

Conferences attended by the faculty, for presenting research papers:

1. Dr. K. Pournali, S Chandrasekhar, "Mathematical Modelling In EDM of Aluminium Metal Composites Using Response Surface Methodology", International Conference On Challenges And Opportunities For Innovation In New Normal Scenario, KSRIPT, Tiruchengode, Marakkal, TN, 5th April 2021
2. Dr. K. Sridhar, Dr. G. Ganesh Kumar , G. Vinod Kumar, "Performance of Solar Air Heater With Aluminum Tubes", International Conference on Challenges and Opportunities for Innovation in New Normal Scenario, organized by KSR Institute for Engineering and Technology (Affiliated to Anna University) , Chennai in association with International Association of Research and Developed Organization (IARDO), 5th April 2021
3. Dr. K. Sridhar, Dr. G. Ganesh Kumar , G. Vinod Kumar, "Thermal And Computational Studies of Loop Heat Pipe Wick", International Conference on Challenges and Opportunities for Innovation in New Normal Scenario, organized by KSR Institute for Engineering and Technology (Affiliated to Anna University) , Chennai in association with International Association of Research and Developed Organization (IARDO), 5th April 2021
4. Dr. K. Raja Narendra Reddy, "Bio-Composites: A Study On Behavior of Oil Palm Mesocarp Fiber Reinforced NGG", IOP Conf. Series: Materials Science And Engineering, P.No:1125, 6th-8th January 2021, International conference on Design, Automation and Control (ICDAC 2020), Organized by Department of Design and Automation, School of Mechanical Engineering, Vellore Institute of Technology, Vellore - 620014, ISSN/ISBN No: 1757899X, doi:10.1088/1757-899X/1125/1/012005
5. Dr. G. Ganesh Kumar, "Experimental And Numerical Studies of A Centrifugal Heat Pump Used For Total Artificial Heart (TAH)", 67th Virtual ASAE Conference, Washington D. C., USA, 10-12 June, 2021, ISBN: 1058-2916
6. Dr. G. Ganesh Kumar, "Comparative Studies On Six And Four Bladed Centrifugal Heat Pump Used For Left Ventricular Assisted Device (LVAD)", 67th Virtual ASAE Conference, Washington D. C., USA 10-12 June 2021, ISBN: 1058-2916
7. Dr. P. Prabhakara Rao, "Fabrication & Characterization Of Aluminium Composite", Substantial Development in the field of Engineering, Management and Humanities Held at IJEL Chaidigarh, Institution of Engineers Sector 19A, Chandigarh, India 22nd May 2021
8. Dr. G. Srinivasa Rao, "Numerical Simulation of Free Convection Flow And Heat Transfer In A Porous Channel With Constant Heat sources With Effect of Nanofluid Prandtl Number And Suction Or Injection Parameter", International conference on Advances in Mechanical Engineering, (ICAMEF21) Sri Ram Engineering College Chennai, 27th and 28th January 2021
9. Dr. G. Srinivasa Rao, "Mixed Convection Heat Transfer Analysis Of Oxide Nano Micropolar Fluid On A Vertical Plate With Prescribed Heat Flux", International conferences on Materials, Mechanical and Energy Engineering, Bapatla Engineering college, AP, 7th and 8th May 2021
10. Dr. G. Srinivasa Rao, "Numerical Study On Free Convection Flow And Heat Transfer In A Porous Channel With AD20 At Different Concentrations", International conferences on Materials, Mechanical and Energy Engineering, Bapatla Engineering college, AP, 7th and 8th May 2021
11. S. Ramesh, Dr. B. Srinivas Reddy, "Effect Of Width of A Serpentine Flow Channel On Pore Fuel Cell Performance", International Conference on Recent Advances in Renewable Energy sources RAREES 2021, Engineering College Buniwara, Rajuhat, India, 26th -27th February 2021
12. S. Ramesh, Dr. B. Srinivas Reddy, "Effect Of Channel Dimensions of A Serpentine Flow Field On Performance Of Proton Exchange Membrane Fuel Cell", International Conference on Advances in Science and Technology (ICAST) 2021, Institute of Innovations, Tiruvannamalai, Tamilnadu, India, 02nd - 03rd April 2021
13. S. Anil Kumar, "Experimental Investigation On Di Diesel Engine Using Biodiesel Neem Oil Methyl Ester Blends", 4th International e-Conference on Recent Advancement in Mechanical Engineering and Technology (IRAMEE) 2021, Department of Mechanical Engineering, Aarupada Veedu Institute of Technology (AVIT) Kanchipuram District, Tamil Nadu, India, 24th -25th June 2021.
14. K. Kishor Kumar, "Mechanical And Morphological Studies of Cellulose Reinforced Isophthalic Polyester Composites", International Conference on Materials, Mechanical and Energy Engineering (ICMME) 2021, organized by Bapatla Engineering College, Guntur, 7th -8th May 2021.
15. Dr. G. Srinu, "Design And Fabrication of Hybrid Mini Shooter", International Conference on Materials, Mechanical and Energy Engineering (ICMME) 2021, organized by Bapatla Engineering College, Guntur, 7th -8th May 2021.
16. Dr. Shukantala Ojha, "Investigation of Solid Particle Erosion Wear Behavior of Activated Carbon Polymer Composites", Pages 283-292, IPDMS 2020, NIT- BOURKELA, ISBN: 978-981-15-9853-1, 23rd Feb 2021.

