

# MExpress

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Mechanical Engineering Department's Official Newsletter

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Mechanical Engineering Association

Department of Mechanical Engineering

KUMARAGURU COLLEGE OF TECHNOLOGY



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## From the Editors...

Dear Readers,

It is with great pride that we present the 86<sup>th</sup> issue of our departmental newsletter, a reflection of the dedication and hard work of our entire academic community. This issue highlights the numerous accomplishments of our faculty and students, who continue to make remarkable strides in both academic and professional arenas.

Last month, our department has organized programs, furthering knowledge exchange and collaboration. Our faculty have contributed immensely as resource persons, sharing their expertise with both academic and industry audiences. Their work in consultancy, corporate training, and active participation in conferences has reinforced our strong linkages with the industry and other educational institutions.

The scholarly achievements of our faculty are commendable, with significant publications, both in journals and books. Their role in reviewing manuscripts for leading journals further enhances our academic standing. We are proud to acknowledge the recognition they have received for their contributions, as well as the patents and copyrights that reflect their innovative research and creative work. The industry linkages we maintain, along with new MoUs, have provided students and faculty members with valuable opportunities to apply their knowledge in real-world settings, further enhancing their learning experience.

Our students, too, have been actively engaged in a variety of competitions and activities, showcasing their talents and determination by winning many prizes.

In this edition, we also capture some of the memorable moments through snapshots that showcase the vibrant life within our department. Additionally, we reaffirm our commitment to the department's Vision, Mission, Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Programme Educational Objectives (PEOs), which continue to guide our academic endeavors.

We hope this issue serves as a source of inspiration and pride for all who read it. We extend our sincere thanks to everyone involved in the preparation and release of this newsletter, and we look forward to sharing many more successes in the future.

Warm regards,

Editors....



# Departmental Activities

## PROGRAMMES ORGANIZED



Training Programme on “Engineering Graphics and CAD” was organized from 11-09-2024 to 19-09-2024. **Dr. V. Prabhuraja**, Professor, PSG College of Technology, Coimbatore and **Mr. G. Vergin Vino**, Design Engineer, TANCAM, Chennai were the resource persons. **Mr. R. S. Mohankumar**, Assistant Professor – II, coordinated the Training programme.

## FACULTY AS RESOURCE PERSON

**Dr. S. Bhaskar**, Associate Professor was the resource person for a session on “Teaching Practices” at United Info Tech on 11-09-2024.



**Dr. K. M. Senthilkumar**, Associate Professor was the Chief Guest for the inauguration of the Programme on Science and Technology capacity building for industrial needs catalyst and supported by TNSCST at Jai Shriram Engineering College, Tirupur on 20-09-2024.

# Departmental Activities



**Dr. K. K. Arun**, Assistant Professor – III was elected as empanelment on Editorial Board by HBRP Publication reviewers, referees' panels on 05-08-2024.

**Dr. N. Sangeetha**, Senior Associate Professor, acted as Doctoral Committee Member for the Zeroth Doctoral Committee Meeting at Karunya Institute of Technology and Sciences, Karunya Nagar on 04-09-2024.



**Dr. B. N. Sreeharan**, Assistant Professor – III, was the resource person in providing training on "Mastering Excel for Project Reporting and Data Analytics" for the final year Fashion Technology students on 23-09-2024.

## CONSULTANCY



**Dr. R. Manivel**, Professor and **Dr. M. Thirumalai Muthukumar**, Assistant Professor – III, provide a consultancy on "Fatigue analysis of Gear box of ridge plaster machine" for M/s. Bull Agro Implements, Ravathur Pirivu, Coimbatore – 641042 for Rs. 14160/-.



## PAPER PUBLICATION

**Dr. M. A. Vinayaga Moorthi**, Assistant Professor – III, published a paper entitled "Design and Development Of Steering System for FSAE CAR" in the International Research Journal of Engineering and Technology (IRJET), Volume: 11 Issue: 09.



## BOOK PUBLICATION

**Dr. V. Muthukumar**, Professor, **Dr. K. M. Senthilkumar**, Associate Professor and **Dr. S. Balaji**, Assistant Professor – III, published a book titled "Fundamentals of Robotics and AI" published by Prime International Publication, 978-93-6010-230-2.



