

Annual Report

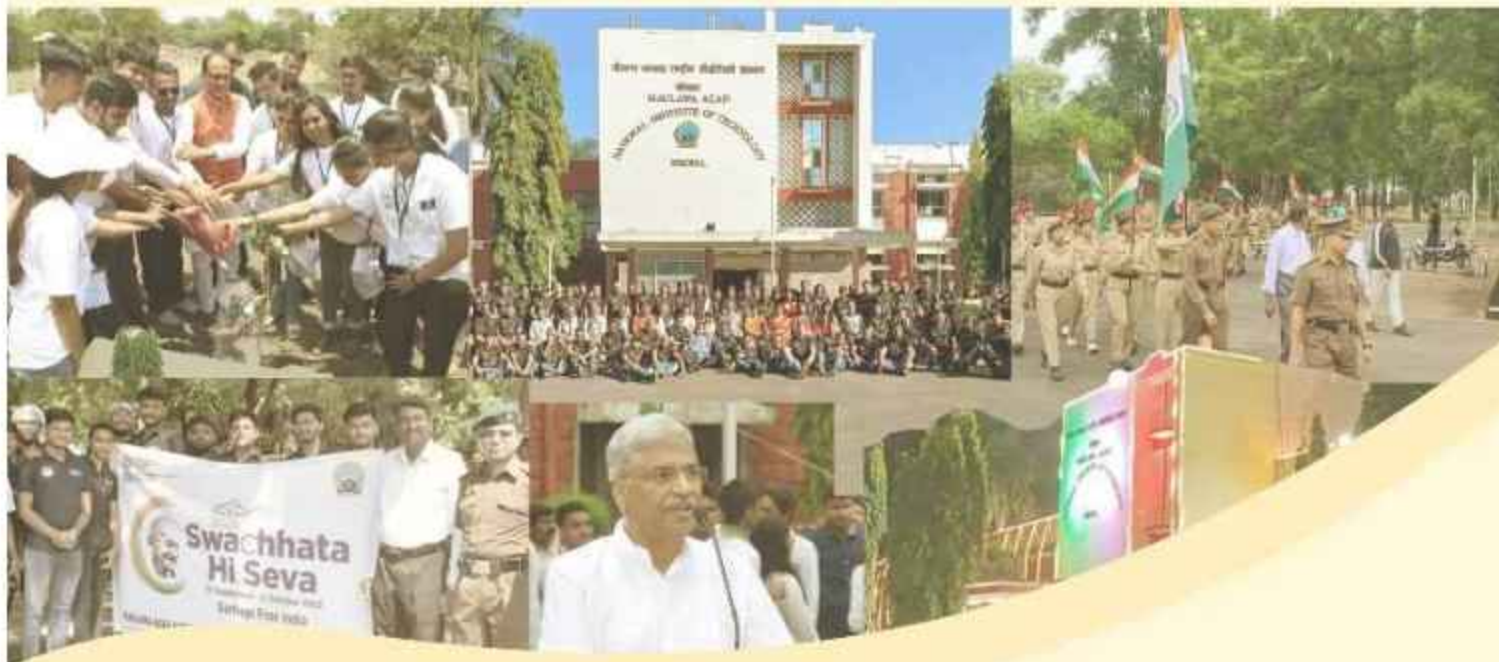
2022-23



मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल 462003
MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY,
BHOPAL 462003

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VISION

MANIT looks forward to becoming a global centre for technical and professional knowledge.

MISSION

To produce technical professionals abreast with competence, logical mind set, moral and ethical values and inner strength synchronous with the futuristic requirement of global business so as to strengthen the national economy.



Introduction

Maulana Azad National Institute of Technology (MANIT) is one of the leading institutions of National Importance in the area of technical education. Established with the objective of developing a 'Centre of Excellence' in Central India, it aims at becoming a multi-disciplinary centre for technical education by strengthening both teaching and research activities besides contributing to the needs of rural community, society and industry at large. MANIT has developed online learning environment during the pandemic. It has sustained and moved further in imparting knowledge to its students defeating the drawbacks of pandemic.

Location

The Institute is situated in the heart of beautiful lake city Bhopal, the capital of Madhya Pradesh with a verdant 650 acre campus and is well connected by rail, road and air transport.

Campus

Located on a plateau at an altitude of 550m, the institute has a magnificent view of the Bhopal capital project of Taty Tope Nagar with adjacent hill and the Secretariat building on one side and Kaliasot dam with newly developing townships of Kolar and Nehru Nagar on the other side. The Institute has a well-equipped campus consisting of Administrative and Institutional Buildings, Workshops, Energy Centre, Computer Centre, Library, Residential accommodation for students and staff and other general amenities like Post-Office, Bank, Shopping Centre, School for children, Dispensary, Auditorium of 700 capacity, Students' Activity Centre, Guest House, Sports Complex and vast expanse of open area in the form of playgrounds.

Historical Background

Government of India and Government of Madhya Pradesh jointly established the Institute on 4th September 1960 to attract bright young students from across the country. It was formerly known as Maulana Azad College of Technology (MACT) that was among the first eight Regional Engineering Colleges of India. It has been named after the great scholar, educationist and the first education minister of Government of India, Late Dr. Maulana Abul Kalam Azad. The foundation stone of the Institute was laid by Late Pandit Jawahar Lal Nehru, the then Prime Minister of India, on 23rd April, 1961. In June 2002, Maulana Azad College of Technology was elevated to the status of a Deemed University bearing the name Maulana Azad National Institute of Technology (MANIT) Bhopal, by the Ministry of Human Resource Development (MHRD), Government of India.

Enjoying the status of an Institution of National Importance, MANIT is funded by Government of India and is governed by the Board of Governors (BOG) constituted as per provisions made under the National Institute of Technology Act 2007. Board of Governors MANIT consists of the Chairperson to be nominated by visitor; the Director, (ex-office); two persons nominated by the Central Government; two persons nominated by the Government of State in which the Institute is situated; two persons, at least one of whom shall be a woman, nominated by the Council; one professor and one assistant professor nominated by the Senate; and the Director of the Indian Institute of Technology in whose zone the Institute is located.

MANIT offers Bachelors, Masters and Doctoral programmes in Architecture and Planning, Engineering and Technology, Sciences, Computer Application, and Management. The programmes of study include nine Bachelors and twenty-nine Masters Programmes, Master of Computer Application (MCA) and Master of Business Administration (MBA) along with Doctoral programmes. The Institute has been conducting full time M. Tech. and industry-oriented courses since August 1968.

Administrative Details

BOARD OF GOVERNORS



Dr. N. S. Raghuwanshi
Director,
MANIT, Bhopal
(Up to 23/01/2023)

Officiating Chairperson &
Member



Dr. R. S. Verma
Director (Officiating),
MANIT, Bhopal
Director,
NIT Allahabad
(24/01/2023 to 31/05/2023)

Officiating Chairperson &
Member



Dr. Karunesh Kumar Shukla
Director (Officiating),
MANIT, Bhopal
(Join from 01/06/2023)

Officiating Chairperson &
Member

Members

Central Government Nominees

Ms. Saumya Gupta, IAS
Joint Secretary (NITs)
Govt. of India
Ministry of Education
Dept. of Higher Education
Shastri Bhawan
New Delhi – 110 115

Shri Sanjog Kapoor
Joint Secretary and FA (NITs)
Govt. of India
Ministry of Education,
Dept. of Higher Education
Shastri Bhawan
New Delhi – 110 115

NIT Council Nominee

Vacant

Vacant

State Government Nominees

Shri Manu Srivastava
Additional Chief Secretary
Dept. of Tech. Education & Skill Dev.
Govt. of Madhya Pradesh,
Bhopal

Vacant

Director of IIT from the Zone

Prof. Suhas S. Joshi
Director
Indian Institute of Technology, Indore
Khandwa Road, Simrol
Indore – 463352 (M.P.)

MANIT Senate Nominees

Dr. Manisha Dubey
Professor
Electrical Engineering Department
MANIT, Bhopal

Dr. Amit Ojha
Assistant Professor,
Electrical Engineering Department
MANIT, Bhopal

Secretary

Shri. Binod Doley
Registrar, MANIT, Bhopal

FINANCE COMMITTEE

Dr. N. S. Raghuwanshi (Officiating Chairperson & Member) Director, MANIT, Bhopal (Up to 23/01/2023)	Dr. R. S. Verma (Officiating Chairperson & Member) Director (Officiating), MANIT, Bhopal Director, NIT Allahabad (24/01/2023 to 31/05/2023)
Dr. Karunesh Kumar Shukla Director (Officiating), MANIT, Bhopal (Join from 01/06/2023)	Ms. Saumya Gupta, IAS (Member) Joint Secretary (NITs) Govt. of India Ministry of Education Dept. of Higher Education Shastri Bhawan New Delhi – 110 115
Shri Sanjog Kapoor Joint Secretary and FA (NITs) Govt. of India Ministry of Education, Dept. of Higher Education Shastri Bhawan New Delhi – 110 115	Shri Manu Srivastava Additional Chief Secretary Dept. of Tech. Education & Skill Dev. Govt. of Madhya Pradesh, Bhopal
Dr. Manisha Dubey Professor Electrical Department MANIT, Bhopal	Shri. Binod Doley (Member Secretary) Registrar, MANIT, Bhopal

BUILDING AND WORKS COMMITTEE

Dr. N. S. Raghuwanshi (Chairman) Director, MANIT, Bhopal (Up to 23/01/2023)	Dr. R. S. Verma (Chairman) Director (Officiating), MANIT, Bhopal Director, NIT Allahabad (24/01/2023 to 31/05/2023)
Dr. Karunesh Kumar Shukla Director (Officiating), MANIT, Bhopal (Join from 01/06/2023)	Director (NITs) (Member) Govt. of India, Ministry of Human Resource Development Dept. of Higher Education Shastri Bhawan New Delhi
Director (IFD) (Member) Govt. of India Ministry of Human Resource Development Dept. of Secondary & Higher Education Shastri Bhawan New Delhi – 110 115	Shri. Sushil Kumar (Member) Superintending Engineer (Civil) CPWD Bhopal Central Circle 52-A, Nirman Sadan, Arera Hills Bhopal – 462 011
Shri. J. P. Jena (Member) Superintending Engineer (Elect.) CPWD Bhopal Central Electrical Circle 52-A, Nirman Sadan, Arera Hills Bhopal – 462 011	Dr. G. Dixit (Member) Dean (P & D) MANIT, Bhopal
Dr. Amit Ojha (Member) Assistant Professor Electrical Engineering Department MANIT, Bhopal	Shri. Binod Doley (Member Secretary) Registrar, MANIT, Bhopal

SENATE MEMBERS

Prof. Karunesh Kumar Shukla Director & Chairman Senate Committee	Shri Binod Doley Registrar & Secretary Senate Committee
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SENATE MEMBERS

Dr. Aysha Iqbal Professor Deptt. of HSS, IIT Madras, External Member	Dr. B.K. Panigrahi Professor, Deptt. of Electrical Engineering, IIT Delhi, External Member
Dr. Rajani Joshi Professor, Deptt. of Mathematics, IIT Bombay, External Member	Dr. Alka Bhasat Professor, Architecture and Planning
Dr. Anupama Sharma Professor, Architecture and Planning	Dr. Ashutosh Sharma Professor, Architecture and Planning
Dr. Jagdish Singh Professor, Architecture and Planning	Dr. K. K. Dhote Professor, Architecture and Planning
Dr. Manmohan Kapshe Professor, Architecture and Planning & Dean (R&C)	Dr. Vinay Mohan Das Professor & HOD, Architecture and Planning
Dr. Yogesh Garg Professor, Architecture and Planning	Dr. Kiran Singh Professor & HOD, Biological Science and Engineering
Dr. Rahul M. Shrivastava Professor, Biological Science and Engineering	Dr. Vijay K. Bulasara Asso. Professor & HOD, Chemical Engineering
Dr. Alok Mittal Professor, Chemistry	Dr. Amit Dubey Professor & HOD, Chemistry
Dr. Savita Dixit Professor, Chemistry	Dr. Anil K. Sharma Professor, Civil Engineering
Dr. Charu Parashar Professor, Civil Engineering	Dr. Jyoti Sarup Professor, Civil Engineering
Dr. M. S. Chauhan Professor, Civil Engineering	Dr. M. S. Hora Professor, Civil Engineering
Dr. Mukul Kulshreshta Professor, Civil Engineering	Dr. Nitin Dindorkar Professor, Civil Engineering
Dr. P. K. Agrawal Professor & HOD, Civil Engineering	Dr. P. K. Jain Professor, Civil Engineering
Dr. Rochi Khare Associate Professor, Civil Engineering & Head, Centre of Excellence in Water Management (WM)	Dr. S. K. Dubey Professor, Civil Engineering
Dr. S. K. Katiyar Professor, Civil Engineering	Dr. Vishnu Prasad Professor, Civil Engineering
Dr. Deepak Singh Tomar Professor & HOD, Computer Science and Engineering	Dr. Meenu Chawla Professor, Computer Science and Engineering
Dr. Nilay Khare Professor, Computer Science and Engineering & Head, Centre of Artificial Intelligence (AI)	Dr. R. K. Pateriya Professor, Computer Science and Engineering
Dr. Manisha Dubey Professor, Electrical Engineering & Dean (ID & IR)	Dr. N. P. Patidar Professor & HOD, Electrical Engineering
Dr. R. K. Nema Professor, Electrical Engineering	Dr. Sanjeev Singh Professor, Electrical Engineering & Asso. Dean (PG & Ph.D.)
Dr. Savita Nema Professor, Electrical Engineering	Dr. Shailendra Jain Professor, Electrical Engineering
Dr. Sushma Gupta Professor, Electrical Engineering	Dr. Yogendra Kumar Professor, Electrical Engineering
Dr. Aditya Goel Professor, Electronics and Communication Engineering	Dr. Ajay Somkuwar Professor, Electronics and Communication Engineering
Dr. Arvind Rajawat Professor, Electronics and Communication Engineering	Dr. Jigendra Sen Yadav Professor, Electronics and Communication Engineering
Dr. Jyoti Singhai Professor, Electronics and Communication Engineering & Dean (FW)	Dr. Kavita Khare Professor, Electronics and Communication Engineering

SENATE MEMBERS

Dr. Madhu Shandilya Professor, Electronics and Communication Engineering	Dr. R.K. Baghel Professor, Electronics and Communication Engineering
Dr. R. N. Yadav Professor & HOD, Electronics and Communication Engineering	Dr. Arvind Mittal Professor, Energy Centre & Dean (Academic Affairs)
Dr. Prashant Baredar Professor & HOD, Energy Centre	Dr. Anjali Jain Professor & HOD, Humanities
Dr. Vinita Mohindra Professor, Humanities	Dr. Amit Banerji Professor, Management
Dr. Shuchi Shrivastava Professor & HOD, Management	Dr. Sanjay Shrivastava Professor & HOD, Materials and Metallurgical Engineering
Dr. K. R. Pardasani Professor, Mathematics, Bioinformatics and Computer Applications	Dr. Madhvi Shukla Professor, Mathematics, Bioinformatics and Computer Applications
Dr. Namita Shrivastava Professor & HOD, Mathematics, Bioinformatics and Computer Applications	Dr. Sanjay Sharma Professor, Mathematics, Bioinformatics and Computer Applications
Dr. Sujoy Das Professor, Mathematics, Bioinformatics and Computer Applications	Dr. C. M. Krishna Professor, Mechanical Engineering
Dr. G. Dixit Professor, Mechanical Engineering & Dean (P&D)	Dr. J. L. Bhagoniya Professor, Mechanical Engineering
Dr. K. R. Aharwal Professor, Mechanical Engineering	Dr. R. K. Dwivedi Professor, Mechanical Engineering & Head, Centre of Excellence in Product Design & Smart Manufacturing (CPDSM)
Dr. R. M. Sarviya Professor, Mechanical Engineering	Dr. Rajesh Gupta Professor & HOD, Mechanical Engineering
Dr. Rajesh Purohit Professor, Mechanical Engineering	Dr. S. P. S. Rajput Professor, Mechanical Engineering
Dr. Siraj Ahmed Professor, Mechanical Engineering	Dr. V. K. Soni Asso. Professor, Mechanical Engineering & Asso. Dean (D.I. & UG)
Dr. Fozia Haque Asso. Professor & HOD, Physics	Dr. M. M. Malik Professor, Physics
Dr. Rajnish Kurchania Professor, Physics	Dr. Aruna Saxena Training and Placement Officer

ADMINISTRATIVE HEADS

Dr. Nazendra Singh Raghuvanshi Director (Up to 23/01/2023)	Dr. R. S. Verma Director (Officiating), MANIT, Bhopal (24/01/2023 to 31/05/2023)
Dr. Karunesh Kumar Shukla Director (Officiating), MANIT, Bhopal (Join from 01/06/2023)	Shri Binod Doley Registrar
Dr. Arvind Mittal Dean (Academic)	Dr. Gajendra Dixit Dean (Planning & Development)
Dr. Manmohan Kapshe Dean (Research & Consultancy)	Dr. Jyoti Singhai Dean (Faculty Welfare)
Dr. Manisha Dubey Dean (Institutional Development)	Dr. K. R. Aharwal Dean (Students Welfare)

HEADS OF THE DEPARTMENT/CENTRE

Dr. Jagdish Singh Architecture & Planning	Dr. Rahul M. Shrivastava Biological Science & Engineering
Dr. P. K. Agrawal Civil Engineering	Dr. Vijay Kumar Bolasara Chemical Engineering
Dr. Savita Dixit Chemistry	Dr. Deepak Singh Tamar Computer Science and Engineering

HEADS OF THE DEPARTMENT/CENTRE

Dr. N. P. Patidar Electrical Engineering	Dr. R. N. Yadav Electronics & Communication Engineering
Dr. Vinita Mohindra Humanities	Dr. Rajesh Gupta Mechanical Engineering
Dr. R. K. Nema Materials & Metallurgical Engineering	Dr. Namita Srivastava Mathematics, Bioinformatics & Computer Applications
Dr. Rakesh Kumar Management Studies	Dr. Fozia Haque Physics
Dr. Nilay Khare Artificial Intelligence	Dr. Prashant V. Baredar Energy Centre
Dr. Akhilesh Barve Rolta Incubation Centre	Dr. Ruchi Khare Water Management
Dr. R. K. Dwivedi Product Design and Smart Manufacturing	

CHAIRMAN OF VARIOUS COMMITTEES

Dr. G. Dixit Infrastructure Assessment of T&P Cell Committee	Dr. Jyoti Singhai House Allotment Committee
Dr. Rajnish Kurchania Chairman, Library Committee	Dr. Namita Srivastava Chairman, Internal Complaints Committee (ICC) for prevention of sexual harassment against women
Dr. Pushpendra Yadav Chairman, Council of Wardens (COW)	Dr. C. M. Krishna Chairman, Anti Ragging Committee
Dr. Jagdish Singh Proctor	Dr. V. M. Das Committee for Academic Module on ERP
Dr. R. K. Dwivedi Hostel's Old Furniture Committee	Dr. Ravi Kumar Mandava Committee to Conduct Career & Development Through SMILE ERP
Dr. Vijay Bhaskar Semwal Committee to Conduct Career & Development Through SMILE ERP	Dr. B. N. Roy Committee to Conduct Career & Development Through SMILE ERP

ADMINISTRATIVE OFFICERS

Shri Binod Doley Registrar	Dr. Aruna Saxena Training and Placement Officer
Shri Gaurav Dwivedi Deputy Registrar Establishment Section	Shri Rajesh Lokhande Deputy Registrar Finance and Accounts
Shri Pankaj Kumar Sharma Deputy Librarian Central Library	Dr. Jyoti Lahiri Senior Medical Officer Dispensary
Dr. Aditya Singhai Medical Officer Dispensary	Shri Harish Vaidya Assistant Registrar Store and Purchase
Shri Benny Abraham Assistant Registrar Academic Section	Shri Manav Kumar Singh Assistant Registrar Establishment Section
Shri Anilkumar Shersingh Mistri Assistant Registrar Finance and Accounts	Dr. Rajesh Mishra SAS Games and Sports
Shri Abhishek Sahni Technical Officer CCF	Shri Prashant Manglik Technical Officer CRF



Director Note

Maulana Azad National Institute of Technology is pleased to release its Annual Report for the year 2022-2023 and I am delighted to share the highlights of our major activities, achievements, initiatives and future plans.

After a long spell of pandemic, the classes and activities resumed in March 2022 to its normal functioning with physical joining of students in full capacity. Presently, faculty strength is 225 and students strength including UG/ PG/ PHD/M.Sc. is 6232. Institute offer's 9 UG and 30 PG programmes apart from MBA, MCA, one Dual Degree Course and 2 MSc. Programmes in Physics and Chemistry.

Over the years, slowly and steadily, we have built a strong research tradition, which can be seen by the statistics in terms of various research indicators. We have continuously improved on our credentials in research as evidenced by way of publications, citations, and h-index.

There is a remarkable increase in students pursuing Ph.D. The PhD student strength has increased to 399 in the year 2023. The concept of showcasing the research work of Ph.D scholars was introduced in the form of Research Scholars' Day. Such events encourage multidisciplinary culture in the institute which is very pertinent and in lines of New Education Policy. In this year's Convocation, a total of 1577 degrees will be awarded. These include 36 Ph.D., 957 UG and 584 PG degrees.

The Institute has provided seed research funding of Rs. 05.00 lacs to each new incumbent faculty upon joining the Institute.

Presently there are 38 Research Projects from various sponsoring agencies like DST, DRDO, ONGC, ISRO, ICSSR and MNRE. MANIT has been providing consultancy & testing services to government and private organizations. The number of such projects have increased from 163 in 2022 to 232 in 2023. We have constituted IPR cell which facilitates filing of various IP's innovated by faculty and students. The IPR Policy of the Institute has been framed with the objective of creating awareness about the concept of IPR and to encourage and provide a conducive environment leading to invention of new technologies. Research culture has improved manifolds with substantial number of patents being filed and published. Also, there is a remarkable increase in number of patents granted to various faculty members across different departments. I am happy to share that up to 18 patents have been granted to the various faculty of the institute till date.

MANIT Bhopal has been ranked in the band "PERFORMER" in Atal Ranking of Institutions on Innovation Achievements (ARIIA), 2021 by the Innovation cell, Ministry of Education, GOI among Institutes of National Importance, Central Universities and Centrally Funded Institutes on 29th December 2021.

Centre of Excellence in Cable Technology was established at Energy Centre of the Institute. The Centre of Excellence in cable technology is collaborated with LAPP India Pvt. Ltd. to enhance the industry-academia partnership for the research and development of novel polymeric sheaths used for cable insulation and testing of various parameters of cables. New Centres like Centre of Water Management and Centre of Product Design and Smart Manufacturing, Datacentre with high performance computing facility, Central Research facility, Space Technology Incubation Centre (ISRO) have also come up.

MANIT has signed several MoUs with government and non-government organisations. MoUs are signed with Director General of Police (DGP) Madhya Pradesh Police on Road Safety and Social Security Research, a MoU signed with National Highways Authority of India (NHAI) under Ministry of Road Transport and Highways, Government of India, for working together with mutual cooperation for dissemination of respective expertise in Civil/Highway engineering field through the road infrastructure development.

Another MoU is signed with L&T Defence Mumbai, LAPP India Pvt. Ltd., Indian Space Research Organization (ISRO), MSME GoI, ESIEE Paris (France), Ministry of Education (MoE), Madhya Pradesh Council of Science & Technology Bhopal, MP Pollution Control Board and Jabalpur Nagar Nigam, MP Pollution Control Board and Gwalior Nagar Nigam, MP Pollution Control Board and Bhopal Municipal Corporation, AMP Energy Distributed Generation Pvt. Ltd.

It is my privilege to mention that Two Doctoral research scholars of Department of Architecture and Planning, MANIT received international funding from University of Bath under the research project "Climate-Resilient Energy Sensitive Resilient Environment (CREST) project", sponsored by British Council. Two of our faculty members have visited university of St. Andrews (United Kingdom) as part of collaborative research project entitled "Reinforcing Research Links in Water Treatment and Renewable Energy". The project was funded by Engineering and Physical Sciences Research Council (EPSRC) UK.