Journal Publications by the faculty:

1. Dr.K. Eswarabai, Dr. G. Ganesh Kumar, "Isotremal And Numerical Studies of A Centrifugal Pump Used For TAH", *Values*, Pg. 88, ANAO Journal, 30-12 June 2021, ISSN: 1384-2965
2. Dr. K. Eswarabai, Dr. G. Ganesh Kumar, "Comparative Studies On Six And Four Bladed Centrifugal Heat Pump Using Left Ventricular Assisted Device (LVAD)", *Values*, Pg. 88, ANAO Journal, 30-12 June 2021, ISSN: 1384-2965
3. Mr. PSE Murthy, "Dynamically expanded systems for reducing shaking effects in spatial mechanisms", Pg. 1293-1300, *Journal of advanced research & control systems* ISSN: 1549-625X
4. Dr. G. Srinivasa Rao "Numerical Analysis of Laminar Free-Convection Fluid Flow and Heat Transfer Over A Vertical Plate with Constant Heat Flux with Thermo fork Nanofluid", *International Journal for Research in Engineering, Application & Management (IJREA30)*, ISSN: 2454-9153
5. K. Kishor Kumar, "Effect of Temperature on Free Vibration of Functionally Graded Tube with Carbon", Pg. 26-39, <https://doi.org/10.20880/2454-9153.1010101>, *International Journal of Integrated Engineering*, ISSN: 2796-938X
6. K. Kishor Kumar, "Effect of Four Parameter Power Law on Free Vibration of Functionally Graded Skewed Elliptical Shell", <https://doi.org/10.1365/15050010.1ADP.Conference.Proceedings.SSN/ISSN.No.0094-243X.print.1861-0618.0001>
7. Chandrasekhar, M. Anil Kumar, G.Vinod Kumar, "Optimization of process parameters in machining of Nimonic super alloy on EDM using genetic algorithm", Pg. 78-84, *Energy, Environmental International Journal of Energy and Environmental Computational*, 7(10), 67-78
8. Dr. M. D. Suresh, "EDM machining characteristics of bamboo leaf ash and shilpa natural silicaceous hybrid matrix composite using Multi-objective optimization by grey relational analysis", *Materials Research Express*, Online: 2020-1091
9. Dr. G. Srinu, "Tensile and Jominy characteristics of epoxy-glass composite reinforced with carbon fiber nanofiber", Pg.1-11, *Indian Polymer Journal*, DOI: 10.1007/s13225-021-00294-9, ISSN/ISSN No. 1526-2655
10. Dr. E. Ramesh, "Experimental and Numerical Investigation of Free and Heat Transfer in Stationary Two-Turn Rectangular Duct (AR = 1.2) with Continuous and Eccentric V-shaped ribs", 15 (2021), Pg. 1-12, *ASME Journal of Thermal Science and Engineering Applications*, 1945-5685
11. Dr. Shukantala Ojha, "Evaluation of Mechanical and Tribological Properties of Resin and Biosorbent Based Silica Particulate Epoxy Composites", *Springer Nature*, <https://doi.org/10.1007/s12035-021-01227-5>, 21-04-2021
12. Dr. Shukantala Ojha, "Influence of Nano Silica on Enhancing the Mechanical Properties of Benz/Ketone Fiber Reinforced Polyester Hybrid Composites", *Springer Nature*, <https://doi.org/10.1007/s12035-021-01227-5>, 21-04-2021
13. Dr. Shukantala Ojha, Dr. M. UM Prakash, "Investigation of tribological properties of biomass developed porous resin reinforced carbon composites", *Wear*, ISSN: 0043-1644, DOI: 10.1016/j.wear.2020.203875.
14. Dr. Shukantala Ojha, Dr. M. UM Prakash, "Effect of biomass derived biochar particles on mechanical properties of biochar epoxy composites", *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, ISSN: 0954-4462, DOI:10.1177/095440622095045
15. Dr. M. UM Prakash, "Synthesis and Characterization of Silica Based Ceramic Composites for Friction Applications", Pg. 1901-1906, *Sci. Res. J.*, ISSN: 1026-9094

