students Aathi.V (22UME014). Aniket Lekra (22UME020) Naveen sarathy V (22UME022) visited Virudhunagar Junction Railway Station for the Seed Money Project titled “Solar-Powered electric vehicle with dynamic solar panel reconfiguration for optimal power generation. Date of visit: 20.02.2025.



II year and III Year Mechanical Engineering students Visited the Industry “Anna Aluminium”, Cochin, Kerala along with Dr.M.Prithiviraj AP/Mech and Mr.D.Palanikumar AP/Mech on 14.03.2025.



II year and III Year Mechanical Engineering students Visited the “Cochin Harbor, Cochin, Kerala”. along with Dr.M.Prithiviraj AP/Mech and Mr.D.Palanikumar AP/Mech on 14.03.2025.



II year and III Year Mechanical Engineering students Visited the Industry “Sun Pressing Pvt,Ltd” Madurai along with Dr.M.Prithiviraj AP/Mech and Mr.N.R.Madhan AP/Mech on 27.03.2025.



II year and III Year Mechanical Engineering students Visited the “ VTM Textiles Industry” Sulakarai, Virudhunagar along with Dr.S.Muthunatarajan AP/Mech and Mr.N.R.Madhan AP/Mech on 16.04.2025.

# ALUMNI INTERACTION



Er.Harimalairajan (2017 passed out), Design Engineer, Caterpillar, delivered a guest lecture on “Industry Culture” for Final year Mechanical Engineering students on 20.07.2024.



Er.D.Sivaramakrishnan (2016 Passed Out), Cooling Specialist Engineer, Siemens Gamesa Renewable Energy, Bangalore delivered a guest lecture on “Technical Aspects of Cooling Systems” for III and IV year Mechanical Engineering students. on 16.08.2024.



Mr. Michael Raj, Engineer - Renault Nissan delivered a Guest lecture on “Enlightenment About Renault Nissan Recruitment Process” for IV year Mechanical Engineering Students through online on 26.08.2024.



Er.M.DhanushKumar, Er.S.Harish, Er. G.Alphose Sam Anto (2024 Passed out) discussed with a third year Mechanical Engineering Students in the topic of “Job Opportunities in BIM for Mechanical Engineer” on 05.10.2024.



Er. Vignesh (2015 batch), Senior Engineer in Daimler Trucks India, Bangalore delivered a Guest Lecture on “Work Ethics” for Final Year and third Year Mechanical Engineering Students on 25.09.2024.



Mr.N.Vijayakumar, Deputy General Manager, Mahindra & Mahindra, Chennai , delivered a Guest Lecture on “Innovative Thinking and Career Opportunities” for First year mechanical Engineering students on 07.12.2024.

# Faculty's Achievements and Awards

# FACULTY AWARDS/ACHIEVEMENTS



**Dr. B.K. Parrthipan AP/Mech**  
Honoured by Bharatha Rathna  
Kamaraj Educational Trust for  
the “Excellence in Education”

**Dr. B. Balavairavan AP/Mech and Mr. N. R. Madhan AP/Mech** completed the Short-Term Course on "Additive Manufacturing and Industry 4.0," organized by the Department of Production Technology, National Institute of Technology, Tiruchirappalli, from 02.12.2024 to 06.12.2024.

**Dr. M. Prithiviraj AP/ Mech** received Best paper award titled “MODE I FRACTURAL TOUGHNESS OF ALKALI TREATED SISAL FIBRES GLASS HYBRID EPOXY COMPOSITES WITH SILICA NANO PARTICLE” in the “International conference THE ROLE OF TECHNOLOGY AND MANAGEMENT IN FULLFILING THE SUSTAINABLE DEVELOPMENT” on 29.11.2024.

## FACULTY ACHIEVEMENTS – SEED MONEY GRAND

Dr.S.Thangakasirajan ASP &HoD /Mech,  
Dr.R.Sakthivel Murugan and  
Dr. K.Muruganathan AP/Mech received  
Faculty seed money grand of Rs.5,00,000/- for  
the Project titled “A novel way of developing  
the electric cycle with a thread mill” .  
Date of Sanction : 27.12.2024.

Dr. R.Sureshbabu HoD/ECE, Dr.S.Thangakasi  
rajan ASP &HoD /Mech and  
Mr.N.R.Madhan AP/Mech received Faculty  
seed money grand of Rs.5,00,000/- for the  
Project titled “ Surveillance Drone”. Date of  
Sanction : 27.12.2024.

