Newsletter
Department of Mechanical Engineering

Jan-March 2022
Volume 6 Issue 1

Madhav Institute of Technology & Science, Gwalior-474005

INSIDE THIS ISSUE:

Editorial Team

— **Dr. Amit Aherwar**
— **Dr. Ravi Kant Ranjan**

Students

--- **Nikita Jain**
--- **Nitya Singh**
--- **Ansh Rathore**

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.*

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

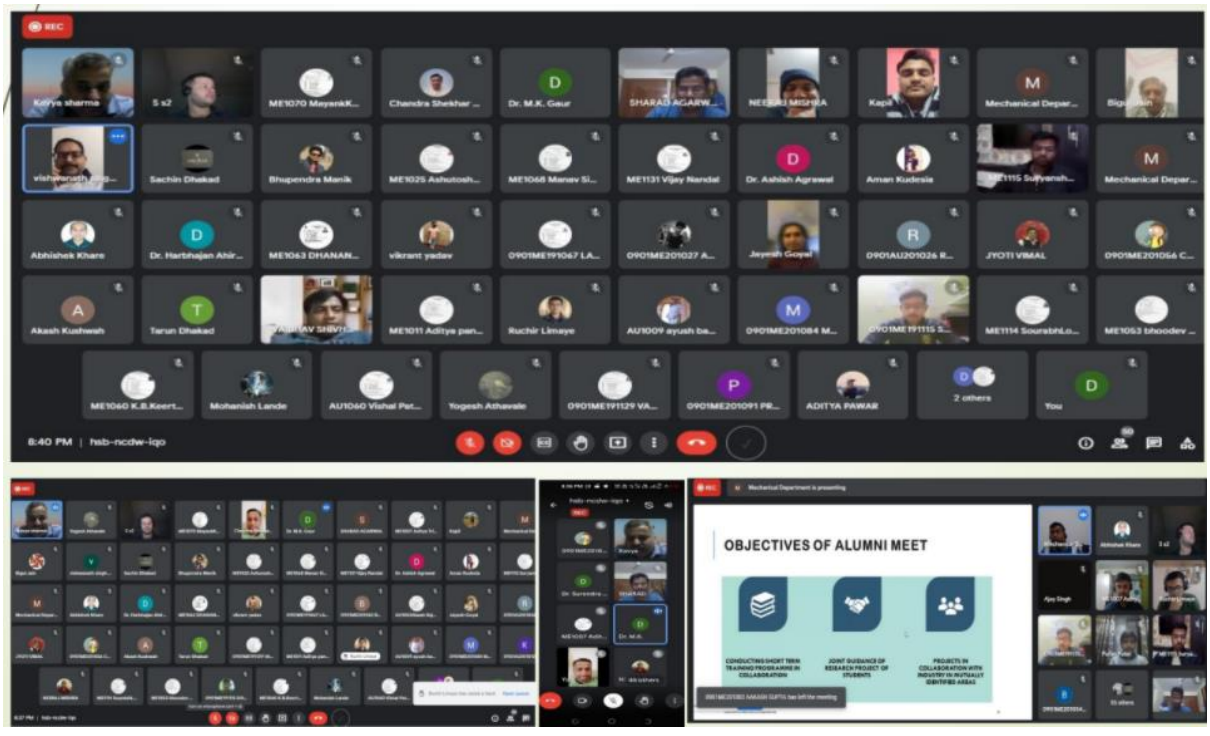
1. Dr. Harbhajan Ahirwar has participated in an International Symposium on "Emerging Materials for Biomedical Engineering" organized by PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur on 30-31st January, 2022.
2. Dr. Ashish Agrawal has participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Avenues for Energy Conservation in Thermal Power Plants" from 07/02/2022 to 11/02/2022 at Anna University.
3. Dr. C.S. Malvi has Chaired a Session in 10th International Conference on "Technology, Innovation and Management for Sustainable Development" (TIMS-2022) at ITM, Gwalior on 25-26 March 2022.