Expert Lectures by the faculty:

Dr. K. Raja Narendra Reddy:


- Webinar Program on *Manufacturing, Role of Blockchain & Cyber Security in Digital Manufacturing*, 20th to 26th May 2021
- Dr. P. V. Kulkarni:

 - GATEWAY TO DIGITAL INDIA, Online National Webinar, Telangana Social Welfare Residential Degree College, Sangli, 15/03/2021
 - Dr. C. Shobhana Babu:

 - SIGOX: IT Content Development, Bharat Institute of Engineering and Technology (BIET), Hyderabad, 24th Feb to 19th March 2021
 - *Control of Micro Manufacturing*, Kamala Institute of Technology and Science, Hazratnagar, Guntur, Recent Trends In Mechanotronics- Phase I: 18th to 21st March 2021
 - *Manufacturing Knowledge Application*, Kamala Institute of Technology and Science, Hazratnagar, Kanchipuram, Recent Trends In Mechanotronics- Phase II: 23rd to 26th April 2021
 - *Manufacturing: Challenges and opportunities*, Kamala Institute of Technology and Science, Hazratnagar, Kanchipuram, Recent Trends In Mechanotronics- Phase III: 09 to 12th May 2021

Dr. P. Prabhakara Rao:

- *Research trends in composite materials*, Sri Krishna Devaraya University college of engineering and Technology, Anaparthi - For Mechanical Engineering students, 09-10-2021
- *Heat Treatment of Alloy Steels*, Vellore Institute of Technology Baramanur - For Mechanical Engineering Faculty and students, 21-01-2021
- *Heat Treatment of Alloy Steels*, Sri Krishna Devaraya University college of Engineering and Technology, Anaparthi - For Mechanical Engineering students, 30-04-2021
- *Some Case Studies on Recent Advances in Metal Cutting processes*, Kakimada Institute of Engineering Technology (KIET) For the Third and Final year Mechanical Engineering students, 24-12-2021
- *Novelty composite materials*, Kakimada Institute of Engineering Technology (KIET) for the Third and Final year Mechanical Engineering students, 06-01-2021



THE PRODIGY

DEPARTMENT OF MECHANICAL ENGINEERING

NEWSLETTER - JUNE 2021


Chief Editor:
Dr. K. Sridhar
Professor and Head

Editors-In-Charge:
Sri G. Vinod Kumar
Assistant Professor

Sri. S. Anil Kumar
Assistant Professor

Students Editorial Board
MEK. AKHIL RAJA (P49)


Principal's Message:



I feel proud and honour to write this message because this newsletter is the testimony of the commitment of the department towards the outcome based education and enhanced student-teacher learning process which is in line with the vision and mission of the department. I hope that the department will strive further to improve the quality of the education and bring laurels to the institute.

Dr. K. Ashoka Reddy

HOD's Message:



It is happy to bring out this newsletter and the best part of the newsletter is that students bagged many accolades and prizes not only in academics but also in extracurricular activities. This newsletter will provide few examples of achievements of the students and faculty in the academic year 2020-21. I am looking forward to more success from the department.

Dr. K. Sridhar

Program Outcomes (POs) of B. Tech in Mechanical Engineering Program

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization in the solution of complex engineering problems.

PO2: 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.

PO3: 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.

PO4: 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.

PO5: Modern 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.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent re-

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: 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 or leader in a team, to manage projects and in multidisciplinary environments.

