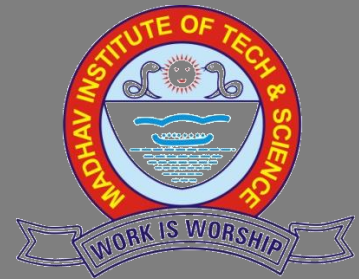


Newsletter

Department of Mechanical Engineering



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Madhav Institute of Technology &
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Vision

"To develop innovative and creative Mechanical & Automobile 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, Automobile and allied engineering.
3. To guide students in acquiring career-oriented jobs in the field of Mechanical and Automobile 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

- Mr. Vaibhav Shivhare
- Mr. Shubham Shrivastava
- Mr. Sayed Faiz Ahmad

Students

- Ravi Kushwah
- Aniket Gupta
- Kabir Saraswat

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 Awards and Honours

1. Mr Sharad Agrawal received Elite certificate for an online NPTEL course on 'Fundamentals of Welding Science and Technology'.
2. Dr Jyoti Vimal along with his student Nikhil Aditya has been honoured with best paper award in technical session in International Conference on Latest Trends in Civil, Mechanical and Electrical Engineering" (LTCMEE- 2021), Maulana Azad National Institute of Technology, Bhopal during April 12-13, 2021.

Faculty Outreach

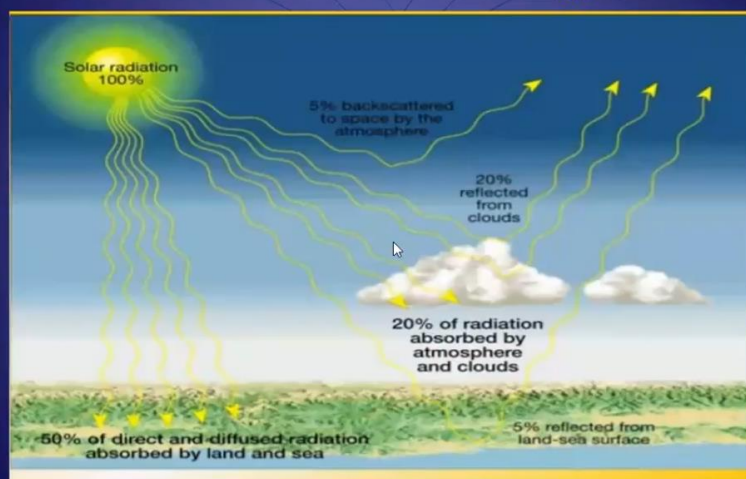
1. Dr Ravi Kant Ranjan presented a paper titled "Isothermal Analysis of Stirling Engine" at National Conference on Advances in Mechanical Engineering organised by the Department of Mechanical Engineering of S.V N. I. T. Surat on May 27-28, 2021.

Departmental Activities

Finishing School Program

Department of Mechanical Engineering offered an online module "Renewable Energy: Applications & Modelling" under the Finishing School Program for pre-final and final year students. The three-week program was coordinated by Dr. Amrat K Dhamneya, Dr. Ravi Kant Ranjan and Mr. Puneet K Nema. The objective of this online internship was to give an idea about various sources of the renewable energy and its application in different areas. The program was open for outside students as well.

How much solar energy?



Parabolic dish collectors



- ▶ Parabolic dish concentrating systems use parabolic dish shaped mirrors to focus incoming solar radiation onto a receiver that is positioned at the focal point of the dish.
- ▶ Fluid in the receiver is heated to high temperatures, around 750°C. This fluid is then used to generate electricity in a small Stirling or Brayton cycle engine, which is attached to the receiver.
- ▶ Parabolic dish systems are the most efficient of all solar technologies, at approximately 25% efficient, compared to around 20% for other solar thermal technologies.

Short Term Training Program

Department of Mechanical Engineering organised an AICTE sponsored one week online short-term training program "Advances in Mechanical Engineering" during June 25 - 30, 2021. The main objective of this STTP was to provide an exposure about various thrust areas in advanced manufacturing systems and technologies such as additive manufacturing, smart manufacturing, flexible manufacturing system etc. This STTP brought together faculty members and researchers from different academic and industrial background to establish new research collaborations to address the challenges and explore the opportunities in the respective fields.

Research Publications

1. Ahirwar Harbhajan and Himansu Sekhar Nanda*. "3D Development, Fixation and Finite Element Analysis of Cylindrical Mesh Cage Bioimplants". Advanced Materials Letters (VBRI Press), vol. 12, pp. 061-641, Apr, 2021,
2. Ahirwar Harbhajan, Vijay Kumar Gupta, and Himansu Sekhar Nanda*. "Finite Element Analysis of Bone Plate Fixation over Fractured Femur Model". Computer Methods in Biomechanics and Biomedical Engineering (Taylor & Francis), vol. 15, pp. 320-430, June, 2021.
3. Akash Gupta, Jyoti Vimal, "Static Analysis on a Milling Cutter with High-Speed Steel at Different RPM", International Research Journal of Modernization in Engineering Technology and Science, e-ISSN: 2582-5208 Volume: 03 Issue: 05, May-2021 pp 2812-2819.
4. Kartik Karambelkar, Jyoti Vimal, "Transient Thermal Analysis of IC Engine Exhaust Valve Using ANSYS" International Research Journal of Modernization in Engineering Technology and Science, e-ISSN: 2582-5208 Volume: 03 Issue: 05, May-2021 pp 3710-3719.
5. Prabhav Agrawal, Jyoti Vimal, "Designs of Heat Sinks on Basis of Thermal Stress & Temperature Flow Through Convection Through FEA", International Research Journal of Modernization in Engineering

Technology and Science, e-ISSN: 2582-5208 Volume: 03 Issue: 05, May-2021 pp 3055-3063.

6. Ankit Shivhare, Jyoti Vimal, "Modelling and Thermal Analysis of Engine Cylinder Fins with Notches and Punch Holes ", International Research Journal of Modernization in Engineering Technology and Science, e-ISSN: 2582-5208 Volume: 03 Issue: 05, May-2021 pp 3092-3099.
7. Jatin jain, Jyoti Vimal, "Model and Analysis of Different Truss Bridges Under Dead Load Condition", International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056 Volume: 08 Issue: 05, May 2021 pp 2944-2950.