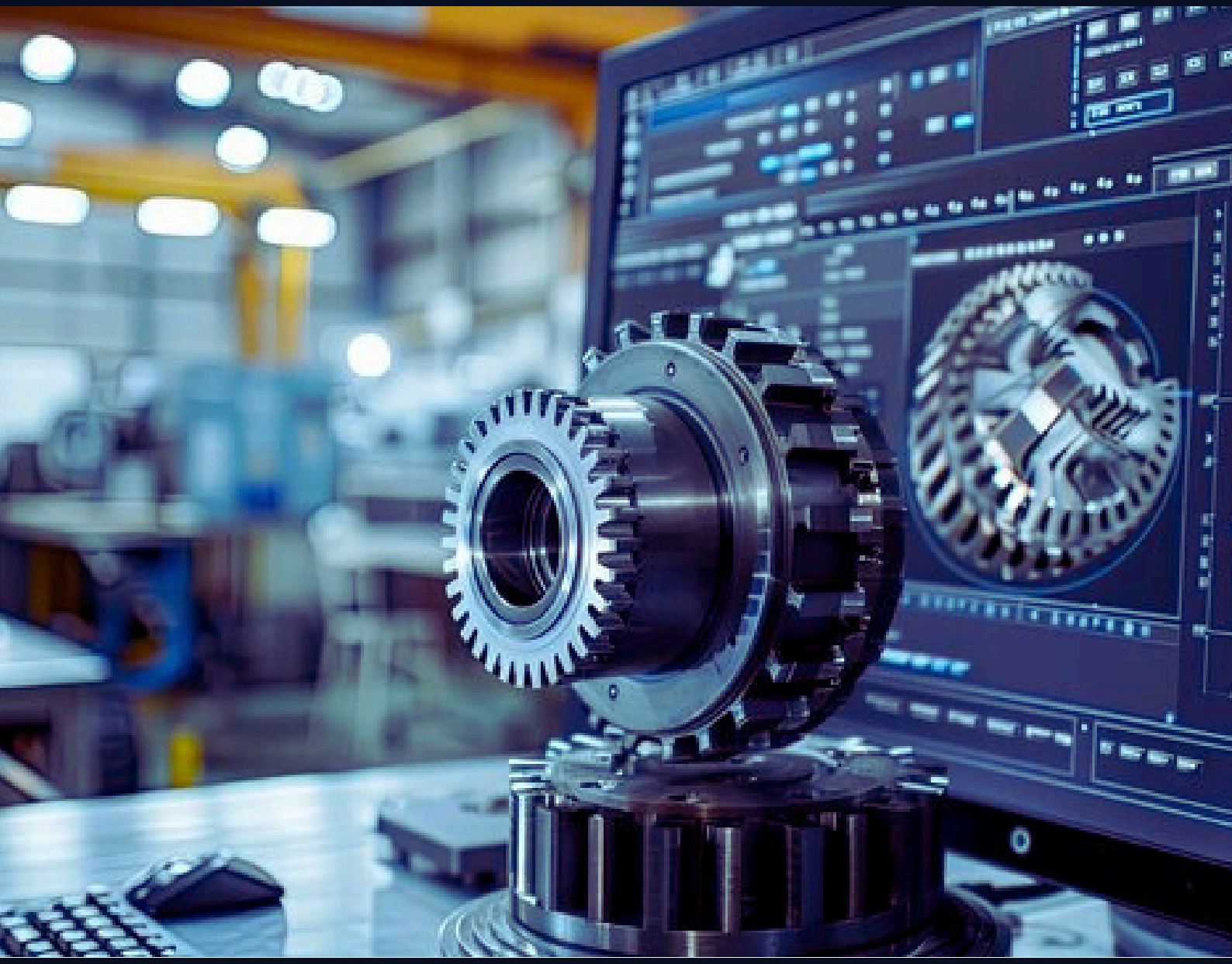
DEPARTMENT OF MECHANICAL ENGINEERING

THE MECH CHRONICLE

MAGAZINE

2021-2022



ISO 9001 : 2015 Certified Institution

CODE URCE

USHARAMA

COLLEGE OF ENGINEERING AND TECHNOLOGY

AUTONOMOUS

On NH-16, Telaprolu, Near Gannavaram, Krishna District - 521109.

PH: 91777 12255, 99497 12255, 0866-2527558 www.usharama.edu.in

About the College

Usha Rama College of Engineering and Technology, established by Usha Rama Educational Academy, with the aim of inculcating quality education to students and produce young technocrats having good knowledge. The college is approved by AICTE and affiliated to JNTU-Kakinada. It is sponsored by Chicago based Multi-Million Dollar Advansoft group.