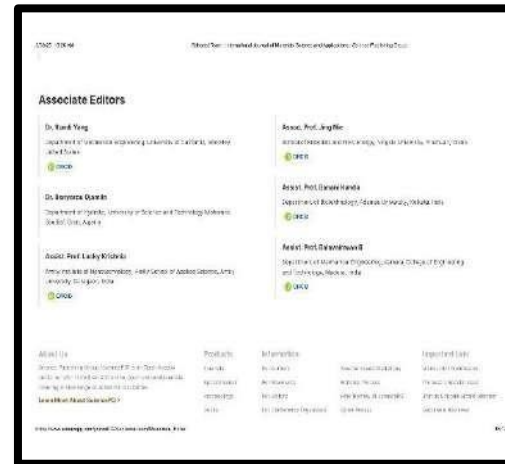


Dr.R.Sakthivel AP/EEE, Dr.S.Thangakasirajan ASP  
&HoD /Mech, Dr.B.K.Parrthipan AP/Mech and  
Dr.B.Balavariavan AP/Mech received Faculty seed  
money grand of Rs.5,00,000/- for the Project  
titled “Solar – Powered Electric Vehicle with  
Dynamic Solar Panel Reconfiguration for Optimal  
Power Generation ”. Date of Sanction :  
27.12.2024.

# FACULTY AS EDITORIAL BOARD MEMBERS



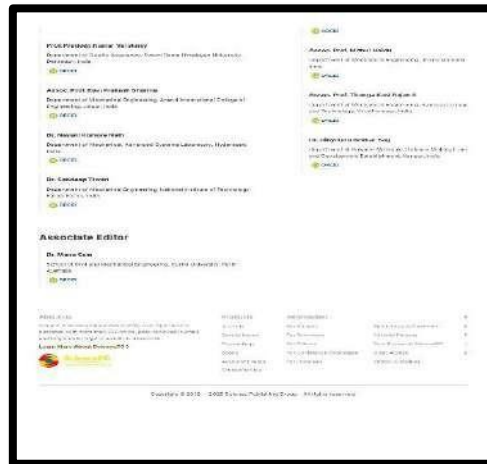
**Dr. P. Narayanasamy ASP/Mech appointed as an “Associate Member of the Institute of Physics (IOP), UK”. Membership ID is 80466333.**



**Dr.B.Balavariavan AP/Mech appointed as “Associate Editor” in the International journal of Material Science and Applications, Science Publishing Group, IF 2.8.**



**Dr. P. Narayanasamy A S P/ M e c h received “Peer Review Recognition for 2023” from the American Chemical Society (ACS) Publications**



**Dr.S.Thangakirajan ASP&HoD/Mech appointed as “Editorial Board member” for the Journal "Composite Materials", Science Publishing Group.**



**Dr.B.K.Parthipan AP/Mech appointed as “Associate Editor” in journal of Advances in Materials (AM) Science publishing group Inc.**

# INTERNATIONAL CONFERENCE IN FOREIGN UNIVERSITY

Dr.B.Balavariavan AP/Mech, Dr.B.K.Parrthipan AP/Mech presented a paper titled “The Role of Natural fibers and Fillers 2000-2024” in the 2<sup>nd</sup> International Conference on “Sustainable Technologies , Energies and Materials organised by “ King Monkut's University of Technology, North Bangkok, Thailand “ on 21.02.2025.

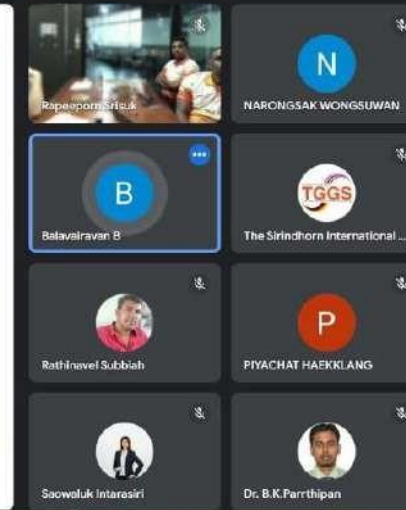


Balavariavan B (Presenting, annotating)