## MANUSCRIPTS REVIEWED



**Dr. B. N. Sreeharan**, Assistant Professor – III, reviewed a manuscript titled “Intensify the hindrance to gas entrapment on the construction of Al 5356 Thin-Walled Structure by tuning the WAAM process parameters” for the Physica Scripta Journal, IOP Publishing, an WoS indexed international journal.

**Dr. K. K. Arun**, Assistant Professor – III, reviewed a manuscript titled “Evaluation of equivalent acceleration factors of repairable systems: a process-average-based approach” for the Journal of Engineering Research and Sciences, an International and SCI indexed journal. He also reviewed another manuscript titled “Solar-Powered Agricultural Utility Vehicle: A Solution for Sustainable Farming” for the MAT Journals Private Limited.



## RECOGNITION



**Mr. K. Manikanda Prasath**, Assistant Professor – II, was certified as Supply Chain Professional Fellow by the Association for Supply Chain Management for demonstrating significant contributions and fulfilling all necessary requirements with distinction and honor as guided by the APICS Certification Committee.

**Dr. K. K. Arun**, Assistant Professor – III, was elected as Editorial Board Member by MAT Journals Private Limited for the Journal of Mechanical and Mechanics Engineering and Journal of Automation and Automobile Engineering.



## PATENT / COPYRIGHTS



**Dr. K. K. Arun**, Assistant Professor – III, registered for copyrights for the Mechanism For Segmented Valve and Fuel Injection for IC Engines” and “Nanostructured Materials for Enhanced Mechanical Properties” in Canada.

**Dr. M. A. Vinayaga Moorthi**, Assistant Professor – III, registered for design paten on “Cooker Handle Locking Mechanism”.

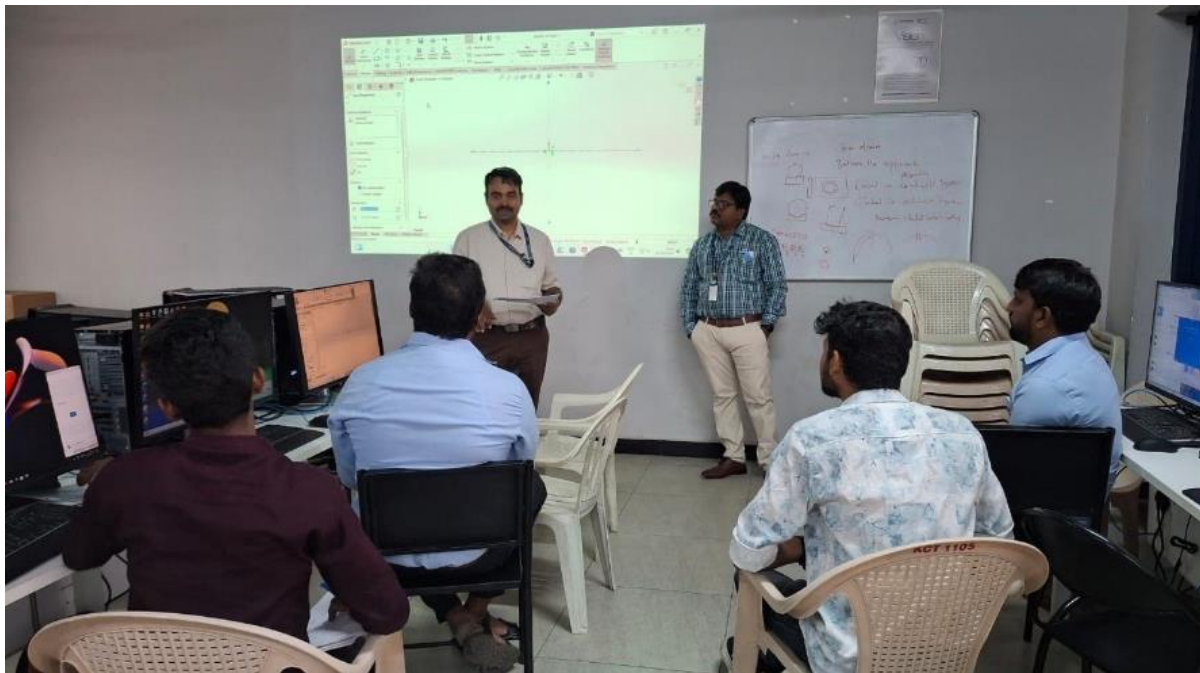


# Departmental Activities

**Dr. V. Muthukumaran**, Professor, **Dr. K. M. Senthilkumar**, Associate Professor and **Dr. S. Balaji**, Assistant Professor – III, registered for design patent on “Smart Crop Care Robot”.