Advansoft Group made an extensive study of the functioning of premier educational institutions in India and abroad and had an extensive consultation with Industry, academicians and scholars, the efforts of which finally culminated in laying the foundation for the college in 2008. Even before the college commenced its functioning, an elaborate plan was drawn up for acclimatizing and absorbing the students predominantly hailing from a rural background, into an environment demanding learning of frontier technologies.

The Trust comprises a team of highly respected professionals in the field of Academics, Management and Industry, dedicated to creating an Institution imparting quality education. Usha Rama College of Engineering and Technology is well supported by a governing body and an academic advisory council consisting of eminent academicians and professors with decades of experience in premier Institutions.

URCE has within a short span of time emerged as one of the premier professional Institutions in this region. The Institute maintains high standards of education by providing a wide array of world-class academic facilities, employing highly qualified and experienced faculty members and creating an ambience that is conducive to quality education.

INSTITUTE VISION

To emerge as a centre of excellence in technical education by imparting quality teaching learning practices and research for the transformation of society.

INSTITUTE MISSION

- **Provide an ideal and the best class infrastructure to foster exploration in engineering and research.**
- **Build dedicated faculty with student centric teaching incorporating experiential, innovative skills.**
- **Encourage lifelong learning, entrepreneurial thinking and ethical responsibility in students to address societal challenges.**

DEPARTMENT VISION

To impart quality education in the field of Mechanical Engineering to meet the industrial standards and technological needs of the society.

DEPARTMENT MISSION

- **To provide quality education for career building and skill enhancement and to become globally competitive.**
- **To groom the students with leadership qualities, problem solving approach, along with team work and effective communication.**
- **To promote higher education, entrepreneurship skills, research cum innovation with a focus on industrial and societal needs and to mould the students with professional ethics and moral values.**

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: To train the graduates in building a successful professional career in Mechanical Engineering.

PEO 2: To encourage the graduate engineers to achieve their goals through higher education and Research & Development activities.

PEO 3: To support the graduates to become moral & ethically responsible citizens in the development of the nation.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Apply Engineering fundamental knowledge, complex mathematics, science and provide solutions to mechanical Engineering system.

PSO2: Design and develop products innovatively with modern tools and to optimize manufacturing processes.

Programme Outcomes (POs)

PO - 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO - 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.

PO - 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.

PO - 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.

PO - 5: 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.

PO - 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-7: 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.

PO -8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO - 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO - 10: 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.

PO - 11: 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.

PO - 12: 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.

PUBLICATIONS BY FACULTY

Journal Publications

1. G.JayaRaju "Fabrication and Modal analysis of composite leaf spring International Journal of Disaster Recovery and Business Continuity, June 2021, Volume 12, Issue 01, Page 1133-1145.

Conferences

1. B.Kiran Babu, "Friction stirs processing of ZE41 Mg alloy: Optimizing the process parameters" IOP Conf. Series: Materials Science and Engineering, Sept 2021, Volume 1185, Issue 01, Page 1-6.

RESOURCE PERSONS IN STTPS/FDPS

Dr. S. Madhusudan

"Failure and damage mechanics of high-performance materials (Phase-I)" Dept. of ME., Anil Neerukonda Institute of Technology & Sciences, Visakhapatnam, Andhra Pradesh. 12th - 17th July 2021.

Dr. S. Madhusudan

"Failure and damage mechanics of high-performance materials (Phase-II)" Dept. of ME., Anil Neerukonda Institute of Technology & Sciences, Visakhapatnam, Andhra Pradesh. 23rd -28th Aug 2021.

Dr. R. Bhargavi

"Recent Advances in Composite Materials for Engineering Applications" Dept. of ME., Tirumala Engineering College Narasaraopet, Guntur District, Andhra Pradesh, 16th – 20th Aug 2021.

Dr. S. Madhusudan

"Failure and damage mechanics of high-performance materials (Phase-III)" Dept. of ME., Anil Neerukonda Institute of Technology & Sciences, Visakhapatnam, Andhra Pradesh. 20th -25th Sept 2021.

Dr. S. Madhusudan

"International Research Workshop in Biomechanical Microsystems 2021" Kaunas University of Technology, Lithuania. 22nd Oct 2021.

Dr. R. Bhargavi

"Advanced materials processing and Characterization methods" Dept. of ME., Tirumala Engineering College Narasaraopet, Guntur District, Andhra Pradesh, 13th – 17th Feb 2023.

Dr. B. Kiran Babu

"Materials: Processing and Applications" Dept. of ME., VKR, VNB & AGK College of Engineering, Gudivada, Andhra Pradesh, 18th March 2023.