One of the important achievements of the institute is implementation of SMILE ERP, a software for managing Institutes of learning and Education. This has helped to achieve paperless Academic and HR administration. We have registered on the portal of digilocker National Academic Depository (NAD) and Academic Bank of Credits (ABC).

During the year, Institute has advertised 107 faculty positions and has successfully carried out recruitment for various non-teaching positions. Further, MACP and DPC were also carried out for the non teaching staff. We also organised a two weeks induction training program for newly joined faculty on Outcome Based Education by NITTR from 12-24 July 2021. The recruitment for the non-teaching along with their MACP has also been done. Further, Institute carried out large numbers of outreach activities including Workshops, FDPs, ATAL FDP and Conferences.

Institute is committed to provide excellent human resource to meet national needs and expectations. MANIT is a dream destination for those who wish to be leaders in science and technology.

MANIT Bhopal has taken several initiatives in restructuring and strengthening its academic programmes at undergraduate (UG) and postgraduate (PG) levels over the past year. Two new M.Sc. programmes have commenced in Physics and Chemistry along with one dual program in Mathematics and Data Science.

As far as infrastructure is concerned the construction of new 600 bedded girl's hostel and extension of VIP Guest house is complete. Renovation of hostels 3 & 4 is completed and hostel 5 & 6 is under process. Campus wide networking and Central Computing Facility including Data centre, HPC and new IOT labs are also established. We have upgraded UG and PG labs, installed high masts lights, 30.5 m high mast National Flag, installed 210 kW additional capacity of solar power and adopted energy efficient measures. Work on improving sports infrastructure is also completed. A new state of the art as multi activity hall having provision of sports activities like badminton and basketball, has come up in the Sports Complex. A new Lawn Tennis Court and Billiards facility is introduced. The renovation work of Yoga Hall is completed. Also, exterior painting and interior painting of campus has been completed.

MANIT has been recognised as District Green Champion for Bhopal district. We have successfully elevated the Swachhata action plan, adopted and implemented best practices in the areas of Sanitation, hygiene, waste management, water management, energy management and greenery management.

I am proud to say, that our students are doing well, in all fields and bringing laurels, to the institute. A special mention that seven alumni of MANIT have been selected in the prestigious civil services examination conducted by UPSC.

There is an active involvement of MANIT faculty, and students, in various outreach activities, including "Unnat Bharat Abhiyan", Ek Bharat Shrestha Bharat, FIT India, Azadi ka Amrit Mahotsav etc. under UBA, Institute received perennial grant awarded. We are an Independent Facilitating Agency for Pradhan Mantri AwasYojna (Urban) Houses for conducting social audits. We are partner Institute with IIT-Bombay in Gandhi Global Solar Yatra and IIT Kanpur in National Air Quality Program. We also mentor Vigyan Jyoti Scheme (DST) of Navodaya Vidyalaya Samiti.

We are committed to continue this progress path and this Annual report is a documentation of our achievements and the activities for the year 2022-23. Wishing MANIT Bhopal to reach new heights!!!

Karunesh Kumar Shukla

Academic Programmes and Department Profile

Under Graduate Programmes

MANIT provides courses of four-year duration leading to Bachelor of Technology degree in Chemical, Civil, Computer Science, Electrical, Electronics & Communication, Materials & Metallurgical and Mechanical engineering. MANIT also offers five years duration Bachelor course in Architecture and four years duration Bachelor course in Planning.

Comparative statement of UG admissions



Post Graduate Programmes

MANIT provides courses of two-year duration leading to Masters of Technology with 28 specializations in different departments. In addition, there is a three years master's programme in computer application. There are two specializations under Masters of Planning and one Masters of Business Administration programme.

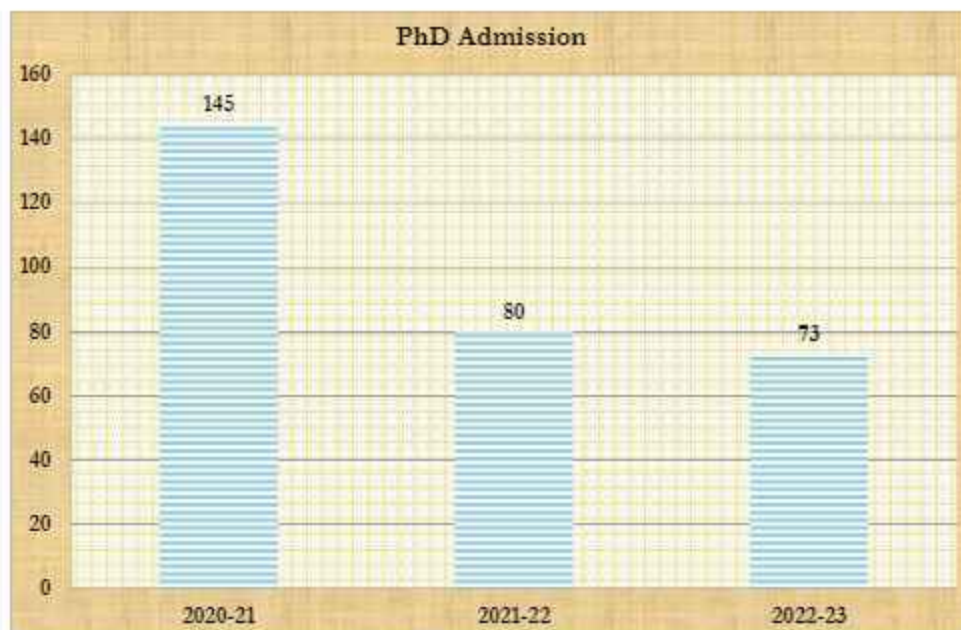
Comparative statement of PG admissions



Doctoral Programmes

MANIT offers Doctoral programme in all Engineering branches and also in Architecture and Planning, Humanities, Management, Physics, Chemistry and Mathematics.

Comparative statement of PhD admissions



Department of Architecture and Planning

The Department of Architecture and Planning, MANIT Bhopal has 27 full time faculty members. The faculty members and students are actively involved in knowledge-based activities like journal publications, conducting and attending conferences, training programs, workshops, international and national research project teams, delivering expert lectures, conducting and participating in more than 70 outreach activities with other institutes of national importance. For the year 2022-2023, faculty members and research scholars gave rich research output by getting 18 journal papers published in international and national journals and presented 25 papers in international and national conferences. Faculty members also published 3 books and contributed in 11 book chapter publications. The department also has some relevant consultancy projects to its credit in the domain of social audit, heritage, architectural design, hospital infrastructure and transportation planning. Additionally, the research projects involve critical topics of climate resilience, tribal area livelihood and water-sensitive design. Also, the department has signed 3 MoUs with ITPI, SPA Bhopal and NIUA for mutual growth. New Labs (4) have been set up in the department for providing the required empirical base to the existing knowledge.

FACULTY

Professor	
Dr. Alka Bharat	Dr. Krishna Kumar Dhote
Dr. Anupama Sharma	Dr. Manmohan Kapshe
Dr. Ashutosh Sharma	Dr. Vinay Mohan Das
Dr. Jagdish Singh	Dr. Yogesh Garg
Associate Professor	
Dr. Charumitra Kapshe	Dr. Savita Subherwal Raje
Dr. Nakul Dhagat	Dr. Seemi Ahmed
Dr. Preeti Onkar	Dr. Sonia Taneja
Dr. Rajat Soni	
Assistant Professor	
Prof. Anugrah Anilkumar Nagaich	Dr. Neha Pranav Kolhe
Prof. Arshi Parashar	Dr. Rahul Tiwari
Prof. Bulbul Shukla	Dr. Rajshree Kamat
Dr. Anuj Jaiswal	Dr. Supriya Vyas
Dr. Kavita Dehelwar	Dr. Surabhi Mehrotra
Dr. Navneet Munoth	Prof. Vicky Lakramsangi

UG Programmes

Bachelor of Architecture (B. Arch)
Bachelor of Planning (B. Plan)

PG Programmes

Master of Planning

Specialization

1. Housing
2. Urban Development

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Abhishek Kumar	Urban Noise
2.	Aditya Palherkar	A Framework to Moderate Surface Temperature by Analysing Thermal Performance of Permeable Grass Pavers in Composite Climate: A Case of Bhopal
3.	Aditya Singh	Identification of Architectural Proportions in Traditional Indian Temples Through Geometric Analysis
4.	Aishwarya Dwivedi	Impacts of Climate Change on Urban Settings
5.	Aishwarya Kasture	Delineating Historic Urban Core
6.	Akansha Shrivastava	Recreational Open Space (ROS) Opportunities for Adolescents and its Association to Their Health
7.	Amit Kumar Biswal	Measuring vitality of urban public spaces
8.	Ankita Shukla	Morphology of Urban Villages
9.	Apurva Sharma	Architectural Design Strategies for Prevention of Airborne Diseases in Educational Institutions: Towards Curbing the Spread of Covid-19
10.	Bhuvnesh Kumar	Neighbourhood Planning
11.	Chitra Srivastava	Resilient Planning Model for Comprehending Carbon-Thermal Scenarios
12.	Divya S Agrawal	Flood-Drought Resilience Through 'Nature Based Solutions'
13.	Gopal Kumar	Framework For Peri-Urban Area Using Dynamic Urban Growth Model
14.	Habib Ul Haque	Evaluating Smart City Ranking Towards Planned Urban Development
15.	Kaushal Kumar	Framework with Passive and Active Measures in Apartment Buildings for Composite Climate for Achieving Maximum Energy Saving Potential
16.	Kirti Trivedi	Assessment of Household Level Water Sensitivity in Indian Cities: A Behavioural Approach

S. No	Name	Title/Area of Research
17.	Manmeet Chandra Verma	Assessment of Neighbourhood Green Space for Children Well-Being in the Metro Cities of Central India.
18.	Mrunmayi Wadvekar	Urban Metabolism Approach for Assessing Wastewater Reuse Potential in Bhopal City
19.	Mukul Prasad	Urban Planning Policies
20.	Neha Pranav Kolhe	Assessment of Slum Redevelopment Models: A Case of Bhopal City
21.	Nirupam Das	Urban Wetland Protection Framework for Resilient Planning
22.	Nupur Saran Saboo	Area of Research-Transformation of Urban Form in Hilly Areas
23.	Pranav Gupta	Land Take Decisions for Delineating Urban Boundary- A Rational Approach
24.	Priya Gupta	Urban Tourism
25.	Purnima Kori	Sustainable Planning and Management for Utility and Services to Mitigate Urban Flooding /Flash Flooding.
26.	Rajat Singh	Customer Satisfaction in Urban Water Systems
27.	Rajat Yadav	Impact of Intermediate Para Transit (IPTs) on City Livability
28.	Rakesh Kumar	Action Plan for Resilient Settlement in Floodplain Area: A Case of Northern Bihar
29.	Rakesh Mistry	Thermal Variability in Urban Residential Neighborhoods: A Parametric Study in Composite Climate
30.	Ram Suhavan Patel	Planning for Stormwater in Urban Areas using Modelling Techniques
31.	Samiksha Choudhry	Indian Architecture
32.	Sandeep Patel	Access to Basic Utility Services- Drinking Water and Sanitation: Analysing the Level of Disparity in M.P.
33.	Sanjeev Kumar	Developing A Land Value Capture Based Framework for Implementation of Urban Development Schemes in India
34.	Satvik Pandey	Role of Charging Infrastructure on Electric Vehicle (EV) Acceptability
35.	Shantanu Singh	A Comprehensive Resilient Index for Urban Floods in Indian Cities
36.	Shashikant Nishant Sharma	Urban Planning and Development Process
37.	Smita Maheshwari	Vulnerability Assessment Urban Water Bodies
38.	Sreemoyee Mitra	Solar Architecture
39.	Srishti Singh	Urban Water Systems
40.	Tanmay Mondel	Impact of Metropolitan region on growth and development of towns
41.	Tanya Dwivedi	Assessment of Water Equity in Indian Cities
42.	Vicky Lakshamsangi	Resilient Urban Spaces
43.	Vikram Chaurasiya	Planning Intervention Towards Development Frame Work For Health Infrastructure

BOOK PUBLICATIONS

1. Rahul Tiwari, "Analyzing Impact of Speed Display System and Electronic Remote Enforcement on Driver Behaviour", Walnut Publication USA, 2023.
2. Rahul Tiwari, Alka Bharat and Yogesh Kumar Garg, "Vision Zero: Systems, Approaches and Methodology", Bloomsbury UK, 2023.
3. Rajshree Kamat, "Planning Model for Earthquake & Flood Prone Town", Walnut Publication-India, UK, USA, 2023.

CHAPTER PUBLICATIONS

1. Arjun Singh Lodhi, Shashikant Nishant Sharma and Kavita Dehalwar, "Framework for Road Safety Improvement Measures for Madhya Pradesh", In: Alka Bharat, Yogesh Kumar Garg and Rahul Tiwari (eds.), Vision Zero - Systems, Approaches and Implementation, Bloomsbury Publishing India Pvt Ltd, 2023.
2. Bhavna Shrivastava, Yogesh K. Garg and Nakul Dhagat, "Concert Evaluation of Housing Delivery Methods in Indian Cities", In: Madogni Vianou Irene (eds.), Research Developments in Science and Technology Vol. 7, B.P. International, 2022.
3. Bhavna Shrivastava, Yogesh K. Garg and Nakul Dhagat, "Discussion on Concert Evaluation of Housing Delivery Methods in Indian Cities", In: (eds.), Research Developments in Science and Technology, B. P. Publication, 2022.
4. Neha Pranav Kolhe, Krishna Kumar Dhote and Aditi Parihar, "Mapping the Access of Internet Facility to Schedule Tribe Population-An Approach Towards Digital Education", In: Amitava Choudhury, Anindam Biswas and Sadhan Chakraborti (eds.), Digital Learning based Education Transcending Physical Barriers, Springer Nature, 2023.
5. Neha Pranav Kolhe, Krishna Kumar Dhote and Gargi Deoti, "Gender and Waste Utilization and Reuse: A Case of Youth Population", In: Prateek Srivastava, Durgaprasad Ramteke, Ankush Kumar Bedyal, Monika Gupta and Jasminder Kaur Sandhu (eds.), Handbook of Research on Safe Disposal Methods of Municipal Solid Wastes for a Sustainable Environment, IGI Publisher, 2023.
6. Rahul Tiwari, Yogesh Kumar Garg and Ms. Utkarsha Negi, "Gender issues in the Public Transport System of India", In: Walter Leal Filho (eds.), SDGs in Asia Pacific, Springer, 2022.
7. Rahul Tiwari and Jayant Singh, "Predicting Urban Future Growth in Bhopal using Artificial Intelligence", In: Sazoj Hiranwal (eds.), Artificial Intelligence and Communication Technologies, IEEE SCRS India, 2023.
8. Rahul Tiwari and Vaibhav Rajoria, "Electronic Remote Enforcement to alter Driver Behaviour", In: Alka Bharat and Yogesh Kumar Garg (eds.), Vision Zero, Bloomsbury UK, 2023.

- Rajshree Kamat, "UNIT3: Chapter IV: Compensation and insurance", In: Rajshree Kamat (eds.), Handbook/Teaching module, "Foundation Course on Disaster Risk Reduction", NIDM, Ministry of Home Affairs, GOI, 2023.
- Shashikant Nishant Sharma, Arjun Singh Lodhi and Kavita Dehalwar, "Approach to sustainable solid waste management in India", In: Ravindra K. Dhir OBE, S. P. Singh, Raman Bedi, Navdeep Singh and Kanish Kapoor (eds.), Proceedings of the International UKIERI Concrete Congress, NIT Jalandhar, 2023.
- Smriti Jain, Anuj Jaiswal and Supriya Vyas, "Trip attraction rate for Commercial Centre: A case study of Sadar manzil, Agra", In: Kamal Singh (eds.), Advances in Civil Engg for Sustainable development, Walnut Publication, 2022.

INTERNATIONAL JOURNALS

- A. Shrivastava and S.Mehrotra, "Emerging trends and knowledge domain of research on urban green open spaces and wellbeing: A scientometric review", Reviews on Environmental Health.
- Gopal Kumar, Supriya Vyas and Kavita Dehalwar, "Planning and Development of Housing in Urban Fringe Area: Case of Bhopal (M.P.)", GIS Business, Vol. 18, Issue 1, pp. 1-14, 2023.
- K.Barpete and S. Mehrotra, "Climate-Informed Planning through Mapping of Urban Thermal Load and Cooling Potential: Case of Tropical City of Bhopal", J. Indian Soc Remote Sens, Vol. 51, pp. 1375-1391 (2023).
- Kirti Trivedi, Manmohan Kapshe, Vinay Mohan Das and Shomit Bada, "Groundwater pricing strategies for Indian cities - a case of Kanpur", Urban Water Journal, Vol. 20, No. 4, pp. 498-512, 2023.
- Leena Thombre and Charomitra Kapshe, "Verification of Connection between Legibility and Conviviality of Public Open Spaces- A Case of New Market, Bhopal", Ecology, Environment and Conservation, Vol. 28(1), pp. 219-226, 2022.
- Pranav Gupta and Alka Bharat, "A hybrid scale to relate natural and built environments: a pragmatic approach to sustainable cities", Int. Journal of Sustainable Development & World Ecology, Vol. 24(11), pp. 13378-13406, 2022.
- Pranav Gupta and Alka Bharat, "Nature-based solutions for flood-drought mitigation using a composite framework: a case-based approach", Journal of Water and Climate Change, Vol. 14(3), pp. 778-795, 2023.
- R. Mistry and S.Mehrotra, "Spatio-temporal Variation of the Daytime Surface Temperature in Local Climate Zones, Forming Cool Island in Bhopal", J Indian Soc Remote Sens, Vol. 51, pp. 713-731 (2023).
- Rahul Tiwari and Yashwanti Sharma, "Public Policies to Promote Renewable Energy Technologies", Materials Today, Vol. 49, Part 2, pp. 366-371, 2023.
- Rahul Tiwari, Antonio Negro and Murthy Bondada, "Analyzing Urban Form on Transit Oriented Development Principles", IRSPSD Journal, Vol. 11, Issue 1, pp. 141-157, 2023.
- Rahul Tiwari, Yogesh Kumar Garg, Anjali Gupta, Vedankur S. Kedar and Nilanjan Paul, "Highlighting Pedestrian Equity Considerations Using Walkability Space Syntax: A Case from Suburb in India", Green and Low Carbon Economy, Vol. 1, No. 2, pp. 85-93, 2023.
- Shantanu Singh, Krishna Kumar Dhote and Sanjeev Kumar, "Assessment framework for public satisfaction on the urban water management attributes in Central India", Current Science, Vol. 124, No. 5, 10, pp. 591-598, 2023.
- Shantanu Singh, Krishna Kumar Dhote and Sanjeev Kumar, "Preparedness of Indian cities for the implementation of urban planning schemes", Current Science, Vol. 124, No. 11, 10, pp. 1282-1289, 2023.
- Sudhir V Dhomane and Krishna Kumar Dhote, "Conservation & Management of Goan Living Heritage ", International Research Journal of Engineering and Technology, Vol. 10 Issue: 03, pp. 995-1003, 2023.
- Vicky Lakramsangi, Lalawipua Khiantse and Andrew Lallianthanga, "Manifestation of Cultural and Settlement Patterns of Vernacular Mizo Villages in Modern Neighborhoods of Mizoram, India", ISVS e-journal, Vol. 9, No. 3, pp. 86-102, 2022.
- Vineet Tiwari, Amit Garg, Manmohan Kapshe, Aashish Deshpande and Saritha Vishwanathan, "Assessing possibilities for coal continuance in India under climate constraints", International Journal of Greenhouse Gas Control, Vol. 122, pp. 103811-1-103811-11, 2023.

NATIONAL JOURNALS

- Anuj Jaiswal, Garima Jain and Subhash Goswami, "Assessment of Satisfaction Level for Existing Public Transport Systems using Machine Learning: A Case of Bhopal (India)", European Transport, Vol. No. 93, pp. 1-16, 2023.
- Shashikant Nishant Sharma, Shankar Chatterjee and Kavita Dehalwar, "Mahatma Gandhi National Rural Employment Guarantee Scheme: Challenges and Opportunities", Think India Quarterly, Vol. 26, Issue-1, pp. 7-15, 2023.

INTERNATIONAL CONFERENCES

- Ankita Shukla and Krishna Kumar Dhote, "Analyzing the Urban Morphology of Housing in Urban Villages", International Research Symposium on Urban Villages, New Delhi, 21-22 May 2022.
- Anuj Jaiswal, Sidhartha Rokade and Neelima Vijay, "Assessment of Satisfaction level of Bus Transport System in Bhopal", TPMDC, IIT Mumbai, 19-21 Dec 2022.
- Arjun Singh Lodhi and Anuj Jaiswal, "Passengers perception and Satisfaction level in Public Transportation", TPMDC, IIT Mumbai, 19-21 Dec 2022.
- Arshi Parashar, Harshit Sohan Lakra, Shiefna S., Kartik Rathore and Vedankur Kedar, "Empatica as A Spatial Research Tool: A Systematic Literature Review", 3rd International and Interdisciplinary Conference on Spatial Methods for Urban Sustainability (SMUS Conference), IIT Roorkee, 23-25 Feb 2023.
- Kahkasha Makrani and Surabhi Mehrotra, "Travel Behaviour Analysis for Areas around Suburban Railway Station" IBSR, IIT Kharagpur, 02-04 Feb 2023.
- Krishna Kumar Dhote and Sanjeev Kumar, "Modern Indian policy for development goals of water and sanitation", IWA World Water Congress and Exhibition, Copenhagen, Denmark, 11-15 Sep 2022.

7. Krishna Kumar Dhote, "Urban Resilience Assessment Framework for Indian Cities", 8th International Seminar on New Urban Agenda- Re-orienting Transformation Strategies for Liveable Cities and Sustainable Communities, 16-17 Dec 2022.
8. Manmeet Chandra Verma and Rajshree Kamat, "To develop an urban green Index to measure the inequality in urban green spaces in Indian cities", 58th World Planning Congress by ISOCARP - International Society of City and Regional Planners on the theme from wealthy to healthy cities at Maison de la Poste, Brussels, Belgium, 04-06 Oct 2022.
9. Neha Pranav Kolhe and Bhuvnesh Kumar, "Child Friendly Environment: A case of Green Infrastructure in Urban neighbourhood", International Conference on Future is Urban 2022, Ahmedabad, 16-18 Dec 2022.
10. Neha Pranav Kolhe and Krishna Kumar Dhote, "Noise Assessment in Formal Areas: A case of Multi storey and Plotted Development", "International Conference on Multidisciplinary Aspects of Design: Enhancing the Connections (ICMAD)", 24-26 Jun 2022.
11. Rahul Tiwari and Nilanjan Paul, "Identifying Parameters for Pedestrian Oriented Development", International Research Symposium on Urban Villages, 2022 New Delhi, 21-22 May 2022 - .
12. Rahul Tiwari and Nilanjan Paul, "Identifying Potential for Non-Motorized Transportation: A case of Siliguri", Infrastructure and Built Environment: Towards Sustainable and Resilient Societies (IBSR), IIT Kharagpur, 02-04 Feb 2023.
13. Rahul Tiwari, Arushi Kamle and Hantapriya Vijay, "Analyzing contribution of first & last mile in overall travel cost", 58th World Planning Congress, ISOCARP, Brussels, Belgium, 04-06 Oct 2022.
14. Rajshree Kamat and Nilesh Kumar Sinha, "Disaster Waste Mitigation", 58th World Planning Congress by ISOCARP - International Society of City and Regional Planners on the theme from wealthy to healthy cities at Maison de la Poste, Brussels, Belgium, 04-06 Oct 2022.
15. Ram Suhawan Patel and Jagdish Singh, "Urban future initiatives with stormwater modelling tools towards spatial planning", International UKIERI Concrete Congress Sustainable Concrete Infrastructure, NIT Jalandhar, Punjab, India, 14-17 Mar 2023.
16. Shashikant Nishant Sharma, Arjun Singh Lodhi and Kavita Dehalwar, "Approach to sustainable solid waste management in India", International UKIERI Concrete Congress Sustainable Concrete Infrastructure, NIT Jalandhar, Punjab, India, 14-17 Mar 2023.
17. Shumaila Saleem, Anuj Jaiswal and Arjun Singh Lodhi, "Green Mobility in Cities: A Case of Jabalpur India", TPMD, IIT Mumbai, 19-21 Dec 2022.
18. Suzabhi Mehrotra and Chitkala Suchitra, "Women perspective for safe and healthy public spaces: Study from Indian city Vijayawada", 58th World Planning Congress, ISOCARP, Brussels, Belgium, 04-06 Oct 2022.