## CORPORATE TRAINING



**Dr. R. Manivel**, Professor and **Dr. M. Thirumalai Muthukumaran**, Assistant Professor – III provided hands-on training in CAD Modelling for Bull Agro Engineers, Coimbatore on 20-09-2024.



## PROGRAMMES PARTICIPATED



**Mr. P. Pradeep**, Assistant Professor - II, participated in a Conference on Technological Advancements in Materials, Design, Manufacturing and Energy Sectors from 21-08-2024 to 22-08-2024, organized by St. Josephs College of Engineering, Chennai.



# Departmental Activities



**Dr. N. Sangeetha**, Senior Associate Professor, participated in a Conference on Effective Metal Cutting on 19-09-2024, organized by Confederation of Indian Industry, Coimbatore Zonal Office.

**Mr. V. Raghupathi**, Lab Instructor, participated in a Training on Skill & Entrepreneurship Development Programme - Value addition in Non-Timber Forest Products (NTFP) on 13-09-2024 organized by EDII- Mettupalayam Agroforestry Business Incubation Forum.



**Dr. M. Thirumalai Muthukumaran**, Assistant Professor - III, participated in a Webinar on It takes a village: Safeguarding quality in scholarly communication on 27-09-2024, organized by Researcher Academy, Elsevier. He further participated in a Conference on Effective Metal Cutting on 19-09-2024, organized by Confederation of Indian Industry, Coimbatore Zonal Office

**Dr. M. Balaji**, Associate Professor, participated in a Webinar on Recent Trends in Industrial Engineering on 31-08-2024, organized by VSB College of Engineering Technical Campus and Institution Innovation Council.



**Dr. K. K. Arun**, Assistant Professor - III, participated in a Webinar on International Organizations Management on 26-09-2024, organized by University of Geneva and Coursera. He also participated in another Webinar on Blended Learning: Personalizing Education for Students on 09-09-2024, organized by New Teacher Center, Silicon Schools Fund, Clayton Christensen Institute and Relay Graduate School of Education.

## INDUSTRY LINKAGES



**Dr. G. Ramankrishnan**, Professor, FT and his team which includes **Dr. C. Velmurugan**, HoD/ME, visited UBA SEG Jacquard Project at SiTarc, on 11-09-2024 and Kannan Jacquard Industry at Madurai on 16-09-2024 and had Discussions.

## MOU



MoU Renewal and Non-Disclosure Agreement (NDA) regarding Student Project and Training, was signed with **M/s. Bull Agro Implements**, Coimbatore on 11-09-2024. Dr. C. Velmurugan, HoD, Dr. R. Manivel, Professor, and Dr. M. Thirumalaimuthukumar, Assistant Professor – III involved in the process.

## COMPETITIONS



**Dr. T. Karuppusamy**, Assistant Professor – III, participated in a National Yoga Championship at Goldan Parks Inn, organized by The Kodai Haven & Indian Yoga Association - Tamilnadu State Chapter & International Youth Yoga Federation from 27-09-2024 to 29-09-2024 and won **FIRST** prize at his age category.



## STUDENT ACTIVITIES



**Mr. K. Praveen**, 23BM073, participated in 16th National Level Technical Symposium, Barnstronz - 2k'24 on 25-09-2024 organized by Hindusthan Institute of Technology, Coimbatore and Presented a paper titled "Hyperloop Transportation".



**Mr. A. Santhosh**, 22BME090, and **Mr. V. Deepan Karthick**, 22BME019, participated in a basketball Competition in MKCE Alumni Tournament organized by M. Kumarasamy College of Engineering and won 1<sup>st</sup> Prize conducted during 13-09-2024 and 14-09-2024. They also participated in 5th State-Level Basketball Tournament, Loyola Victor's Trophy 2024, held at Loyola College, Namakkal from 27-09-2024 to 29-09-2024 and secured 3rd place.