EVENTS ORGANIZED BY THE DEPARTMENT

FACULTY DEVELOPMENT PROGRAM / SHORT TERM TRAINING PROGRAM ORGANIZED

1. Six days FDP(Online) on "Thermal Energy Systems- Design, Computationational Techniques Applications" on 23rd - 28th Aug, 2021.

Key note speakers are:

1. Dr. R. Subba Rao, Associate Professor, NITTR, Kolkata.
2. Dr. L.V.S. Prasad, Professor, Andhra University, Visakhapatnam.
3. Dr. K. Rambabu, Professor, LBRCE, Mylavaram.
4. Dr. K. Srinivasa Reddy, Professor, CMR college of Engg. Hyderabad
5. Dr. N. Hari Babu, Professor, Aditya Institute of Technology and Management, Tekkali

2. Five days FDP (Online) on "Advances in Mechanical Engineering" on 31st Jan - 5th Feb, 2022

Key note speakers are:

1. Dr. K. Ramji, Professor, Andhra University, Visakhapatnam.
2. Dr. M. Vijay Kumar, Assistant Professor, NIT, Warangal.
3. Dr. G. Vijay Kumar, Professor, P.V.P.S.I.T, Vijayawada.
4. Dr. Ch. Sobha, Associate Professor, GITAM University, Visakhapatnam.
5. Dr. B. Naga Raju, Professor, ANITs, Visakhapatnam.

3. Five days FDP (Online) on "OBE and NEP 2020" on 4th -29th May, 2022

Key note speakers are:

1. P. Suresh Varma, Professor, Dept. of CSE, Adi Kavi Nannaya University
2. Dr. P.S. Rama Srikanth, Professor, Dean School of ME, VIT, AP.
3. Dr. Gopi Krishna, Assistant Professor, Achraya Nagarjuna University, Guntur
4. Dr. Ch. Santhi Rani, Professor, Dept. of ECE, Usharama College of Engineering, Telaprolu.

WORKSHOPS/SEMINARS

- A Seminar on " Solar Energy- An Overview" by Dr. L.V.S. Prasad, Professor, Andhra University, Visakhapatnam., for ME students on 26/02/2021 to 27/02/2021.
- A webinar on " A webinar on “Smart Materials in Mechanical Engineering” " by Dr. K. Srinivasa Reddy, Professor, CMR college of Engg. Hyderabad AP. for ME students on 20/11/2021.
- A Seminar on " Seminar on Automation in Smart Factories (Industry 4.0) " by Dr. N. Ramanaiah, Professor, Andhra University, Visakhapatnam, for ME students on 27/12/2021.
- A Seminar on “Soft Robotics and Its Applications” " by Dr. K. Ramji, Professor, Andhra University, Visakhapatnam. for ME students on 19/02/2022.
- A Seminar on " Shape Memory Alloys and Their Applications " by Dr. Gopi Krishna, Assistant Professor, Achraya Nagarjuna University, Guntur for ME students on 23/02/2022.

FACULTY DEVELOPMENT PROGRAMS ATTENDED

- CH. Venkata Krishna, N. Siva Krishna, N. Ranjith Kumar A one week online FDP on “Finite Element Analysis Methods in Engg. using ANSYS” organized by the Department of Mechanical Engineering, Lakireddy Bali Reddy College of Engineering, Mylavaram, Krishna (Dt.), Andhra Pradesh, India organized from 07/06/2021 to 11/06/2021.
- N. Ranjith Kumar A one week online FDP on “Innovation, Incubation, Startups and Challenges in India” organized by the Department of Mechanical Engineering, SRM Ins. of Science and Technology, Chennai, India organized from 28/06/2021 to 02/07/2021.
- N. Ranjith Kumar, 3 day workshop on “Technological Advancements in Naval, Defence& Space Applications: An Integrated Industry 5.0 Approach.” organized by the Department of Mechanical Engineering, N S Raju Institute of Technology, Visakhapatnam, India organized from 08/07/2021 to 10/07/2021
- N. Siva Krishna 5-days online FDP on “Vibrations and Condition Monitoring” organized by the Department of Mechanical Engineering, Vasavi College of Engg. Pedana, India organized from 20/09/2021 to 24/09/2021.
- K. Srinivasa Rao, N. Siva Krishna, D. Sujatha A one week online FDP on “Advancements in Automotive Industries” organized by the Department of Mechanical Engineering, Satyabama Instituteof Science and Technology, India organized from 18/10/2021 to 25/10/2021.