NATIONAL CONFERENCE

1. H. U. Haque, P Patel and J Singh, "Growth of small and medium towns in Indian context with smart city initiatives", 71st Town and Country Planners Conference, on "Challenges for Urban and Regional Planning towards Sustainable Development" Bhuvneshwar, Odisha, 24-26 Feb 2023.
2. Jagdish Singh and T. Bajaj, "Challenges of urbanization and climate change on urban flood volumes to achieve sustainable development", 71st Town and Country Planners Conference, on "Challenges for Urban and Regional Planning towards Sustainable Development" Bhuvneshwar, Odisha, 24-26 Feb 2023.
3. Jagdish Singh, S. K. Sharma and K. Dahelwar, "Envisioning strategies for sustainable peri-urban area planning", 71st Town and Country Planners Conference, on "Challenges for Urban and Regional Planning towards Sustainable Development" Bhuvneshwar, Odisha, 24-26 Feb 2023.
4. Ram Suhawan Patel, Jagdish Singh and Sonia Taneja, "Alternative stormwater management measures and their suitability towards overcoming the challenges for promoting urban and regional planning with sustainable development", 71st Town and Country Planners Conference, on "Challenges for Urban and Regional Planning towards Sustainable Development" Bhuvneshwar, Odisha, 24-26 Feb 2023.
5. Shashikant Nishant Sharma, Kavita Dehalwar and Jagdish Singh, "Envisioning Strategies for Sustainable Peri-Urban Area Planning", 72nd Town and Country Planners Conference, on "Challenges for Urban and Regional Planning towards Sustainable Development" Bhuvneshwar, Odisha, 24-26 Feb 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Member expert Accreditation, Member of National and International committees, Observer, Examiners, Convenor, Board Members etc. Total number of Outreach Activities this year is 74 which includes all type of activities.

MOU DETAILS

S. No.	Name of Coordinator	Name of the agency with which MOU signed
1.	Jagdish Singh	Institute of Town Planners India (ITPI)
2.	Jagdish Singh	School of Planning and Architecture (SPA) Bhopal
3.	Rahul Tiwari, Alka Bharat, Yogesh Kumar Garg	National Institute of Urban Affairs (NIUA), Government of India

RESEARCH PROJECTS

1. Manmohan Kapshe, Yogesh K. Garg and Vinay Mohan Das, "Water for Change "Integrative and fit-for-purpose water sensitive design framework for fast growing liveable cities", Sponsored by Department of Science and Technology, Govt. of India and Netherlands Organisation for Scientific Research.

2. Surabhi Mehrotra, Alka Bharat and Yogesh Garg, "Ensuring Livelihood security through resource optimization model for Tribal Areas of MP", Sponsored by ICSSR, GOI.
3. University of Bath, Rajnish Khurshania (Institute PI), Alka Bharat and Krishna Kumar Dhote, "CREST (Climate-Resilient Energy Sensitive Resilient Environment) project", Sponsored by British Council.

CONSULTANCY PROJECTS

1. Ashutosh Sharma, "BJP Head office cum residential complex at Bhopal", Sponsored by Bhartiya Janta Party.
2. Ashutosh Sharma, "Residential Sainik School at Budni", Sponsored by Saraswati Shishu Mandir.
3. Ashutosh Sharma, "Stage -1 DPR preparation work (Gap Analysis work for Infrastructure, Staff, Equipments and costing for increase of Post Graduate and Undergraduate seats at various Medical Colleges & Hospital beds of Madhya Pradesh)", Sponsored by Department of Medical Education (Central & State) and Project Implementation Unit MPPWD.
4. Jagdish Singh and Siddharth Rokade, "Consultancy Project on Vetting of City entry Junctions, Jabalpur Smart City Limited (JSCL), Jabalpur MP 482001", Sponsored by Jabalpur Smart City, Limited.
5. Jagdish Singh and Supriya Vyas, "Heritage consultation of Heritage Bye-laws of Centrally protected monuments", Sponsored by NMA.
6. Jagdish Singh and Supriya Vyas, "Heritage Consultation of Vetting of Heritage Bye-Laws of CPMs & Protected areas, with NMA", Sponsored by National Monument authority.
7. Jagdish Singh, "Consultancy Project on Heritage Impact Assessment of rock shelters on Adamgarh Hills, Narmadapuram (Earlier Hoshangabad) MP", Sponsored by Divine Builder.
8. Mukul Kulshrestha and Yogesh K. Garg, Vinay M. Das, Nakul Dhagat and Rajat Soni, "Review of Preliminary Design of Statue of Oneness, Omkareshwar", Sponsored by Madhya Pradesh Tourism Development Corporation.
9. Preeti Onkar and Krishna Kumar Dhote, "Social Audit of PMAY projects in Central India", Sponsored by Urban Area Administration Department.
10. Preeti Onkar and Krishna Kumar Dhote, "Vetting of DPR of water body at Ganjbasoda under AMRUT 2.0 Scheme", Sponsored by UADD, Directorate of urban Administration and development MP Bhopal.
11. Rahul Tiwari and Yogesh Kumar Garg and Anuj Jaiswal, "Accident Prevention and Traffic Improvement Plan for Bhopal City", Sponsored by Madhya Pradesh Police.

PROGRAMME DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Manmohan Kapshe, Yogesh K. Garg, Vinay M. Das	Workshop	Bhopal main jalchunotiyon ki peahchantathasamajikjalsamvedansheeltakele ya roadmap	30	24 Mar 2023	24 Mar 2023
2.	Manmohan Kapshe, Yogesh K. Garg, Vinay M. Das	Workshop	Pathways and experiments towards water sensitivity in Bhopal city	30	25 Feb 2023	25 Feb 2023
3.	Rahul Tiwari, Yogesh Kumar Garg, Vinay Mohan Das	STTP	Safe Mobility Planning to Reduce Road Fatalities	40	25 Jul 2022	29 Jul 2022
4.	Vicky Lakramsangi	Organising Secretary for Conference	36 th National Convention of Architectural Engineers & National Conference on Green Buildings, Innovation and Sustainability (NCGBIS) 2022.	200	19 Nov 2022	20 Nov 2022

EXPERT LECTURE ORGANIZED

S. No.	Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
1.	Jagdish Singh, Supriya Vyas	Prof. Reena Tiwari from Curtin University, Perth, Australia	Heritage Conservation	10 Feb 2023
2.	Vicky Lalramsangi	Athar Mansury Assistant Professor, SPA, Delhi	Building Services Lecture Series	24-25 Nov 2022

FOREIGN VISITS

S. No.	Name of Faculty	Purpose / Title of Programme	Country Visited	Duration of visit	
				From Date	To Date
1	Krishna Kumar Dhote	To attend the IWA World Water Congress & Exhibition	Copenhagen, Denmark	09 Sep 2022	17 Sep 2022
2	Rahul Tiwari	Conference Paper and Expert Lecture, 58 th World Planning Congress by ISOCARP - International Society of City and Regional Planners on the theme from wealthy to healthy cities	Belgium, Europe	01 Oct 2022	10 Oct 2022

S.	Name of	Purpose / Title of Programme	Country	Duration of visit
3	Rajshree Kamat	Conference Paper, 58 th World Planning Congress by ISOCARP - International Society of City and Regional Planners on the theme from wealthy to healthy cities	Maison de la Poste, Brussels, Belgium	01 Oct 2022 - 10 Oct 2022

LAB DETAILS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Advance Furniture Lab	Machine and hand tools	Under graduate program	
2.	Construction Yard	machine and hand tools	Under graduate program	
3.	Urban Informatics Lab	Air temperature and Humidity sensors, WBGT Probe, Fish Eye Lens, Wind sensors, , High resolution Satellite images and Object base Analysis Software and Monitors	Undergraduate and Post graduate program, Urban spatial research	Application of GIS data and in spatial planning, Research and development
4.	NITI (Need based initiative towards innovation) Lab	Need-Based Initiatives Towards Innovation, Procurement of areal mapping, photography and remote sensing by drone technology as platform, 3-D Visual / Digitisation as virtual mapping platform	Startups and Innovations	Promoting Research and Development

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
ENVI-MET Science with Bio-Met Software		
Ecognition Developer Teaching Lab Software		
DSLR Camera		
Wind Speed Sensor and Direction Integrated with Radiation and Humidity Sensor		
Action Camera 360 Degree		

SUMMARY

S. No.	Particulars	Total
1.	Faculty Members	27
2.	Phd Scholars	43
3.	Book Publications	03
4.	Chapter Publications	11
5.	International Journal Publication	16
6.	National Journal Publication	02
7.	International Conference Publication	18
8.	National Conference Publication	05
9.	Faculty Outreach	74
10.	MoU's	03
11.	Research Projects	03
12.	Consultancy Projects	11
13.	Workshops/Seminar Organized	04
14.	Expert Lectures Organised	02
15.	Foreign Visits	03
16.	Lab Facilities Developed	04

Department of Biological Science and Engineering

The department of Biological Science & Engineering was established in 2012. The department has 04 highly qualified, dedicated faculty members who strive to produce competent professionals. Faculty members are working on diverse areas of biological science offering broad subject exposure to the students. Some of these areas are Biosensor and Natural products, Genomics, Computational Biology, Bioinformatics, Molecular Signalling and Host Pathogen Interaction. Apart from subject teaching, we also impart research plan & design and presentation skills to our students and provide them guidance for their career in biotechnology. Department offers M. Tech. Biotechnology and PhD courses. Students of our department are excelling in different academic, R&D institutions as well as various biotechnology-based industries. Many students have been selected for various fellowships for higher studies in India as well as abroad. We have 03 well equipped labs offering exposure and training to a broad range of biological instruments and various biological methods. Several research projects from various funding agencies have been implemented in the department and some are ongoing. Dept is planning to offer research based skill oriented PG courses and to start new UG courses.

LAB FACILITIES AVAILABLE IN THE DEPARTMENT

Lab 1: (Genomics Lab): The Genomics Laboratory is an integrated, high-throughput molecular biology laboratory focusing on the development of genetics, genomics and transcriptomics technologies, together with associated laboratory automation systems.

Lab 2: (Computational Biology Lab): Computational Biology lab is an inter-disciplinary special lab focus primarily on developing software skills that are applied in advanced field of genomics and proteomics and drug designing in biological science. Bioinformatics experts collaborate with the lab to provide online intern and short-term workshops regularly.

Lab 3: (Molecular Signalling): Lab is focusing on understanding molecular mechanisms of diseases especially tuberculosis and cancer and identifying targets suitable for drug development. Apart from this, lab is also engaged in developing the process for products of commercial importance. Lab students get exposure to various modern molecular biology methods used in biotechnological interventions.

Lab 4: (Proteomics and Metabolomics lab): Lab is focused on screening and formulation of anti-venom from natural products and fabrication of biosensing devices for the detection of cancer.

FACULTY DETAILS

Professor	
Dr. Kiran Singh	Dr. Rahul M. Shrivastava
Assistant Professor	
Dr. Khushhali Menaria Pandey	Dr. Shivendra K. Chaurasiya

UG Programme

NIL

PG Programme

Master of Technology
(M. Tech.)

Specialization

1. Biotechnology

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Bijna Mathew	Understanding Intrinsic Drug Resistance Mechanisms in Mycobacteria
2.	Ruchi Khare	Biosensors
3.	Rupal Rai	Studies on Glutamate Decarboxylase Dependent Acid Tolerance in Mycobacteria
4.	Sandeep Jhade	Formulation of Antivenom
5.	Sarit Prabha	Phyto chemistry & Bioinformatics
6.	Shrutika Sharma	Transcriptomics & CADD
7.	Vinayak Singh	Studies on Host and Pathogen Derived Pathways Involved in Adaptation and Survival of Mycobacteria within Host Cells

CHAPTER PUBLICATIONS

1. Ruchi Khare, Sandeep Kumar Jhade and Rahul Shrivastava, "Drug Repurposing: An Approach for Reducing Multidrug Resistance", Non-traditional Approaches to Combat Antimicrobial Drug Resistance, 2023.
2. Ruchi Khare, Sandeep Kumar Jhade, Manoj Kumar Tripathi, Rahul Shrivastava, Mohammad Yasir and Rahul Shrivastava, "Foodomics and Green Analytical Technologies", In: Vinay Kumar, Kleopatra Tsatsaraghou and Nilofar Asim (eds.), Chemistry in Agriculture and Food Production, CRC Press, 2023.
3. Satyam Sangeet, Sarit Prabha and Khushhali M. Pandey, "Antibacterial Property of Biologically Synthesized Iron Nanoparticles Against Staphylococcus aureus", In: Puneet Verma, Olusegun D. Samuel, Tikendra Nath Verma and Gaurav Dwivedi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Vol. II, Springer, 2022.
4. Vinayak Singh, Bijina Mathew and Rupal Rai, "Phospholipase C in bacterial infections", In: Edited book (eds.), Phospholipases in Physiology and Pathology, Vol.2, Elsevier, 2022.

INTERNATIONAL JOURNALS

1. Aniruddhya Mukherjee, Khushhali M. Pandey and Sumanta Kumar Sahu, "Identification of possible SARSCoV-2 main protease inhibitors: In silico Molecular Docking and Dynamic Simulation Studies", Beni-Suef University Journal of Basic and Applied Sciences, Vol. 12 (1), pp. 69, 2023.
2. Bijna Mathew, Priyal Gupta and Tabassum Naaz, "Role of Streptococcus Pneumoniae Extracellular Glycosidases in Immune Evasion", Cellular and Infection Microbiology, Frontiers, Vol. 13, pp. 63-70, 03 Feb 2023.
3. Girish Chandra, Ajay Pandey and Khushhali Pandey, "Microstructure, Mechanical, in Vitro Biodegradation, and Antimicrobial Behavior of a MgZn-CaSr/ZrO₂ Composite Prepared Using Powder Metallurgy", CS Applied Bio Materials, Vol. 5(11), pp. 5148-5155, 2022.
4. Lubna Zeena, Shalini Prajapati and Khushhali Pandey, "In silico Screening of Potential Phytochemicals against Extracellular Adherence (EAP) Protein of Staphylococcus aureus from Indian Medicinal Plants", Research Journal of Pharmacy and Technology, 2023.
5. Ruchi khare, Pushpendra Singh and Rahul Shrivastava, "Blueprint of Impedance-based Electrochemical Biosensors as Bioengineered Tools in the Field of Nano Diagnostics", Current Research in Biotechnology, 2022.
6. Rupal Rai, Vinayak Singh and Bijna Mathew, "Mycobacterial Response to Acidic Environment: Protective Mechanisms", Pathogen and Disease journal, Oxford University Press, Vol. 79, pp. 1-9, 03 Oct 2022.

INTERNATIONAL CONFERENCES

1. Bijna Mathew, Kajal Rahangdale and Rupal Rai, "Sigma factor H1 (SigH1): A potential antibiotic stress response regulator in Mycobacterium smegmatis", 62nd Annual International Conference on Microbes in Society: Current Trends and Future Prospects, Mysore, India, 21-23 Sep 2022.
2. Rupal, Rai, Bijna, Mathew and Vinayak, Singh, "The Rv3432c encoding a glutamate decarboxylase enzyme confers acid tolerance in mycobacteria", EMBO Tuberculosis Workshop, Pasteur institute, Paris, France, 12-17 Sep 2022.
3. Rupal Rai, Bijna Mathew and Vinayak Singh, "Mycobacterium smegmatis as the host for overexpression and purification of Mycobacterium tuberculosis protein", Towards end TB: Achievements, Challenges and Future directions; THSTI, Faridabad, India, 23-25 Mar 2023.
4. Shivendra Chaurasiya, "Role of Glutamate metabolism in acid tolerance in mycobacteria", Towards end TB: Achievements, Challenges and Future directions; THSTI, Faridabad, India, 24-25 Mar 2023.

NATIONAL CONFERENCE

1. Sayak Banerjee, Shreshth Gupta and Khushhali M Pandey, "In Silico Approach for Pathway reconstruction to unravel the Evolutionary Significance of Cannabinoid Synthesis", 6th International Conference on Recent Trends in Bioengineering (ICRTB 2023), 20 Jan 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, BoS Members etc. Total number of Outreach Activities this year is 9 which includes all type of activities.

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Khushhali M. Pandey	An Amphibious System To Monitor Water Pollution Using Algae Along with An Early Contamination Warning	Published
2.	Khushhali M. Pandey	Efficient And Sustainable Smart Aquaponic System With Nanotechnology And Automated Control	Published
3.	Khushhali M. Pandey	Smart Portable Vein Image Visualization And Reconstruction System With Predictive Analysis For Blockage Detection	Published
4.	Rahul M. Shrivastava	Fabrication of electrochemical biosensing platform for detection of salivary biomarker CD44	Published

RESEARCH PROJECTS

1. Shivendra K. Chaurasiya, "Determining the Role of Glutamate Decarboxylase in Mycobacterial Drug Tolerance and Adaptation-Survival within Host Cells", Sponsored by SERB, India.

LAB DETAILS

S. No	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Proteomics Lab	HPLC, ELISA reader, Potentiostat, Biosafety cabine, CO ₂ incubator, Electrophoresis unit, Inverted Microscope etc.		High impact international journal publications, conference publications, PhD and Mtech thesis completed

S. No	Name of Lab	Facilities/Equipments	Research Carried	Output
2.	Computational Biology Lab	Discovery Studio, Workstations and Server	PG and PhD research	03 Dissertation Project Complete and 01 PhD Research + 01 Research Paper
3.	Molecular signalling	Target Thermal Cycler (PCR), Electrophoresis Unit, BOD incubator, Double distillation unit, Probe Sonicator, Biosafety cabinet, Type II A2, CO2 incubator, Weighing balance, Water bath, Distillation unit, Microfuge, incubator, Refrigerated centrifuge, Deep freezer, Electroporator, Real Time PCR, Fluorescent Microscope	Host-pathogen interaction and signal transduction, 03 PhD + 03 Mtech. scholars are working, 01 external project running	06 high impact international journal publications, 04 conference publications, M. Tech thesis completed
4.	Plant Genomics Lab	Automatic Autoclave, Cooling Centrifuge-REMI, RT-PCR BIORAD, Colony Counter, Antibiotic Zone Reader, Gel Doc BIORAD, MJ Mini Thermal Cycler BIORAD, Magnetic Stirrer, Vortex, Soxhlet Extraction Unit, Distillation Unit-Anum Pro, Distillation Unit- Anum Advance, Distillation Unit- Anum Bag Tank 50, Hot Air Oven, Humidifier, Light Microscope, Inverted Microscope, Gel Electrophoresis, SDS-PAGE, Rotatory Shaker- neustion, Incubator Shaker, Laminar Airflow	PG and PhD research	08 Dissertation Project Completed and 02 Ph D Research + 01 Research Paper

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
VERTICAL AUTOCLAVE (DR. KHUSHALI M PANDEY LAB)	FOR STERILIZATION PURPOSE	
ORBITAL SHAKER INCUBATOR (DR. KHUSHALI M PANDEY LAB)	FOR INCUBATION OF SUSPENSION CULTURE	
RECIPROCAL SHAKER (DR. KHUSHALI M PANDEY LAB)	FOR SHAKING	

NAME OF EQUIPMENT	PURPOSE / USE	PHOTO
PH METER (DR. SHIVENDRA CHOURASIYA LAB)	FOR MEASURING pH (FREE H ⁺) OF DIFFERENT SOLUTIONS AND BUFFERS USED IN THE LABORATORY.	
Fluorescence Microscope (Dr. Shivendra Chourasiya Lab)	USED FOR DETECTION AND VERIFICATION OF VARIOUS PROPERTIES OF FLUORESCENTLY-LABELLED BIOLOGICAL SAMPLES LIKE MAMMALIAN CELLS	
REAL TIME PCR MACHINE (DR. SHIVENDRA CHOURASIYA LAB)	Monitors amplification of target DNA during the PCR i.e. in real time. It is used for gene expression analysis, genetic variation analysis, miRNA and noncoding RNA analysis, Mutation analysis etc	
Refrigerated Centrifuge (Dr. Rahul M Shrivastava)	For the separation of temperature-sensitive mixtures or samples.	

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	04
2.	Phd Scholars	07
3.	Chapter Publications	04
4.	International Journal Publication	06
5.	International Conference Publication	04
6.	National Conference Publication	01
7.	Faculty Outreach	09
8.	Patents	04
9.	Research Projects	01
10.	Lab Facilities Developed	04

Department of Chemical Engineering

Department of Chemical Engineering was established in the year 2007 and, offers B.Tech., M.Tech. and PhD degree in Chemical Engineering. Presently there are 11 faculty members in the department and all are highly dedicated to the advancement of education and research to produce competent professionals in the Chemical Engineering. The Broad area of the current research focus of the department includes Catalysis, Multi Phase Reaction, Water Splitting, Nanomaterials, Nano Composites, Biofuels, etc. In the current annual year, 22 papers have published in the reputed international journals. Many papers have also presented in renowned international and national conferences. Two external funded projects currently running in the department. Apart from the regular courses the department has also conducted workshops, training programmes and conferences in both the national and international level to provide best technical skills.

FACULTY DETAILS

Associate Professor	
Dr. Vijayakumar Bulasara	
Assistant Professor	
Dr. Bharatkumar K. Modhera	Dr. Rupak Kishor
Dr. Dharmendra Pandey	Dr. S. Suresh
Dr. Jay Mant Jha	Dr. Subhajt Patra
Dr. Kanchapogu Suresh	Dr. Sumit HansapalDhawane
Dr. Rajeer Parmar	Dr. Sunder Lal Pal

UG Programme

Bachelor of Technology (B. Tech.)	Chemical Engineering
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PG Programme

Master of Technology (M. Tech.)	Specialization 1. Industrial Safety and Pollution Abatement
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PHD SCHOLAR DETAILS

S. No	Name	Title/Area of Research
1.	Abhishek Mathur	Development of graphene based nanocomposite material for environmental applications
2.	Dhiraj K. Tatar	Synthesis of nanoparticles and its applications
3.	Jamna Prasad Gujar	Valuable products from Glycerol
4.	Kapil Mewara	Multiphase flow

BOOK PUBLICATIONS

1. Dan Bahadur Pal and Jay Mant Jha, "Sustainable and Clean Energy Production Technologies", Springer Singapore, 2022.

CHAPTER PUBLICATIONS

1. A. Rizwan, M. Bhagat and S. Suresh, "Agricultural waste: An Exploration of the Innovative Possibilities in the Pursuit of Long-Term Sustainability", In: Sarika Verma, Raju Khan, Medha Mili, S.A.R. Hashmi, Avnish Kumar Srivastava (eds.), Advanced Materials from Recycled Waste, Elsevier, 2022.
2. Amit Kumar Sharma, Ravi K. Dwivedi and Bharat Modhera, "A Review of Operating Parameters, Pre-Treatment Process and Digester Design Effect on Biogas Production in Anaerobic Digestion", In: Sadhan Kumar Ghosh, Michael Nelles, H. N. Chanakya, Debendra Chandra Baruah (eds.), Biomethane through Resource Circularity: Research, Technology and Practices, Taylor & Francis Group (CRC Press), 2022.
3. Leena Kapoor, Jay Mant Jha and Dan Bahadur Pal, "Pyrolysis of Waste Biomass using Solar Energy for Clean Energy Production", In: Jay Mant Jha and Dan Bahadur Pal (eds.), Sustainable and Clean Energy Production Technologies, Springer Nature Singapore, 2022.
4. M. Bhagat, S. Singh and S. Suresh, "Utilization of value-added products from Fly Ash-an Industrial Waste", In: Sarika Verma, Raju Khan, Medha Mili, S.A.R. Hashmi and Avnish Kumar Srivastava (eds.), Advanced Materials from Recycled Waste, Elsevier, 2022.
5. Manoj Kumar Tripathi, C. Nickhil and Bharat Modhera, "Biosensor: Fundamentals, biomolecular component, and applications", In: Kunal Pal, Sarika Verma, Pallab Datta, Ananya Barui, S. A. R. Hashmi and Avnish Kumar Srivastava (eds.), Advances in Biomedical Polymers and Composites, Elsevier Publications, 2022.
6. S. Singh, S. Suresh and Diksha, "Cellulosic Bioethanol production from liquid wastes using enzymatic valorisation", In: Pradeep Verma (ed.), Volume II-Enzymes in Valorization of waste, CRC Press, Taylor & Francis, 2022.
7. Vijayalakshmi Gosu, Gayatri Rajpur and S. Suresh, "Photocatalytic Degradation of Organic Pollutants by Using Efficient Nanomaterials", In: Dinesh Kumar, Meena Nemiwal (eds.), Applications of Advanced Nanomaterials in Water Treatment, CRC Press, Taylor & Francis, 2022.