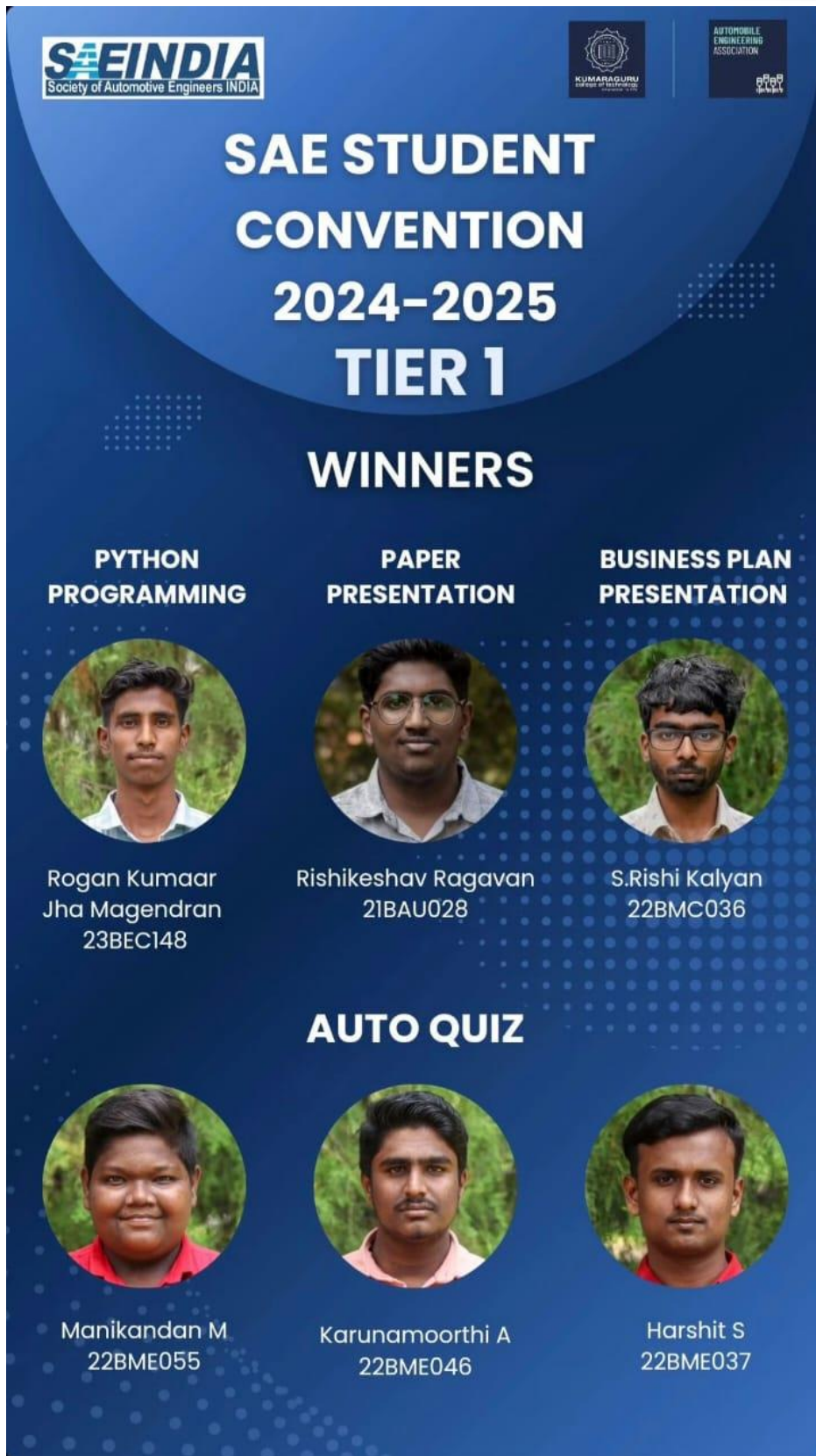
## Departmental Activities



**Mr. K. Krisnan** won National level IEI NMLC - FCRIIT Excellence Award organized by The Institution of Engineers (India), Navi Mumbai and Fr. C. Rodrigues Institute of Technology, Vashi at Navi Mumbai on 18-09-2024.



