RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Forge and Flow

July's Quarterly E-Newsletter

What's Happening

It's the Summer Break Edition!



Department of Mechanical Engineering

Volume 1: Issue 3

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Forge and Flow

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DEAR READERS,

WE ARE DELIGHTED TO PRESENT THE THIRD EDITION OF FORGE AND FLOW

THE QUARTERLY E-NEWSLETTER OF THE DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

THIS PLATFORM HIGHLIGHTS THE ACHIEVEMENTS OF OUR FACULTY AND STUDENTS

CELEBRATING THEIR ROLE IN DRIVING INNOVATION AND EXCELLENCE

HEARTFELT THANKS TO ALL CONTRIBUTORS AND SUPPORTERS WHO MADE THIS EDITION POSSIBLE

WARM REGARDS, EDITORIAL TEAM

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

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VISION

THE DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING STRIVES FOR NATIONAL AND INTERNATIONAL RECOGNITION BY FOCUSING ON STUDENT-CENTRIC EDUCATION, RESEARCH AND INNOVATION PRIORITIZING ETHICAL VALUES TO EFFECTIVELY MEET SOCIETAL NEEDS AND ASPIRATIONS.

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AN INTRODUCTION TO THE FOUNDRY

A foundry might sound like something out of a fantasy novel, but it's actually a fascinating place where metal is melted, molded, and transformed into useful objects. From car engines to streetlights, many everyday items begin their journey inside a foundry.

The process starts by heating a metal, like iron, steel, or aluminum, until it glows like lava. This molten metal is then poured into molds shaped like the final product. Once it cools and hardens, the casting is removed, cleaned, and sometimes polished to perfection. Watching metal turn from liquid fire into solid form is both science and art!

Foundries use various techniques, including sand casting and die casting, to create different products. Modern foundries often use robots, sensors, and computer-aided design (CAD) to make the process faster, safer, and more precise.

Though the work can be hot and challenging, it's incredibly rewarding. Foundries blend old-world craftsmanship with modern technology, proving that even in today's digital world, there's still plenty of magic in melting metal.

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WELCOMING NEW FACULTY



Dr. Mallaradhya H M

Dr. Mallaradhya H M is an accomplished academic and researcher with a solid foundation in Mechanical Engineering, specializing in Industrial Automation and Robotics. With a Ph.D. from Visveswaraiah Technological University (VTU).

His professional journey includes nearly a decade-long tenure as an Assistant Professor at SJCIT, Chickballapura.

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WELCOMING NEW FACULTY



Mrs. U. Viji

Mrs. U. Viji is currently pursuing a Ph.D at Ramaiah University of Applied Sciences, Bangalore having vast experience of teaching Embedded controllers, Microcontroller etc.

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FACULTY ACHIEVEMENTS

Dr. T N Srikantha Dath, Professor Department of Mechanical Engineering received a Research Project Grant of Rs 25,00,000 (Twenty five Lakh) from Indian Council of Social Science Research (ICSSR) under Vision Viksit Bharat@2047 for the title Development of a Business Resilience Framework to Enhance the Sustenance of Deep Tech Startups for Viksit Bharat @ 2047: A Study of Selected Districts of South India jointly with Dr. Anicar D. Manavi Faculty of Management and Commerce.

Mr. Naveen Kumar K H, Assistant Professor Published a book chapter titled ''Design of solar panel cleaning robot" in Springer on 17th September 2024. The Details are below: Venkat Nikhil, A., Shama Ravichandran, Naveen Kumar, K.H. (2024). Design of Solar Panel Cleaning Robot. In: Singh, A., Mishra, D.P., Bhat, G. (eds) Recent Trends in Thermal and Fluid Sciences. INCOME 2023. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-97-5373-4_1. Q4.

Dr. Ananth S Iyengar, Dr. Mallaradhya H M and Mr. Naveen Kumar K H successfully completed the 09 days training Programme on Train the Trainer Program on Robotics and Automation Technologies at M/S Janatics India Pvt. Ltd, Bangalore and Coimbatore as Part of the Authorized Training Centre establishment at RUAS.

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FACULTY ACHIEVEMENTS

Dr. Dayananda B S, Head MME participated in Technical seminar on Advances in Green Hydrogen Power Technologies organised by ASME on 21st September 2024.





Dr. Suresh R, Professor, MME department has actively participated in the 2 nd International 5-Day Faculty Development Program on "Sustainability and Research in Modern Mechanical Engineering" from 23 rd to 27 th September 2024, organized by the Department of Mechanical Engineering, Madanapalle Institute of Technology & Science, Andhra Pradesh, India.

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ONGOING RESEARCH PROJECTS

1. Project: Process Parameter Optimisation of Hybrid Composites
Investigation Team: Dr. Rahul Cadambi (PI), Mr. Bhargav (MME), Mr. Parikshith (TCE) and Mr. Chandru Kulkarni (TCE)
Sanctioned Amount: Rs. 55.035 lakhs
Sponsoring Agency: DMSRDE-DRDO, Kanpur
Status: (i) Second Milestone Review successfully completed on 26th September 2024.
(ii) Optimised the processing parameters for the project.

2. Project: Performance Evaluation of Intumescent Fire-Retardant Paint
Investigation Team: Dr. Rahul Cadambi (PI), Mr. Parikshith (TCE) and Mr. Chandru Kulkarni (TCE)
Sanctioned Amount: Rs. 9.90 lakhs
Sponsoring Agency: NMRL-DRDO, Ambernath
Status: (i) Closure meeting took place at NMRL-DRDO, Ambernath at 19th August 2024.
(ii) Director, NMRL-DRDO appreciated our timely finishing of the activity and completing the stringent FIRE Rating compliance.

