RAMAIAH UNIVERSITY OF APPLIED SCIENCES

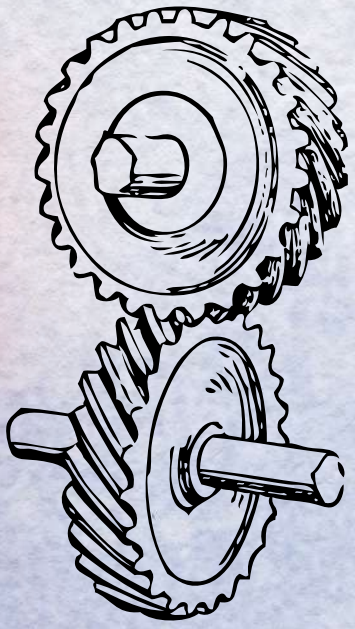
ISSUE1
VOLUME 1
JAN 2024

FACULTY OF ENGINEERING AND TECHNOOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING



FORGE n FLOW







QUARTERLY E-NEWSLETTER

https://engineering.msruas.ac.in/departments/mechanical-and-manufacturing-engineering

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

FORGE n FLOW

EDITORIAL TEAM

Dear Readers,

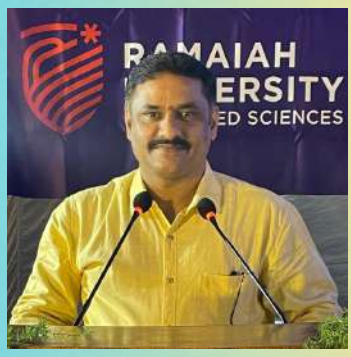
It brings us immense pleasure to present the first edition of Forge & Flow, the quarterly e-newsletter from the Department of Mechanical & Manufacturing Engineering.

The Forge & Flow serves as a platform to acknowledge the accomplishments and milestones achieved by our faculty and students. Their achievements not only inspire us but also contribute significantly to the growth and recognition of our department on a global scale.

We extend our heartfelt gratitude to all contributors, reviewers and supporters whose unwavering dedication has made this edition possible.

Thank you for your continued support and enthusiasm for Forge & Flow.

We are excited to embark on this journey of exploration and discovery with you.



Dr. DAYANANDA B S
CHIEF EDITOR



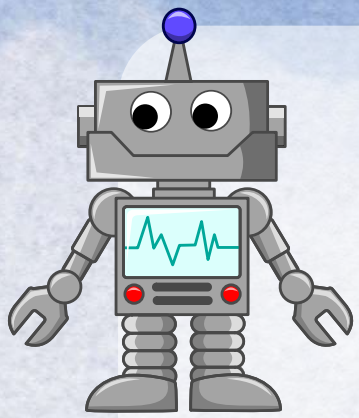
Mr. NAVEEN KUMAR K H
EXECUTIVE EDITOR



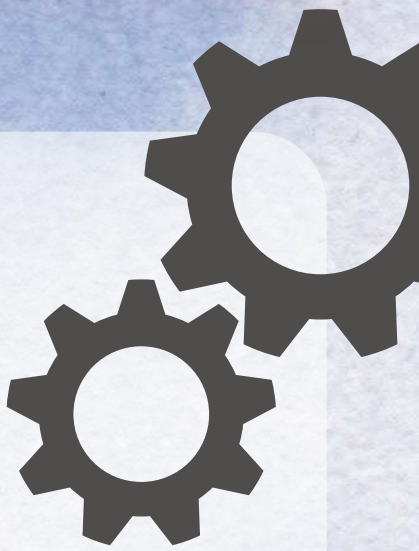
Mr. HEMANTH GOWDA S L
MANAGING EDITOR

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

FORGE n FLOW



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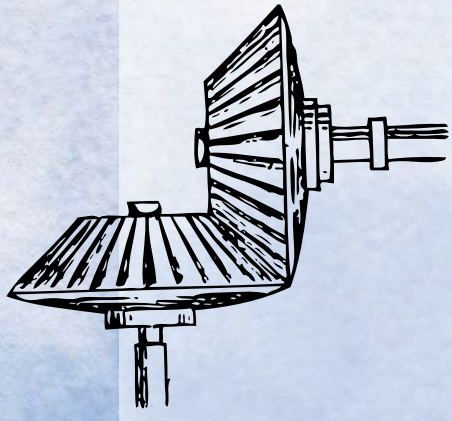
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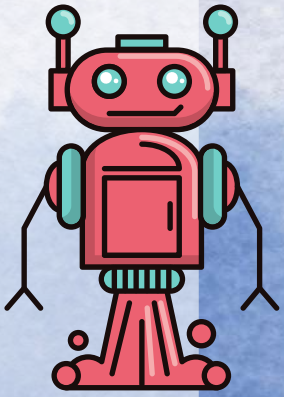
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FACULTY ACHIEVEMENTS