### Natural Fibers/fillers for biofilms and their packaging applications

- Typical natural fibres and fillers include jute, hemp, coir, flax, sisal, cellulose, lignin, and starch. Fillers enhance mechanical and functional characteristics.
- These components improve the durability of biofilms, making them appropriate for packaging applications where protecting the environment is crucial.
- The incorporation of natural fibres into biofilms will enhance the mechanical characteristics of these materials by strengthening the polymer matrix. This strength is crucial in packaging applications as it must demonstrate sufficient tensile strength and resilience.
- Moreover, natural fillers such as cellulose can improve barrier characteristics against moisture and gases, hence prolonging the shelf life of packed product.
- Thermal stability and decomposition are the essential elements influencing biofilm efficacy in packaging.
- The use of natural fillers such as starch and lignin can regulate degradation rates and improve the thermal properties of biofilms.
- These materials facilitate accelerated biodegradation compared to entirely synthetic alternatives, hence reducing environmental waste.
- In addition to safeguarding items from physical and chemical damage, efficient packaging must control the transfer of water vapour, oxygen, and carbon dioxide to mitigate oxidation, microbial proliferation, and decomposition of food.
- Plastics are generally porous to gas molecules, rendering moisture barrier characteristics essential for food packaging.

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# SCHOLARS OF EMINENCE



**Dr. M. Kaliraj**  
**Public viva voce held at**  
**04.10.2024**  
**Supervisor Incharge**  
**Dr. S. Senthil**  
**Prof /Mech, KCET**  
**Supervisor**  
**Dr. P. Narayanasamy**  
**ASP/Mech , KCET**



**Dr.S.David Blessley**  
**Public Viva voce held**  
**at**  
**14.05.2025**  
**Supervisor**  
**Dr. P.Narayanasamy**  
**ASP/Mech, KCET**



**Dr.R.Sakthivel Murugan**  
**Public Viva voce held at**  
**24.03.2025**  
**Supervisor**  
**Dr. S. Vinoth**  
**Prof/Production**  
**Engineering , National**  
**Institute of Technology,**  
**Tiruchirappalli.**

# GUEST LECTURES DELIVERED BY FACULTY

**Francis Xavier Engineering College**  
AN AUTONOMOUS INSTITUTION  
Vennarpalayam, Tirunelveli - 627 003.

**Guest lecture on Forming of Metals**

Guest Lecture: \*\*\*\*\*

**Dr. S. Muthu Natarajan**  
Assistant Professor,  
Kannur College of  
Engineering and Technology,  
Virudhunagar.

**18**  
OCTOBER 2024  
9:30 AM to 10:30 AM

REGISTER: <https://meet.google.com/mpu-ftma-zok>  
(or)

SCAN HERE TO REGISTER

Organized by  
Department of Mechanical Engineering

Co-ordinators:  
**Mr. S. David Blessley**  
Assistant Professor,  
Dept. of Mechanical Engineering,  
Francis Xavier Engineering College

Convener:  
**Dr. R. Samuel Hansen**  
HOD, Dept. of Mechanical Engineering,  
Francis Xavier Engineering College.

Dr. K. Jayakumar  
Deputy Manager - Development

Dr. V. Velmaragan  
Principal

**Dr.S.Muthunatarajan AP/ Mech acted as Resources person for Guest lecture on “ Forming of Metals” Online mode organized by Francis Xavier Engineering College , Tirunelveli, held on 18-10-2024.**



**Dr.B.K.Parrthipan AP/ Mech acted as Resources person for Guest lecture on “ Engineering Mechanics” organized by, Department of Mechanical Engineering, Fatima Michael College of Engineering and Technology, Poovanthi on 23.10.2024.**

PLAN FOR THE CURRENT RESEARCH

- Materials & Processing
  - Preparation of powders
  - Milling
  - Compacting
  - Sintering
- Characterization of individual powders by using the SEM Analysis
- Size distribution of powders & evolution of morphology
- X ray diffraction studies of individual and Mixed powders
- Micro structural characterization
- Mechanical properties
  - Density & Porosity Measurement
  - Hardness Measurement
- Sliding wear behavior & Co-efficient of friction
  - Effect of media velocity
  - Effect of load
  - Effect of sliding distance
  - Effect of sliding velocity
- Identification of Wear Mechanism by analysis of worn surfaces using SEM
- Wear debris analysis
- Modeling & optimization