- B. Kiran Babu, N. Siva Krishna, A 2 weeks online FDP on "Advanced Vibrations- Various Engg. Applications with hands on sessions (Phase-II)" organized by the Department of Mechanical Engineering, JNTUK, Kakinada, India organized from 27/09/2021 to 20/10/2021.
- Dr V Ajay Kumar, J Ashok Kumar, 5-day Online FDP on the theme "Inculcating Universal Human Values in Technical Education (UHV-I)" organized by All India Council for Technical Education (AICTE) from 08/11/2021 to 12/11/2021.
- G. Jaya Raju, Nawab Masid Abdul A one-week online FDP on "Emerging Trends in Thermal Engg." organized by the Department of Mechanical Engineering, PVPSIT, Vijayawada, India organized from 27/12/2021 to 31/12/2021.
- Dr. R. Bhargavi, M. Kiran Durga Kumar, J. Ashok Kumar A one-week online FDP on "Post Covid Green and Sustainable Development Practices in Manufacturing Industries" organized by the Department of Mechanical Engineering, CVR College of Engg. Hyderabad, India organized from 17/01/2022 to 21/01/2022.
- Dr. S. Madhusudan, Dr. V. Ajay Kumar, B. Kiran Babu A two-week online FDP on "Recent advances in Materials and Challenges in Manufacturing Techniques" organized by the Department of Mechanical Engineering, JNTUK, Kakinada, India organized from 07/02/2022 to 19/02/2022.
- KVV NagaRaju, CH. Venkata krishna, N. Siva Krishna A two-week online FDP on "Recent advances in Materials and Challenges in Manufacturing Techniques" organized by the Department of Mechanical Engineering, JNTUK, Kakinada, India organized from 07/02/2022 to 19/02/2022.

CERTIFICATIONS COURSES THROUGH NPTEL

- M. Kiran Durga Kumar, completed a certification course titled, "Inspection and Quality Control in Manufacturing" offered through Swayam - NPTEL during Feb - March 2021
- G Jaya Raju, completed a certification course titled, "Engineering Metrology" offered through Swayam - NPTEL during July- Oct 2021.
- Dr. Rebba Bhargavi, completed a certification course titled, "Fundamentals of Manufacturing Processes" offered through Swayam - NPTEL during July – Oct 2021
- K Vidya, completed a certification course titled Manufacturing of Composites" offered through Swayam - NPTEL during Aug-Oct 2021

- Dr KVV Naga Raju, completed a certification course titled, " Data Mining" offered through Swayam - NPTEL during Feb- April 2021.

INDUSTRIAL VISIT

Nill

STUDENTS PARTICIPATIONS IN PROFESSIONAL EVENTS

1. T Pavan Kalyan, T Ratnakar, M Sasi Kumar has participated in Webinar (Industry 4.0 Expectations From Next Generations Engineers) at Presidency University on 20-08-2021.
2. B Vinay Kumar, G Vamsi Krishna, N Sai Mani Kowshik, B Pavan Kalyan has participated in Webinar (Industry 4.0 Expectations From Next Generations Engineers) at Presidency University on 20-08-2021.
3. T Naga Maha Akhilesh, T Pavan Kalyan, T Ratnakar has participated in Webinar (Solar Thermal Technologies) at Mohamed Sathak Engineering College on 27-09-2021.
4. M Sasi Kumar, B Vinay Kumar, D Rambabu, K Srikanth has participated in Webinar (Solar Thermal Technologies) at Mohamed Sathak Engineering College on 27-09-2021.
5. M Naga Malleswara Rao, Y Sriharsha, B Vijay Jeevan Kumar, N Sai Mani Kowshik has participated in Webinar (Future Scope of Electrical Vehicles) at Karpagam Institute of Technology, Coimbatore, Tamilnadu. on 23-10-2021.
6. B Pavan Kalyan, M Sasi Kumar, B Vinay Kumar, K Ratnakar has participated in Webinar (Future Scope of Electrical Vehicles) at Karpagam Institute of Technology, Coimbatore, Tamilnadu. on 23-10-2021.
7. B Vijay Jeevan Kumar, M Sasi Kumar has participated and won 2nd prize in the event Project Expo at DNR College of Engineering & Technology, Bhimavaram, Andhra Pradesh on 16-03-2022.
8. D Mohan Surya, T Naga Maha Akhilesh has participated and won 2nd prize in the event Project Expo at DNR College of Engineering & Technology, Bhimavaram, Andhra Pradesh on 16-03-2022.