Journal Publications

1. K S Krupesh, R Suresh, B M Rudresh and K Ajaykumar (Dec. 2023) Effect of Abrasive Grit Grade on the Abrasion Wear Behaviour of Long Banana - Jute Fibers Reinforced Hybrid Epoxy Composites, Materials Research Express, 10:125102, PP. 1-12 (IF: 2.3, Q2 SCI/Scopus Indexed)
2. Santhosh Gotagunaki,Vardhaman S. Mudakappanavar,R. Suresh (Dec. 2023) Wire Electrical Discharge Machining characteristics of Rare Earth Oxides Reinforced AZ91D Magnesium Alloy Hybrid Composite using Taguchi-Grey Relational Analysis Approach, Hybrid Advances, Vol. 4, Hybrid Advances 4, 100116, pp. 1-13
3. K.M Manjunatha Swamy, H Manjunath, R. Suresh (Nov. 2023) Experimental Investigation of Chia (Salvia Hispanica L) Seed Oil as a Novel Promising Feedstock for the CI Engine" has been completed. Biofuels, (IF: 2.1) Q2, SCI/WoS/Scopus Indexed).
4. Santhosh Gotagunaki,Vardhaman S. Mudakappanavar,R. Suresh, C. Durga Prasad, (Nov. 2023) Studies on the Mechanical Properties and Wear Behavior of an AZ91D Magnesium Metal Matrix Composite Utilizing the Stir Casting Method, Metallography, Microstructure, and Analysis, (Online) (IF: 1.6) Q2, SCI/Wos/Scopus Indexed).
5. A. G. Shivasiddaramaiah, L. Shivaramu, U. S. Mallik, R. Suresh (Oct. 2023) Effect of Aging Temperature on Microstructure, Hardness and Thermal Property of AA7085 Alloy, Journal of the nstitute ofEngineering India Ser. D, (Online)(Q2, SCI/Scopus Indexed).

"The economy of human time is the next advantage of machinery in manufactures." - Charles Babbage

FACULTY ACHIEVEMENTS CONTD...



Award of Ph.D



Congratulations to Mr. Pavan Kumar Reddy for the award of Ph.D degree from VTU for the thesis titled, "Performance of Organic Rankine Cycle using Zeotropic Mixtures of Working Fluids Based on Parabolic Trough Collector," which explores innovative ways to harness solar energy for clean power generation.

Patent Granted



Sl. No.	Title of the Invention	Inventor/s	Patent Number and Date
1	Method and System for Multi-Profile Sheet Stamping Machine	Balappa.B.U, Chetan Nije,Jayaraj Acharya,Manjunath Muddanagoudar,Martin Evan,Siddarth Akki	458819 12 October 2023
2	System and Apparatus for Paddy Transplantation	Tricia lobo, , R Rakesh, K V Sandeep, P Arunkumar, M Sibichakravarthi, R Hemanth, Arun Sasi, K M Ajeesh, Monish Gowda M H, Vijaya Kumar S	462272 26 October 2023
3	De-Husking Flat Beans	Balappa.B.U, V S Ravi, Chennagiri Gopinath	471061 21 November 2023
4	Compact Foxtail Millet Deshelling Machine	N C Mahendra Babu, Manjunath M Ullegaddi, Abdul Rahman, Miraz Mohammed, Shreenidhi M S, Syeda Anjum	480944 12 December 2023

No employment can be managed without arithmetic, no mechanical invention without geometry.

FACULTY ACHIEVEMENTS CONTD...

Invited Talk



Dr. Suresh R, delivered the Invited talk on 'Role of AI and ML in Sustainable Machining of Difficult–to-Cut Materials', in AICTE (ATAL) Academy sponsored One week FDP on 'Sustainable Machining for Tomorrow: Machining Learning Based Approach' , MITS, Madanapalle, AP(S) on 13th Dec. 2023.