**Mr. G. Sreeram**, 22BME015, participated in the 33<sup>rd</sup> Senior National Wushu (MEN-WOMEN) Championship-2024 held at Maharana Pratap Stadium, Raipur, Dehradun, Uttarakhand from 21st to 26th September 2024.






The poster features logos for SAE INDIA (Society of Automotive Engineers INDIA), KUMARAGURU UNIVERSITY, and AUTOMOBILE ENGINEERING ASSOCIATION. The main title is 'SAE STUDENT CONVENTION 2024-2025 TIER 1 WINNERS'. It lists winners in three categories: Python Programming, Paper Presentation, and Business Plan Presentation. Below these are the winners of the Auto Quiz competition.

**SAE INDIA**  
Society of Automotive Engineers INDIA




**KUMARAGURU UNIVERSITY**

**AUTOMOBILE ENGINEERING ASSOCIATION**

## SAE STUDENT CONVENTION 2024-2025 TIER 1 WINNERS

PYTHON PROGRAMMING	PAPER PRESENTATION	BUSINESS PLAN PRESENTATION
 Rogan Kumaar Jha Magendran 23BEC148	 Rishikeshav Ragavan 21BAU028	 S.Rishi Kalyan 22BMC036

### AUTO QUIZ

 Manikandan M 22BME055	 Karunamoorthi A 22BME046	 Harshit S 22BME037
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Mr. M. Manikandan, 22BME055, Mr. A. Karunamoorthi, 22BME046 and Mr. S. Harshit, 22BME037 participated and won the Quiz competition of Society of Automotive Engineers Student convention 2024-25, organized by KCT Automobile and SAE India on 25-09-2024.



The following 28 students from the Mechanical Engineering Department, comprising both pre-final and final-year students, actively participated in Ignite'24, taking on leadership roles as leads, marshals, and co-leads to guide the freshers.

1. Mr. Gokulakrishnan M-21BME024
2. Mr. Naveen G G-21BME058
3. Mr. Steven josh A-21BME088
4. Mr. Sathishkumar S-21BME221
5. Mr. Deepak R-21BME017
6. Mr. Sanjay R-21BME071
7. Mr. Hashwic. V. Vincent-21BME032
8. Mr. Manoj kumar M-21BME049
9. Mr. Aruthra S-22BME013
10. Mr. Jai Harish-22BME040
11. Mr. Vigneshraja K S-22BME123
12. Mr. Akash-22BME005
13. Mr. Suriya Prakash U-22BME114
14. Mr. Hareesh Kanth S-22BME032
15. Mr. Kalanithi S-22BME042
16. Mr. Smith S-22BME103
17. Mr. Nitin B-22BME069
18. Ms. Kirubashini P-22BME050
19. Mr. Merunkumar A-22BME058
20. Mr. Prasin S-22BME074
21. Mr. Dharaneesh SR-22BME022
22. Mr. Shrikanth P-22BME099
23. Mr. Fayaz hussain-21BME019
24. Mr. Harish P-22BME035
25. Mr. Kavin Kannan R-21BME041
26. Mr. Adhithyan T-21BME003
27. Mr. Santhana Krishnan RS-21BME073
28. Mr. Divakar C S-21BME018

## SNAPSHOTS



Mr. Ragupathi @ Skill & Entrepreneurship Development Programme

### கல்லூரி உதவி பேராசிரியர் சர்வதேச யோகா போட்டிக்கு தேர்வு!

கோவை, அக். 2-  
கோவைசரவணம்பட்டி  
ஜனதா நகர் பகுதியைச்  
சேர்ந்தவர் டாக்டர் டி.  
கருப்புசாமி (57). இவர்  
கோவை குமரகுரு கல்லூரி

போட்டியில் கலந்து  
கொண்டு முதல் பரிசை  
பெற்றுள்ளார்.  
மேலும் 2025 ஆம்  
ஆண்டு மார்ச் மாதம் துபா  
யில் நடைபெற உள்ள

ருஷ்ணன் நடத்தி வரும்  
ஓசோன் யோகா மையத்  
தில் உடல் நலனை பேணி  
காக்க வேண்டும் என்பதற்  
காக கடந்த ஓராண்டாக  
யோகா பயிற்சி பெற்று  
வருவதோடு மட்டுமல்  
லாமல் டிப்ளமோ இன்  
நேச்சுரோபதி யோகா  
சயின்ஸ் ஆசிரியர் பயிற்  
சியை பெற்று வருவதாக  
வும் கூறினார்.