Expert Talks Delivered

1. Dr. M.K. Gaur has delivered an online Expert Lecture in the two weeks online Faculty Development Program titled 'Advances in Solar Distillation System' on the topic titled "Alternative Energy Sources for Sustainable Development" organized by Delhi Technological University, Delhi, during January 3-14, 2022.
2. Dr. M.K. Gaur has delivered an online Expert Lecture in the one week online Faculty Development Program titled 'Recent Trends & Issues in Mechanical Engineering' at GJUS&T, Hisar on 10-15th January, 2022.
3. Dr. C.S. Malvi appeared as a Resource Person at FDP organised by DTU, New Delhi on 11 Jan 2022 on the topic titled "Solar Energy Plant Schemes".
4. Dr. C.S. Malvi delivered a lecture in Industrial Conclave at SisTec, Bhopal on 19 Jan 2022.
5. Dr. C.S. Malvi appeared as a Keynote speaker at □□□□□□□ □□□□□□□-2022, सर □□ □□ रमन □□□□□□□□□□□□□, at Bundelkhand University, Jhansi on 2nd Feb, 2022.
6. Dr. C.S. Malvi appeared as a Resource person at FDP at Architecture department on IPR on the topic 'IPR in Academics and Research' on 24th Feb, 2022.
7. Dr. C.S. Malvi delivered a session on 'National Education Policy in Technical Education regard'; at Workshop at Dr BR Ambedkar Polytechnic College, Gwalior on 14th March, 2022.

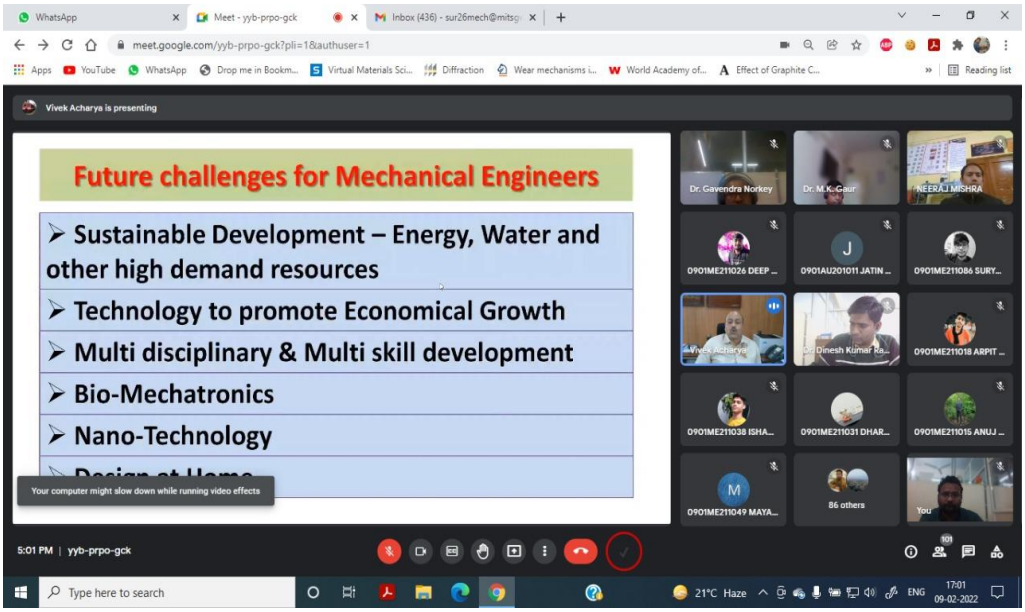
Departmental Activities

6. A alumni meet was organized by the Deptt. of Mechanical Engg. on 18th December, 2021 from 7:00-9:00 pm in virtual mode. It was an incredible virtual reunion of alumni joined from India and Abroad through google meet. It was a reunion of alumni from the USA, Dubai, Singapore, Delhi, Hyderabad, Mumbai, Pune, Nagpur, Local, etc., and the department's students, faculty, and staff members. The alumni meet was conducted to reconnect with the Alumni and celebrate their success and various achievements. The Head of the Department and team alumni cell welcomed all the Alumni and addressed them with thanks to all the alumni for responding to the invitation from the department and being present for the alumni meet despite their busy schedule. He then presented the department report highlighting the various milestones reached in the past year.