Book Chapter

Shivaranjini Gali, R Suresh, (Dec. 2023) Emerging Trends in High Speed Micro-Machining of Dental Ceramics through CAD-CAM Systems, Edt. S. Kunar, G. Kibria, P. Chatterjee,Electro micromachining and microfabrication: principles and research advances, Apple Academic Press, Taylor & Francis group Series: Frontiers of Mechanical and Industrial Engineering, ISBN:9781774913796

"There are many good mechanical engineers; there are also many good businessmen; but the two are rarely combined in one person." - Henry R. Towne

FACULTY ACHIEVEMENTS CONTD...

Faculty Representation in External Events





On 27th and 28th November 2023 Assistant Professor Sandeep N from Mechanical department attended an event to establish valuable connections between the university and the IMechE student chapter, organized by IMechE at New Delhi.

Points covered during the meeting by IMechE President Mr. Giles Hartill

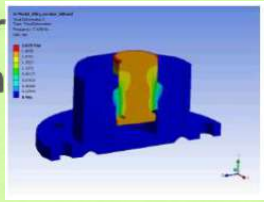
1. Introduction of the university to the house
2. Key activates of IMechE student chapter from last two years D
3. Discussion on the challenges and opportunities for IMechE student chapter
4. Networking with industry participants
5. Identified opportunities for students and placements

"It is not worth my while to manufacture in three countries only; but I can find it very worthwhile to make it for the whole world."

FACULTY ACHIEVEMENTS CONTD...

Sponsored Research and Research Funding

Project: Design and Development of Shear Thickening Nanofluid Enabled Anti Vibration Mounts.



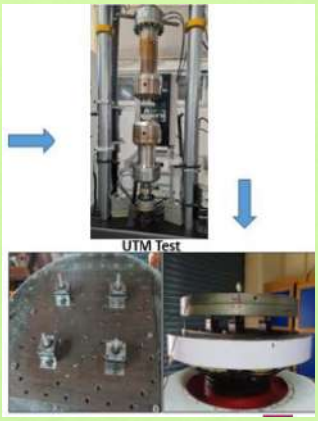


Sponsoring Agency: NPOL-DRDO, Kochi

Investigation Team: Dr. Rahul Cadambi (PI), Mr. Parikshith (TCE), Mr. Chandru Kulkarni (TCE) and Mr. Nagarjuna (TCE)

Status: (i) Ongoing and Milestone 3 is completed.

(ii) Prototypes of 3 different loading capacity mounts (21 variants) has been designed and developed and was be subjected to physical testing at NPOL-DRDO, Kochi.



(iii) Results are better than the existing anti-vibration mounts. Optimisation work is in progress.

Project: Design and Development of GT/WT, EMI/EMC and Fire Resistant Composite Doors and Hatches for IN Ships

Investigation Team: Dr. Rahul Cadambi (PI), Mr. Parikshith (TCE), Mr. Ravi Shankar (TCE), Mr. Dakshath (TCE) and Mr. Sandesh (TCE)

Sponsoring Agency: TDF-DRDO, Joint Collaboration: Indian Navy, Valdel and Technocentre

Status: Ongoing and Two Major Milestone is Completed & Composite Door Design is qualified for following critical areas:

a)EMI/EMC Test cleared as per Military standards

b)Fire Test cleared as per IMO FTP (Part 3- A60) Protocol


Door Assembled on a Fixture


Locking Mechanism

Manufacturing is more than just putting parts together. It's coming up with ideas, testing principles and perfecting the engineering as well as final assembly.

FACULTY ACHIEVEMENTS CONTD...

Sponsored Research and Research Funding

Project: Process Parameter Optimisation of Hybrid Composites

Investigation Team: Dr. Rahul Cadambi (PI), Mr. Bhargav (MME), Mr. Parikshith (TCE) and Mr. Chandru Kulkarni (TCE)

Sponsoring Agency: DMSRDE-DRDO, Kanpur

Status: (i) Project Sanctioned on November 2023.

(ii) Ongoing and first discussion with DMSRDE happened on November 27to 28th at RUAS.

Sanctioned Amount: Rs. 55.035 lakhs

Project: Performance Evaluation of Intumescent Fire Retardant Paint

Investigation Team: Dr. Rahul Cadambi (PI), Mr. Parikshith (TCE) and Mr. Chandru Kulkarni (TCE)

Sponsoring Agency: NMRL-DRDO, Ambernath

Status: (i) Ongoing.

