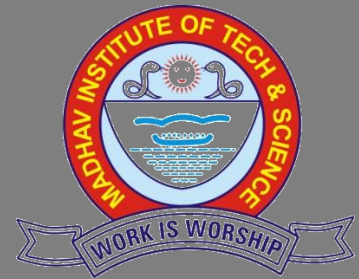


Newsletter

Department of Mechanical Engineering



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Madhav Institute of Technology &
Science, Gwalior-474005

INSIDE THIS ISSUE:

1. Faculty Outreach
2. Talks Delivered Outside the
Institute
3. Departmental Activities
4. Students Achievements and
Activities
5. Research Publications

Vision

"To develop innovative and creative Mechanical Engineers catering the global industrial requirements and social needs".

Mission

1. To prepare effective and responsible graduate engineers for global requirements by providing quality education.
2. To enhance knowledge through project and internship in the field of Mechanical and allied engineering.
3. To guide students in acquiring career-oriented jobs in the field of Mechanical engineering.
4. To provide academic environment of excellence, leadership, ethical values and lifelong learning to cater the need of society by sustainable solutions.

Editorial Team

- Dr. Amit Aherwar
- Dr. Ravi Kant Ranjan

Students

- Nikita Jain
- Nitya Singh
- Ansh Rathore

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1. Graduates of the program will be able to have successful professional career.
2. Graduates of the program will be able to develop attitude of learning and become adaptable to dynamic industrial and social environment.
3. Graduates of the program will be able to design and develop mechanical system by using skills and knowledge of core competency along with allied engineering skill.
4. Graduates of the program will be able to undertake interdisciplinary research needed to build a sustainable society.

PROGRAM OUTCOMES (POs)

Mechanical and Automobile Engineering Graduates will be able to:

- 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.*

Faculty Outreach

1. Dr. Ashish Agrawal Participated in a 3-Day Online Workshop on "Computational Fluid Dynamics (CFD) Using Ansys Fluent", from 18-20th November, 2021 organised by VIT-AP University Amaravati (AP).
2. Dr. Harbhajan Ahirwar participated in a one-day workshop on "IPR-PATENTS DESIGNS" organized by Chhattisgarh Swami Vivekanand Technical University, Bhilai, (C.G.) India in Collaboration with Rajiv Gandhi National Institute for Intellectual Property Management (RGNIPM) Nagpur, (M.H.) India on 4th Oct, 2021.
3. Dr. C.S. Malvi has participated in the Discussion on Solar Energy Policy, University of Leeds, United Kingdom on 9th November, 2021.
4. Dr. C.S. Malvi has visited to Rajghat Hydro Power Station, Chanderi , an installed capacity of 45 MW for technical visit on 30th October, 2021.

Expert Talks Delivered

1. Dr. C.S. Malvi delivered an expert talk on the eve of Energy Conservation Day at Centre for Renewable Energy, Rabindranath Tagore University, Raisen on 14th December, 2021.

Departmental Activities

1. Department of Mechanical Engineering has organized a programme "AZADI KA AMRIT MAHOTSAV" on a topic "Emerging Materials for Environmental Remediations & Defence Applications" by Dr. Rajendra Bunkar, Scientist, DRDE, Gwalior (M.P.) on 11th November, 2021.
2. Department of Mechanical Engineering has organized a special interaction session on "Research projects in Space Technology" by a former ISRO Scientist Prof. N.K. Gupta on 17th November, 2021. This programme was organized by Dr. M.K. Gaur, Dr. C. S. Malvi & Dr. Gavendra Norkey.
3. Department of Mechanical Engineering has organized an expert lecture programme on 'intellectual Property Rights-Patenting Processes in India' by Mr. Prateek Shrivastava on 10th December, 2021. This programme was coordinated by Dr. C. S. Malvi & Dr. Gavendra Norkey.

Workshop

1. Department of Mechanical Engineering has organized a 5 days' workshop on "Industrial training on CFD through ANSYS Workbench" during Dec 06-10, 2021. The convener of the workshop was Dr. M. K. Gaur.

Faculty Achievement and Activities

1. Dr. M.K. Gaur has chaired the session titled "Computational Intelligence & Machine Learning" in the International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology held online during November 13-14, 2021, organized by MITS, Gwalior and technically sponsored by Soft Computing Research Society.
2. Dr. M.K. Gaur has chaired the session titled "Keynote of Dr. Swagatam Das" in the International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology held online during November 13-14, 2021, organized by MITS, Gwalior and technically sponsored by Soft Computing Research Society.