PO12: 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.

Vision of the Department

- To be a centre of excellence in Mechanical Engineering, to provide the best teaching-learning and research environment, to produce high quality professionals and entrepreneurs to cater the needs of society.

Mission of the Department

- M1: To impart quality education that builds strong ethical attitude, technical knowledge and professional skills by providing congenial teaching-learning environment.
- M2: To nurture the reasoning, problem solving and research capabilities of learners by providing the state-of-the-art facilities, to meet the changing needs of society.
- M3: To inculcate life-long learning and leadership traits for successful professional careers, by counseling and mentoring.

Program Educational Objectives (PEOs) of B. Tech in Mechanical Engineering Program

- PEO1 : To provide comprehensive knowledge in basic sciences, mechanical engineering and multi disciplinary areas.
 PEO2 : To apply modern tools and techniques to design analyze interpret and solve mechanical and allied engineering problems and communicate them effectively.
 PEO3 : To impart responsibility towards socio-technical, economical, environmental and energy related issues.
 PEO4 : To inculcate professionalism, ethical attitude, team spirit and lifelong learning to achieve career goals.

Program Specific Outcomes (PSOs) of B. Tech in Mechanical Engineering Program

Engineering Graduates will be able

- PSO1 : To apply learned principles and knowledge in various applications of materials, design, thermal, production and industrial engineering.
 PSO2 : To model, analyze, design, develop and implement advanced mechanical systems or processes.

Program Educational Objectives (PEOs) of PG - M. Tech (Design Engineering) Program

The postgraduates of DESIGN ENGINEERING will be able to...

PEO1 (Research and Innovation): engage in research, innovation and in teaching in Higher education institutions

PEO2 (Technical expertise and Successful career): excel in profession in industry, and entrepreneurship with updated technologies in the domain of design engineering

PEO3 (Soft skills and Lifelong learning): exhibit professional ethics, effective communication and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society

Program Outcomes (POs) of PG - M. Tech (Design Engineering) Program

At the time of graduation, the postgraduates of Design Engineering will be able to ...

PO1: independently carry out research /investigation and development work to solve practical problems

PO2: write and present an effective technical report/document

PO3: demonstrate competence in the area of design engineering

Program Specific Outcomes (PSOs) of PG - M. Tech (Design Engineering) Program

The postgraduates of Design Engineering will be able to...

PSO1: apply knowledge of design engineering for development of effective and innovative solutions to engineering problems

PSO2: apply appropriate methodology, contemporary hardware and software tools to solve complex engineering problems in the domain of design engineering

Students Placements:

Name of the Organization	No. of Students Selected
ACCENTURE	03
Hyundai	01
Infosys	15
Medha Servo Drives	01
Media Mint	01
TCS Digital	01
ZenQ Technologies	01

SAE INDIA ACTIVITIES

1. Formula Bharat 2021 quiz
2. Formula Student Germany 2021 quiz
3. Designs review session
4. FB 2021 participation
5. Interaction session with alumni on power train development and data acquisition
6. Formula Bharat 2022 quiz



Students Participation in Publications in Conferences and Journals:

1. Mohd Fazel, published a paper at International Conference, "Performance of Solar Air Heater With Aluminum Tubes Challenges and Opportunities for Innovation in New Normal Scenario", ISBN: 978-81-948668-3-1, Pg. No. 301-310, KSR Institute for Engineering and Technology (Affiliated to Anna University , Chennai in association with International Association of Research and Developed Organization (IARDO), 03-04-2021.
2. Toparu Lavaniith, published a paper at International Conference, "Thermal And Computational Studies of Loop Heat Pipe Wick Challenges and Opportunities for Innovation in New Normal Scenario", ISBN: 978-81-948668-3-1, Pg. No. 323-335, KSR Institute for Engineering and Technology (Affiliated to Anna University) , Chennai in association with International Association of Research and Developed Organization (IARDO), 03-04-2021.
3. N. Navaneeth, published a paper at International Conference, "Mechanical and Morphological Studies of Cellulose Reinforced Isophthalic Polyester Composites", IOP Publishing Conference Series Materials Science and Engineering (ICMSE-2021), Department of Mechanical Engineering, Bapatla Engineering College, Bapatla, Andhra Pradesh, 07-05-2021 to 08-05-2021.
4. M. Sampath, G. Varun, V. Sirisha, A. Sai Chandan, M. Akhil, published a paper at International Conference, "Design And Fabrication of Hybrid Mini Scooter" , IOP Publishing Conference Series Materials Science and Engineering (ICMSE-2021), Department of Mechanical Engineering, Bapatla Engineering College, Bapatla, Andhra Pradesh, 07-05-2021 to 08-05-2021.
5. G. Jayasri, published a paper at International Conference, "Fabrication & Characterization of Aluminium Composite", Substantial Development in the field of Engineering, Management and Humanities, ISBN:978-81-948668-5-5, Pg. No. 126-130, Institution of Engineers, Chandigarh, Sector 19A India, 22-05-2021.
6. Chitralekha, published a paper at International Conference, "Design and Fabrication of Automatic", Classroom Cleaning Robot, 4th International e-Conference on Recent Advancement in Mechanical Engineering & Technology (ICRAMET 2021), Department of Mechanical Engineering, Aarupadai Veedu Institute of Technology (AVIT), 24-06-2021 to 25-06-2021.
7. M. Sravani, N. Rahul, published a paper at International Conference, " Experimental investigation on DI diesel engine using biodiesel neem oil methyl ester blends", 4th International e-Conference on Recent Advancement in Mechanical Engineering & Technology (ICRAMET 2021), Department of Mechanical Engineering, Aarupadai Veedu Institute of Technology (AVIT), 24-06-2021 to 25-06-2021.
8. N. Sai Chander published a paper at National Conference, "Modelling And Analysis Of Spur Gear Assembly By Using Creo and Ansys", Latest Trends in Mechanical Engineering (LTME-2021), Vignana Bharathi Institute of Technology, 03-05-2021 to 04-05-2021.
9. Tejaswi Kasala, Vishwa Teja Chilagani, published a paper at national Conference, "Comparison of Stress Analysis on Laminated Composite Beams by Varying Materials and Fiber Angle Orientation", Latest Trends in Mechanical Engineering (LTME-2021), Vignana Bharathi Institute of Technology, 03-05-2021 to 04-05-2021.
10. G. Siddarth Reddy, T. Nimish, published a paper at national Conference, " Design And Simulation of Shell Structures", Latest Trends in Mechanical Engineering (LTME-2021), Vignana Bharathi Institute of Technology, 03-05-2021 to 04-05-2021.
11. V. Pranay, "Evaluation of Mechanical and Tribological Properties of Biowaste and Biowaste Based Silica Particulate Epoxy Composites", Springer Nature, <https://doi.org/10.1007/s12633-021-01227-9>, 21-06-2021.

Details of the Faculty Development Programme attended by the faculty:

• Most of the faculty members have attended FDP's conducted by various reputed institutions in collaboration with AICTE-ATAL, NPTEL etc.

Titles of the Faculty Development Programmes:

- 3D Printing & Design
- Advances in Manufacturing
- Applications Of Soft Computing Techniques For Electro-Mechanical Systems
- Computational Fluid Dynamics
- CII Education Conference: Innovations In Learning
- Emerging Optimization Techniques for Engineering Applications
- Emerging Trends In Advanced Materials & Manufacturing Processes
- Energy Engineering
- Energy Storage
- FRP COMPOSITES
- Hybrid & Electric Vehicle Technologies For Sustainable Mobility
- Hybrid Modeling Solutions for Typical Complex Engineering Applications
- Immersive Virtual Reality
- Innovations and Challenges in Industry 4.0 ecosystem and smart manufacturing
- IoT In Manufacturing
- Nano Structured Materials Synthesis Characterization and Application
- Smart Materials
- NVA Accreditation and Teaching-Learning in Engineering
- Optimization Techniques For Engineering Applications
- Outcome-Based Education(OBE) Accreditation Process
- Rapid Prototyping And Artificial Intelligence For Industrial Applications
- Recent Advances & Applications Of Machine Learning & IoT In Mechanical Engineering
- Recent Advances in CAD/CAM Applications
- Renewable Energy Intervention In Industry, Commercial And Domestic Application
- Robotics
- Role Of Blockchain And Cyber Security In Digital Manufacturing
- Strategic Methods And Tools For Product Development
- Sustainability Engineering
- Thermodynamic Analysis of Energy Systems