(ii) Amount of Rs. 3.86 lakhs received in month of November 2023.

(iii) Fire rating test on component is in progress.

FACULTY ACHIEVEMENTS CONTD...

Sponsored Research and Research Funding

Project: Development of Molybdenum Based Chalcogenides Thin Film Sensors for Room Temperature NH3 Gas Sensors.

Investigation Team: Dr. Rahul Cadambi (PI), Dr. Manmeet Kaur (PC), BARC-Mumbai, Dr. Srikari S. (Co-PI), Dr. R. S. Keshava Murthy (Co-PI) and Ms. Simran Shah (JRF)

Sponsoring Agency: DAE-BRNS, New Delhi

Status: (i) Ongoing.

(ii) Gas Sensing Test Equipment received in October 2023. Commissioning work is in progress.

(iii) Synthesis of MoS2 through Hydrothermal Route and CVD is in progress. Sensor will be developed in the coming months

Project: Mode-I Delamination Growth Behaviour in CFRP.

Investigation Team: Mr. Bhargav (PI) and Dr. Rahul Cadambi (Co-PI)

Amount: Rs. 2.19 lakhs

Status: (i) Ongoing.

(ii) Load cell procured in October 2023.

The great happiness of life, I find, after all, to consist in the regular discharge of some mechanical duty.

FACULTY ACHIEVEMENTS CONTD...

Sponsored Research and Research Funding



CAMBRIDGE INSTITUTE OF TECHNOLOGY

Certificate of Appreciation

This is to certify that Dr.Rahul M. Cadamb. from _____ has delivered a talk on the title _____ in the VGST sponsored "A Four Day FDP on Nano Composites for Naval Engineering" organized by the Department of Basic Sciences, Cambridge Institute of Technology, Bengaluru from 06th to 09th November 2023.

Dr. Ravi Shankar — Dr. Indumathi G. — Shri.D.K.Mohan

Dr. Rahul M Cadambi Delivered an FDP talk on 'Nano Materials and Nano Composites for Naval Engineering Applications' at Cambridge Institute of Technology, K. R. Puram on 8th Nov 2023.

Dr. Rahul M Cadambi participated in 1st Faculty Development Program (FDP) on Density Functional Theory Modelling of Materials (DFT-M) organized by the Centre for Advanced Computational Studies, Delhi from November 2nd to 8th 2023 via Online Mode.



1ST DFT-M ONLINE HANDS-ON-TRAINING ON

DENSITY FUNCTIONAL THEORY MODELLING OF MATERIALS

(NANOPARTICLE, THIN FILM, UNIT CELL USING QUANTUM ESPRESSO)

Centre for Advanced Computational Studies, New Delhi, India

(Registered under Ministry of SME, Government of India for Research and Experimental Development on Natural Sciences and Engineering)
(ISO 9001:2015 Certification for Hands-on-Training on Computational Science including DFT calculation of Materials, Molecular Docking and Dynamics)
Website: https://aimsdelhi.com, Email: admin@aimsdelhi.com

Certificate of FDP Completion

This is to certify that

Rahul Cadambi, Professor, Ramaiah University of Applied Sciences, Karnataka, India

has actively participated in the 1st Faculty Development Program (FDP) on Density Functional Theory Modelling of Materials (DFT-M) organized by the Centre for Advanced Computational Studies, Delhi from 2nd – 8th November 2023 via Online Mode. FDP program 7 Interactive Sessions by DR. NIKHIL AGGARWAL on Density Functional Theory Modelling of Materials at Nanoscale using Quantum Espresso and Burai Software applications.

Dr. Nikhil Aggarwal
Head of the Department & Convener

ISO Accreditation Body: United Ackreditering Services Limited, United Kingdom
Certificate No.: 2023/DFT-M/W/1/8

Dr. Rahul M Cadambi received Faculty Achiever on RUAS Innovation Day organized on 16th October 2023 Ramaiah University of Applied Sciences.



Communication is like the basics of mechanical engineering, the more moving parts you have the more likely it is to break down.