INTERNATIONAL JOURNALS

1. Abhijit Dey, Satarupa Dey and S. Suresh, "Microbial strategies for degradation of microplastics generated from COVID-19 health care waste", *Environmental Research*, Vol. 216, pp. 114438-114449, 2022.
2. Adinath Kate, Shikha Tiwari and Bharat Modhera, "Spotting of Volatile Signatures through GC-MS Analysis of Bacterial and Fungal Infections in Stored Potatoes (*Solanum tuberosum* L.)", *Foods*, Vol. 12, pp. 2083-2098, 2023.
3. Ambikesh Soni, Manohar Prasad Bhandari and Suresh Sundaramurthy, "Nano-biotechnology in tumor and cancerous disease: A perspective review", *Journal of Cellular and Molecular Medicine (Wiley)*, Vol. 27, pp. 737-762, 2023.
4. Anjali Prasad, Jyoti Verma and S. Suresh, "Recent advancement in the applicability of SnO₂-based photo-catalysts for Hydrogen production: Challenges and Solutions", *Waste Disposal & Sustainable Energy*, Vol. 4, pp. 179-192, 2022.
5. Antil M., S. Singh and S. Suresh, "Column optimization of adsorption and evaluation of bed parameters-based on removal of arsenite ion using rice husk", *Environ Sci Pollut Res.*, Vol. 29, pp. 72279-72293, 2022.
6. Debabandya Mohapatra, Bharat Modhera and Alokesh Ghosh, "Development of Electronic Nose for early spoilage detection of potato and onion during post-harvest storage", *Journal of Materials NanoScience*, Vol. 9 (2), pp. 101-114, 2022.
7. Dhiraj Kishor Tatar and Jay Mant Jha, "Wet chemical synthesis and characterization of CuO nanoparticles and their application in pool boiling heat transfer", *Journal of Crystal Growth*, Vol. 617, pp. 127305:1-127305:10, 2023.
8. Dhiraj Kishor Tatar and Jay Mant Jha, "Biosynthesis and characterization of CuO nanoparticles using mehendi and neem leaf extract and its relevance as a nanofluid for heat transfer", *Journal of Crystal Growth*, Vol. 605, pp. 127063:1-127063:9, 2023.
9. Elza Bontempi, Uttpal Anand and S. Suresh, "Occurrence, transformation, bioaccumulation, risk and analysis of pharmaceutical and personal care products from wastewater: a review", *Environmental Chemistry Letters*, Vol. 20, pp. 3883-3904, 2022.
10. Jamna Prasad Gujar and Bharat Modhera, "A Review on Catalytic Conversion of Biodiesel Derivative Glycerol to Bio-Olefins", *Materials Today: Proceedings*, Vol. 72, pp. 2723-2730, 2023.
11. Leena Kapoor, Akbar Mohammad and Jay Mant Jha, "Biofuel production using fast pyrolysis of various plant waste biomasses in fixed bed and twin-screw reactors", *International Journal of Energy Research*, Vol. 46(13), pp. 19278-19286, 2022.
12. Nisha Malik, Vijaya Kumar Bulasara and Soumen Basu, "Surfactant induced ultrafiltration of heavy metal ions from aqueous solutions using a hybrid polymer-ceramic composite membrane", *Chemical Engineering Research and Design*, Vol. 185, pp. 407-417, 2022.
13. Rahul Jarariya and K. Suresh, "Spinel ferrite nanomaterials-MgFe₂O₄-Synthesis by appropriate microwave solution combustion (Msc) method of visible light-responsive photocatalyst for Rb21 dye degradation", *Materials Today: Proceedings*, Vol. 72, pp. 2618-2629, 2023.
14. Rajeev Parmar, "Prediction of intensity of dispersion in surfactant solutions in vertical sparged bubble column", *Asia-Pacific Journal of Chemical Engineering*, Vol. 18(1), pp. 3637-3642, 2023.
15. S. Suresh, Preety Kumari and Jay Mant Jha, "Sonocatalytic removal of naphthalene from an aqueous solution using ZnO nanoparticles", *AQUA-Water Infrastructure, Ecosystems and Society*, Vol. 71(9), pp. 1002-1015, 2022.
16. S. Suresh, M.Sillanpää and F. Banat, "Adsorption of arsenic in aqueous solution onto FeCl₃ impregnated bagasse fly ash", *Journal of Environmental Health Science and Engineering*, Vol. 20, pp. 861-879, 2022.
17. S. Suresh, Shashi Bala and A. K. Sharma, "Performance evaluation of environmentally sustainable precast cement concrete paver blocks using fly ash and polypropylene fibre", *Sustainability*, Vol. 14(23), pp. 1569-1575, 2022.
18. Sasan Zahmatkesh, Mostafa Hajiaghahi-Keshteli and Suresh Sundaramurthy, "Wastewater Treatment with Nanomaterials for the Future: A State-of-the-Art Review", *Environmental Research*, Vol. 216, pp. 114652-114660, 2023.
19. Shikha Tiwari, Umang Goswami and Bharat Modhera, "Biological relevance of VOCs emanating from red onions infected with *Erwinia (Pectobacterium) carotovora* under different storage conditions", *Postharvest Biology and Technology*, Vol. 184, pp. 111761-111773, 2022.
20. Subhajit Patra, Sarang Tamhankar and Rajeev Parmar, "Mathematical modeling of bubble size distribution in bubble column", *Materials Today: Proceedings*, Vol. 72 (5), pp. 2637-2642, 2023.
21. U. Anand, Anukool Vaishnav and S. Suresh, "Current advances and research prospects for agricultural and industrial uses of microbial strains available in world collections. *Science of the Total Environment*", *Science of the Total Environment*, Vol. 842, pp. 156641-156646, 2022.
22. Uttpal Anand, Tarun Pal and Suresh Sundaramurthy, "The spread of the Omicron variant: identification of knowledge gaps, virus diffusion modelling, and future research needs", *Environmental Research*, Vol. 225, pp. 115612-115618, 2023.

NATIONAL JOURNALS

1. Battula Kumara Raja, Nipun Mohindra and Bharat Modhera, "Conversion of Glycerol to Solketal using Heterogeneous Catalysts", *Journal of The Institution of Engineers (India): Series E*, Vol. 103, pp. 145-148, 2022.

INTERNATIONAL CONFERENCES

1. Archa Vasanthan, S. Suresh and Abhishek Mathur, "Is the use of waste tissue papers an answer to the problems of global warming and pollution?", *International Conference on Sustainable Technologies in Water Treatment and Desalination (STWTD-2022)*, Department of Chemical Engineering, National Institute of Technology Calicut, Kerala, 28 Jan 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest Editor etc. Total number of Outreach Activities this year is 19 which includes all type of activities.

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1	Ajoy Debbarma and Suresh Sundaramurthy	Pyrolysis system for thermal decomposition of biomass	Granted

RESEARCH PROJECTS

1. Bharat Modhera and C. Sasikumar, "Design and Development of Ultrasonic Transducer", Sponsored by ISRO, Bengaluru.
2. S. Suresh, Sanika Verma, Moh. Khan and A. K. Srivastava, "Development of Carbon Nanofiber Materials from Cow-Dung/Bio-Sludges for Smart Fabric Textile and Selective CO₂/H₂ Energy Storage Applications", Sponsored by Ministry of Textile, NTM.

CONSULTANCY PROJECTS

1. A. K. Sharma and S. Suresh, "Strategical survey and assessment of air pollution in the non-attainment cities of Madhya Pradesh", Sponsored by M/s Center for Study of science, Technology and Policy, Bangalore.
2. M. S. Chauhan and S. Suresh, "Water Quality monitoring and assessment of Central Effluent Treatment Plant (CETP), Indore, Madhya Pradesh", Sponsored by Industrial Central Effluent Treatment Plant (CETP), Indore.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1	Suresh S.	Organizer & Moderator,	Academia-Industry Interaction on "Entrepreneurship and start-up, Opportunities in Carbon and Allied Industry	100	09 Dec 2022	09 Dec 2022
2	Suresh S.	Organizer & Moderator,	Felicitation of GATE2023 Rankers	65	20 Mar 2023	20 Mar 2023

LAB DETAILS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1	Ultrafast cooling research laboratory	Muffle furnace, Ultrasonic Bath, Plate cooling setup and transient temperature measurement	Nanoparticle preparation and its different application	2 SCI publication

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
Pilot plant for biodiesel production	For the continuous production of biodiesel	
Microwave Reactor	Synthesis of material and its performance under microwave conditions	

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
Wetted Wall Column	Demonstrate Air absorption in water and simultaneously moisture of air. Experimentally calculate the mass transfer coefficient	
Solid-in Air Diffusion	Study the diffusion of naphthalene in air. Determine the diffusivity of solids	
Spectrophotometer	Demonstrate the Beer-Lamberts law to Calculate the concentration of unknown samples obtained in experiments	

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	11
2.	Phd Scholars	04
3.	Book Publications	01
4.	Chapter Publications	07
5.	International Journal Publication	22
6.	National Journal Publication	01
7.	International Conference Publication	01
8.	Faculty Outreach	19
9.	Patents	01
10.	Research Projects	02
11.	Consultancy Projects	02
12.	Workshops/Seminar Organized	02
13.	Lab Facilities Developed	01

Department of Chemistry

Department of Chemistry caters the needs of the industry and academia and offers courses for under graduate B. Tech. students on the Engineering Chemistry and Environmental Science and PG course in Chemistry. The courses have been designed in such a way that students are able to utilize their applied chemistry knowledge to develop innovative technologies in various fields for the welfare of society and nation at large. All the students passed out in the very first batch of M.Sc. have secured good jobs or research positions worldwide. Department also runs Ph.D. program in the field of Water Treatment, Polymers Sciences, Natural Products, Nano Technology etc. and possesses well-established laboratories equipped with sophisticated instrumentation. Over the years the research carried out by the department has been published in various high impact journals and received excellent citations. All the faculty members of the department are committed to provide quality research and excellence in academics.

Department has following UG and PG Laboratories:

- Analytical Chemistry UG Lab
- Engineering Chemistry UG Lab
- Organic Chemistry PG Lab
- Physical Chemistry PG Lab
- Analytical/Inorganic Chemistry PG Lab
- Research labs of each faculty

FACULTY DETAILS

Professor	
Dr. Alok Mittal	Dr. Savita Dixit
Dr. Amit Dubey	
Assistant Professor	
Dr. Dharmendar Kumar Sharma	Dr. Sukanti Behera
Dr. Jyoti Mittal	

UG Programme

NIL	
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PG Programme

M. Sc.	Specialization
	Chemistry

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Anjali Yadav	Synthesis and Photophysical Characterization of Lead free Perovskite Nanomaterials using Spectroscopic and Microscopic Approaches
2.	Arala Ramesh	Synthesis & applications of 2D Transition Metal Dichalcogenides
3.	Bhagwan Singh Lokwanshi	Development and Characterization of Sustainable hybrid reinforced aluminium metal matrix composites
4.	Bharti Yadav	Water Treatment
5.	Deepa Ahirwar	Development, Testing and Characterization of self healing polymer composite
6.	Shalu Patel	Biomedical Implants
7.	Subodh Kumar	Fabrication and characterization of hybrid metal matrix composites by stir casting technique
8.	Yashwant Yadav	Development and characterization of high performance hybrid polymer composite material from waste PET using chemical recycling.

BOOK PUBLICATIONS

- Huma Ali and Savita Dixit, "A Comprehensive Review of Herbalism", Cambridge Scholars, 2023.

CHAPTER PUBLICATIONS

- Amit Dubey, Savita Verma and C. Sasikumar, "Structure Activity Relationship of Functionalized Porous Graphene Oxide Nanocomposites for Catalytic Applications", In: Victor Martinez-Luaces (eds.), A Closer Look at Chemical Kinetics, Nova Science Publishers, 2022.
- Jyoti Mittal, Charu Arora and Alok Mittal, "Application of Biochar for the Removal of Organic Dye - Methylene Blue from Aquatic Environment: A Review", In: I. Anastopoulos, E. Lima, L. Meili, D. Giannakoudakis (eds.), Biomass Derived Materials for Environmental Application, Elsevier, 2022.
- P. Dutta, P. Dutta, C. Arora and Jyoti Mittal, "Metal Organic Frameworks for Detection and Adsorptive Removal of Pesticides", In: Tyagi and M.H. Dehghani (eds.), Sustainable Material for Sensing and Remediation of Noxious Pollutants, Elsevier, 2022.

INTERNATIONAL JOURNALS

1. H. Darazi, Alok Mittal and Jyoti Mittal, "Study on the biodegradability improvement of 2,4 dinitrophenol in wastewater using advanced oxidation/reduction process with UV/SO₂/ZnO", Environmental Science and Pollution Research, Vol. 30, pp. 22273-22275, 2023.
2. Huma Ali, Kiran Rohit and Savita Dixit, "Fabrication and Characterization of Eco-friendly Natural Human Hair fiber reinforced Polyester Composites", Journal of Natural Fibers, Vol. 20 (1), 2023.
3. Kaushal V. Kumar and Alok Mittal, "Electrochemical Energy Storage and Hydrogen Peroxide Sensing using Hybrid Framework of CeO₂-MnO₂ on Carbon Nano Fibre Composite", Journal of Alloys and Compounds, Vol. 934, pp. 167740, 2023.
4. Mitali Dugvekar and Savita Dixit, "Chemical Treatments for modification in the surface morphology of Coir fiber: A Review", Journal of Natural Fibers, Vol. 19, pp. 915-922, 2022.
5. Mitali Dugvekar and Savita Dixit, "Thermal, structural, and morphological examination of mercerized coir fiber-reinforced composites", SAGE Part E, Vol. 237 (3), pp. 982-988, 2023.
6. P. Saharan, V. Kumar and Alok Mittal, "A Comprehensive Review on the Metal Based Green Valorized Nanocomposite for the Remediation of Emerging Colored Organic Waste", Environmental Science and Pollution Research, Vol. 30, pp. 45677-45700, 2023.
7. Sanju Sonia, Nidhi Raia and Jyoti Mittal, "Enhanced sequestration of an acidic dye on novel bimetallic metal-organic framework", Journal of Dispersion Science and Technology.
8. Savita Dixit, "Plastic k kachre se taiyyarhoga plywood ka vikalp", Built Environment, Vol. 8 (4), pp. 20, 2022.
9. Savita Dixit and Deepthi Trivedi, "Sahjan: Superfood", Rajbhasha Bharti Patrika, ISSN no 09709398 Hindi, pp. 67-72, 2022.

INTERNATIONAL CONFERENCES

1. Savita Dixit, "Waste to Best", Advancement in Core and Frontier of Physics (ACFP- 23) and GLA University, Mathura, 17-19 Feb 2023.
2. Yashwant Kumar Yadav, Savita Dixit and Gajendra Dixit, "Fabrication and Mechanical behaviour of Date Palm Fiber Reinforced High performance polymer composite", Future Trends in Materials and Mechanical Engineering (ICFTMME-2022) and SRMIST, Delhi NCR Campus, Ghaziabad, 19-20 Aug 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 18 which includes all type of activities.

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Gajendra Dixit, Savita Dixit	A Modified Concrete Composition	Granted 23 May 2022
2.	Gajendra Dixit, Savita Dixit, Subodh Kumar	A Paver Block and a Composition for the same	Granted 23 Nov 2022

RESEARCH PROJECTS

1. Alok Mittal and Jyoti Mittal, "Design and Evaluation of Nanostructured Materials for Wastewater Treatment", Sponsored by MHRD (Ministry of Education).
2. D. K. Sharma, "Development of Lead Free Perovskite Halide Materials and In-Situ Photophysical Characterization for Quantum Dot based Display Applications", Sponsored by SERB/SRG Govt. of India.
3. D. K. Sharma, "Exploring morphological effects on the Photophysical properties of Lead Free Halide Perovskite Nanocrystals", Sponsored by UGC-DAE CSR, India.

EXPERT LECTURE ORGANIZED

S. No.	Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
1	Savita Dixit	Shri AmoghLila Das Prabhu	A Stimulus to Rise	20 Jan 2023

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
(a) Honeycomb optical table with pneumatic isolation, and (b) Basic inverted microscope		
Fume Hood		
CW 405 & CW 532 Diode pumped lasers		
Gratings, Slit, Excitation and Emission		

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
filters etc.		
Laser Optics, Mounts and other Precision Tools		
Micro-centrifuge		
Monochrome CCD Camera		
Heating mantle with magnetic stirrer		

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	06
2.	Phd Scholars	08
3.	Book Publications	01
4.	Chapter Publications	03
5.	International Journal Publication	09
6.	International Conference Publication	02
7.	Faculty Outreach	18
8.	Patents	02
9.	Research Projects	03
10.	Expert Lectures Organised	01

Department of Civil Engineering

The Department of Civil Engineering is one of the oldest department of the Institute started in 1960. It offers B.Tech (Civil Engineering) degree and 6 M. Tech. degree in Hydro Power Engineering, Geotechnical Engineering, Structural Engineering, Environment Engineering, Transportation Engineering and Geo informatics specialization. It also offer Ph.D degree. The department has 32 highly qualified and dedicated faculty who strives to produce competent professionals who are abreast with the latest technology and are equipped with enterprising skills necessary for a designer and also for a site engineer.

FACULTY DETAILS

Professor	
Dr. A.K.Sharma	Dr. Nitin Dindorkar
Dr. Charu Parashar	Dr. P.K.Agarwal
Dr. Jyoti Sarup	Dr. P.K.Jain
Dr. M.S.Chauhan	Dr. S.K.Dubey
Dr. M.S.Hora	Dr. S.K.Katiyar
Dr. Mukul Kulshrestha	Dr. Vishnu Prasad
Associate Professor	
Dr. Abhay Sharma	Dr. M.K.Choudhary
Dr. H.L.Tiwari	Dr. Rakesh Kumar
Dr. H.S.Kaur	Dr. Ruchi khare
Dr. Kamal Singh	Dr. Siddhartha Rokade
Dr. Kishan Dharavath	Dr. Suneet Kaur
Assistant Professor	
Dr. A.K.Thawait	Dr. Priyanka Dhurvey
Dr. Bivina G.R.	Dr. Raman Nateriya
Dr. Juned Raheem	Dr. Rutuja Manohar Chavan
Dr. Neera; Tiwari	Dr. S.P.S.Rajput
Dr. Pritikana Das	Dr. Vivek Garg

UG Programme	
Bachelor of Technology (B.Tech.)	Civil Engineering
PG Programme	
Master of Technology (M. Tech.)	Specialization 1. Environmental Engineering 2. Geoinformatics & its Application 3. Geotechnical Engineering 4. Hydro Power Engineering 5. Structural Engineering 6. Transportation Engineering 7. Water Resource Engineering

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Aashanksha Rawat	Efficiencies of Irrigation
2.	Abhijeet Shukla	Not decided yet
3.	Abhijit Saha	Experimental Investigation and Analysis for Scour around Bridge Piers
4.	Abhishek Soni	Evaluation of Ecofriendly Ultra High Performance Concrete (UPHC) containing Agriculture and Industrial Waste as a partial Replacement of Sand.
5.	Aditya Bhargava	Not decided yet
6.	Akanksha Bilthare	Assessing the feasibility of using lignin as a bitumen alternative in the production of asphalt pavements
7.	Akash Jaiswal	Behavior of Dual Layered Encased Stone Columns in Loose Sand Under Shear Load
8.	Aman Tiwari	Numerical evaluation of capacity of laterally loaded pile adjacent to sloping ground
9.	Amit Mandal	Not decided yet
10.	Ankur Sharma	Impact of Climate Change on Hydrological Variables of Middle Tapi Basin
11.	Anurag Saraogi	Not decided yet
12.	Chandra Prakash Gaur	Study on strength and Durability of geopolymers concrete using Bone China Waste and Recycled Concrete Aggregates
13.	Deepak Mishra	Not decided yet

S. No.	Name	Title/Area of Research
14.	Dungar Singh	Proactive Safety Evaluation at Unsignalized Intersections under Mixed Traffic Conditions
15.	Farooque Rahman	Scour analysis around bridge piers
16.	Harsh Sharma	Not decided yet
17.	Hemant Choudhary	Experimental Investigation of newly fabricated pervious paver block developed using construction and demolition waste
18.	Himanshu Pathak	Water pollution
19.	Jitendra Nardeo	Dynamic analysis of beams using method of initial functions
20.	Karan Moolchandani	Influence of crumbed rubber, thermal and stone industry waste on strength, durability and morphological properties of modified concrete
21.	Karan Singhai	Not decided yet
22.	Kartikya Mishra	Not decided yet
23.	Kundan Kumar Sahu	Not decided yet
24.	Man Singh Meena	Not decided yet
25.	Mansi Tiwari	Effect of climate change on water resources
26.	Mohit Sheode	Not decided yet
27.	Neeraj Jatar	Not decided yet
28.	Neeraj Kumar	Behaviour of Dual Layered Geosynthetic Encased Stone Column in Soft Soils
29.	Nishant Singh	Development of a GIS based framework for Road Accident Analysis of urban Bhopal
30.	Oman Sayyed	A study on the influence of micro and nano particle inclusions in concrete towards a sustainable solution
31.	Parth Verma	Design, Development and Performance Evaluation of Metakaolin based Geopolymer Concrete
32.	Priyanshu Jain	Optimization of Water Distribution Networks for Energy Recovery Through Leakage Reduction
33.	Pushpendra Singh Palash	Design Development and Application of geopolymer concrete
34.	Rahul Tanwar	Multimodal Transport System
35.	Rakesh Chand	Not decided yet
36.	Sachin Kumar	Hydrological Modelling - Sediment Yield Analysis
37.	Satyam Mishra	Batch and column adsorption studies for simultaneous removal of nitrate, sulfate and phosphate from aqueous solution
38.	Saumya Anand	Trip Generation
39.	Saurabh Kumar Anuragi	AI Application in Landslide Susceptibility
40.	Shani Singh	Not decided yet
41.	Shashank Chaudhary	Geopolymer Concrete
42.	Shivendra Singh Kushwah	Not decided yet
43.	Shrish Chandrawanshi	Structure-Soil-Structure interaction between Adjacent Buildings
44.	Sphuryt Ramani	Not decided yet
45.	Subham Singh Verma	Not decided yet
46.	Suneel Kumar	Not decided yet
47.	Suniri Kumari	Bridge piers scour analysis
48.	T.M. Prateek	Soil structure interaction of shell footing
49.	Tushar Golait	Nonlinear interaction analysis of irregular RC space frame-soil system on sloping grounds
50.	Umare Shobhangi Niranjan	Ground Water Quality Assessments
51.	Upkar Singh	Design optimisation of hydrokinetic turbine model
52.	Urvashi Srivastava	Not decided yet
53.	Utkarsh	Stabilization of Expansive Soil by the use of EPS Beads and conventional admixtures.
54.	Vaishali Yede	Numerical analysis of soft clay reinforced with stone column under sustained loading conditions.
55.	Velagapalli Chiranjeevi	Evaluating the performance of stone dust, Granite dust, Marble dust and Calcium lignosulphate as soil stabiliser to be used in subgrade
56.	Vijay Singh Solanki	Performance Indicator Benchmarking of Urban Public Transport System in India
57.	Vinay Raj	Remediation of Metals: Lead, Cadmium, Chromium from Aqueous Solution Through the Combination of Biosorbents
58.	Vineet Kushwaha	Not decided yet
59.	Vishal Jain	Not decided yet
60.	Yash Rathore	Manufactured Sand Concrete

BOOK PUBLICATIONS

1. Kamal Singh, H. L. Tiwari and Rakesh Kumar, "Advances in Civil engineering for sustainable Development- Construction Technology", Walnut publication USA, UK & India, 2022.
2. Kamal Singh, H. L. Tiwari and Rakesh Kumar, "Advances in Civil engineering for sustainable Development- Water Resources Engineering", Walnut publication USA, UK & India, 2022.

