

Newsletter

Department of Mechanical Engineering



July-Sep 2021
Volume 5 Issue 3

Madhav Institute of Technology &
Science, Gwalior-474005

INSIDE THIS ISSUE:

1. New Joining
2. Faculty Outreach
3. Talks Delivered Outside the
Institute
4. Departmental Activities
5. Students Achievements and
Activities
6. 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.*

New Joining as Regular Faculty



*PDF (IIT Delhi), Ph.D.
(IIITDM Jabalpur), M.Tech
(NIT Trichy)*



*Ph.D. (IIT Roorkee),
M.Tech (IIT BHU)*



*Ph.D.(IIITDM Jabalpur),
M.Tech (IIT Kharagpur)*



*Ph.D. (JUET Guna), M.Tech.
(MITS Gwalior), B.E. (MITS
Gwalior)*



*Ph.D. (NIT Rourkela), B.E.
(SATI Vidisha)*



*Ph.D.(IIT, Kanpur), M.Tech (IIT,
Kanpur), B.E(MITS, Gwalior).*

Faculty Outreach

1. Prof. Vedansh Chaturvedi has attended one week training programme titled "Introduction to the Mathematical Modelling of Smart Materials and their applications to Sensors and Actuators" organized by IIT Jammu from 12-16th July, 2021.
2. Dr. Jyoti Vimal has attended one week training programme titled "Introduction to the Mathematical Modelling of Smart Materials and

their applications to Sensors and Actuators" organized by IIT Jammu from 12-16th July, 2021.

3. Dr. Neeraj Mishra has attended one day workshop on "PLC programming and its application" organized by CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION, Chandigarh on 23rd July, 2021.
4. Dr Gavendra Norkey has attended one-week online FDP on "Futuristic Trends in Energy, Material and Manufacturing Technology" organized by Hindustan College of Science & Technology, Mathura from 2-6th August, 2021.
5. Dr. Surendra Kumar chourasiya has attended one-week online FDP on "Universal Human Value (UHV)" organized by AICTE from 9-13th August, 2021.
6. Dr. M.K. Gaur has attended one-week webinar on "Research & Innovation" organized by Vidyavardhaka College of Engineering, Mysuru from 17-21th August, 2021.
7. Prof. Vedansh Chaturvedi has attended one day National Workshop on Virtual Lab organized by ABV-IIITM Gwalior, MITS Gwalior & Shiksha sanskriti Utthan Nayas, Madhay Pradesh on 21st August, 2021.
8. Prof. Vaibhav Shivhare has attended one day National Workshop on Virtual Lab organized by ABV-IIITM Gwalior, MITS Gwalior & Shiksha sanskriti Utthan Nayas, Madhay Pradesh on 21st August, 2021.
9. Dr. M.K. Gaur has attended one-day webinar on "Engineering Education" organized by IETE, Bhopal & Gwalior, IEEE, M.P. Subsection and Institution of Engineers (India), Gwalior on 5th September, 2021.
10. Dr. Nifin Upadhyay has attended two-day AICTE Sponsored International E-Conference on Mechanical and Material Science Engineering: Innovation and Research (ICMMSE:IR 2021) organized by SITRC Nasik (E conference) from 17-18th September, 2021.

11. Dr. Neeraj Mishra has attended two-day workshop on Fundamentals of Mechatronics & Industrial Automation organized by CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION, Chandigarh from 22-23rd September, 2021.
12. Dr. Dinesh Kumar Rathore has attended one week online ATAL FDP on "Novel Materials: Advances and Application" organized by AICTE from 24-28th September, 2021.

Expert Talks Delivered

1. Dr. M.K. Gaur delivered an online Expert Lecture in a Short-Term Training Program titled "Futuristic Innovation in Solar Energy" organized at Gyan Sagar College of Engineering, Sagar during 14-16th July, 2021.
2. Dr. Gavendra Norkey delivered an online lecture under the 'Expert Lecture Series' on the topic titled "Virtual Lab practices" at MANIT Bhopal on 16th August, 2021.
3. Dr. C.S. Malvi delivered an online lecture in National workshop on Virtual Lab on the topic titled "Virtual Lab practices" at ABVITM, Gwalior on 21st August, 2021.
4. Dr. Gavendra Norkey delivered an online lecture under the 'Expert Lecture Series' on the topic titled "Laser Beam Machining" at GLA University, Mathura during 20-21st August, 2021.
5. Dr. Dinesh Kumar Rathore delivered an online lecture under the event 'Knowledge sharing session' on Composite Material titled "Mechanical and Thermo-mechanical characterization of FRP Composites" organized by TATA STEEL, Jamshedpur & NIT Rourkela on 21st August, 2021.
6. Dr. C.S. Malvi delivered an Orientation Lecture on Innovation Cell in an Orientation Program organized by IITT, Gwalior on 31st August, 2021.

7. Dr. C.S. Malvi delivered a lecture as an Invited Expert on the eve of Engineers Day Celebration on the topic titled "Innovation by Engineers" at Bhabha University, Bhopal on 15th September, 2021.