PLACEMENT 2020 BATCH



KEYENCE



Shashank M A
20ETRE409023
CTC – 6LPA



Om Deore
20ETME005012
CTC – 6LPA

Consulting Sales Engineer

genpact



Ashray A
20ETME005005
CTC – 11LPA



Mohd Adnan Anhar
20ETME005011
CTC – 11LPA

Graduate Engineer Trainee

HYUNDAI



Daneshwari Pattanashetti
20ETRE409003
CTC – 8.05LPA

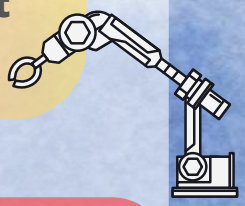
Graduate Engineer Trainee

leadsquared



TKV Sanjana
20ETRE409027
CTC – 7.15LPA

Sales Development Research Intern



"Without mechanics, there would be no engineering." - Henry Ford

PLACEMENT 2020 BATCH



Karan C
20ETRE409009
CTC – 4.5LPA

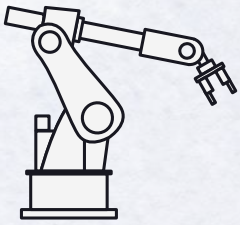
Associate System Engineer

THINK LABORATORY Co.,Ltd.
株式会社シンク・ラボラトリー



Hemanth Gowda S L
20ETME005007
CTC – 25.5LPA

Machine Control/Program



ACE DESIGNERS

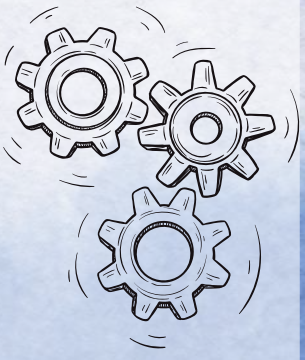


Arth Manishkumar Zaveri
20ETME005003
CTC – 3.29LPA



Vaishavi Singh
20ETME005019
CTC – 3.29LPA

Graduate Engineer Trainee



"Stress analysis is like predicting the future, only with numbers." - Bill Hammack

INDUSTRIAL VISIT

ACE DESIGNERS



The 7th Semester Mechanical and Robotics engineering students visited ACE Designer on November 21, 2023, a renowned CNC machine manufacturer in India. The visit commenced with an enlightening presentation delivered by HR - Kashinath Patnashetty, on the company's history, products, and clientele, followed by a tour of the shop floor. Students were impressed by the intricate assembly process, commitment to precision, and use of cutting-edge technology. ACE Designer's diverse product range, focus on innovation, and ability to customize machines were particularly noteworthy. The visit provided valuable insights into the world of CNC machine manufacturing and left a lasting impression on the students.

“I don’t spend my time pontificating about high-concept things; I spend my time solving engineering and manufacturing problems.”

STUDENTS ACTIVITIES



The Nagpur MMA Championship Pro Category 2023 was a highly anticipated event that took place on 16th and 17th September 2023 at University ground, Ravinagar Square, Nagpur. It was a night of intense competition featuring some of the most talented mixed martial artists in the region.

With impressive agility and powerful throws, Gaurav Kumar Rai dominated the Under 68kg category, clinching a well-deserved bronze medal. His incredible performance and fighting spirit led him all the way to the semi-finals, leaving a lasting impression on the crowd.



Gaurav continued his impressive streak by participating in the prestigious International Training Camp and Tryout Goa Beach Fight. He trained rigorously at the acclaimed AKA Mandrem and showcased his dedication and talent, ultimately solidifying his position as a finalist in the challenging competition.



“One accurate measurement is worth a thousand expert opinions.”
- Grace Hopper

Aaryan (RE)
Abhijeet (RE)
Dhanush (RE)
Vipin (RE)
Adithi (RE)
Murali (ME)
Samwan(ME)
Ranjith (RE).

STUDENTS ACTIVITIES



The students successfully competed in the IIT Bombay Techfest qualifiers hosted at Global College which was Held on October 28, 2023. The team showcased cutting-edge designs and programming skills, earning accolades for their performance. This event not only provided a platform for healthy competition but also facilitated networking opportunities with students from other reputed institutions.