Student Achievement and Activities

Yashika Singhal, a Mechanical Engineering final year student has been awarded as NPTEL Discipline Star by NPTEL Swayam for the session July-Dec, 2021.



Awards & Certificates

1. Mr. Neeraj Mishra has successfully defended his Ph.D Thesis titled “**Dynamic and Control of a Class of Hand Prosthesis**” at Dr. B.R. Ambedkar NIT Jalandhar on 8th of November 2021.
2. Dr. M.K. Gaur & Dr. Amrat Kumar Dhamneya were awarded by a certificate from NPIU on successfully completion of project “**Performance Enhancement of solar Distillation systems using nanoparticles**” sanctioned under TEQIP-III Collaborative Research Scheme on 26th November, 2021.
3. Dr. Neeraj Mishra & Dr. M.K. Sagar were awarded by a certificate from NPIU on successfully completion of project “**Design and Development of the Portable Gnathodynamometer**” sanctioned under TEQIP-III Collaborative Research Scheme on 26th November, 2021.
4. Dr. Pratesh Jayaswal & Prof. Sarvesh Kumar Yadav were awarded by a certificate from NPIU on successfully completion of project “**Analysis and Control of Noise Pollution in Hospitals**” sanctioned under TEQIP-III Collaborative Research Scheme on 26th November, 2021.
5. Dr. Dharmendra Jain, Dr. M.K. Sagar & Prof. Sharad Agrawal were awarded by a certificate from NPIU on successfully completion of project “**3D modelling and Finite element analysis of Human bone generated from CT scan and MRI Data**” sanctioned under TEQIP-III Collaborative Research Scheme on 26th November, 2021.

Research Publications

1. Prof. S.C. Pal presented a technical paper entitled “**CFD simulation of patient specific bifurcated carotid artery with Newtonian and non-Newtonian viscosity models**” in the International Conference on Energy Conversion and Thermo-fluid System (i-CONNECTS 2021) ON 19-20th November, 2021 under the aegis of the Deptt. Of Mech. Engg., MNIT Jaipur.
2. Dr. Surendra Kumar Chourasiya wrote a book chapter on “**Tribology of Spray- Formed Aluminum Alloys and Their Composites**”.
3. Dr. Ashish Agrawal, Abhinav Kumar, Seepana Praveen Kumar & Vladimir Ivanovich Velkin have published a journal Paper titled “**Alternating current losses in superconducting circular/stacked coils**”

used in energy storage systems" in the Journal of Energy Storage, pp.1-12, vol. 45.

4. Dr. Ashish Agrawal presented a paper entitled "Thermodynamic And Transport Properties Of Supercritical Helium Used For Superconducting Applications" in the 2nd International Conference on "Industrial and Manufacturing System" organised by Deptt. Of Production & Industrial Engg., PEC, Chandigarh and BRA NIT Jalandhar on 11-13th November, 2021.
5. Dr. Harbhajan Ahirwar, Ankit Sahu, Vijay Kumar Gupta, Prasoon Kumar & Himansu Sekhar Nanda have published a journal Paper titled "Design and finite element analysis of femoral stem prosthesis using functional graded materials" in the Journal of Computer Methods in Biomechanics and Biomedical Engineering, <https://doi.org/10.1080/10255842.2021.2006648>
6. Dr. M.K. Gaur, Bhupendra Kumar Pandey & Pushpendra Singh have published a journal Paper titled "Performance evaluation of evacuated solar collector assisted hybrid greenhouse solar dryer under active and passive mode" in the Journal of Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2021.10.461>
7. Dr. M.K. Gaur & Puspendra Singh have published a journal Paper titled "Sustainability assessment of hybrid active greenhouse solar dryer integrated with evacuated solar collector" in the Journal of Current Research in Food Science, <https://doi.org/10.1016/j.crfs.2021.09.011>
8. Dr. M.K. Gaur, Dr. R.K. Pandit & Rishika Shah have published a journal Paper titled "Thermal comfort analysis through development of artificial neural network models: An experimental study in Cwa climate" in the Journal of Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2021.11.139>
9. Dr. M.K. Gaur & Vikash Kumar Thakur have published a journal Paper titled "Study the effect of CuO nanoparticles on the performance of passive solar still in winter and summer season" in the Journal of Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2021.11.119>

10. Dr. C.S. Malvi, S Srivastava, A Srivastava, S Jain & N Kumar have published a journal Paper titled "Performance analysis of PCM curtain for thermal comfort," in the Journal of Textile and Apparel.