Departmental Activities

Mechanical Engineering Department has organized AICTE sponsored one-week online training programme on "Advances in Manufacturing Systems-Phase II" during 20-25th September, 2021. Dr. M.K. Sagar was the programme coordinator and Dr. M.K. Gaur was the convener of the programme. The total no. of 248 candidates was registered for the workshop. A no. of renowned persons was addressed during the sessions. Prof. Rajendra Sahu, Director (ABV-IIITM Gwalior), Prof. M.K. Tiwari, Director (NITIE, Mumbai), Prof. A.K. Agarwal (IIT BHU), Prof. P.K. Ray (IIT Kharagpur), Prof. Pradeep Kumar (IIT Roorkee), Prof. Santosh Kumar (IIT BHU), Prof. G.L. Samuel (IIT Madras), Prof. Puneet Tandon (IIITDM Jabalpur), Prof. Padmanav Acharya (NITIE, Mumbai), Prof. G.S. Dangayach (MNIT Jaipur), Prof. A.K. Dubey (MNNIT Allahabad), Prof. C.S. Malvi (MITS Gwalior), Dr. Shrikrishna N. Joshi (IIT Guwahati), Dr. R.K. Sharma (NIT Jalandhar), Dr. Harlal Singh Mali (MNIT Jaipur), Dr. J.C. Mohanta (MNNIT Allahabad) and Prof. D.P. Kothari (VNIT, Nagpur) were the main resource persons of the workshop.

Faculty Achievement and Activities

1. Dr. C.S. Malvi delivered an online lecture under the 'Expert Lecture Series' on the topic titled "How to write a research project" at MITS Gwalior on 23rd July, 2021.
2. Dr. C.S. Malvi delivered an online lecture under the 'Expert Lecture Series' on the topic titled "IPR and Patent" at MITS Gwalior on 26th August, 2021.
3. Dr. C.S. Malvi delivered an online lecture under the activity 'AICTE-STTP on Advances in Manufacturing Systems' on the topic titled "Solar Panel Manufacturing" at MITS Gwalior on 24th September, 2021.

4. Dr. Nitin Upadhyay attended two days Faculty Induction Programme (FIP)-2021 at MITS Gwalior from 9-10th July, 2021.
5. Dr. Harbhajan Ahirwar attended two days Faculty Induction Programme (FIP)-2021 at MITS Gwalior from 9-10th July, 2021.
6. Dr. Gavendra Norkey attended two days Faculty Induction Programme (FIP)-2021 at MITS Gwalior from 9-10th July, 2021.
7. Dr. Surendra Kumar chourasiya attended two days Faculty Induction Programme (FIP)-2021 at MITS Gwalior from 9-10th July, 2021.
8. Dr. Harbhajan Ahirwar attended AICTE sponsored one week training programme on Advanced Manufacturing systems- Phase-II at MITS Gwalior from 20-25th September.
9. Dr. Gavendra Norkey attended AICTE sponsored one week training programme on Advanced Manufacturing systems- Phase-II at MITS Gwalior from 20-25th September.

Student Achievement and Activities

SUO Krishan Kumar Singh, Enrollment no. 0901ME181052 has been awarded for best the "NCC CWS BEST CADET COMPETITION" and a cheque was given to him of worth Rs. 4500/ by Group Commander Gwalior Brig VM Sharma on 25th August, 2021.



Placement Record

Total 47 students have been placed in various tech companies like LTI (L&T Infotech), Accenture, Jaro Education, TCS, Infosys, L& T infotech, Sudarshan Chemical, Dhoot Transmission Pvt. Ltd., Liugong, Byju's, NKS Agro, upGrad, and Britannia (JB Mangharam Plant, Gwalior) .

Research Publications

1. Thakur V.K., Gaur M.K. & Dhamneya A.K. have published a paper titled "Validation of Thermal Models to Predict the Productivity and Heat Transfer Coefficients for Passive Solar Still with different Nanoparticles" in the Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects. <https://doi.org/10.1080/15567036.2021.1971338>
2. Thakur V.K. & Gaur M.K. have published a paper titled "Heat and Mass Transfer Analysis of Passive Solar Still with Nanoparticles, Operating at Different Water Depth and Various Slope of Glass Cover" in the Journal of Desalination and Water Treatment. <https://doi.org/10.5004/dwt.2021.27627>
3. Singh P. & Gaur M.K. have published a paper titled "Environmental and economic analysis of novel hybrid active greenhouse solar dryer with evacuated tube solar collector" in the Journal of Desalination and Water Treatment. <https://doi.org/10.5004/dwt.2021.27627>
4. Singh P. & Gaur M.K. have published a paper titled "Heat Transfer analysis of Hybrid active Greenhouse Solar dryer attached with evacuated tube solar collector" in the Journal of Solar Energy. <https://doi.org/10.1016/j.solener.2021.06.050>
5. Kushwah A., Kumar A., Gaur M.K. & Pal A. have published a paper titled "Garlic dehydration inside heat exchanger- evacuated tube assisted drying system: Thermal performance, drying kinetic and color index" in the Journal of Stored Products Research. <https://doi.org/10.1016/j.jspr.2021.101852>