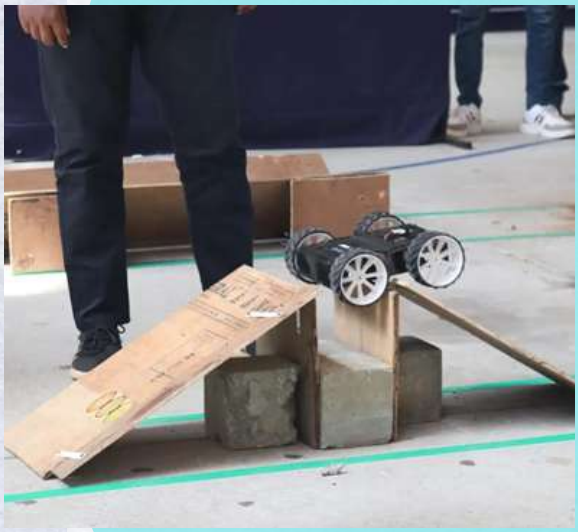
The journey continued with the team's participation in Roboveda at Srinidhi Institute of Technology, Hyderabad Held from November 20, 2023 to November 22, 2023. The competition featured challenges that tested the students' technical acumen and problem-solving abilities. The Ramaiah University team demonstrated proficiency in navigating complex tasks, earning commendations from the judges and establishing a positive representation of their institution.



"Never be limited by other people's imagination; never limit others because of your own limited imagination." - Dr. Mae Jemison

Aaryan (RE)
Vipin (RE)
Harish (RE)
Vijay Kumar (ME)
Manohar (RE)
Sagar GM (RE)
Abhijeeth (RE)
Dhanush (RE)
Ismail Aijaz (ME)
Tarun (ME)

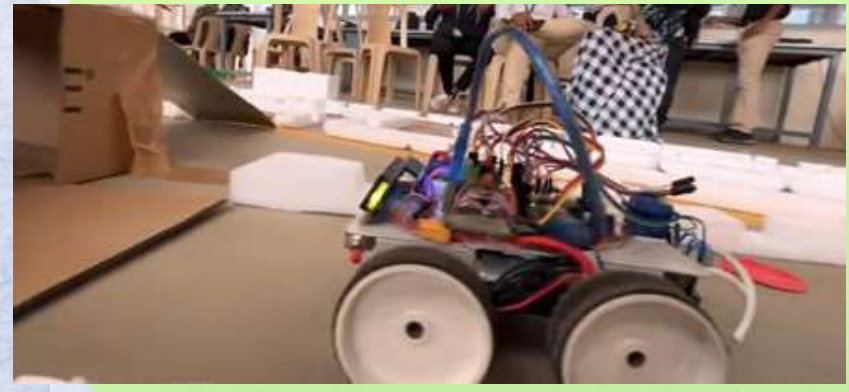
STUDENTS ACTIVITIES



The robotics enthusiasts from Ramaiah University showcased their prowess at Roborikishi hosted by the National Institute of Engineering, Mysore on December 27, 2023.. The event emphasized a balance between creativity and technical skills. The team's innovative approach to the challenges demonstrated their commitment to pushing the boundaries of robotics technology.

Participation in Innovatex 2.0 at Presidency University in Bangalore Held from November 21, 2023 to November 23, 2023 showcased the Ramaiah University students' commitment to innovation and problem-solving. The competition encouraged interdisciplinary in collaboration, fostering an environment where robotics and mechanical engineering integrated to address real-world challenges.







“Manufacturing is more than just putting parts together. It’s coming up with ideas, testing principles and perfecting the engineering as well as final assembly."

CLUB ACTIVITIES

- **IMechE**

Institution of MECHANICAL ENGINEERS

SOFE 2023



On October 9,2023 SOFE was organized. SOFE is a global competition specifically designed for young engineers to hone their communication, speaking, and presentation skills. Participants showcase their talents by explaining complex mechanical engineering concepts in a clear, engaging, and impactful manner to a diverse audience.



The South Region of the SOFE 2023 competition was a thrilling event for young engineers showcasing their communication and presentation skills in the field of mechanical engineering.

The South Region followed the same general format as other SOFE regional heats, with participants delivering 20-minute presentations on a chosen mechanical engineering topic, followed by a 10-minute Q&A session.

"The key to understanding any civilization is to understand its machines."
- Daniel J. Boorstin

CLUB ACTIVITIES

• IMechE

Institution of MECHANICAL ENGINEERS

IISC Talk



On November 25th, 2023, IMechE members have attended a tech talk at IISc Bangalore unveiled breakthroughs in tissue engineering that have the potential to transform healthcare. Revolutionary innovations, using readily available natural materials like Lupeed seeds and 3D-printed silk scaffolds to regenerate bone



On December 16th, 2023, the IMechE members attended a tech talk at IISc, Bangalore by Prof. Shyamprasad Karagadde on Microstructures. He focused on combined gas and shrinkage porosity, revealing fascinating phenomena like liquid channels and rapid growth. Explored mitigation strategies for these issues, particularly in large ingot casting and hot tearing.