- Priyanka Dhurvey, Saurabh Aggrawal and Chandra Prakash Gour, "Flexure Analysis of Laminated Composite Plates under Sinusoidal Loading: A Numerical Approach", Notion Press, 2023.

CHAPTER PUBLICATIONS

- A. Balvanshi and H. L. Tiwari, "Climate Change Impact on Future Reference Evapotranspiration and Crop Evapotranspiration for Maize in Sehore District of Madhya Pradesh. In: Timbadiya", In: P.V. Singh, V.P. Sharma, P.J. (eds) Climate Change Impact on Water Resources (eds.), Climate Change Impact on Future Reference Evapotranspiration and Crop Evapotranspiration for Maize in Sehore District of Madhya Pradesh. In: Timbadiya, Springer, 2023.
- A. Balvanshi, V. Poonia, M. K. Goyal, A. Gupta, A. K. Gupta and H. L. Tiwari, "Quantitative Assessment of Impact of Climate Change on Crop Yield over Sikkim and Central Region of India", In: Hydro-Meteorological Extremes and Disasters. Disaster Resilience and Green Growth (eds.), Hydro-Meteorological Extremes and Disasters. Disaster Resilience and Green Growth, Springer, 2022.
- A. S. Raghuvanshi, H. L. Tiwari and S. A. Barbhuiya, "Performance Evaluation of Lumped Conceptual Rainfall-Runoff Genie Rural (GR) Hydrological Models for Streamflow Simulation. In: Timbadiya", In: P.V. Patel, P.L. Singh, V.P. Sharma, P. J. (eds), Performance Evaluation of Lumped Conceptual Rainfall-Runoff Genie Rural (GR) Hydrological Models for Streamflow Simulation. In: Timbadiya, Springer, 2023.
- Aman Tiwari, Nitin Dindorkar and Suneet Kaur, "Numerical evaluation of capacity of laterally loaded piles adjacent to sloping ground", Proceedings of the Indian Geotechnical conference 2022 Volume 5-Geotechnics: Learning, Evaluation Analysis and Practice (GEOLEAP), Springer, Accepted for publication 2023.
- Ankur Sharma, Ruchi Khare & Vishnu Prasad and M.K. Choudhary, "Hydrologic Impact Evaluation of land use and Land Cover Change in Subbasins of Tapi River Using SWAT Model", Springer, 2023.
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- Bhushan Rode and Ruchi Khare, "Numerical Simulation for Design Improvement in Diffuser of Centrifugal Pump", In: Suman Saha, A. S. Sajith, Dipi Ranjan Sahoo, Pradip Sarfar (eds.), Recent Advances in Material Mechanic and Structures, Select Proceedings in ICMMS 2022, Oct 2022.
- Bivina G.R. and M. Parida, "Objective and Subjective Approaches towards Analysis of Level of Service of Sidewalks", In: A. K. Maurya, B. Maitra, R. Rastogi and A. Das (eds.), Proceedings of the Fifth International Conference of Transportation Research Group of India. Lecture Notes in Civil Engineering, Springer, 2022.
- C. Mahajan, Daungarsingh and Pritikana Das, "Pedestrian movement at an urban uncontrolled intersection: A case study of Bhopal", In: CTRG (eds.), Proceedings of the Sixth International Conference of Transportation Research Group of India, Lecture notes in civil engineering, 2022.
- Chouhan H, Pritikana Das and Dungar Singh, "Qualitative and quantitative evaluation of urban car parking system: A case study of Bhopal city", In: CTRG (eds.), Proceedings of the Sixth International Conference of Transportation Research Group of India, Lecture notes in civil engineering, 2022.
- Dungar Singh and Pritikana Das, "A Review on Surrogate Safety Measures in Safety Evaluation and Analysis", In: CTRG (eds.), Proceedings of the Sixth International Conference of Transportation Research Group of India, Lecture notes in civil engineering, 2022.
- Jitendra Sharma, M.K. Choudhary, and Rahul Jaiswal, "Assessment of Crop Requirement in the Context of Climate Change", Springer, 2023.
- M. S. Hora, H. L. Tiwari and Y. Bhagat, "Seismic Performance Evaluation of Residential Cum Commercial Infilled Building. Technological Innovation in Engineering Research", In: Faculty of Industrial Technology, Phranakhon Rajabhat University, Thailand (eds.), Seismic Performance Evaluation of Residential Cum Commercial Infilled Building. Technological Innovation in Engineering Research, 2022.
- Prajakta Surkar and M.K. Choudhary, "Climate Change Impact Assessment on Water Resources - A Review", Springer, 2023.
- Parth Verma, Priyanka Dhurvey and Chandra Prakash Gour "Utilization of E- Waste as Coarse Aggregates in Geopolymer Concrete, Sustainable Approaches and Strategies for E- Waste Management and Utilization. IGI Global, 2023"
- Priyanka Dhurvey, Harsh Panthi and Parth Verma, "Utilization of waste ceramic Tiles as Coarse Aggregates", In: Priyanka Dhurvey; Harsh Panthi; Parth Verma; Chandra Prakash Gour (eds.), Waste Recovery and Management, CRC Press, 2023.
- Ruchi Khare, "Comparing a Parameter less Technique Jaya with Parameters-Based Evolutionary Algorithms", In: R. V. RAO (eds.), Advanced Engineering Optimization Through Intelligent Techniques. Lecture Notes in Mechanical Engineering, Springer, Singapore, springer, 2022.
- Ruchi Khare, "Effect of Runner Hub Cone Geometry on Performance of Kaplan Turbine using CFD", In: R. V. Rao (eds.), Advanced Engineering Optimization through Intelligent Techniques. Lecture Notes in Mechanical Engineering, Springer, Singapore, springer, 2022.
- Ruchi Khare, "Optimized Design of Pipe network using Rao Algorithm", In: R. V. Rao (eds.), Advanced Engineering Optimization through Intelligent Techniques. Lecture Notes in Mechanical Engineering, Springer, Singapore, springer, 2022.
- Sarvesh P. S. Rajput, Amit Mandal and Hemant Choudhary, "Engineering properties of paver block prepared by incorporation of stone dust as part replacement of river sand for heavy traffic condition", Springer, 2023.

INTERNATIONAL JOURNALS

- Abhay Carpenter and M. K. Choudhary, "Water Demand and Supply Analysis using WEAP Model for Veda River Basin Madhya Pradesh (Nimar Region), India", Trends in Sciences, Vol. 19(6), pp. 3050-3061, 2022.

2. Abhijit Saha and H L Tiwari, "An Investigation on Scour of Bridge piers having various geometry and length width ratio on non uniform sand bed", *Journal of SCOPE*, Vol. 13 (1), pp. 567-583, 2023.
3. Akash Jaiswal and Rakesh Kumar, "Influence of dual layer confinement on lateral load capacity of stone columns: An Experimental Investigation", *Geomechanics and Engineering*, Vol. 32, pp. 567-581, 2023.
4. Akshay Gupta, Bivina G.R. and Manoranjan Parida, "Prioritising Pedestrian's Needs around Transit Stations through Walkability Assessment: A walk audit tool approach", *16th World Conference for Transportation Studies (WCTR, 2023)*, 2023.
5. Akshay Gupta, Bivina G.R. and Manoranjan Parida, "How Metros' Catchment Area Affect Commuters Choice to walk or use Feeder Modes?", *16th World Conference for Transportation Studies (WCTR, 2023)*, pp. 61-77, 2023.
6. Alok Singh and A. K. Thawait, "Assessment of Streamflow in Ken River Basin using Swat Model", *IJRES*, Vol. 10 and 12, pp. 54-59, 2022.
7. Amardeep Kumar and Jyoti Sarup, "Soil Erosion and Sediment Analysis of Tawa Reservoir, District Narmadapuram M.P. using Remote Sensing and GIS", *Journal of Earth Science & Climatic Change*, Vol. 14, Issue 5, pp. 1-8, 2023.
8. Ankur Sharma, Ruchi Khare and Vishnu Prasad, "Assessment of spatio-temporal variation of water balance components by simulating the hydrological processes of a large complex watershed", *Environmental Earth Sciences*, Vol. Environmental Earth Sciences, pp. 82-127, 2023.
9. Ankur Sharma, Ruchi Khare and M. K. Choudhary, "Assessment of spatio-temporal variation of water balance components by simulating the hydrological processes of a large complex watershed", *Environmentalearthsciences*, Vol. 127, pp. 1-17, 2023.
10. Ankur Vishwakarma, M. K. Choudhary and M. S. Chauhan, "Non-parametric trend and the validity of a newly developed drought indicator for agricultural application over the central India region", *Arabian Journal of Geosciences*, Vol. 15(4), pp. 1-13, 2022.
11. Ankur Vishwakarma, M. K. Choudhary and M. S. Chauhan, "Assessment of CMIP5 and CORDEX-SA experiments in representing multiscale temperature climatology over central India", *Water Practice and Technology*, Vol. 17(9), pp. 1923-1936, 2022.
12. Brijkishore, Ruchi Khare and Vishnu Prasad, "Numerical analysis of cavitation hydrodynamics at different Kaplan runner solidity", Vol. 266, Part 3, pp. 11218-, 15 Dec 2022.
13. Chandra Prakash Gaur, Priyanka Dhurvey and Nagaraju Shaik, "Optimization and Prediction of Concrete with Recycled Coarse Aggregate and Bone China Fine Aggregate using Response Surface Methodology", *Journal of Nanomaterials*, Vol. 2022, pp. 1-11, 07 Oct 2022.
14. Chandra Prakash Gaur, Priyanka Dhurvey and Nagaraju Shaik, "Design of Structural Concrete with Bone China Fine Aggregate using Static Approach", *Advances in Materials Science and Engineering*, Vol. 2022, pp. 1-12, 31 Aug 2022.
15. Yuvraj Goyal, S. Meena and Mukul Kulshrestha, "Real-time emissions of gaseous pollutants from vehicles under heterogeneous traffic conditions", *Scientific Journal of Silesian University of Technology Series Transport*, 2023.
16. H L Tiwari, M S Hora and Bikram Prasad, "Development Of Stilling Basin Models with Appurtenances", *International Journal of Engg. Management & Research (IJEMR)*, Vol. 12(5), pp. 1-5, 2022.
17. K. Kumar, M. Kumar and P. Das, "Traffic congestion Forecasting using Multilayered deep neural network", *Transportation letters: the international Journal of Transportation Research*, 2023.
18. Monika Vyas and Mukul Kulshrestha, "Immobilization of radioactive waste material in concrete matrix-A study of leachability aspects", *Materials Today: Proceedings*, 2023.
19. Monika Vyas and Mukul Kulshrestha, "Removal of radioactive material (Uranium-VI) from low level wastewaters and subsequent disposal of loaded biomass", *Materials Today: Proceedings*, 2023.
20. Neeraj Kumar, Rakesh Kumar and Akash Jaiswal, "Numerical Analysis of a Dual-Layer Geosynthetic Encased Stone Column Installed in Soft Soil", *Advances in Civil Engineering*, 2023.
21. Nikita Palod, Vishnu Prasad and Ruchi Khare, "A new multi-objective evolutionary algorithm for the optimization of water distribution networks", *Vol. IWA Journal of Water Supply*, pp. Water Supply, 22 (12) 8972, 2022.
22. Parth Verma, Priyanka Dhurvey and Venkatesa Prabhu Sundramurthy, "Potential Assessment of E-waste Plastic in Metakaolin waste geopolymer using Petrography image Analysis", *Advances in Materials Science and Engineering*, Vol. 2022, pp. 1-10, 14 Sep 2022.
23. Parth Verma, Priyanka Dhurvey and Venkatesa Prabhu Sundramurthy, "Structural Behaviour of Metakaolin Geopolymer Concrete Wall-Type Abutments with Connected Wing Walls", *Advances in Materials Science and Engineering*, Vol. 2022, pp. 1-10, 22 Aug 2022.
24. Priyanshu Jain and Ruchi Khare, "Multi-objective Rao algorithm in resilience-based optimal design of water distribution networks", *Vol. Water Supply (2022) 22 (4): 4346-4360*.
25. Rajat pandey, Jyoti Sarup and Shafique Martin, "The optical trapezoidal Model of OPTRAM based soil moisture Estimation", *Journal of Spatial Science*, 01 Mar 2023.
26. Rutuja Chavan, Anurag Sharma and Bimlesh Kumar, "Turbulence Anisotropy around Bridge Piers in Seepage Affected Sand Bed Channel", *Journal of Turbulence*, Vol. 23(1-2), pp. 52-67, 2022.
27. Sai Amulya Nyathikala, Tooraj Jamsab and Kulshrestha Mukul, "Utility governance, incentives, and performance: Evidence from India's urban water sector, *Utilities Policy*", *Utilities Policy*, Vol. 82, pp. 1-14, 2023.
28. Shivam Singh, Bikram Prasad and H L Tiwari, "Sedimentation analysis for a reservoir using remote sensing and GIS techniques", *ISH Journal of Hydraulic Engineering*, Vol. 29(1), pp. 71-79, 2023.
29. Vikalp Chouhan, G. D. Singhal and Rutuja Chavan, "A review of sediment deflection in rivers using submerged vanes", *ISH Journal of Hydraulic Engineering*, Vol. Accepted, pp. 1-17, 2022.
30. Vikalp Chouhan, E. Padhi and Rutuja Chavan, "A Review of Bridge Scour Mitigation Measures Using Flow Deflecting Structures", *ISH Journal of Hydraulic Engineering*, Vol. Accepted, pp. 1-14, 2023.

INTERNATIONAL CONFERENCES

1. Abhijeet Singh, H. L. Tiwari and Abhay Sharma, "Mapping of surface water bodies using Google Earth Engine: A Review", 27th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24, Dec 2022.
2. Ankur Sharma, Ruchi Khare, and M.K. Choudhary, "Hydrologic Impact Evaluation of land use and Land Cover Change in Subbasins of Tapi River using SWAT Model", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
3. Atul Singh, Sumit Raikwar, Priyanka Dhurvey, Parth Verma and Chandra Prakash Gour, "Comparative Analysis of Drying Shrinkage of Mortar with varying ratio of Fly Ash and GGBS", NCGBS 2022, 19-20 Nov 2022.
4. Badree Sahu, Priyanka Dhurvey, Parth Verma, Juned Raheem and Aditya Bhargava, "Behaviour Analysis of Layered Beam Using ANSYS", AMMT 2022, 22-26 Nov 2023.
5. Chandra Prakash Gour and Priyanka Dhurvey, "Sustainable Utilization of bone china aggregates in Geopolymer Concrete", ICRTMD-2023.
6. Dasari Navya and Vishnu Prasad, "Comparative Study of Performance of Elbow and Conical Draft Tube at Different Operating Conditions", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering, 2023.
7. Dasari Navya and Vishnu Prasad, "Study on Effects of Turbine Operating Conditions on Conical Draft Tube Performance", 9th International and 49th National Conference on Fluid Mechanics and Fluid Power, 2023.
8. F. Rahman, A. K. Thawait and C. Rutuja, "Groundwater Quality Assessment For Drinking Purpose In Bhopal City, M.P Utilizing Geographic Information System And Water Quality Index", 27th International Conference on Hydraulics, Water Resources, Environmental And Coastal Engineering (Hydro 2022 International) At Punjab Engineering College Chandigarh, India, 22-24 Dec 2022.
9. Farooque Rehman, A Thawait and Rutuja Chavan, "Groundwater Quality Assessment for Drinking Purpose in Bhopal City, M.P. Utilizing GIS and Water Quality Index", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
10. H. L. Tiwari and M. S. Hora, "Analysis of Hydraulic Jump in Open Channel", 27th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24 Dec 2022.
11. H. Chouhan, P. Das and D. Singh, "Qualitative and Quantitative Evaluation of Urban Car Parking System: A Case Study of Bhopal City", TIPCE, IIT Roorkee, 14 Sep 2022.
12. H.L. Tiwari and M.S. Hora, "Analysis of Hydraulic Jump in Open Channel ranking within 100)", 27th International conference on hydraulics and water resources - Hydro 2022, 22-24 Dec 2022.
13. Hardik sharma, H. L. Tiwari and Abhay Sharma, "Flash Drought Analysis and its Impact", 27th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24 Dec 2022.
14. Jitendra Namdeo and S.K. Dubey, "Development of relation for shear factor and power factor for modal analysis of beams", 4th International conference (On line) on "Sustainable materials and structures for civil Infrastructures" organised by UIT, RGPV Bhopal, 26-27 May 2022.
15. Karthikeya Mishra, H. L. Tiwari and Neeraj Tiwari, "Estimation of Reservoir Sedimentation Using Satellite Images", 28th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24, Dec, 2022.
16. Kundan Kumar Sahu, Charu Parashar and Priyanka Dhurvey, "Numerical Analysis of Cross Flow Hydro Turbine with Different Number of Blades", ICFTES 2022, 9-11 Jun 2022.
17. Manjeet Deharia and Rutuja Chavan, "Study of Various Shapes of Gyroscopes Using Flow 3D", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), December 22-24, 2022.
18. Neelima C. Vijay, Siddhartha Rokade and Bivina G. R., "A review on Pedestrian Level of Service for Sidewalks", 15th International Conference of Transportation Planning and Implementation Methodologies for Developed Countries (TPMDC), 19-12-2022.
19. P. Sruthakeerthi and M. K. Choudhary, "Soft Computing Techniques Hybridised with Swarm Intelligence Metaheuristic Algorithms for Estimating Reference Evapotranspiration - a Review", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
20. C. Parvez, P. Das and D. Singh, "Proactive Safety Assessment at Unsignalized intersection using Surrogate Safety Measures: A Case Study of Bhopal City", TPMDC, IIT Mumbai, 19 Dec 2022.
21. Prabhat Singh and Rutuja Chavan, "Bed Load Transport in Non-uniform Sand Bed Channel: A Review", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), December 22-24, 2022.
22. Prabhat Soni, S.K. Dubey and Prakash Sangamnerkar, "Analysis of moment resisting framed reinforced concrete building under seismic vibration", UKIERI Concrete congress-Sustainable concrete infrastructure (virtual mode), Department of Civil Engineering Dr. B.R. Ambedkar National Institute of Technology, (NIT) Jalandhar, Punjab, 14-17 Mar 2023.
23. Priya Verma and Ruchi Khare, "Ramification of Climate Change in to Hydrological Parameters using SWAT: A Review", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering, 22-24 Dec 2022.
24. Priyanshu Jain and Ruchi Khare, "Optimization of Leakage and Power in Water Distribution Network", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering, 22-24 Dec 2022.

25. Rakesh Patel, S.K. Dubey and K.K. Pathak, "Effect of different types of loading on the beams wing MIF", UKIERI Concrete congress-Sustainable concrete infrastructure (virtual mode), Department of Civil Engineering Dr. B.R. Ambedkar National Institute of Technology, (NIT) Jalandhar, Punjab, 14-17 Mar 2023.
26. Rita Tiwari and Rutuja Chavan, "An Approach to Utilize the Static Energy of Obstructed Water to Enhance the use of River Flows for Agricultural Water Supplies", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
27. S. Anand, P. Das and Bivina G. R., "Trip Generation based on land use characteristics: A review of the techniques used in recent years", TPMDC, IIT Mumbai, 20 Dec 2022.
28. S. Singh, N. Kumar and A. K. Thawait, "Effect of Soil Erosion and Sedimentation on Water Bodies", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International) at Punjab Engineering College Chandigarh, India, 22-24 Dec 2022.
29. Saharash Chaube, Bivina G.R. and Siddhartha Rokade, "Analyzing Pedestrian Crossing difficulty near roundabouts", 2nd International Conference of Transportation Infrastructure Projects: Conception to Execution, 14 Sep 2022.
30. D.Singh, P. Das and P. Ghosh, "A Review on Surrogate Safety Measure Using Extreme Value Theory", TPMDC, IIT Mumbai, 19 Dec 2022.
31. D.Singh, P. Das and V. Verma, "Assessment of Pedestrian Safety at Urban Uncontrolled Intersections using Surrogate Safety Measures: A Case Study of Bhopal City", TPMDC, IIT Mumbai, 19 Dec 2022.
32. Suniti Kumari, H. L. Tiwari and Rutuja Chavan, "A review on Hydrodynamics of River Meandering", 27th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24 Dec, 2022.
33. Suniti Kumari, H. Tiwari and Rutuja Chavan, "A review on Hydrodynamics of River Meandering", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
34. Swarit Gupta, H.L. Tiwari and M.S. Hora, "Effects of climate change over groundwater level fluctuations using artificial neural network-A Review", 27th International conference on hydraulics and water resources - Hydro 2022, 22-24 Dec 2022.
35. Swarit Gupta, H L Tiwari and M S Hora, "Effects of climate change over groundwater level fluctuations using artificial neural network-A Review", 27th International conference on hydraulics and water resources - Hydro 2022, PEC Chandigarh, 22-24, Dec 2022.
36. Upkar Singh, Vishnu Prasad and Ruchi Khare, "Performance Analysis of Radial Flow Pump Using CFD", 9th International and 49th National Conference on Fluid Mechanics and Fluid Power, 14-16 Dec 2023.
37. Vikalp Chouhan, E. Padhi and Rutuja Chavan, "Numerical Modeling for Optimization of the Aspect Ratio of Submerged Vanes for the Purpose of Sediment Deflection in Rivers", 9th LAHR International Symposium on Hydraulic Structures at Indian Institute of Technology, Roorkee, Roorkee, India, 24-27 Oct 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 36 which includes all type of activities.

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Priyanka Dhurvey, Parth Verma; Chandra Prakash Gour	Construction Material Fineness Analyser	Granted
2.	Priyanka Dhurvey, Parth Verma; Chandra Prakash Gour	Concrete Mixer Analysing Device	Granted
3.	Priyanka Dhurvey, Parth Verma; Chandra Prakash Gour	Soil Compactness Analyser	Granted
4.	Sarvesh P.S. Rajput	Triangular Pattern Paver Block	Granted
5.	Sarvesh P.S. Rajput	Paver Block	Granted
6.	Sarvesh P.S. Rajput	Paver Block	Granted

RESEARCH PROJECTS

1. H. L. Tiwari, "Identification and treatment study of heavy metals and chlorinated by products using fish scale morphological changes with sedimentation analysis for Upper lake of Bhopal", Sponsored by .
2. P.K.Agarwal, Sidhartha Rokade and Pritikana Das, "Proactive Safety Evaluation of Rural Roads: A surrogate Safety Assessment", Sponsored by NRIDA New Delhi.
3. Pritikana Das, Bivina G.R. and Siddhartha Rokade, "Development of Trip Genration Manual for Indian Cities", Sponsored by CSIR-CRRI.
4. Tu Anh Trinh, Yogeshwar V. Navandar, Bivina G.R., SheileahNaplang, Ashsh Dhamaniya, Vasantha and Pawinee, "Theory-based development, implementation and evaluation of an innovative educational platform to enhance traffic safety for school-going children in Asian context", Sponsored by International Research Group Formed but No Financial Assistant for one year.

5. Vikas Dhimani and Jyoti Sarup, "Effects of Residential and workplace green spaces on mental health", Sponsored by ICMR-NIREHBhopal.
6. Yogeshwar Navandar and Bivina G.R., K. Krishnamurthy, "Sustainability assessment of Inland Water Transport: A case study of Kerala", Sponsored by Kerala State Council for Science, Technology & Environment (KSCSTE).