9. K Srikanth, N Sai Dinesh has participated and won 2nd prize in the event Poster Presentation at DNR College of Engineering & Technology, Bhimavaram, Andhra Prades hon 16-03-2022.
10. K Ratnakar, M Naga Malleswara Rao has participated and won 2nd prize in the event Poster Presentation at DNR College of Engineering & Technology, Bhimavaram, Andhra Pradesh on16-03-2022.
11. G Vamsi Krishna, N Sai Mani Kowshik, B Pavan Kalyan has participated in the event Project Expo at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 18-03-2022.
12. N Leela Prasad, K Lakshman has participated in the event Project Expo at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 18-03-2022.
13. T Naga Maha Akhilesh, T Pavan Kalyan, T Ratnakar has participated in the event Poster Presentation at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 18-03-2022.
14. M Sasi Kumar, B Vinay Kumar has participated in the event Poster Presentation at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 18-03-2022.
15. D Rambabu, K Durga Prasad, K Srikanth has participated and won 2nd prize in the event Technical Quiz at Swarnandhra College of Engineering & Techonlogy, Narsapur, Andhra Pradesh on 29-04-2022.
16. N Sai Dinesh, K Ratnakar, M Naga Malleswara Rao has participated in the event Technical Quiz at Swarnandhra College of Engineering & Techonlogy, Narsapur, Andhra Pradesh on 29-04-2022.
17. Y Sriharsha, B Vijay Jeevan Kumar, M Sasi Kumar has participated and won 2nd prize in the event Poster Presentation at Swarnandhra College of Engineering & Techonlogy, Narsapur, Andhra Pradesh on 29-04-2022.
18. D Mohan Surya, T Naga Maha Akhilesh, V Leela Naga Sandeep has participated in the event Poster Presentation at Swarnandhra College of Engineering & Techonlogy, Narsapur, Andhra Pradesh on 29-04-2022.

PUBLICATIONS BY STUDENTS

CONFERNCES

1. N. Dileep, CH. Sai Manikanta, P. Tarun, Y. Sri Harsha has presented a paper titled "Role of Heat Treatment on Microstructure and Mechanical Properties of Al7075" in the Virtual International Conference on Research Contributions in Mechanical Engineering (ICRCME-2022), organized by Department of Mechanical Engineering, Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru during 25 – 26 February 2022.
2. M. Sri Harsha, K. Venkateswara, Ch. Tarun Sai, Ch. Kranthi "Mechanical Properties of Glass Epoxy composites in addition to TiO2 particles" International Conference on Emerging Trends In Mechanical Engineering and Industrial Automation – 2021, (NEC-ICETMEIA-2021), 30th & 31st July 2021, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-42-0.
3. O. Govindu, M. Sai Kiran, V.L. Siva Rama Krishna, P. Jagadeesh "Process parameters Optimization in Abrasive Jet Machining for Deep Hole Making in Al7075 using Taguchi Methods" International Conference on Emerging Trends In Mechanical Engineering and Industrial Automation – 2021, (NEC-ICETMEIA-2021), 30th & 31st July 2021, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-42-0.
4. D Kamal Babu, G Naveen, B Surya Sai "Okra Banana Empty Fruit Bunch Fiber Reinforced Hybrid Composites: Failure Analysis of Bolted and Adhesive Bonded Joints" International Conference on Recent Advances in Mechanical Engineering and Materials Characterization (ICRAME-2021), 26th & 27th March 2021at Prasad V Potluri Siddhartha Institute of Technology, Andhra Pradesh, India.
5. K Dilip Kumar, B Avathar Singh, T Rajesh, N Suresh "Validation of Mechanical Properties through ROHM Method for Kenaf and Acant hasicyos Natural Fibre Composites" " International Conference on Recent Advances in Mechanical Engineering and Materials Characterization (ICRAME-2021), 26th & 27th March 2021at Prasad V Potluri Siddhartha Institute of Technology, Andhra Pradesh, India.
6. V N Eswar Kumar, Ch Praveen, A Naga Harish, K Rajesh "Investigation on Materials Removal Rate and Taper Angle in Abrasive Aqua jet Machining of Al7075/sic/gr Composites using RSM Approach" won 3rd prize, International Conference on Emerging Trends In Mechanical Engineering and Industrial Automation – 2021, (NEC-ICETMEIA-2021), 30th & 31st July 2021, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-42-0.

Editorial board

Dr S Madhusudan (Editor) **Dr R Bhragavi (Chief Editor)**

Student's Coordinators

O Govindu (IV Year)

K Ratnakar (IV Year)

K Sai Pavan (III Year)

K Lakshman (III Year)

D Sathwik (II Year)

T Durga Prasad (II Year)

MECHANICAL ENGINEERING STUDENT ASSOCIATION
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WE MOVE THE WORLD