Bu toplantı kaydediliyor

Tamam

Narayananamy Pandiarajan adlı kişinin ekranı

**Dr. P. Narayanasamy ASP/ Mech acted as resource person and presented a topic "Recent trends in Thermal Spray Coatings" as part of the 5-day virtual International Faculty Development Program (FDP) on "Sustainability and Research in Modern Mechanical Engineering," organized by the Department of Mechanical Engineering, Madanapalle Institute of Technology & Science, on 24.09.2024.**



**Mr. R. Sakthivel Murugan AP/Mech Delivered a lecture titled “ Prioritization and Deployment of DFAM methods to Automotive Component “ through online in short term faculty development course on “Additive Manufacturing and Industry 4.0”, being organized by the Department of Production Engineering, NIT Tiruchirappalli on 05.12.2024.**

# GUEST LECTURES DELIVERED BY FACULTY

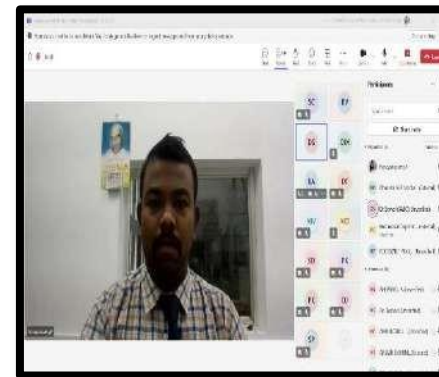
Dr. B. Balavairavan AP/ Mech delivered a guest Lecture on "Effective Utilization of Bio fillers and Their Effects on Packaging Biofilms" in online Faculty Development Program on "Techniques and Tools for Sustainable and Emerging Materials," organized KLN College of Engineering on 12.12.2024.

Dr. B.K. Parthipan AP/Mech acted as a resource person and delivered a guest lecture on the topic "Securing your innovation: IPR Applications and protection strategies" organized by Madurai Sivakasi Nadars Pioneer Meenakshi Women's College, Sivagangai. on 14.12.2024 .

Dr. K. Muruganathan AP/Mech Delivered Guest lecture on One day Seminar on "Interactive E-Tools for Novice Researchers: A Practical Approach" at P.S.R. ENGINEERING COLLEGE. Date: 27.12.2024.

Dr. P. Narayanasamy, ASP/Mech delivered a Guest lecture on "Research Publication and Ethics" during the Faculty Enrichment Programme organized by the IQAC, Vivekananda College, Madurai, on 06.01.2025.

Dr. P. Narayanasamy, ASP/Mech delivered a session on " 3D printing of Smart Implants : Applications and Challenges " as a part of 6- Day AICTE sponsored ATAL online FDP , Organized by S.A. Engineering College on 13.02.2025.



# FACULTY INTERACTIONS



Dr. P. Narayanasamy ASP/Mech acted as BoS Member in the 13th BoS meeting at VHVSN Polytechnic College, Virudhunagar on 27.07.2024



Dr. S.Thangakasirajan ASP/ Mech visited the Vickram Sarabhai Space center and LPSC interacted with LPSC Director, Narayanan , ISRO, Trivandrum on 20.11.2024.



Dr. B.K. Parrthipan, AP/Mech along with EDC student members visited ATAL Community Innovation Centre (ACIC) - MEPCO Innovative Foundation, Mepco Schlenk Engineering College, Sivakasi on 23.08.2024.



Dr.M.Muruganathan AP/Mech attended the " Vision for a Better world : Achieving Industry Innovation, and Infrastructure through AI" program as part of the world Standards Day Celebrations on 14.10.2024 Organized by the Bureau of Indian Standards , Madurai.



Dr. P. Narayanasamy ASP/ Mech attended Madurai MSME Summit 2024 " organized by CII, on 17-10-2024.



Dr. P. Narayanasamy ASP/ Mech acted as Judge for "Innover 2K24" organized by Fatima Michael College of Engineering and Technology, Madurai held on 15-10-2024.