CONSULTANCY PROJECTS

1. A K Sharma and Anupma Sharma, "Vetting of Hydraulic Design and Drawing for Gandhisagar-1 Multi Village Water Supply Scheme, District- Mandasaur and Ratlam.", Sponsored by LCC Project Pvt. Ltd., B Wing, 15th Floor, Pivillon Building Vikram Nagar AmbliBopal Road Gujarat.
2. A K Sharma and S Suresh/Anupma Sharma, "Emission Inventory, Analysis PM10 and Pm 2.5 Samples, recetsforModeling, Spafial distribution data using dispersion model, prepration of action plan, prediction of emission usinggrowth. (Jabalpur)", Sponsored by Nagar Palika Nigma, Jabalpur.
3. A K Sharma and S Suresh, Anupma Sharma, "Emission Inventory, Source Apportionment Study & Carrying Capacity Study of Ujjai City for Major an pollution sources.", Sponsored by M P Pollution Control Board, E-5, ParyavaranParisar, Arera Colony, Bhopal.
4. A K Sharma, "Vetting of Hudraulic Design and Drawings for Nimarani-2 Multi Village Water Supply Scheme.", Sponsored by W P I L Ltd. Trinity Plaza, 84/1A, topsia Road (South) Kolkata.
5. A K Sharma, "Vetting of Hydraulic Design of Intake well & Raw water Pumpint Main at Ghogari Multi-Village Scheme, Distt. Betul", Sponsored by Vikram Engineering & Exim Pvt. Ltd. T & B Infra Project Ltd. (JV), 401, Odyssey IT Park, Wagle Industrial Estate Thane.
6. D Kishan and Bivina G R, "Geotechnical Invsestigation for the proposed Establishment of New Kendriya Vidyalaya at Marsingath Distt. Rajgarh (M.P.) under "Challenge Method" ", Sponsored by C P W D, division-II 52-A Arera Hills, bhopal.
7. H L Tiwari and A K Sharma, "Vetting of Hydraulic Drawing & Design of Distribution Network at District Singrauli (M.P.)", Sponsored by Vijay Kumar Mishra constructionPvt. Ltd., New Yaman 5/23 Sahara State, bhojpur Road, bhopal.
8. H L Tiwari and A K Sharma, "Vetting of Revised Design & Drawing of distribution netwrok for the construction of Amlikaus Gov. (Surface based) water supply scheme +28 tube well based water supply scheme, Distt. Banda.", Sponsored by N C C, LTD.D2/150, Palm Spring, Susant Golf City Ansal, API, Near Shoping Square, Saheed Path, Lucknow (Dist.) U.P..
9. H L Tiwari and A K Sharma, "Veting of Hydraulic Drawing & Design of Thruse Block at DisitctSingrauli.", Sponsored by Vijay Kumar Mishra, Construction Pvt. Ltd., Vijay Villa 24/185 Dwarka Nagger, Rewa (M.P.).
10. H L Tiwari and A K ShaRMA/P K Agarwal, "Vetting of Drawing and Design of Machagora, Multi Village Water Supply Scheme Distt. Chhindwara (M.P.)", Sponsored by Viraj Greens Consultancy, C-21, Pragati Complex, Depot Square, Jawahar Chowk Bhopal.
11. H L Tiwari and P Dhurvey/ P K Das/P K Agarwal, "Vetting of design and Drawing of Naharayi Multi Village Rural Water Supply Scheme Dist Bhopal & Vidisha.", Sponsored by The Indian Hume Pipe Co. Ltd. H. No. 5 WalchandHirachand Road, Ballard Estate Mumbai.
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98. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawings of proposed construction of Restaurant, Space Frame, VIP Stand and GSP Office at Global Skills Park, Bhopal.", Sponsored by M. P. Skills Development Project, Gloobal Skills Park-City Campus (GSP-CC), ITI Govindpura Campus, Raisen Road, Bhopal.
99. N Dindorkar and J Raheem, "Proof Checking of Structural Design and Drawing for proposed construction of MIG Quarter, LIG Quarter, EWS Quarter, Overhead Tank and Sump-Well at hatta, Damoh (M.P.)", Sponsored by AwaneeshNema& Associates, 1st Floor, Flat No. 201A, Khushi Plaza, Bhanwartal Extn., Napier Town, Jabalpur.
100. N Dindorkar and J Raheem, "Proof Checking of Structural Design and Drawing for proposed construction of Mandla Tehsil (M.P.)", Sponsored by AwaneeshNema& Associates, 1st Floor, Flat No. 201A, Khushi Plaza, Bhanwartal Extn., Napier Town, Jabalpur.
101. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Kendriya Vidyalaya at Kasaravadi.", Sponsored by Vidya Consultants, E-3/9 Arera Colony Bhopal.
102. N Dindorkar and J Raheem, "Inspection of Cable Suspantions Bridge at Saar Sapata at Bhadbhada Road Bhopal.", Sponsored by Madhya Pradesh State Tourism Development Corporation Ltd., Paryatan Bhawan, Bhadbhada Road, Bhopal.
103. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawings for proposed Construction of Seoni-Mp/MH Border NH-7 from km 624.480 to km 653.225 under Phase-II on EPC mode in the state of M.P. and FOB at location @ 637+515 Kurai and 650+550 Khawasa.", Sponsored by Lione Engineering Consultants Pvt. Ltd., Lion Tower Plot, No. 97 Elegant Estate, Near Mother Teresa School, Behind Petrol Pump, Kolar Road Bhopal.
104. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawings for proposed construction of 7 Nos. MNBs Single span, Bridge No. 1076, 1083, 1088, 1090, 1093, 1097 and 1102 at Bina Katni 3rd Line project.", Sponsored by Jai Gurudev Engineering Consultants, 722, MR 3 Road, Mahalaxmi Nagar, Indore (M.P.).
105. N Dindorkar and J Raheem, "Proof Checking of Sub Structural Design and Drawing for CH 20+370 (Sonar River) balance work at DamohPatharia Road.", Sponsored by A B Construction & Development Company, Line NO.14 Q. No. 31, Birla Nagar Gwalior..
106. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed Construction of 3 Hospital G+2 at Nalkheda, Sonkatch and Khalwa.", Sponsored by Shrikant Vaishampayan, Arch., Engineers, Madhav Club Road, Freeganj, Ujjain (M.P.).
107. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed Construction of Major Bridge No. 238 & 246 between Km 128.00 to 143.00 betweenKhilchipur-Rajgarh Section in the state of (M.P.)", Sponsored by Bhimji Velji Sorathia construction Pvt. Ltd., Plot No.112-113, Arbuda Nagar, Survey No. 10/2 & 10/3, Village Antarjal, tal. Gandhidham (Kutch) Gujrat.
108. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing of proposed construction of basementcommercial complex Sheet piling work at Siya Ganj Indore.", Sponsored by M P H & I D B, Division -2 Shopping Complex A. B. Road Indore..
109. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake Well 3 Nos. Water Treatment Plant 3 Nos. Clear Water Pump House with UGR, Elevated Storage Tanks 76 Nos at pertaining to

- Pattamundai Block, Rajanagar Block and Garadpur Block of Kendrapada District, Odisha.", Sponsored by Laxmi Civil Engineering Services Pvt. Ltd., C. S. No. 1031/K2, E Ward, 3rd, Floor, Sterling Tower, Mandai, Shahupuri.
110. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake Well 4 Nos. Water Treatment Plant 4 Nos. Clear Water Pump House with UGR, Elevated Storage Tanks 60 Nos at pertaining to Karnakhyannagar, Parjang, Kankadahad& Sadar Block of Dhenkanal District Odisha.", Sponsored by Laxmi Civil Engineering Services Pvt. Ltd., C. S. No. 1031/K2, E Ward, 3rd, Floor, Sterling Tower, Mandai, Shahupuri.
 111. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Major Bridge at Ch. 96+800 from Tamenglong to Mahur (NH-137) in the State of Manipur.", Sponsored by B R Goyal Infrastructure Ltd., 3-A Agrawal Nagar, Near Vikram Tower, Sapn-Sangeeta Road, Indore.
 112. N Dindorkar and J Raheem, "Proof Checking of Structure Design & Drawing walls of various heights 3.0m, 6.0m and 12.0m Height for Danish Hills View, Kolar Road Bhopal.", Sponsored by Danish Housing Society, BF-1, 216-A, Zone-1, (Behind Jyoti Tahies) M.P. Nagar Bhopal.
 113. N Dindorkar and J Raheem, "Proof Checking of POT PTFE Bearings Design & Drawing at lower depth canal crossing in connection with Parkhm-AchhneraChiksana cord line construction.", Sponsored by Pilcon Engineering, 16-19, Najaf Colony, sadiqabad, Nagpur.
 114. N Dindorkar and J Raheem, "Vetting of Structural Design & Drawing for various schools under CM Rise Scheme of SED, govt. of M.P. (Govt. Excellence Higher Secondary School, Gohad, Govt. Higher Secondary School, amayan and Govt. Excellence Higher Secondary school, Mehgaon.)", Sponsored by Studio Plus, First Floor Plot No.67, Zone-1 M P Nagar Bhopal.
 115. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake Well Cum Pump House with Approach Bridge, WTP, OHT 50KI to 300KI at Gad Multi Village Rural Water Supply SechemeDist Betul (M.P.)", Sponsored by L N Malviya Infra Projects Pvt. Ltd. Plot No. 1, M. P. Nagar, Zone-1 Bhopal.
 116. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake Well Cum Pump House with Approach Bridge, WTP, OHT 50KI to 1200KI at Meda Multi Village Rural Water Supply SechemeDist Betul (M.P.)", Sponsored by L N Malviya Infra Projects Pvt. Ltd. Plot No. 1, M. P. Nagar, Zone-1 Bhopal.
 117. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake Well Cum Pump House with Approach Bridge, WTP, OHT 50KI to 1200KI at Wardha Multi Village Rural Water Supply SechemeDist Betul (M.P.)", Sponsored by L N Malviya Infra Projects Pvt. Ltd. Plot No. 1, M. P. Nagar, Zone-1 Bhopal.
 118. N Dindorkar and J Raheem, "Proof Checkinf of Sub-Structure of PEB Sheds under Augmentation of Facility for POH LBH coach Phase 1 CRWS Bhopal", Sponsored by Vidya Consultants, E-3/9 Arera Colony Bhopal (Seftech India Pvt. Ltd.).
 119. N Dindorkar and J Raheem, "Vetting of Structural Designs and drawings of Office cum Residential Complex for SIB at Seoni and Mandla (M.P.)", Sponsored by C P W D, Jabalpur Central Division, Near kachnar City, Vijay Nagar, Jabalpur.
 120. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Intake well cum Pump house 1 No., WTP 1 No., OHT 128 No. 50 KI to 800KI, Sump Pump House 28 Nos., Staff Quarter/Office Building 1499 Sqmt., Vitr Chamber, Boundry Wall, Thrust block. District Badwani& Khargone.", Sponsored by Laxmi Civil Engineering Services Pvt. Ltd., E-3/30, Arera Colony, Bhopal.
 121. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of Major Bridge & Minor Bridge Major span 4x30 at km 66+550, Minor Bridge of span 2x25 at km 51+300 and Minor Bridge of span 1 x 25 at km 34+940 at Jaunpur bypass section of NH-135A in the state of Uttar Pradesh.", Sponsored by Suraj Builder India Pvt. Ltd., House No.1-008, Pocket-D6 Narmada, Vasant Kunj, New Delhi.
 122. N Dindorkar and N Dindorkar, "Soil Investigation for proposed Construction of 400 Bedded 18 Story Building superspeciality Hospital at E-6 Arera Colony Near Kanha Tower, Bhopal", Sponsored by Siddhanta MedicityPvt. Ltd., M-156, Gautam Nagar Chetak Bridge Bhopal.
 123. N Dindorkar and N Tiwari, "Inspection of Structural Head Office Building Sahakar Bhawan, North T. T. Nagar, Bhopal", Sponsored by M P State Govt. Awassangh Ltd., Sahkar Bhawan North T T Nagar Bhopal.
 124. N Dindorkar and N Tiwari, "Structural Inspection of government College Sailana Distt. Ratlam (M.P.)", Sponsored by M P H & I D B, Division Ratlam.
 125. N Dindorkar and N Tiwari, "Proof Checking of Structural Design & Drawin for proposed Construction of upgradation of Bijor to Kotwali Section NH-709AD from Km 153660 to km 175.280 on EPC mode (ROB at KM 154+360).", Sponsored by APC-MCPL (JV), 10/58, Kirti Nagar, Industrial Area Block-10 New Delhi.
 126. N Dindorkar and P Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of Administration & Academic Building Block at PT. Khushilal Sharma Ayurvedic College, Bhopal.", Sponsored by Rupal Sanghvi and Associates, 105-106, First Floor, The Magnet, 6/1 New Palasia Indore (M.P.).
 127. N Dindorkar and P Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of Main Buildings of Multi Level Car Parking Cum Office Complex at Nagar Nigam Campus & Incubation Center under Jhansi Smart City Ltd.", Sponsored by Incubation Masters IM Pvt. Ltd., 402 4th Floor Many Arcade ISBT, Bhopal.
 128. N Dindorkar and P Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of Abutments (3 Bridges) and Returns/Face-Wall (3 Bridges).", Sponsored by K P Techno Consulting Engineers & Contractors, E-5/75, Mahavir Nagar, Bhopal (D. P. Chopra, Jhansi).
 129. N Dindorkar and P K Jain/R Kumar, "Checking old failed Retaining Wall & Proof Check New Retaining wall of Kaliyasot Bridge in km 294-920 near Bhopal ", Sponsored by M P Road Development Corp. Ltd. 45- A, Arera Hills bhopal.
 130. N Dindorkar and R Kumar, "Proof Checking of Structural Design & Drawing for proposed Construction of RAPTC Hostel at Indore.", Sponsored by Aadharshila, Design India, 94-C, Basantvihar, Behind Bombay Hospital, Indore.
 131. N Dindorkar and R Kumar, "Proof Checking of Structural Design & Drawing of proposed construction of E, Type F, Type, G, Type, H Type & I Type residential quarters & Underground water tank of Re-densification of Rajaswa Colony Ujjain.", Sponsored by M P H & I D B, Administrative Area, Bhart Puri Dewas Road Ujjain (M.P.).

132. N Dindorkar and R Kumar, "Proof Checking of Structural Design & Drawing for various components of Ghogari Multi-Village Scheme, Distt. Betul, (M.P.)", Sponsored by Vikran Engineering & Exim Pvt. Ltd. T & B Infra Project Ltd. (JV), 401, Odyssey IT Park, Wagle Industrial Estate Thane.
133. N Dindorkar and S Kaur, "Proof Checking of Structural Design & Drawing for proposed Construction of Boundary Wall at Khelgaon, Gwalior.", Sponsored by Earth Associates, E-3, Sr. MIG-12, Arera Colony, Bhopal.
134. N Dindorkar and S Kaur, "Proof Checking of Structural Design & Drawing for proposed Construction of GO's Type Apartment at Lalpara, Jahangirabad, Bhopal.", Sponsored by Earth Associates, E-3, Sr. MIG-12, Arera Colony, Bhopal.
135. N Dindorkar and S Kaur, "Proof Checking of Structural Design & Drawing for proposed Construction of N.G.O. (S+6) and Constable (S+9) Apartment at Dania (M.P.)", Sponsored by Earth Associates, E-3, Sr. MIG-12, Arera Colony, Bhopal.
136. N Dindorkar and S Kaur, "Proof Checking of Structural Design & Drawing for proposed Construction of Climbing Wall Structure at Boys KridaParisarShahdol (M.P.)", Sponsored by Earth Associates, E-3, Sr. MIG-12, Arera Colony, Bhopal.
137. N Dindorkar and S Kaur, "Proof Checking of structural Design and Drawings for proposed Construction of ROB Km 154+360, Bijnor to Kotwali Section of NH-709AD from Km 153-660 to Km 175.280 on EPC Mode under NH(O) in the state of Uttar Pradesh.", Sponsored by APS-MCPL (JV), 10/58, Kirti Nagar, Industrial Area, block-10, New Delhi.
138. N Dindorkar and V Garg, "Proof Checking of Structural Design & Drawing for proposed Construction of Commercial Complex Seyaganj Indore.", Sponsored by M P H & IDB, Division-2 Shopping Complex A. B. Road, Indore.
139. N Dindorkar and V Garg, "Proof Checking of Structural Design & Drawing of proposed construction of Academic Building & Porch (Phase-1) for School of Planning & Architecture (SPA) at Bhauri, Bhopal", Sponsored by C P W D, Division-II 201, Nirman Sadan 52-A Arera Hills Bhopal.
140. N Dindorkar and V Prasad, "Consultancy Services for the repairing protection of Bridge Pier and Strengthening work of High Level Bridge situated on river Narmada D/s at Indira Sagar Dam Narmada Nagar. (Pier P3 and P4 of HLB D/s to Indira Sagar Dam) Distt. Khandwa (M.P.)", Sponsored by Indira Sagar Power Station, NHDC Office Complex, Narmada Nagar, Distt. Khandwa (M.P.).
141. N Dindorkar/R Kumar and R Kumar, "Proof Checking of Structural Design & Drawing for proposed construction of Four Lane elevated Road (Fly Over) on Swar Rekha Nalla from IIITM College to Maharani Laxmibai Pratima in District Gwalior (M.P.)", Sponsored by Shre manglamBuildoon (I) Pvt.Ltd.SF 58,59,60, HexzoneArcadeNr. JayabenModi Hospital, Valia Road, G.I.D.C., Ankleshwar Distt. Bharuch (Gujrat).
142. N Dindorkar, "Proof Checking of Structural Design and Drawing of proposed structures for Gandhisagar-1 Multi Village Water Supply Scheme, District:- Mandsaur and Ratlam.", Sponsored by LCC Project Pvt. Ltd., B Wing, 15th Floor, Privilon Building Vikram Nagar AmbliBopal Road Gujrat.
143. N Dindorkar and J Raheem, "Proof Checking of Structural Design & Drawing for proposed Construction of Warehouse at Kathota (Sidhi), Umari (Rewa), Gaharwara (Satna) & Kushi (Satna (M.P.)", Sponsored by Er. Mayank, Kushwaha, for Riva International Mumbai.
144. N Tiwari and H L Tiwari, "Proof Checking of Design and Drawing for Vetting for Udgawan Multi Village Rural Water Supply Scheme under MPJNM", Sponsored by Aryan Supplier & Coloniser Pvt. Ltd. H. No. 55 3rd Floor, Good Shepherd Colony, Kolar Road, Bhopal.
145. N Tiwari and H L Tiwari, "Structural Audit Married Quarter (No. of Married quarters-525) at Saugor.", Sponsored by Saugor Cantt. (Sagar).
146. N Tiwari and M S Hora, "Structural Vetting of Design and Drawings for proposed Multi Sports Complex-2 Jabalpur, (M.P.)", Sponsored by Rawani Construction, Rabs Height, Near 2nd Railway Bridge, Beside Sheela Talkies South civil Line, Flat No. 404, Jabalpur.
147. N Tiwari and M S Hora, "Structural Audit of Over Head Water Tank (OHT) at Jawahar Navodaya Vidyalaya, Shyampur, Dist. Sehore (M.P.)", Sponsored by Jawahar Navodaya Vidyalaya Shyampur Distt Sehore.
148. N Tiwari and M S Hora, "Proof Checking of Structural Design & Drawing for proposed Construction of 10 HIG A type and 30 HIG B Type house at ayudhyaExtensionSurmayaParisar Bhopal", Sponsored by M P H & I D B, Divison-4 Bhopal.
149. N Tiwari and M S Hora, "Proof Checking of Structural drawing of School Building at Sagar District (M.P.)", Sponsored by Vima The Dimension, Ar. Puneet Pandey, C-156 Vasant Vihar, Indore.
150. N Tiwari and M S Hora, "Proof Checng of the structural design of the proposed towers at Sanfran Sarovar Height multistored residential building at Arazi No. 134,135,136,137,98 & 97/2 Mouza lahargrid Jhansi.", Sponsored by H A Structure Consultant, 108, First Floor Swadesh Bhawan Near Dainik Bhaskar Press L.I.G. Square Indore..
151. N Tiwari and M S Hora, "Structural Audit of Terrace 5th Floor Columns and slab and basment columns and beams only of existing G+4 Navin building at palika Bhawan, Shivaji Nagger, Bhopal", Sponsored by Director Urban Administration and Development, M.P., Bhopal.
152. N Tiwari and M S Hora, "Proof Checking of Structural Design & Drawing of School Building of Naryali Dist. Sagar.", Sponsored by Ar. Puneet Pandey Arch. Interior Designers, C-156 Vasant Vihar Indore..
153. N Tiwari and M S Hora/Manish Vishwakarma, "Certification of structural drawings according to relevant IS-Code of Green Field Project inPilibhit, U. P.", Sponsored by AB Mauri India Pvt. Ltd. Worldmark-1 Village Maidawas Sector-65 GurugaramDistt. Haryana..
154. N Tiwari and M S Hora/P K Agarwal, "Structural Stability analysis of (G+4) Navin Building (located in the premises of Palika Bhawan at Shivaji Nagger Bhopal.", Sponsored by Directorate, Urban Administration & Development, M.P., Bhopal.
155. N Tiwari and P Dhurvey, "Checking of Estimate according to revised structural design and drawing of proposed Nagar Nigam head office building at link road No.2 Bhopal", Sponsored by Nagar Palika Nigam, Bhopal.
156. N Tiwari and P K Agarwal, "Inspection/Supervision of Bridge load Test at Ch 16+583 on river Ougal at Talen on PachoreShualpur Road (M.P.)", Sponsored by P W D National Highway Division, Bhopal.