ரியில் கடந்த 10 ஆண்டுக  
ளாக மெக்கானிக்கல்  
துறை உதவி பேராசிரிய  
ராக பணிபுரிந்து வருகிறார்  
.இவர் கொடைக்கான  
லில் நடைபெற்ற தேசிய  
அளவிலான யோகா

இன்டர்நேஷனல் யோகா  
போட்டிக்கு தேர்வாகியுள்  
ளார். இது குறித்து கருப்பு  
சாமி கூறும் போது, நூறு  
வயது வரை வாழ்ந்த  
யோகா பாட்டி நானம்மா  
ளின் மகன் டாக்டர் பாலகி

மேலும் யோகா பயிற்சி  
மட்டுமே எல்லா வயதின  
ரும் செய்யக்கூடிய ஒரு  
உடற்பயிற்சியாகும்.  
கடந்த ஓராண்டில்  
மாவட்ட அளவிலான மற்  
றும் மாநில அளவிலான  
போட்டிகளில் முதல்  
பரிசை பெற்றுள்ளதாக  
வும் கூறினார். தொடர்ந்து  
சர்வதேச யோகா போட்  
டிக்கு தேர்வாகியுள்ள  
கருப்புசாமிக்கு யோகா  
ஆசிரியர் டாக்டர் பாலகி  
ருஷ்ணன் வாழ்த்து தெரி  
வித்தார்.

மாலை முரசு 02-10-2024

About Dr. Karuppusamy's achievement in Daily Newspaper



**குமரகுரு தொழில்நுட்பக் கல்லூரிக் குழு புதுமையான மற்றும் பாதுகாப்பான குக்கர் கைப்பிடி பூட்டுதல் பொறிமுறையை உருவாக்கியுள்ளது**

**கு**மரகுரு தொழில்நுட்பக் கல்லூரியின் (KCT) ஆராய்ச்சியாளர்கள் குழு, குக்கர் சாதனங்களில் பாதுகாப்பு மற்றும் செயல்பாட்டை கணிசமாக மேம்படுத்தும் "குக்கர் வேண்டில் லாக்கிங் மெக்கானிசம்" என்று ஆங்கிலத்தில் கூறப்படும் குக்கர் கைப்பிடி பூட்டுதல் பொறிமுறையை வெற்றிகரமாக உருவாக்கி காப்புரிமை பெற்றுள்ளது. புதுமையான வடிவமைப்புச் சிந்தனைக்கு ஜூன் 2024 இல் இந்திய காப்புரிமை மேம்பட்ட தேடல் அமைப்பின் (InPASS) காப்புரிமை வழங்கப்பட்டுள்ளது.

பாரம்பரிய குக்கர் கைப்பிடி கள் பெரும்பாலும் ஆயுள், பணிச்சூழலியல் மற்றும் அழுத்த எதிர்ப்பு ஆகியவற்றில் குறைபாடுகளால் பாதிக்கப்படுகின்றன. இந்த புதுமையான

பூட்டுதல் பொறிமுறையானது இந்த சவால்களைச் சமாளிக்கிறது.

குழு SolidWorks மென்பொருளைக் கொண்டு மெக்கானிசத்தை நுட்பமாக உகந்த வடிவம் மற்றும் பணிச்சூழலியல் பரிசீலனைகளை உறுதி செய்யும் வகையில் வடிவமைத்துள்ளது. கூடுதலாக, Ansys மென்பொருள் கடுமையான பகுப்பாய்விற்குப் பயன்படுத்தப்பட்டது, பல்வேறு அழுத்த நிலைமைகளின் கீழ் வலுவான செயல்திறனை உறுதி செய்தது.