6. Sharma N.K., Gaur M.K. and Malvi C.S. have published a paper titled "Application of phase change materials for cooling of solar photovoltaic panels: A review" in the Journal of Materials Today: Proceedings. <https://doi.org/10.1016/j.matpr.2021.05.127>
7. Thakur V.K., Gaur M.K., Dhamneya A.K. and Sagar M.K. have published a paper titled "Performance Analysis of Passive Solar Still with and without nanoparticle" in the Journal of Materials Today: Proceedings. <https://doi.org/10.1016/j.matpr.2021.05.539>
8. Kushwah A., Kumar A., Pal A., and Gaur M.K. have published a paper titled "Experimental analysis and thermal performance of evacuated tube solar collector assisted solar dryer" in the Journal of Materials Today: Proceedings. <https://doi.org/10.1016/j.matpr.2021.04.243>
9. Thakur V.K, Gaur M.K, Sagar M.K & Tiwari G.N. have published a paper titled "A Study on Heat and Mass Transfer Analysis of Solar Distillation Systems" in the Journal of Thermal Engineering. <https://doi.org/10.18186/thermal.978021>
10. Gaur M. K., Tiwari G.N., Singh P. & Kushwah A have published a paper titled "Heat Transfer Analysis of Hybrid Active Solar Still with Water Flowing over Glass Cover" in the Journal of Thermal Engineering. <https://doi.org/10.18186/thermal.989993>
11. S. Srivastava, A. Srivastava, S. Jain, N. Kumar & C. S. Malvi have published a paper titled "Performance analysis of PCM curtain for thermal comfort" in the Journal of Textile and Apparel. <https://doi.org/10.1108/RJTA-05-2021-0066>
12. Norkey G., Singh, K. P., Prajapati, A. and Sharma have published a paper titled "Intelligent parameters optimization for laser cutting of highly reflective and thermally conductive materials using Artificial Neural Network" in the Journal of Materials today proceedings (Elsevier). <https://doi.org/10.1016/j.matpr.2020.10.309>.

13. Singh S.K., Sagar M.K. & Upadhyay R.K. have published a paper titled have published a paper titled "Mechanical characterization of plant fortified fiber polymer composites" in the Journal of Materials today proceedings. <https://doi.org/10.1016/j.matpr.2021.02.507>
14. Aherwar A., Pruncu C.I. & Mia M. have published a paper titled have published a paper titled "Optimal Design Based on Fabricated SiC/B4C/Porcelain Filled Aluminium Alloy Matrix Composite Using Hybrid AHP/CRITIC-COPRAS Approach" in the Journal of Silicon. <https://doi.org/10.1007/s12633-020-00916-1>

Book Chapters:

1. Singh P., Gaur M.K. Enviro-Economic Analysis of Ginger Drying in Hybrid Active Greenhouse Solar Dryer. In: Dubey H.M., Pandit M., Srivastava L., Panigrahi B.K. (eds) Artificial Intelligence and Sustainable Computing. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-16-1220-6_11
2. Thakur V.K., Gaur M.K., Sagar M.K. Performance Analysis of Different Tilt Angles-Based Solar Still. In: Dubey H.M., Pandit M., Srivastava L., Panigrahi B.K. (eds) Artificial Intelligence and Sustainable Computing. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-16-1220-6_17
3. Saxena G., Gaur M.K., Kushwah A. Performance Analysis and ANN Modelling of Apple Drying in ETSC-Assisted Hybrid Active Dryer. In: Dubey H.M., Pandit M., Srivastava L., Panigrahi B.K. (eds) Artificial Intelligence and Sustainable Computing. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-16-1220-6_24
4. Shah R., Pandit R.K., Gaur M.K. Artificial Neural Networks as a Tool for Thermal Comfort Prediction in Built Environment. In: Dubey H.M., Pandit M., Srivastava L., Panigrahi B.K. (eds) Artificial Intelligence and Sustainable Computing. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-16-1220-6_14

5. Kosti S., Malvi C.S., Vishwakarma S.K. (2021) Hybrid Nano-materials Properties Analysis for Solar Photovoltaic. In: Kumar A., Pal A., Kachhwaha S.S., Jain P.K. (eds) Recent Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-15-9678-0_26
6. Singh K.P., Norkey G., Gautam G.D. (2021) Parametric Optimization of Hole Quality in Laser Drilling Kevlar/Basalt Hybrid FRP Composite. In: Parey A., Kumar R., Singh M. (eds) Recent Trends in Engineering Design. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-16-1079-0_18
7. S. K. Chourasiya, G. Gautam, N. Kumar, A. Mohan, S. Mohan have published a book chapter titled "Tribology of Spray Formed Aluminum Alloys and Their Composites" in the book of Tribology and Surface Engineering for Industrial Applications, CRC Press. eBook ISBN9781003097082