157. N Tiwari and P K Agarwal, "Structural Audit Married Quarter (No. of Married quarters= 525) at Saugor.", Sponsored by Saugor Cantt. (Sagar).
158. P Dhurvey and P K Agarwal, "Mix Design of M-15, M-25 and M-30 Grade for proposed construction of Technology Development and Innovation Center A State-of the Art Five Star Rated Green Building for CSIR AMPRI Bhopal.", Sponsored by Kimiya Engineers Pvt. Ltd., Plot NO. 110/2, Crystal, Sher-e-punjab Colony, Mahakali Caves Road, Andheri (E) Mumbai.
159. P K Agarwal and H L Tiwari, "Seeking expert opinion on damaged road of Guna-Ashoknagar-Ishagarh to tow lane with paved shoulder (Designed Length 76.15 Km) due to flood caused by incessant rains.", Sponsored by AryavratTollwaysPvt. Ltd., 201, British Park, Opp, Iper College, Bhopur Road Bhopal.
160. P K Agarwal and P Das, "Mix Design for the tender work of Sewer Project to Municipal Corporation Katni-Madhya Pradesh.", Sponsored by Jayantisuper Construction Pvt. Ltd. 12, Sahjanand Society Urban Bank Road Highway Mehsana Gujarat.
161. P K Agarwal and P K Das, "Road Safety Audit Four Laning of Tuljapur-Ausa (including Tuljapur Bypass) section of NH 361 from km 0.000 to 55.835 under NHDP PhaseIV in the state of Maharashtra.", Sponsored by Dilip Buildcon Ltd. Plot No. 05, Inside Govind Narayan Singh Gate, Chuna Bhatti Bhopal.
162. P K Agarwal and P K Das, "Job Mix Formula at NTPC Khargone.", Sponsored by NTPC Khargone.
163. P K Agarwal and P K Das, "Pavement Design and Storm water not load bearing drain design and drawing for approval.", Sponsored by Gawar Construction Ltd. SF-01, JMD Galleria, Sector-48 Sohna Road Gurugram.
164. P K Agarwal and R Kumar/Bivina G R, "Scrutiny of project proposals for the state of Madhay Pradesh under pradhan Mantri Gram Sadak Yojana (PMGSY) Prament to the principal Technical agencies (PTAs).", Sponsored by N R I D A, 5th Floor 15NBCC Tower, Bhikaji Cama Place New Delhi.
165. P K Agarwal, "Vetting the design and drawing of pench river high level bridge and approach road.", Sponsored by W R D, No. 1 Chourai Distt. Chhindwara (M.P.).
166. P K Jain and N Dindorkar, "Site Visit, inspection of Old nagarpanisahd Building, School building suggesting repair/demolition.", Sponsored by Nagar Parishad Kolaras Distt. Shivpuri.
167. P K Jain and N Dindorkar, "Soil investigation for construction of office Building for National Green Tribunal at Arera Hills, Bhopal", Sponsored by C P W D, Division -I Bhopal.
168. P K Jain and N Dindorkar/R Kumar, "Site Visit and Soil Testing of Failure of retaining wall of Kaliyasot Bridge in km 294-920 near Bhopal.", Sponsored by M P Road Development Corp. Ltd. 45- A, Arera Hills bhopal.
169. P K Jain and P K Agarwal, "Stability of Road embankment at bridge approaches on Guna byepass.", Sponsored by Iacon International Ltd, Plot No. 1, Phoolwari Colony, Near Millennium School, Guna.
170. P K Jain and R Kumar, "Soil Investigation for the C/o parking facility (Basement + Ground + Rooftop parking at AIIMS Campus Saket Nagar, Bhopal.", Sponsored by C P W D, Division -I Bhopal.
171. R Kumar and J Raheem, "Design analysis of slope stability in connection with construction of Mathura Jhansi 3rd line project (package-1 & 2)", Sponsored by Hicon Testing Lab consultancy & Research Centre, 61, Narayan Nagar, Hoshangabad Road, bhopal.
172. R Kumar and P K Jain, "Plate Load test fro Gwalior Airport (M.P.) 5 Locations", Sponsored by Gwalior Airport (M.P.).
173. R Kumar and P K Jain, "Soil Investigation for proposed construction of Phase-II Residential Complex in AIIMS Campus C/o 140 Nos of Type-III Residential Quarters at AIIMS, Saket Nagar, Bhopal", Sponsored by C P W D, Division-II Nirman Sadan, 52A, Arera Hills Bhopal.
174. R Kumar and P K Jain, "Soil Investigation 3 locations & Foundation Design Terminal at Manglya, Indore. (M.P.)", Sponsored by B P C L, Manglia Receipt Terminal, Indore.
175. R Kumar and P K Jain/A Mittal, "Regarding third party inspection report for construction of phase-B works at Jawahar Navoday Vidyalaya, pratapgarh (Rajasthan)", Sponsored by Telecommunications Consultants India Ltd., Plot No. 203, First Floor, Gupatni Nagar-A Maharani Farm, durgapura, Jaipur.
176. R Nataniya and M S Hora, "Proof Checking of Structural Design and Drawing of College of veterinary and Animal Science and College of Fisheries works for various buildings in Dania.", Sponsored by NBCC (India) Ltd. Near Pahu Dam, Gwalior Road, Jhansi, U.P.
177. R Nataniya and M S Hora, "Proof Checking of Structural Design & Drawings of Clinical Complex cum Hospital (G+1) Area 6970m2, Central livestock Building (G+1) 635m2 of College of veterinary and Animal Science and College of Fisheries RLBCAU, Dania, M.P.", Sponsored by NBCC, RLBCAN work Near Pahu Dam Gwalior Road Jhansi (U.P.).
178. S K Dubey and V Garg, "Mix Design Grade of M-20, M-25, M-30, M-35 for the work of Augmentation of facility for POH of LHB coaches phase-I at CRWS bhopal", Sponsored by West Central Railway, Bhopal (Seftech India Pvt. Ltd. Mumbai.
179. S P S Rajput and J Raheem, "Mix Design M-15, M-20 & M-30 Grade concrete for the work construction of foundation and substructure of 08 major bridges between Govindgarh to Sidhi in Rewa-Sidhi project.", Sponsored by W C R, Rewa. (Veljiratna Sorathia Infra. Pvt. Ltd. Vadodra, Gujarat).
180. S P S Rajput and J Raheem, "Structural Vetting and Review of the structural design and drawing for 10 schools for CM Rise, M.P.", Sponsored by KlimArtPvt. Ltd., No. 21 8th Cross, 24th Main, JP Nagar 2nd phase, opp Rangashankara, Bangalore.
181. S P S Rajput and J Raheem, "Structural Vetting and Review of the Structural Design and drawing of structure for 123 flat at Jagdalpur, Chhattisgarh", Sponsored by Chhattisgarh Housing Board, Division- Jagdalpur.
182. S P S Rajput and J Raheem, "Structural Vetting and review of the Structural Designs and Drawings for 5 CM Rise School, M.P.", Sponsored by AJ Arkidesigns, Pvt. Ltd., B-33 Kailash Colony, New Delhi.
183. S P S Rajput and J Raheem, "Vetting and review of the structural designs and drawings for 15 CM Rise School, M.P.", Sponsored by Arinem Consultancy Services Pvt. Ltd.

184. S P S Rajput and J Raheem, "Structural Vetting of the Structural Design and drawings of 20 Schools under Cm RISE project at various locations in M.P.", Sponsored by R V P Structural Creations Pvt. Ltd. F-1 C-165 Swarup apartment, Sainnath Nagar, Kolar Road Bhopal.
185. S P S Rajput and Mukesh Kirar/P M Mishra, "Checking and vetting of (BEP) hydraulic, Structure, Electrical & mechanical, instrumentation design & drawings of Mandla Sewerage project", Sponsored by Shri Ram construction Cop. 1st floor Anand Plaza, Bhagwati Colony Singhpur Road Morar, Gwalior, M.P..
186. S P S Rajput and R S Rana, "Third Party inspection at factory (located in Mumbai) for the equipment (1. Sc 260 Static Compactor Machine, 2. Hook Loader with Chassis, 20 Cm container) before Installation in 3 nos of gargabagetransfer station in Gwalior, M.P.", Sponsored by HYVA, India Pvt. Ltd., Plot No. EL-215, MIPL, Mahpae Nawi Mumbai.
187. S P S Rajput, "Mix Design M-10, 15, 25, 35, & 40 Construction of Bus Terminal Complex at Vidhya Nagger Phase-II project", Sponsored by B D A, Bhopal (Velji Ratna Sorathia Infra Pvt. Ltd. Bhopal.
188. S Rokade and A Jaiswal/P Das, "Traffic Management and parking advise for salkanpur Temple Region District Sehore.", Sponsored by M P State Tonisum, Development Corporation Ltd. ParytanChawan, Bhadbhada Road Bhopal.
189. S Rokade and K Singh/J Raheem/P K Das/N Dindorkar/R Chavan, "Scruting of project proposals for the state of M.P. under pradhanMantri Gram Sadak Yojna (PMGEY-III) Payment to the state to the State Technical Agencies (STAs)", Sponsored by National Rural Infrastructure Development Agency, 5th Floor 15-NECC Tower, Bhikaji Cama Place, New Delhi.
190. S Rokade and P K Das, "Design of PCC Road for the construction composite housing scheme at Khajuri Kalan, Bhopal.", Sponsored by M P H & I D B, Division-4 Ayudhya Nagar Bhopal .
191. S Rokade and P K Das/Bivina G R, "Design of Cement Concrete Road at Sunkhedi for M.P. Housing Board, Bhopal", Sponsored by M P H & I D B, Sub Division-06 Bhopal.
192. V Prasad and R Khare, "Vetting of Design Hydrological Investigation for Kota Bina Doubling project", Sponsored by Ananya Engineering Pvt. Ltd. Rudrakish Park Phase-II Flat No. 402, 4th Floor, block D-6, Bawadia Kalan, Huzur Bhopal.
193. V Prasad, "Soil Slope Stability Snalysis and structure analysis in Barkhera-Budni 3rd Railway Line project.(Hydrological analysis consisting of basin characteristics and design flood for cloud burst condition at 5 location)", Sponsored by R V N L, 174/2 Shakti Nagar, alkapuri, Opp. Gate No.1 Bhopal.
194. V PrasadJ and J Sarup/R Khare, "Soil Slope Stability Snalysis and structure analysis in Barkhera-Budni 3rd Railway Line project", Sponsored by R V N L, 174/2 Shakti Nagar, alkapuri, Opp. Gate No.1 Bhopal.

PROGRAMME

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	H L Tiwari	Seminar	National seminar on Green Building	69	19 Nov 2022	20 Nov 2022
2.	M.K.Choudhary Rutoja M Chavan Jyoti Sarup	Workshop	Advanced Application of Hyperspectral and Microwave Remote Sensing	25	25 July 2022	31 July 2022
3.	Ruchi Khare, Namita Sinvastava, Fozia A Haque	Conference	Women Education in India: A Situational Analysis	69	07 Jan 2023	08 Jan 2023

EXPERT LECTURE

S. No.	Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
1.	H. L. Tiwari	Dr R K Jaiswal Scientist E, NIH Roorkee (RO Bhopal)		06 Dec 2022
2.	H. L. Tiwari	Dr Ashish Dhamania SVNIT Surat	Road safety	10 Feb 2023

LAB

S. No	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Computer Lal			
2.	Environmental PG			
3.	Environmental UG			
4.	Geology Lab			
5.	Geo-Technical Lab			
6.	Hydraulic Lab			
7.	PORL (FM&HM)			
8.	RS & GIS Lab			
9.	Soil dynamics Lab			
10.	Structure Lab Concrete Lab			
11.	Survey Lab			
12.	Transportation Lab			

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

S.No.	Name of Equipments	Purpose / Use	Photograph
1	Water Bath with Shaker	A water bath with a shaker is commonly used in the soundness test of cement, which is part of the quality control process to assess the durability of cement. The soundness test evaluates the ability of a cement sample to resist volume changes caused by the hydration of calcium oxide and magnesium oxide, which can lead to disruptive expansion and cracking in concrete structures. The test is important in ensuring the long-term stability and performance of cement in construction. The water bath with a shaker helps maintain consistent temperature and agitation conditions, ensuring the reliability of the soundness test results. Soundness is a critical property of cement because any significant volume changes in concrete can lead to cracks and structural issues in the constructed infrastructure.	
2	Rapid Chloride Permeability test Apparatus	The Rapid Chloride Penetration Test (RCPT) is a laboratory test used to evaluate the permeability of concrete to chloride ions. It is an important test in assessing the durability of concrete structures, particularly in environments where chloride ions from sources like de-icing salts or seawater can penetrate the concrete and potentially corrode the reinforcement steel, which can lead to structural degradation.	
3	Vacuum Pump	In the process of demolding concrete cubes, a vacuum pump is often used to assist in separating the cubes from the moulds. The vacuum pump is employed to create a pressure differential that helps release the concrete cubes from the mould by sucking out the air in the space between the concrete and the mould. This process is typically used for testing the compressive strength of concrete cubes as part of quality control and quality assurance procedures.	
4	Mild Steel Core with collar/Mould	For doing experiments and also for preparation of cubes by B.E., M.TECH. & Ph.D students	
5	Semi Automatic mild steel compression testing machine (Unconfined)	For Concrete cubes Testing	

S.No.	Name of Equipments	Purpose / Use	Photograph
6	Sieve Shaker	for sieve analysis	
7	Hot Air Oven	to dry the sediments	
8	Induction Motor 3hp	For lifting the water from Lower to higher level like over head tank open channel flume for performing experiment by UG,PG & PhD Experiment	
9	Induction Motor 5hp	For lifting the water from Lower to higher level like over head tank open channel flume for performing experiment by UG,PG & PhD Experiment	
10	DC Power Supply	For electro coagulation process for conversion of AC to DC in thesis or Project Work	
11	Gas analyzer	It is used in analyzing Indoor/Out door CO2 in M.Tech Thesis or Project Work	

S.No.	Name of Equipments	Purpose / Use	Photograph
12	Humidity and Temperature sensor system	Used to find Humidity and Temperature in air quality sampling processes	
13	PM Sampler 10	It is used for M.Tech II Sem Practical	
14	PM Sampler 2.5	It is used for M.Tech II Sem Practical	
15	Wheel rut tester	Wheel Rut Tester which is useful for research & road construction (to determine the resistance ability to wheel tracking at high temperature of bituminous combined material)	
16	Extensometer	The Concrete Cylinder Compressometer-Extensometer is used to determine the static modulus of elasticity (Young's Modulus) and Poisson's ratio of concrete in compression.	

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	32
2.	Phd Scholars	60
3.	Book Publications	03
4.	Chapter Publications	20
5.	International Journal Publication	30
6.	International Conference Publication	37
7.	Faculty Outreach	36

S. No	Particulars	Total
8.	Patents	06
9.	Research Projects	06
10.	Consultancy Projects	194
11.	Workshops/Seminar Organized	03
12.	Expert Lectures Organised	02
13.	Lab Facilities Developed	12

Department of Computer Science and Engineering

Technological change is ongoing and phenomenal for the improvement of the human condition. The Department of CSE community- students, staff, faculty, and alumni will realize our motto of "Progress and Service" through effectiveness and innovation in teaching and learning, research advancement, and entrepreneurship in all sectors of society. The computer science and Engineering Department was established in the year 1986. Since its inception, it is consistently creating its place of excellence not only within the institute but among its counterparts in the country and abroad. The department of CSE will continue to provide a high impact on the teaching/learning process, technological advancement, and research discoveries that will have worldwide implications and benefit humankind. The department runs one UG program B.Tech. (Computer Science and Engineering), four PG programs M.Tech. in Advanced Computing, Computer Networking, Information Security, and Artificial Intelligence, and Doctoral Program as well.

The department has highly qualified and competent faculty members and adequate facilities to support teaching and learning activities. Students with high rank in competitive exams like JEE and GATE join the department at undergraduate, postgraduate, and doctoral levels and become part of the industry and research organizations at the National and International levels. The faculty along with its students is actively involved in research activities in the area of Machine Learning, Big Data, Internet of Things, Natural Language Processing, Robotics, Information Security, and Quantum Computing. The faculty also conducts regularly various workshops/ training programs for imparting technical knowledge in the upcoming areas of Computer Science. The faculty has published 49 research papers in reputed International journals, 49 International conferences, and 15 book chapters. The faculty is also involved in various outreach activities as Expert members of various national-level technical committees and interview panels.

There are currently two ongoing research projects in the department in the area of Information Security which develop Tools to gather and analyze Digital Evidence and Solar Irradiance Forecasting which gives real-time models for reliable forecasts of solar parameters that can be used for energy planning and decision-making process, one completed in the area of Emotion Recognition and two projects under review. The CSE department also takes care of various institute-level services like Networking, Website maintenance, and Central Computing facility. The students of the department have a very good placement record with 84%, with companies like Amazon (28.75 LPA), Flipkart (26.57 LPA), and Goldman Sachs (23 LPA) with an average package of 25.74 LPA.

LAB FACILITIES AVAILABLE IN THE DEPARTMENT

1. MANIT Alumni Cell Organised Ask me Anything on Career in Tech Company session with 1999 Batch CSE ALUMNI, Mr. Sanjib Biswas Engineering Leader at Microsoft, Leading MS Word and Office NUI Engineering Teams in India. On 07 Nov 2022
2. UNESCO-INDIA-AFRICA HACKATHON on 22-25th Nov. 2022.
3. International Conference on "Advances in Materials and Manufacturing Technology", ICAMMT-2022 in association with the department of ME and CSE in online or offline mode on 22nd Nov. 2022
4. 4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND-2021) in Online Mode on 19-20 Jan 2023.
5. Department Academic Audit held on 7th Nov 2022.
6. Expert Talk on "Atomic Swaps across Blockchains" delivered by Prof. Divyakant Agrawal (Professor of Computer Science UC Santa Barbara, United States).
7. UNESCO-INDIA_AFRICA HACKATHON organized by CSE Department, MANIT on 22-25th Nov, 2022.
8. 2nd International Conference on Advances in Materials & Manufacturing Technology, ICAMMT-2022 in Association with Department of Materials & Metallurgical Engineering and Mechanical Engineering
9. India International Science Festival (IISF) on 21-24 January 2022.
10. Workshop on "Artificial Intelligence and Deep Learning" (AIDL-2023) in Online Mode on 2nd-06th Jan 2023.

Dr. Mithul Kumar Ahirwal Presented "AI and Big Data research" at SCO Young Scientists Conclave, He was one of the four Indian speakers in the Event.

Member in National and International committees

1. Dr. Vijay Bhaskar Semwal - IEEE Senior Member
2. Dr. Pragati Agrawal - Member of IEEE, ACM, CSI, and Women Techmaker
3. Dr. Vaibhav Soni- Member of International Association of Engineering (IAOE)
4. Dr. Meenu Chawla - Member of CSI and ISTE
5. Dr. Sweta Jain - Member of CSI
6. Dr. Namita Tiwari - Member of CSI
7. Dr. Mitul Kumar Ahirwal - IEEE Senior Member
8. Dr. S.K.Saritha - Member of CSI

New Labs/centre established

1. Human Ergonomics, Assistive and Haptic Lab (HEAHL) with IOT lab: Developed by Dr. Nilay Khare and Dr. Vijay Bhaskar: The focus of is to designed and develop assistive techniques to see the different human capability, limitations and biomechanical analysis of human interaction. The focus areas are AR/VR/AI/Robotics.
2. Brain-Computer Interface Lab developed by Dr. Mithul Ahirwal: The Brain-Computer Interface (BCI) Lab's main research focus is on development of brain-computer interface systems, translational neuroscience, and human machine interaction systems.

Projects whose fees received in this duration is more than 5 lacs.

1. Phase-II of Information Security Education and Awareness (ISEA), which commenced in 2015, is currently being funded by the Ministry of Communication and Information Technology, Government of India. This initiative is led by Dr. R.K. Pateriya and Dr. Deepak Singh Tomar.
2. Project Titled "Impact of climate change and urbanization on water bodies of Madhya Pradesh using artificially intelligent image processing techniques: A critical analysis for the development of model for surface water bodies monitoring system", Funding Agency: MPCST (Madhya Pradesh Council of Science and Technology), M.P. Govt., PI Dr. Jyoti Singhai Co-PI: Dr. Vijay Bhaskar Semwal Amount: 9 lakh
3. The project titled "Miniaturized Pressure Regulators (Non-moving Type) for Low-Flow Rate Applications" is being funded by ISRO/DOS. The Principal Investigator (PI) of the project is Dr. Vilash Warudkar, and the Co-PI is Dr. Pragati Agrawal, Amount Rs. 12.27 Lacs.

FACULTY DETAILS

Professor	
Dr. Meenu Chawla	Dr. R. K. Pateriya
Dr. Nilay Khare	
Associate Professor	
Dr. Deepak Singh Tomar	
Assistant Professor	
Dr. Akhtar Rasool	Dr. Pragati Agrawal
Dr. B. N. Roy	Dr. Rajesh Wadhvani
Dr. Dharendra Pratap Singh	Dr. Sanjam Shukla
Dr. Jaynilok Choudhary	Dr. Sri Khetwat Santha
Dr. Jyoti Bharti	Dr. Sweta Jain
Dr. Manasi Gyanchandani	Dr. Vaibhav Soni
Dr. Manish Pandey	Dr. Vasudev Dehakwar
Dr. Mitul Kumar Ahirwal	Dr. Vijay Bhaskar Semwal
Dr. Namita Tiwari	

UG Programme

Bachelor of Technology (B.Tech.)	Computer Science Engineering
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PG Programme

Master of Technology (M.Tech.)	Specialization
	1. Advance Computing
	2. Computer Networking
	3. Information Security
	4. Artificial Intelligence

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Ablishek Jadhav	Attention-based Computational Models for Medical Image Segmentation
2.	Alok Sahelav	Modification of sentiment Text using EEG Signals (Tentative)
3.	Anjali Gupta	Lower Limb rehabilitation from occluded Gait for different activities
4.	Ankita Choudhary	A Novel Blockchain Framework for National Academic Credit Bank in context of NEP 2020(ongoing)
5.	Arvind Pillani	Design and development of approaches for reducing the data complexity issues associated with real world classification problems
6.	Ashish Kumar Raihwar	Framework for Medical Image Segmentation and Information Retrieval
7.	Ashwini Kumar Malviya	Quantum Cryptanalytic Attack on Symmetric Block Ciphers (Completed)
8.	Banalaxmi Brahma	Investigation of dataset characteristics for design of RNN models in time series applications
9.	Barkha Soni	Quantum Machine Learning
10.	Bhavna Swarnkar	Early Diagnosis of gynecological cancers using Machine learning techniques
11.	Chandrabhushan Prasad	An Approach based on Graph Neural Network for Context Aware Recommendation System
12.	Chetna Indorkar	Image Segmentation
13.	Debangana Ram	Big Data Privacy
14.	Himanshu Yadav	Machine Learning
15.	Kaptan Singh	Enhanced security, user Authorization and ownership transfer framework for web of things
16.	Khushboo Singh	Multiclass Classification of Human Emotions from EEG Signals using Deep Learning Model
17.	Lalit Kumar	Parallel Approach for Population based Metaheuristic Optimization Algorithms

S. No.	Name	Title/Area of Research
18.	Lokesh Yadav	A Hybrid Approach for Malware Analysis with API Call Sequence
19.	Madhvi Patel	Improved image captioning with integration of context-aware attention mechanism
20.	Mahendra Kumar Jhariya	Digital Identification and Authentication Framework for Access Management of IoT Devices Using Blockchain
21.	Mahesh Gour	Deep Learning Approaches for medical image segmentation and classification
22.	Manali Chandnani	Application of Machine learning in real world
23.	Mithun Singh Ahirwar	Improved Fall Detection and Prediction Based on Wearable Sensor Data Using Deep Learning Techniques
24.	Mohit Kushwaha	Construction of Realistic Human 3D Model from a single 2D image using Lifting Transformation
25.	Muktesh Gupta	Change Point Detection-Based Prediction for Time Series Data Applications
26.	Neelima Agaraiya	security and malware detection
27.	Pratibha Tokas	Human Gait Analysis for Rehabilitation
28.	Puneet Himthani	Machine Learning (Multi-label Classification) (Ongoing)
29.	Rahul Jain	Development of Deep Learning Model for Robot Walk Generation
30.	Rahul Singh	Natural Calamity prediction based on spatio-temporal data using Machine learning
31.	Rajeev Kumar	feature extraction based intrusion detection system using machine learning
32.	Rakesh Bharathi	An Integrated Approach For Text And Annotated Data To Predict Fake Post And Hate Speeches.
33.	Reenu Rajpoot	XAI techniques for Medical Image Classification Problems
34.	Richa Goenka	Detection of Diverse Phishing Attacks using Multilayered Heuristic Approach(ongoing)
35.	Rijvan Beg	A framework for Evidence Collection and Analysis of Malware Activities using Machine Learning Technique
36.	Sadhna Bijrothiya	Wearable Sensor-Based Human Activity Recognition Using Hybrid Deep Learning Architectures
37.	Saima Hasib	Quantum Machine Learning
38.	Sameeksha Prasad	Zero Knowledge Protocols (ongoing)
39.	Sana Akbar	Quantum Machine Learning Based Community Detection in Social Network Analysis (Awarded)
40.	Santosh Kumar Sahu	Plant Foliar Disease Detection from Leaf Images using Machine Learning Techniques
41.	Sarita Sahani	An ensemble of deep learning models for human activity recognition
42.	Saurabh Shrivastava	Novel Optimization Based Solutions for Supervised Learning
43.	Shreya Sahu	Improved Graph Mining for Significant Patterns in Weighted Big Graphs(Completed)
44.	Snehata Yadav	Semantic secure Broadcast Encryption Schemes using Asymmetric Key Cryptography.
45.	Sowkarthika B.	Efficient Data Complexity based Machine Learning for Real World Problems
46.	Sreemoyee Biswas	Enhanced data privacy using machine learning techniques for correlated large datasets
47.	Suneer Joshi	Improved scheme for anomaly detection in Online Social Network
48.	Surendra Solanki	Spectrum Sensing Using Classification Techniques for Cognitive Radio
49.	Sushil Charurvedi	Application of machine Learning
50.	Swapnil Murai	Learning based Bipedal Model for Rehabilitation
51.	Vandana Shukla	Assessment of Security and Vulnerability of wireless Network through Reinforcement Learning
52.	Varsha Kushwah	Decomposition Techniques Based Hybrid Approach to Improve the Performance of Forecasting Model
53.	Vishal Singh Bhati	Investigation of Deep Learning Classifiers for Emotion Recognition
54.	Yogesh Kumar sharma	Analysis and detection of android malware through code-based features using machine learning techniques

CHAPTER PUBLICATIONS

1. Aman Rai and Mitul Ahirwal, "Cognitive Load Classification During Arithmetic Task Using Single Convolution Layer-Based 2DCNN Model ", In: Aman Rai and Mitul Ahirwal (eds.), (Machine Learning, Image Processing, Network Security and Data Sciences), Springer, Singapore, 2023.
2. Aman Rai and Mitul Ahirwal, "Electroencephalogram-based Cognitive Load Classification during Mental Arithmetic Task", In: Aman Rai and Mitul Ahirwal (eds.), Edge Analytics, Springer, Singapore, 2022.
3. Ayush Soni, Akhtar Rasool and Aditya Dubey, "Visualizing Commenters Opinions Through Topic Analysis", In: Ayush Soni, Akhtar Rasool, Aditya Dubey and Nilay Khare (eds.), Lecture Notes in Networks and Systems, Springer Nature Singapore, 2022.
4. Chiranjit Das, Aditya Dubey and Akhtar Rasool, "Outlier Detection Techniques: A Comparative Study", In: Chiranjit Das, Aditya Dubey, Akhtar Rasool (eds.), Lecture Notes in Electrical Engineering, Springer Singapore, 2022.
5. Dilip Kumar Choubey, Vaibhav Shukla and Vaibhav Soni, "A Review on IoT Architectures, Protocols, Security, and Applications", In: Dilip Kumar Choubey, Vaibhav Shukla, Vaibhav Soni (eds.), Industrial Internet of Things, CRC Press, 2022.
6. Dilip Kumar Choubey, Chandan Kumar Jha and Vaibhav Soni, "Detecting Heart Arrhythmias Using Deep Learning Algorithms", In: Dilip Kumar Choubey, Chandan Kumar Jha and Vaibhav Soni (eds.), Convergence of Cloud with AI for Big Data Analytics: Foundations and Innovation, Wiley Online Library, 2023.
7. Kapil Sharma, Meenu Chawla and Namita Tiwari, "Intrusion Detection System using Machine Learning Approach: A Review", In: Kapil Sharma, Meenu Chawla and Namita Tiwari (eds.), Lecture Notes on Networks and Systems, SPRINGER, 2022.