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ONGOING RESEARCH PROJECTS

3. 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)
Sanctioned Amount: Rs. 27.35 lakhs
Sponsoring Agency: DAE-BRNS, New Delhi
Status: (i) Ongoing.
(ii) ZnO nanorods and ZnO tetrapod synthesis completed.
(iii) Gas sensing tests and stability tests of MoS2 is currently in progress.
(v) Synthesized MoS2 can detect NH3 gas and NO2 gas at room temperature.

4. Project: Design and Development of Shear Thickening Nanofluid Enabled Anti Vibration Mounts
Investigation Team: Dr. Rahul Cadambi (PI), Mr. Parikshith (TCE), Mr. Chandru Kulkarni (TCE) And Mr. Nagarjuna (TCE)
Sanctioned Amount: Rs. 36.38 lakhs
Sponsoring Agency: NPOL-DRDO, Kochi
Status: (i) Ongoing and Milestone 4 is completed.
(ii) Final prototypes of 3 different loading capacity mounts is designed and developed Physical testing of the prototypes are in progress at NPOL-DRDO, Kochi.

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FACULTY IN FOCUS

The following papers were published by Dr. Suresh R from 1st July 2024 to 30th September 2024

1. Siddesh Kumar N, Suresh R, Durga Prasad C, Shivaramu L, Siddalingswamy N. (Sept. 2024) Study on tool wears in turning Al2219, unhybrid and hybrid metal matrix nano composites by CCD design of experiment. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science. (Online) (IF :1.8) (Q2 Journal) doi:10.1177/09544062241278127

2. Ayyampilli, S.P., Suresh, R. & Hegde, M.G. (Sept.2024) Effect of Hemp and Sheep Wool Reinforcements on Mechanical and Acoustic Properties in Natural Fibre Polymer Composite using Vacuum Bag Moulding Process. J. Inst. Eng. India Ser. D, (IF :1.45) (Q3 Journal) https://doi.org/10.1007/s40033-024-00807-4

3. Virupakshappa Lakkannavar, K.B. Yogesha, C. Durga Prasad, R. Suresh, Avinash Lakshmikanthan, S. Hanumanthlal, (Aug. 2024) Investigation of cyclic oxidation and corrosion behavior of plasma-sprayed NiCrAlY/Cr3C2/h-BN coatings on T22 boiler steel alloy, Surface and Coatings Technology, Vol.492, 131205, pp. 1-15. (Q-1 journal),(IF: 5.3).https://doi.org/10.1016/j.surfcoat.2024.131205

4. M. Ravi kumar, R. Naik, R. Suresh, k.Y. Chethana, (Aug. 2024) A study of mechanical and wear behavior of sic-ceo2 reinforced al7075 hot rolled hybrid composites, Arch. Metall. Mater. 69, 3, 903-910.(Q3 Journal) (IF:0.7)DOI: https://doi.org/10.24425/amm.2024.150910

5. R. Suresh, Ajith G. Joshi, M. Manjaiah, Satish Kumar and K. N. Bharath, (Aug. 2024) Mechanical Behavior and Sliding Wear Assessment of Al2024/TiC Metal Matrix Composite using Taguchi and Spotted Hyena Optimization" Scintia Iranica, SCI-2101-5261, vol 31 (13) 1063-1076 (Q2 journal) (IF:1.43) https://scientiairanica.sharif.edu/article_23517.html,

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STUDENT EVENTS AND ACHIEVEMENTS

ASME RUAS Student Section of MME department have received Outstanding Community Engagement award for the Year 2024 with a cash prize of Rs 5,000/-. Dr. Murugesh M C was the faculty coordinator for the ASME club.

Stress Management and Meditation session conducted by Bramha Kumari Eshwari Vishwavidyalaya



Awareness on Blood Cancer



Digital Happiness Gym a Happiness Program

Awareness on Happiness Program

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STUDENT PROJECTS OVER THE BREAK

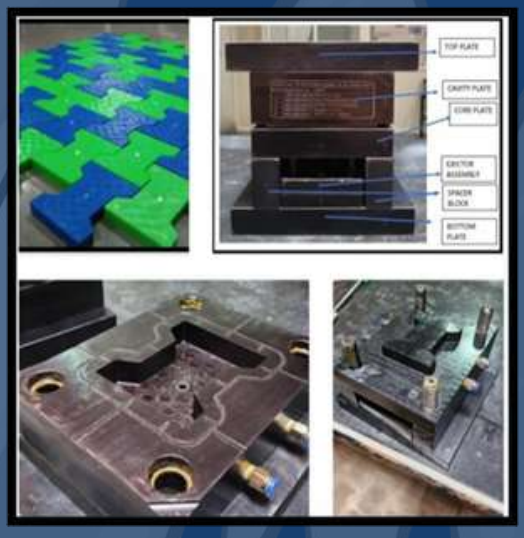
Remotely Operated Vehicle for Under water Application





IIHR (Indian Institute of Horticulture Research) the Development of a multi purpose Agri-Rover

Design and Development of Injection Mould Tool



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STUDENT PROJECTS OVER THE BREAK

Design and Development of Exoskeleton Arm by adopting Additive Manufacturing Technology





Automated Air Quality Monitoring and Purification System with Algae Cultivation

Design & development of Apple sorting machine.



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Thank you for reading!

Stay tuned for Issue 4