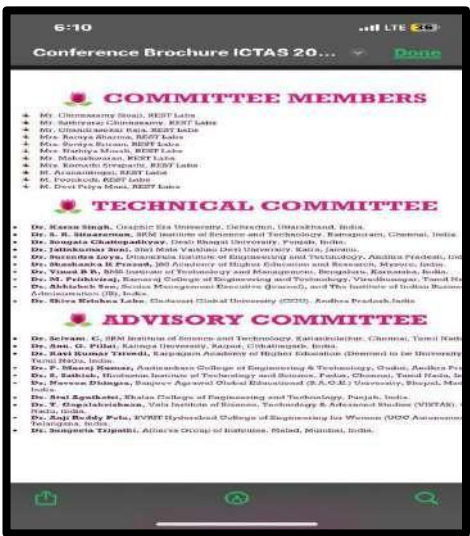
# FACULTY INTERACTIONS



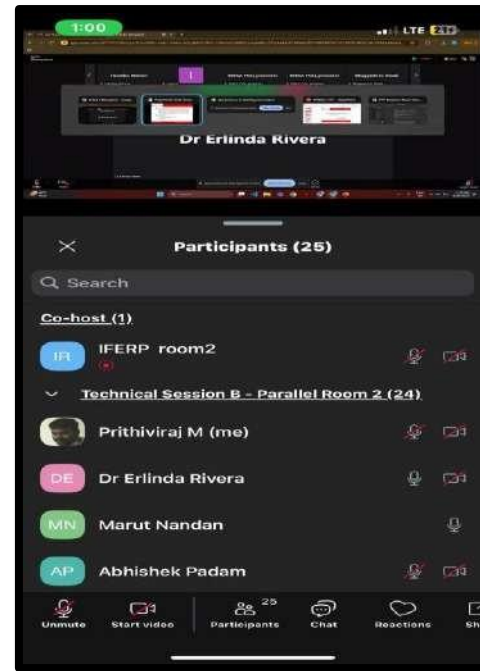
Dr. P. Narayanasamy ASP/Mech participated in a “One-Day Mentor Training Programme” organized by the “Entrepreneurship Development and Innovation Institute of Tamil Nadu (EDII-TN)” under the Government of Tamil Nadu, held at Virudhunagar Collectorate on 13.12.2024.



Dr. B. Balavairavan AP/ Mech visited “Nano Technology and Battery Fuel Cell laboratory” established in Sri kalieswari college of arts and Science , Sivakasi on 09.12.2024.



Dr. M. Prithviraj AP/Mech, appointed as “Technical committee member” in the International Conference on Theoretical and applied Science Organized by Rest Labs & Rest Society for Research International on 27th – 28th June 2025.



Dr. M. Prithviraj AP/Mech acted as “session chair for “14th International Conference on Recent Challenges” in Engineering and Technology (ICRCET-2025) organized by IFERP Academy, Bangalore on 26.05.2025.



Dr.P.Narayanasamy ASP/Mech Acted as a keynote speaker at the 12th International Congress on Engineering and Technology Management in Istanbul, Turkey, and delivered a presentation titled “Tribological Behaviour of Magnesium Hybrid Composites.” on 09.11.2024.

# FACULTY INTERACTIONS



Micro, Small and Medium Enterprises Development and Facilitation Office (Branch), Government of India, Ministry of MSME, Tirunelveli has organized 5 days Management Development Programme on Export Policies, Procedures and Documentation at Kamaraj College of Engineering and Technology, from 09.12.2024 to 13.12.2024 for the Entrepreneurs growth and development of Export.

Dr. V.Jeyaseelan IAS, District Collector, Virudhunagar District, has distributed MDP certificates to participants of the Programme. A total of 26 trainees had undergone the training and benefitted. Officials from MSME-DFO, Tirunelveli, DIC, Virudhunagar and Dr.S.Thangakasi rajan ASP&HoD /Mech and Dr.P.Narayansamy ASP/Mech have attended valedictory function.



Dr. S.Thangakasirajan ASP&HoD /Mech Served as a “NBA Expert” for the Mock Audit at Sankar Polytechnic College, Tirunelveli on 17.03.2025.



Dr. P. Narayanasamy ASP/Mech Served as a resource person for the workshop on “Crafting High-Impact articles for Scopus: Strategies for Success” organized by EMG Yadava Women's College, Madurai , on 20.03.2025.

# INDUSTRY INSTITUTE INTERACTION BY FACULTY



Dr. S.Thangakasirajan ASP&HoD/Mech and Mr.A.Sanakaranarayanamurthy AP/Mech visited TAFE, Kalladipatti, Dindugul District and Interacted with Senior manager Er.K.Siva kumar and HRM Mrs.Shivaskathi on 19.10.2024 for students internship and Placement.



Dr. B.K.Parrthipan, AP/ Mech along with 6 Final Year Mechanical Engineering Students Visited the “ISF Industries Pvt. Ltd, Chennai” on 28.08.2024 for Students placement Drive.