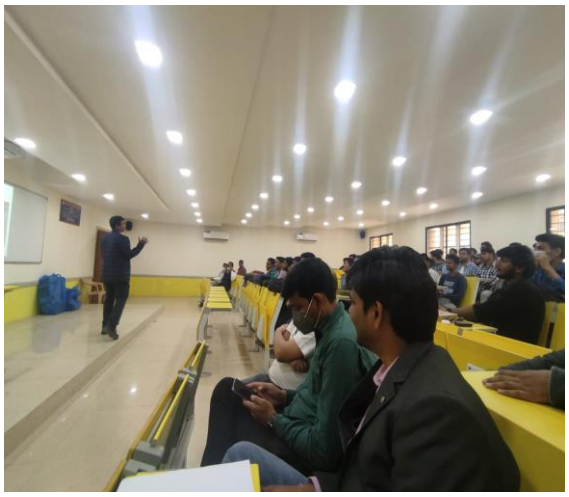
7. An Online Expert Talk on "Dynamic Industrial Scenario & Future Opportunities for Mechanical Engineers" delivered by Shri VIVEK ACHARYA, IRSME Chief Workshop Manager (CWM) Central Railway Loco Workshop, Parel, Mumbai and organized by 'Alumni and Industry Interaction Cell (AIIC)' & Mech. Engg. Deptt., MITS, Gwalior on 9th

February, 2022. Shri V. Acharya spoke about various aspects of recent technological progress in Indian Railway. Dr C S Malvi and Dr Gavendra Norkey are the main convener of the programme.



8. A one-day in-house workshop was organized by the Deptt. Of Mech. Engg. on 17th February, 2022. The purpose of the workshop is to address the special needs of slow and advanced learners through teaching-learning to propose solutions/measures for improving the status of both types of learners, such that their learning goals are achieved. Dr, M.K. Gaur, Dr. C.S. Malvi, Dr. M.K. Sagar, Dr. Jyoti Vimal and Prof. Bhupendra Pandey expressed their thought on the above mentioned topic.

9. Department of Mechanical Engineering has conducted a "Off-line Campus Connect Program" on 02.03.2022 for the 2nd and 3rd year students to sensitize for smooth transition from on-line to off-line classes and to create a sense of belongingness for the institutions.
   Dr. Jyoti Vimal was the chairman of the conducting committee and Dr. D.K. Rathore, Prof. V. Chaturvedi, Dr. S.K. Chaurasiya, Prof. V. Shivhare & Prof. Sharad Agrawal were the members of this committee. Prof. M.K. Gaur & Prof. C.S. Malvi were enlightened the students through their thoughts.



10. Department of Mechanical Engineering has conducted another "Off-line Campus Connect Program" on 14.03.2022 for the 1st year students to sensitize for smooth transition from on-line to off-line classes and to create a sense of belongingness for the institutions.

Dr. Jyoti Vimal was the chairman of the conducting committee and Dr. D.K. Rathore, Prof. V. Chaturvedi, Dr. S.K. Chaurasiya, Prof. V. Shivhare & Prof. Sharad Agrawal were the members of this committee. Prof. M. Pandit, Prof. M.K. Gaur, Prof. C.S. Malvi and other faculty have addressed the students.

6. A team of Innovation cell of Mechanical Engineering Department has involved in the inauguration ceremony of Madhya Pradesh's first Drone School in MITS Gwalior on 10th March, 2022.

7. Department of Mechanical Engineering has conducted an expert session on "Project Planning and Scheduling Theme: Start-up" by a MITS proud alumni Shri Nitesh Kumar Rai ON 16th March, 2021. Dr. C S Malvi, Dr. Gavendra Norkey and Dr. Nitin Upadhaya were the convener of the Programme.