Mechanical Engineers can become a mechanic, a software engineer cannot become a software

CLUB ACTIVITIES

- **IMechE**

Institution of MECHANICAL ENGINEERS

INDUSTRIAL VISIT



Mitutoyo South Asia Pvt. Ltd. (MSA) was established in 1996, headquartered in New Delhi, as a regional hub for South Asia to bolster customer support. The visit was held on December 7, 2023, for 20 students, both final year and 3rd year students, accompanied by
Mr. Sandeep N.



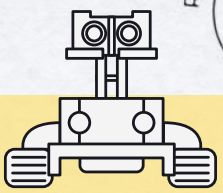
Sophisticated measuring machines like roughness testers, contour tracers, roundness measuring machines, profile projectors, vision measurement machines, and coordinate measuring machines.

Cutting-edge features like non-contact measurement, 3D CNC capability, and automated CAD-based CMM programming.
Mitutoyo's commitment to high precision and quality assurance across industries.

"Mechanical engineering is the art of turning imagination into reality."

CLUB ACTIVITIES

• Robotics

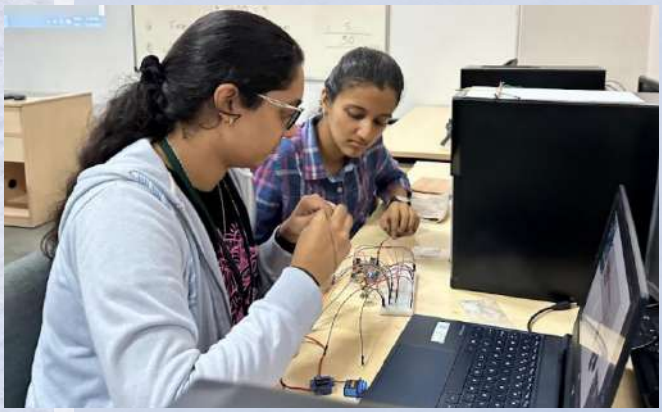


ROBO MAZE

On September 15, 2023, teams of 2-3 students faced a thrilling challenge at the 'Robo Maze' event. Using provided materials and programming skills, they had to build line-following robots capable of autonomously navigating through a series of maze-like structures, ranging from simple puzzles to intricate labyrinths. The competition tested their skills to develop innovative algorithms and strategies to guide their robots to victory.



ROBOT REACH

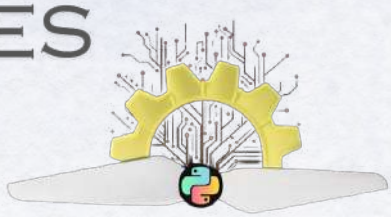


On November 24, 2023, Robot Reach event challenged teams to construct a 3-link robot arm using Arduino, emphasizing innovation and efficiency within specified constraints. Competing in categories like pick-and-place accuracy, teams were evaluated on functionality, design, and programming.

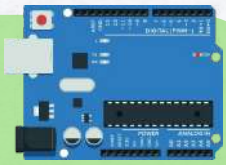
The event aimed to showcase advancements in robotic technology and problem-solving skills, promoting creativity and precision in task execution

The machine causes fear that it works by itself, and gives pleasure that it works properly

CLUB ACTIVITIES



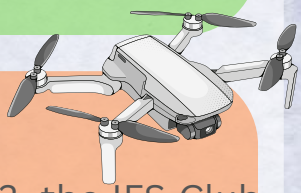
• IFS



ARDUINO WORKSHOP



IFS Club hosted an Arduino workshop for 20 tech enthusiasts on October 20, 2023. Workshop covered Arduino basics and advanced applications like sensor interfacing. Hands-on learning with experienced instructors made it engaging and informative. Positive feedback encourages the club to host future workshops.



FPV DRONE WORKSHOP



On November 24th, 2023, the IFS Club hosted a "Fly High" workshop. The workshop took over 120 enthusiastic students from various disciplines on a journey into the world of First Person View (FPV) drone flying. The event generated a buzz across campus, showcasing the growing interest in drone technology. Students navigated simulated courses, mastering drone controls and maneuvering through various scenarios.

I am not a mechanic but a MECHANICAL ENGINEER.


Thank You