# Student's Corner

# ROBOTIC ARM SYSTEM FOR INJECTING MEDICATION TO PET ANIMALS THROUGH REAL TIME VISION

J.ALWYN JOSHUA, S.RAMACHANDRAN, A.ASRAFMOHAMED

Guided by Dr.B.BALAVAIRAVAN



This project presents the design and development of a robotic arm system capable of accurately and safely administering medication to pet animals through a real-time vision system. The robotic arm integrates advanced computer vision algorithms to identify the injection site and adapt dynamically to the pet's movement, ensuring precision and minimizing stress. Equipped with sensors for detecting vital parameters. The project focuses on developing a robust solution for optimizing the shifting procedure of pet animals through injections with a great emphasis on safety and precision. This system consists of a degree-of-freedom robotic arm with an embedded camera which assists in achieving real-time vision. This arrangement makes it possible to accurately inject pet animals at well-identified positions that are pre-recorded in an interface that has a built-in coordinate system. The interface describes the top left corner of the frame as the position (0,0) whereas the position on the bottom right frame is termed the maximum X and Y which aids in conveniently identifying the position of the injection. After the pet owner has chosen an injection spot on the video feed, the system sends the accurate X and Y coordinates to an Arduino microcontroller. The microcontroller determines the appropriate displacements and instructs the robotic arm which end effector to displace to where it needs to be positioned.

# ROBOTIC ARM SYSTEM FOR INJECTING MEDICATION TO PET ANIMALS THROUGH REAL TIME VISION

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The robotic arm that is equipped with two DC gear motors positions the syringe with great accuracy as per the requirement. Once the position is perfectly set, the actuator turns on and activates the syringe, injecting medication smoothly. The need for real-time vision and the coordinate-based control system ensures maximum precision, completely eliminating the risk of any errors that usually accompany manual injections. The two degrees of freedom of the robotic arm allow it to move in a flexible way both horizontally and vertically. Complex or hard-to-access injection sites can be easily reached by this device. DC gear motors are very finely calibrated for smooth and precise motion. The Arduino microcontroller acts as the control hub of the system. Such an integration of parts is indicative of technical sophistication. The electrical actuator of the robotic arm end effector is another salient feature, providing consistency in the activation of the syringe. Thus, variability and inconsistencies of manual procedures are eliminated by having the injection process automated; this increases the reliability and safety of the system. In this regard, it represents a considerable advancement in veterinary care.

# Alumni Corner

## Circular Economy in Mechanical Design: Turning Waste into Worth

In recent years, the concept of the **circular economy** has emerged as a transformative approach to sustainability, especially in the field of **mechanical engineering**. Unlike the traditional linear model of “take, make, and dispose,” the circular economy emphasizes **resource efficiency, waste minimization, and product life extension** through smart design and innovation. For mechanical engineers, this philosophy is not just an environmental obligation—it’s a new design paradigm.

At its core, the circular economy encourages engineers to **design products for longevity, repairability, and recyclability**. Mechanical design now increasingly integrates **life-cycle thinking**, considering how a product’s materials, components, and energy use can be optimized across its entire lifespan. For instance, modular design allows easy replacement of parts, while materials selection focuses on recyclables, bio-based, or renewable alternatives.

Additive manufacturing (3D printing) has further enhanced the scope of circular design by **reducing material waste** and enabling **on-demand production**. Similarly, advancements in **remanufacturing** and **reverse logistics** are helping industries recover components from end-of-life products, reprocess them, and reintroduce them into the value chain—turning waste into valuable resources once again.

Mechanical engineers play a crucial role in driving this transition. Through **design optimization, predictive maintenance, and material innovation**, they are redefining how products are made, used, and reused. The adoption of digital tools such as **CAD-integrated sustainability analysis** and **digital twins** allows engineers to simulate product performance, estimate energy use, and minimize environmental impact before production even begins.

The benefits are significant—**reduced raw material consumption, lower emissions, and enhanced economic resilience**. Global industries are increasingly recognizing that sustainability and profitability are not opposites but complementary goals. The circular economy provides a framework where **engineering ingenuity meets environmental responsibility**, ensuring that the machines and systems we design today contribute to a cleaner, more resource-efficient tomorrow.

As future mechanical engineers, embracing the circular economy mindset means designing with purpose—to **innovate responsibly and engineer sustainably**, truly turning waste into worth.



Er. Vigneshwaran C  
Assistant General Manager,  
ISF Industries,  
Chennai

# Editorial Team



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