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Faculty Achievement and Activities

1. Dr. M.K. Gaur has delivered a lecture on "Special needs of slow and advanced learners through teaching-learning" on 17th February, 2022 in a programme organized by Mech. Engg. Deptt., MITS, Gwalior.
2. Dr. Dr. C.S. Malvi has delivered a lecture on "Special needs of slow and advanced learners through teaching-learning" on 17th February, 2022 in a programme organized by Mech. Engg. Deptt., MITS, Gwalior.
3. Dr. Dr. M.K. Sagar has delivered a lecture on "Special needs of slow and advanced learners through teaching-learning" on 17th February, 2022 in a programme organized by Mech. Engg. Deptt., MITS, Gwalior.
4. Dr. Jyoti Vimal has delivered a lecture on "Special needs of slow and advanced learners through teaching-learning" on 17th February, 2022 in a programme organized by Mech. Engg. Deptt., MITS, Gwalior.
5. Prof. Bhupendra Pandey has delivered a lecture on "Special needs of slow and advanced learners through teaching-learning" on 17th February, 2022 in a programme organized by Mech. Engg. Deptt., MITS, Gwalior.
6. A poem titled "Main hi Gyan hun, Vigyan hun" written by Dr. C.S. malvi has published in a Gwalior based Newspaper 'Swadesh' on 28.02.2022.

Student Achievement and Activities

1. The Black Panthers, a group of 20 students of MITS, Gwalior got 5th position and awarded by "Future Award" for its future E-bike in an event organized by 'Imperial Society of Innovative Engineers' during 25-29th of December, 2021 at Jhanjeri, Panjab. The team has performed under the guidance of Prof. Vaibhav Shivhare and sponsored by Hero Electric, Nova, AKZONovel, Shri R.P. Agarwaal and Pushpa Ramniwas Rathore.

2. Satyam Singh Rajawat, a final year student of Automobile branch has scored 22nd rank in all over India and 1st rank in Madhya Pradesh and got silver medal in an online National Science Gaming Competition organized by Nuclear Energy Deptt. and Ministry of Science and Technology. 50 participants have got selected in all over India.

3. Mayank Keshri (0901ME191070) of Mechanical Engineering Department has successfully presented a paper titled "Design, Analysis and Fabrication of Agriculture Semi-trailer" and received rank 2nd for the best paper in the theme of 'Design & Manufacturing' in 1st International Conference on Materials, Manufacturing and Energy (ICMME-2021), organized by Rajkiya Engineering College, Mainpuri (UP) on 17-18th December, 2021.

4. Mr. Ayush Verma, an Automobile 3rd year student has successfully submitted and presented a research paper titled "Recent Developments in Smart Mobility and Electric Vehicle: A Review " at International Conference on Materials, Machines & Information Technology, 2022 (ICMMIT-2022), organized by Amity School of Engineering & Technology (ASET) and Amity Institute of information Technology (AIIT), Amity University, Jharkhand, Ranchi held during 24-25th January, 2022.

5. The achievements of some Ph.D. research scholars of Mech. Engg. Deptt. have been published in a newspaper name 'Patrika Plus' on 28.02.2022. Mr. Shubham Shrivastava has preparing a fire fighting suit and hand gloves for the fire-fighter's men, while the team of Vikas Kumar Thakur, Pushpendra Singh, C. S. Koli & Prof. M.K. Gaur have

successfully constructed a Greenhouse Solar Dryer for drying vegetables, food grains or any food items.

6. Mr. Sourabh Dhepte, an alumnus of our department has started his own entrepreneurship and now his product is available on Amazon.
7. A MITS Gwalior passed out student Mr. Abhay Kumar Rishi has scored 140th rank in the GATE-2022 Exam.