திட்டமானது உயர்தர பொருட்களை உள்ளடக்கியது, குறிப்பாக குக்கர் சிலிண்டர் ருக்கு அலுமினியம், கைப்பிடிக்கு பேக்லைட் ஆகியவற்றைப் பயன்படுத்துகிறது. இந்த நுணுக்கமான பொருள் தேர்வு, புதுமையான வடிவமைப்புடன் இணைந்து, விதிவிலக்கான ஆயுள், வெப்ப எதிர்ப்பு மற்றும் எளியமுறைப் பயன்பாட்டை வழங்கும் பூட்டுதல் பொறிமுறையாக மொழிபெயர்க்கப்பட்டுள்ளது.

இது குக்கர் சாதனத் துறையில் பயனர் பாதுகாப்புத் தரங்களில் குறிப்பிடத்தக்க முன்னேற்றத்தைக் குறிக்கிறது. குழுவின் முயற்சிகளின் முடிவு பூட்டுதல் பொறிமுறையில் ஏற்கனவே உள்ள தொழில்நுறை அளவுகோல்களைச் சந்திப்பதோடு மட்டுமல்லாமல் அதை மிஞ்சவும் செய்கின்றது.

**இந்த அற்புதமான கண்டுபிடிப்பின் பின்னணியில் உள்ளக் குழு:**

- டாக்டர் விநாயகமூர்த்தி எம் ஏ, உதவிப் பேராசிரியர் III, இயந்திரவியல் துறை, குமரகுரு தொழில்நுட்பக் கல்லூரி.
- திருசைசுகன் சி.வி
- திரு. கௌதம் எம்
- திரு. சதீஷ்குமார் எஸ்






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ஆகஸ்ட் 2024

Dr. Vinayagamoorthis and his team's innovation in Om Sakthi Magazine



## Departmental Activities



Faculty members @ Training Programme on “Engineering Graphics”



Dr. Sreeharan @ Training Programme in Fashion Technology Department

# Departmental Activities



Dr. Velmurugan @ Jacquard Project Discussions

# Departmental Activities



Dr. Manivel and his team during Corporate Training



Signing MoU with M/s. Bull Agro Implements



**KUMARAGURU**  
college of technology

COIMBATORE – 641 049

## Department of Mechanical Engineering

### INSTITUTE VISION:

The vision of the college is to become a technical university of International Standards through continuous improvement.

### INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

### DEPARTMENT VISION:

To achieve global recognition for the programs of the department by promoting innovation, sustainability, and leadership, contributing to the society.

### DEPARTMENT MISSION:

1. To promote innovation in the Mechanical Engineering through curriculum, focusing on sustainability and ethical practices.
2. To create an active learning ecosystem for acquiring knowledge and skills in Mechanical Engineering.
3. To facilitate research in mechanical systems and sustainable technologies that have an impact on industry and society.

## B. E. MECHANICAL ENGINEERING

### PROGRAM EDUCATIONAL OUTCOMES (PEO's):

- PEO 1 :** Graduates to pursue careers in Mechanical engineering and allied fields.  
**PEO 2 :** Graduates to engage in the execution of multi-disciplinary engineering activities.  
**PEO 3 :** Graduates to pursue professional development programs in Mechanical Engineering Science and Management.

## PROGRAM OUTCOMES (PO's):

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Engineering tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
8. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
9. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
10. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
11. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSO's):

1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

## M. E. INDUSTRIAL ENGINEERING

### PROGRAM EDUCATIONAL OBJECTIVES (PEO's):

- PEO 1 :** Graduates will be mid to higher level management / engineering professionals with responsibilities in engineering management, data analysis and business operations.
- PEO 2 :** Graduates will be engineering professionals, and technology leaders who would manage such functions as plant engineering, production, supply chain and quality management.
- PEO3 :** Graduates would function as educators or researchers in academic institutions.

### PROGRAM OUTCOMES (PO's):

- P01 :** An ability to independently carry out research /investigation and development work to solve practical problems.
- P02 :** An ability to write and present a substantial technical report/document.
- P03 :** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- P04 :** Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.
- P05 :** Apply principles of industrial engineering to solve problems in industry.
- P06 :** An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.