नेशनल साइंस गेमिंग कम्पटीशन का परिणाम घोषित

सत्ता सुधार | ग्वालियर

परमाणु ऊर्जा विभाग के इटर-इंडिया और विज्ञान और प्रौद्योगिकी विभाग के विज्ञान प्रसार के सहयोग से आर्यभट्ट विज्ञान क्लब,झारखण्ड द्वारा न्यूक्लियर फ्यूजन पर आधारित ऑनलाइन नेशनल साइंस गेमिंग कम्पटीशन का परिणाम क्लब के समन्वयक श्री आलोक कुमार चौधरी द्वारा ऑनलाइन आयोजित कार्यक्रम में घोषित किया गया। प्रतियोगिता की ग्वालियर चंबल संभाग कोऑर्डिनेटर डॉ. दीप्ति गौड़ ने बताया कि इसमें ग्वालियर के एम आई टी एस कॉलेज के ऑटोमोबाइल इंजीनियरिंग के फाइनल ईयर के स्टूडेंट सत्यम सिंह राजावत ने आल इंडिया 22 वां स्थान प्राप्त कर एवम् मध्यप्रदेश में एकमात्र स्थान ले के ग्वालियर का नाम रोशन किया। पूरे देश के श्रेष्ठ 50 प्रतिभागी का चयन हुआ। इस प्रतियोगिता में फ्रांस में बन रहे 35 देश के सहयोग से बन रहे सूर्य जैसी संरचना कैसे काम करेगी, उस पर यूरोप में बने मोबाइल गेम पर प्रतियोगिता हुई जिसमें, मशीन में ज्यादा से ज्यादा ऊर्जा, कम कार्बन उत्पादन, कम समय में और कम मशीन खराबी पर करना था। इस प्रतियोगिता में 23 राज्यों से कुल 508 एंट्री आई। ऑनलाइन घोषित रिजल्ट कार्यक्रम में बोलते हुए विज्ञान प्रसार के वैज्ञानिक डॉ अरविन्द सी रानाडे और इटर इंडिया के निदेशक श्री उज्जवल बरुआ ने कोऑर्डिनेटर और विजेताओं को शुभकामनाएं प्रेषित की ।

ग्वालियर के सत्यम ने आल इंडिया 22 वा स्थान एवं मध्यप्रदेश में एकमात्र स्थान ले के ग्वालियर का नाम किया रोशन

पत्रिका plus

gwalior.monday 28/02/2022 patrika.com/entertainment 06

national science day शहर के छात्र गढ़ रहे विकास की नई इबारत

फायर कंट्रोल के समय अधिक हीट और शॉर्प ऑब्जेक्ट्स का हैंड ग्लब्स पर नहीं होगा असर

पत्रिका plus रिपोर्टर

तैयार कर रहे फायर फाइटर सूट, टेस्टिंग के बाद नहीं करना होगा एम्पोर्ट

सर सीवी रमन ने 1928 में की थी 'इफेक्ट' की खोज

सोलर ड्रायर सुखाएगा सब्जियां, अनाज सहित सब कुछ

स्वदेश

ग्वालियर - मुख्य संस्करण

Date 28 Feb 2022

राष्ट्रीय विज्ञान दिवस पर विशेष

कविता

मैं ही ज्ञान हूँ, विज्ञान हूँ

मनुष्य न पैदा होता है,
न मरता है, सिर्फ गुजरता है,
और अगर कहीं ठहरता है,
तो सिर्फ पन्नों के बीच,
किताब के यह पन्ने,
बिलकुल हीरे-पन्ने।
पन्नों की यह माला,
जो एक किताब है,
इसमें चाणक्य का हिसाब है,
आइंस्टीन का ख्वाब है,
न्यूटन का सेव है,
आर्कमिडीज का पानी है,
रामानुजन का शून्य है,
प्रेमचंद की कहानी है,
सागर से गहरे हिमालय का भूगोल है,
इतिहास की दस्तक है,
यह पुस्तक है।
इन पन्नों को खोल देना,
पूरी कहानी सुना दूँगी,
एक-एक से मिला दूँगी,
अणु है, परमाणु है,
न्यूट्रॉन, इलेक्ट्रान, प्रोटोन भी,
उसके अंदर जाना हो अगर,
मै रास्ता दिखा दूँगी,
एक-एक से मिला दूँगी।
और पन्ने पलटाओगे,
घर-मोहल्ला, नगर-प्रदेश,
देश-विदेश घूम आओगे,
अंतरिक्ष का अंधकार मिटाओगे।
पर पढ़ना अंत तक,
परत-दर-परत तक।
सूर्य सी ज्ञान की अग्नि को,
मैंने ही आग जलाई,
चक्का भी मैंने ही चलाया,
सुई को सैटेलाइट बनाया,
तुम्हारी आवाज पहुँचाई,
बेतार मीलों तक।
लोग गुजरते गये, मुझे गढ़ते गए,
तुम्हें भी गुजरना है, गुजरो,
पर कुछ देर तो ठहरो,
कि नाम लिख लूँ तुम्हारा,
जिसे लोग पढ़ें, याद रखें,
सदियों तक, विश्वास करो,
मैं ही ज्ञान हूँ, विज्ञान हूँ,
तुम्हारी पहचान हूँ।
दुनिया का सारा रहस्य मैं,
भूत मैं, भविष्य मैं,
मैं ही सदियों की सेतु हूँ,
और सिर्फ तुम्हारे हेतु हूँ
तुम्हारे हर सवाल का जवाब हूँ,
क्योंकि मैं किताब हूँ।
मुझे गढ़ना भी तुमको है,
मुझे पढ़ना भी तुमको है,
तो पन्ने पलटो और ढूँढो अपने को,
कि तुम गुजरे थे यहीं से,
तुम्हें लौट कर आना है यहीं पे,
तो छोड़ो कुछ ऐसे निशान,
कि फिर पहचानना हो आसान।।

डॉ. चन्द्रशेखर मालवी
प्रोफेसर, एमआईटीएस ग्वालियर

Awards & Certificates

Dr. Pratesh Jayaswal has received a Meritocracy award with a certificate of recognition towards his excellent coordination of the TEQIP-III project in the capacity of Academic Coordinator which resulted in the institute securing the 1st rank at national level in the final performance audit of TEQIP-III on the eve of the MITS Day on 10.03.22.

Dr. M.K. Gaur has received a Meritocracy award with a certificate of recognition towards his research contribution in publishing papers in five SCIE, two ESCI and One Scopus Indexed Journals on the eve of the MITS Day on 10.03.22.

Dr. M.K. Sagar has received two Meritocracy award with a certificate of recognition towards his research contribution in publishing paper in one SCIE and for scoring Average FFI greater than 4.25 in both semesters of the July 2020-June 2021 session in 'Engineering Graphics'on the eve of the MITS Day on 10.03.22.

Dr. Amit Aherwar has received a Meritocracy award with a certificate of recognition towards his research contribution in publishing SCIE paper on the eve of the MITS Day on 10.03.22.

Research Publications

1. M.K. Gaur, Amit Shrivastava & Pushpendra Singh have published a paper titled "Mango leather (Aam Papad) drying in hybrid greenhouse solar dryer with evacuated tube collector and finned drying tray: drying behavior and economic analysis" in the journal of 'Energy Sources, Part A: Recovery, Utilization, and Environmental Effects'. DOI: 10.1080/15567036.2022.2029974
2. P. Singh & M.K. Gaur (2022) have published a paper titled "A Review on Thermal Analysis of Hybrid Greenhouse Solar Dryer (HGSD)" in the Journal of Thermal Engineering, 8(1), 103-119. https://doi.org/10.14744/jten.2022.xxxx
3. Kushwah A, Gaur M.K., Kumar A. & Singh P. have published a paper titled "Application of ANN and prediction of drying behavior of Mushroom drying in side hybrid greenhouse solar dryer: An experimental validation" in the Journal of Thermal Engineering, 8(2), 221-234. https://doi.org/10.14744/jten.2021.0006
4. Sampurna Panda, Manoj Gupta, C S Malvi & Babita Panda have published a paper titled "Effect of Depositions on PV Panel with proposal of a self cleaning system in IEEE Explore. DOI: https://doi.org/10.1109/AESPC52704.2021"
5. Nitin Upadhyay, Aditya Sharma, Agnivesh Kumar Sinha, Surendra Kumar Chourasiya have published a paper titled "Wavelet Time Scattering Features for the Bearing Defects Classification" in the Journal of Design Engineering. Vol 2021: ISSUE 09.

Book Chapters:

1. Dr. Neeraj Mishra, 'Machines, Mechanism and Robotics Book Chapter Trajectory Control and Force Control of Biomimetic Fingers by Tendon-Based Actuation System Using Bond Graph', PP 1177-1188 Book Series: Lecture Notes in Mechanical Engineering Print ISBN: 978-981-16-0549-9. https://doi.org/10.1007/978-981-16-0550-5

Patents:

1. Dr. Jyoti Vimal has published a patent titled "Cognitive Computing Based Robot for Active Education Using Artificial Intelligence" on 10th of December, 2021 with the Application No. 202111053730 A
2. Dr. Ravi Kant Ranjan has published a patent titled "Method and Apparatus for Measuring the Absorptivity of Materials Having Different Contour Surfaces" on 7th Jan, 2022 with the Application no. 202131052394.