8. Kumar Gaurav, Bholanath Roy and Jyoti Bharti, "A Hybrid Deep Learning Model for Human Activity Recognition Using Wearable Sensors", In: Kumar Gaurav, Bholanath Roy, Jyoti Bharti (eds.), Machine Intelligence and Smart Systems, SpringerLink, 2022.
9. Mangesh Kose and Mitul Ahirwal, "Comparative Analysis of Node Dependent and Independent Graph Metrics for Brain Connectivity Network", In: Mangesh Kose, Mitul Ahirwal and Mithilesh Atulkar (eds.), (Machine Intelligence Techniques for Data Analysis and Signal Processing, Springer, Singapore, 2023).
10. Manoj Kumar, Pratiksha Gautam and Vijay Bhaskar Semwal, "An Introspective Approach to Fathom Human-Inspired Bipedal Walk Using Gait Analysis for the Matrix of Cyber-Physical System", In: Manoj Kumar, Pratiksha Gautam and Vijay Bhaskar Semwal (eds.), Artificial Intelligence in Cyber-Physical Systems: Principles and Applications, CRC Press, 2023.
11. Md Imteyaz Mohsin, Jyoti Bharti and R.K.Pateiya, "Improved Bio-hashing Fingerprint Security Using Modified Arnold's Cat Map", In: M. Imteyaz Mohsin, J. Bharti and R.K. Pateiya, (eds.), Artificial Intelligence and Sustainable Computing: Algorithms for Intelligent Systems, Springer, Singapore, 2022.
12. Rahul Singh, Bholanath Roy and Vipin Singh, "Serverless IoT Architecture for Smart Waste Management Systems", In: Rahul Singh and Bholanath Roy (eds.), IoT-Based Smart Waste Management for Environmental Sustainability, CRC Press, 2022.
13. Ruchi Billore, Manish Pandey and Santosh Kumar Sahu, "A Survey on Data Security Challenges in Healthcare Systems Using the Internet of Things Techniques", In: ---- (eds.).
14. Vaibhav Jadhav, Namita Tiwari and Meenu Chawla, "A Review on EEG Data Classification Methods for Brain - Computer Interface", In: Vaibhav Jadhav, Namita Tiwari and Meenu Chawla (eds.), Lecture Notes on Networks and Systems, SPRINGER, 2022.
15. Vikesh Kumar Gond, Aditya Dubey and Akhtar Rasool, "Missing Value Imputation Using Weighted KNN and Genetic Algorithm", In: Vikesh Kumar Gond, Aditya Dubey, Akhtar Rasool and Nilay Khare (eds.), Lecture Notes in Networks and Systems, Springer Nature Singapore, 2022.

INTERNATIONAL JOURNALS

1. A.K. Yadav, S. S. P. Shukla and R. K. Pateiya, "Implementation of SARSA-HMM Technique for Face Recognition", Data Sciences MIND-2022, 2022.
2. Abhishek Jadhav, Akhtar Rasool and Manasi Gyanchandani, "Quantum Machine Learning: Scope for real-world problems", Procedia Computer Science, Vol. 218, pp. 2612-2625, 2023.
3. Aditya Dubey and Akhtar Rasool, "Impact on Air Quality Index of India Due to Lockdown", Procedia Computer Science, Vol. 218, pp. 969-978, 2023.
4. Aditya Dubey and Akhtar Rasool, "Recent advances and applications of deep learning technique", Journal of Theoretical and Applied Information Technology, Vol. 100, pp. 5000-5009, 2022.
5. Aditya Dubey and Akhtar Rasool, "Usage of Clustering and Weighted Nearest Neighbors for Efficient Missing Data Imputation of Microarray Gene Expression Dataset", Advanced Theory and Simulations, Vol. 5, pp. 44942, 2022.
6. Aditya Dubey and Akhtar Rasool, "Usage of deep learning in recent applications", Archives of Materials Science and Engineering, Vol. 115, pp. 49-57, 2022.
7. Anany Pandey and Manish pandey, "Review Paper on Machine Learning Techniques Used For Prediction of Stock Price", IJERP, Vol. 9, Issue 11, pp. 70-74, 2022.
8. Anil Kumar Kushwaha and Rajesh Wadhvani, "Trend triplet based data clustering for eliminating nonlinear trend components of wind time series to improve the performance of statistical forecasting models", Multimedia Tools and Applications, Vol. 81, pp. 33927-33953, 2022.
9. Anjali Gupta and Vijay Bhaskar Semwal, "Occluded Gait reconstruction in multi person Gait environment using different numerical methods", Multimedia Tools and Applications, pp. 23421-23448, 2022.
10. Ashwini Kumar Malviya and Namita Tiwari, "Quantum Linear Cryptanalysis on a Toy Cipher", Pramana - Journal of Physics (SPRINGER), Vol. 97 (63), 2023.
11. Ashwini Kumar Malviya, Namita Tiwari and Meenu Chawla, "Quantum Cryptanalytic Attacks of Symmetric Ciphers: A Review", Computers and Electrical Engineering (ELSEVIER), Vol. 101 (108122), 2022.
12. B. Sowkarthika, Manasi Gyanchandani and Rajesh Wadhvani, "Data complexity-based dynamic ensembling of SVMs in classification", Expert Systems with Applications, Vol. 216, 2023.
13. Banalaxmi Brahma and Rajesh Wadhvani, "A residual ensemble learning approach for solar irradiance forecasting", Multimedia Tools and Applications, pp. 1-23, 2023.
14. Banalaxmi Brahma and Rajesh Wadhvani, "Visualizing solar irradiance data in ArcGIS and forecasting based on a novel deep neural network mechanism", Multimedia Tools and Applications, Vol. 81, pp. 9015-9043, 2022.
15. Barkha Soni and Nilay Khare, "Quantum principal component analysis based on the dynamic selection of eigenstates", Europhysics Letters, Vol. 139, 2022.
16. Bhagat Raghuwanshi, Aakansha Mangal and Sanyam Shukla, "Universum based kernelized weighted extreme learning machine for imbalanced datasets", International Journal of Machine Learning and Cybernetics, Vol. 13 and 11, pp. 3387-3408, 2022.
17. Deepali Patil, Rajesh Wadhvani and Sanyam Shukla, "Adaptive wind data normalization to improve the performance of forecasting models", Wind Engineering, Vol. 46, pp. 1606-1617, 2022.
18. Kapil Kumar Soni and Akhtar Rasool, "Quantum-effective exact multiple patterns matching algorithms for biological sequences", PeerJ Computer Science, Vol. 8, pp. e937, 2022.
19. Kaptan Singh and Deepak Singh Tomar, "Secure the ownership of WoT devices using secure ownership transfer framework", International journal of information technology, Vol. 15.

20. Khushboo Singh, Mitul Kumar Ahirwal and Manish Pandey, "Quaternary Classification of Emotions based on Electroencephalogram Signals Using Hybrid Deep Learning Model", *Journal of Ambient Intelligence and Humanized Computing*, Vol. 14, pp. 2429-2441, 2022.
21. Mahesh Gour, Sweta Jain and Sushant Kaushal, "XCapsNet: A deep neural network for automated detection of diabetic retinopathy", *International Journal of Imaging Systems and Technology*, Vol. 33, Issue3, pp. 1014-1027.
22. Mangesh Ramaji Kose, Mitul Kumar Ahirwal and Mithilesh Atulkar, "Dynamic characterization of functional brain connectivity network for mental workload condition using an effective network identifier", *International Journal of Information Technology*, Vol. 15, pp. 1-10, 2023.
23. Manju Lata Sahu, Mithilesh Atulkar and Mitul Kumar Ahirwal, "Internet-of-Things-Enabled Early Warning Score System for Patient Monitoring", *IETE Journal of Research*, pp. 1-12, 2022.
24. Mohit Kushwaha, Jayatilok Choudhary and Dharendra Pratap Singh, "Enhancement of human 3D pose estimation using a novel concept of depth prediction with pose alignment from a single 2D image", *Computers & Graphics*, Vol. 107, pp. 172-185, 2022.
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27. Narendra Kumar Rout, Mitul Kumar Ahirwal and Mithilesh Atulkar, "Improved Content-Based Medical Image Retrieval System for Effective Skin Melanoma Diagnosis based on Proposed Optimized Pair-Wise Comparison (OPWC) Approach", *Journal of Digital Imaging*, Vol. 36, pp. 46-58, 2022.
28. Nimisha Gupta, Mitul Kumar Ahirwal and Mithilesh Atulkar, "Development of Human Decision Making Model with Consideration of Human Factors through Reinforcement Learning and Prospect Utility Theory", *Journal of Experimental & Theoretical Artificial Intelligence*, pp. 1-17, 2022.
29. Nimisha Gupta, Mitul Kumar Ahirwal and Mithilesh Atulkar, "Simulation and modeling of human decision-making process through reinforcement learning based computational model involving past experiences", *Decision Science Letters*, Vol. 11, pp. 366-378, 2022.
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34. Rahul Rane, Aditya Dubey, Rajesh Wadhvani and Akhtar Rasool, "Data Mining Based Techniques for Covid-19 Predictions", *Procedia Computer Science*, Vol. 218, pp. 210-219, 2023.
35. Roshani Choudhary and Sanyam Shukla, "Reduced-Kernel Weighted Extreme Learning Machine Using Universum Data in Feature Space (RKWELM-UFS) to Handle Binary Class Imbalanced Dataset Classification", *Symmetry*, Vol. 14 and 2, 2022.
36. Rout, N.K., Mithilesh Atulkar and Mitul Kumar Ahirwal, "Assimilation of Pair-Wise Comparison Method to Decide Weights of Features Based on the content of Image", *International Journal of Information Technology & Decision Making*, pp. 1-26, 2022.
37. S. Solanki, Vasudev Dehalwar and J. Choudhary, "Spectrum Sensing in Cognitive Radio Using CNN-RNN and Transfer Learning", *IEEE Access*, Vol. 10, pp. 113482-113492, 2022.
38. Sandesh Verma, Dr. Namita Tiwari and Dr. Meenu Chawla, "Image Orientation Correction: A Review", *IJRT (International Journal of Research & Technology)*, Vol. 11 Issue 1, pp. 16-20, 2023.
39. Santosh Kumar Sahu and Manish Pandey, "An optimal hybrid multiclass SVM for plant leaf disease detection using spatial Fuzzy C-Means model", *Elsevier*, Vol. 214, pp. 118989-118989, 2022.
40. Saroj Kumar Pandey, Rekh Ram Janghel and Pankaj Kumar Mishra, "Automated Epilepsy Seizure Detection from EEG Signal based on Hybrid CNN and LSTM model", *Signal Image and Video Processing*, Vol. 17, pp. 1113-1122, 2022.
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42. Snehlata Yadav and Dr. Namita Tiwari, "An Efficient and Secure Data Sharing Method using Asymmetric Pairing with Shorter Ciphertext to enable Rapid Learning in Health-Care", *Computational Intelligence and Neuroscience (Hindawi)*, Vol. 2022, 2022.
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44. Sravan Kumar Challa, Akhilesh Kumar and Vijay Bhaskar Semwal, "An optimized-LSTM and RGB-D sensor-based human gait trajectory generator for bipedal robot walking", *IEEE Sensors Journal*, Vol. 22, Issue 24, pp. 24352-24363.
45. Sreemoyee Biswas, Anuja Fole and Dr. Nilay Khare, "Enhancing correlated big data privacy using differential privacy and machine learning", *Journal of Big Data*, Vol. 10, Article No. 30, pp. 32, 2023.
46. Sweta Jain, Pruthviraj Choudhary and Mahesh Gour, "Pulmonary lung nodule detection from computed tomography images using two-stage convolutional neural network", *The Computer Journal*, Vol. 66 Issue 4, pp. 785-795.
47. Vasudev Dehalwar, Mohan Lal Kolhe and Shreya Deoli, "Blockchain-based trust management and authentication of devices in smart grid", *Cleaner Engineering and Technology*, Vol. 8, pp. 2666-7908, 2022.
48. Vijay Bhaskar Semwal, Rahul Jain and Pushkar Maheshwari, "preimpact", *Multimedia Tools and Applications*, pp. 1-19, 2023.

49. Vishal Khandare and Manish pandey, "Electric Car Price Prediction using Machine Learning Techniques", IFERP, Vol. 9, Issue 11, pp. 44-46, 2022.

INTERNATIONAL CONFERENCE

- Aditya Pushkar, Muktesh Gupta and Rajesh Wadhvani, "A Comparative Study on Change-Point Detection Methods in Time Series Data", International Conference on Intelligent Technologies, Hubli, India, 24-26 June 2022.
- Ahan M R, Roshan Roy and Vaibhav Soni, "Transformer-based Flood Scene Segmentation for Developing Countries", 35th Conference on Neural Information Processing Systems (NeurIPS 2021), virtual, 9 Oct 2022.
- Aman Gupta, Meenu Chawla and Namita Tiwari, "Electricity Power Consumption Forecasting Techniques: A Survey", ELSEVIER SSRN (Proceedings of ICICC 2022), 19-20 Feb 2022.
- Aman Pant, Akhtar Rasool and Rajesh Wadhvani, "Heart disease prediction using image segmentation Through the CNN model", International Conference on Cloud Computing, Data Science & Engineering, Noida, India, 19-20 Jan 2023.
- Aman Pant, Akhtar Rasool and Rajesh Wadhvani, "Recommendation System for Health-care using Reinforcement learning: A survey", International Conference on contemporary Engineering and Technology.
- Amit Kumar, Namita Tiwari and Meenu Chawla, "Review of Copy-Move Image Forgery Detection", CEUR Workshop Proceedings (WINS 2022), 26-29 Aug, 2022.
- Anany Pandey and Manish Pandey, "A Robust Neural Network Based Short Time Electricity Price Prediction", International Conference on Intelligent Communication and Computational Techniques, 19-20 Jan 2023.
- Anshul Kumar, Rajesh Wadhvani and Akhtar Rasool, "Quantile Regression in Machine Learning: A Survey", International Conference on Secure Cyber Computing and Communication, 26-28 May 2023.
- Beauty Kumari and Jyoti Bharti, "A Comprehensive Review of the Occlusion Identification Based Gait Recognition Mechanism", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS-2023), Bhopal, India, 18th-19th February 2023.
- Chetan Patel, Arsh Pandey and Rajesh Wadhvani, "Forecasting Nonstationary Wind Data Using Adaptive Min-Max Normalization", International Conference on Sustainable Technology for Power and Energy Systems, NIT Srinagar, India, 04-06 July 2022.
- Debangana Ram, Bholanath Roy and Vaibhav Soni, "3D Grid Based Virtual Trial Room", 2022 IEEE World Conference on Applied Intelligence and Computing, AIC 2022, 17-19 June 2022.
- Debangana Ram, Dr. Bholanath Roy and Dr. Vaibhav Soni, "A Review on Virtual Reality for 3D Virtual Trial Room", 2022 IEEE World Conference on Applied Intelligence and Computing, AIC 2022, 17-19 June 2022.
- Deepak Kumar and R.K. Pateriya, "DDoS Detection using Deep Learning", International Conference on Machine Learning and Data Engineering, 2023.
- Hussain Kaide Johar Manasiani and Jyoti Bharti, "GCD Thresholding Function applied on an image with Global Thresholding", International Conference on Advances in IOT, Security with AI (ICASISA-2023), Delhi, India, 24-25 March 2023.
- Jyoti Bharti, Deepak Singh Tomar and, Chandan Charchit Sahoo, "Transformer based multimodal similarity search method for e-commerce platform", IEEE Guwahati Sub Section Conference (GCON-2023), IIT Guwahati, 23 June - 25 June 2023.
- Lokesh Yadav and Shyam Mohan Azad, "A Sophisticated Framework for Document Forensics", Machine Learning, Image Processing, Network Security and Data Sciences: 4th International Conference, MIND 2022, MANIT Bhopal, 19-20 Jan 2023.
- Mahesh Gour, Sweta Jain and Reenu Rajpoot, "Histopathological Image Synthesis with Generative Adversarial Network for Nuclei Segmentation", 4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences MIND-2022, 19-20 Jan 2023.
- Mallela David Vinay, Mandavyapuram Hemanth Kumar and Deepak Singh Tomar, "Smart Attendance System Using Biometric and GPS", 8th IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECS 2023.
- Mayank Shukla, Akhtar Rasool and Aditya Jain, "COVID-19 Detection Using Raw Chest X-Ray Images", 2022 IEEE World Conference on Applied Intelligence and Computing (AIC), 17-19 June 2022.
- Mitul Kumar Ahirwal, Saahard Pareek and Samyak Mehta, "Improved Concentrated Mental State Classification through EEG Signal Augmentation and One-Dimensional Convolutional Neural Network", International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering at SVNIT Surat, Gujarat, 19-20 Jan 2023.
- Mukesh Kumar Ojha, Dilip Kumar Choubey and Vaibhav Soni, "IoT Based System for Accident Detection, Monitoring and Landslide Detection Using GSM in Hilly Areas", 4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, MANIT, Bhopal, MP, 19-20 Jan 2023.
- Naveen Saini, Manasi Gyanchandani and Debangana Ram, "Multi-Headed CNN and Vision Transformer Based Diabetic Retinopathy Classification", International Conference on Computing, Communication and Networking Technologies, 06-08 July 2023.
- Nidhi Dua and Vijay Bhaskar Semwal, "A Survey on Human Activity Recognition Using Deep Learning Techniques and Wearable Sensor Data", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, Bhopal, MP, 19-20 Jan 2023.
- Omprakash Kurmi, Manasi Gyanchandani and Nilay Khare, "Classification of Amyotrophic Lateral Sclerosis Patients using speech signals", Third International Conference on Secure Cyber Computing and Communication, 26-28 May 2023.
- Omprakash Kurmi, Manasi Gyanchandani and Nilay Khare, "Comparative Analysis on classification efficiency of Deep Learning Models on Amyotrophic Lateral Sclerosis Patients using speech signals", 11th International Conference on Contemporary Engineering & Technology, 1-2 May 2023.

26. OmswroopThakur, Sri Kherwat Sanitha and Sweta Jain, "Topic Modeling, Sentiment Analysis, and Text Summarization for Analyzing News Headlines and Articles", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, 19-20 Jan 2023.
27. Omswroop Thakur, Sri Kherwat Sanitha and Sweta Jain, "Textual analysis of Covid-19: A Review", THEETAS 2022: Proceedings of The International Conference on Emerging Trends in Artificial Intelligence and Smart Systems, THEETAS 2022, 16-17 Apr 2022.
28. Pawan Kumar Patidar, Deepak Singh Tomar and R. K. Pateriya, "A Threat modeling approach to analyze and mitigate WhatsApp attacks: A Review", 6th IEEE International Students' Conference on Electrical, Electronics And Computer Science, SCECS 2023, 20-23 Mar 2023.
29. Pratik Ashok Chaudhari, Rajesh Wadhvani and Akhtar Rasool, "A Review on Condition Assessment Methods of Ball Bearing", International Conference on Secure Cyber Computing and Communication, 26-28 May 2023.
30. Rahul Ahirwar, Akhtar Rasool and Aanya Chouhan, "Covid-19 Detection based on Transfer Learning & LSTM Network using X-ray Images", 2022 IEEE World Conference on Applied Intelligence and Computing (AIC), 17-19 Jun 2022.
31. Rahul Rane, Rajesh Wadhvani and Akhtar Rasool, "Neural Network Based Mortality Prediction in Covid-19 Dataset", International Conference on Artificial Intelligence of Things, Chandigarh, India, 30-31 Mar 2023.
32. Raj Shekhar, Deepak Singh Tomar and R. K. Pateriya, "Human Activity Recognition with Smartphone Using Classical Machine Learning Models", 17thINDIACom, 2023 10th International Conference on "Computing for Sustainable Global Development", organised by BVICAM, New Delhi, 15-17 Mar 2023.
33. Rajdeep Singh and R.K. Pateriya, "Data Clustering Approach on the Basis of Data Sensitivity for Implementation of Secure Cloud Computing Environment", 4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences MIND-2022, 1-3 Jan 2023.
34. Raksha Verma, Sweta Jain, S K Sanitha and Shubham Dodia, "Automatic Abnormality Detection in Musculoskeletal Radiographs Using Ensemble of Pre-trained Networks", International Conference on Frontiers of Intelligent Computing: Theory and Applications, 18-19 Jun 2022.
35. Risham Kumar Pansari, Akhtar Rasool and Rajesh Wadhvani, "Machine Learning Based Stock Market Prediction", International Conference on Next Generation Systems and Networks, Singapore, 4-5 Nov 2022.
36. Roshani Choudhary, Jayesh Kashyap and Sanyam Shukla, "Feature Selection in under bagging Based Kernel ELM for Handling Class Imbalance Dataset Classification", Workshop on Control and Embedded Systems and Online, 22-24 Apr 2022.
37. Shivangi Tripathi, Rajesh Wadhvani and Akhtar Rasool, "Comparison Analysis of Deep Learning Models in Medical Image Segmentation", International Conference on Cloud Computing, Data Science & Engineering, 19-20 Jan 2023.
38. Shubham Gupta, Sweta Jain and Bholanath Roy and Abhishek Deb, "A TinyML approach to human activity recognition", International Conference on Applications of Intelligent Computing in Engineering and Science (AICES-2022), 12-13 Feb 2022.
39. Sonu Kumar, Pranay Yadav and Vijay Bhaskar Semwal, "A Comprehensive Analysis of Lower Extremity Based Gait Cycle Disorders and Muscle Analysis", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, Bhopal, MP, 19-20 Jan 2023.
40. Utkarsh Pandey, Sanyam Shukla and Rajesh Wadhvani, "OCSK-SMOTE: An improved minority oversampling technique for unbalanced dataset using One-Class SVM and K-means", International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2022 and Greater Noida, India, 28-29 Apr 2022.
41. Vaibhav Jadhav, Namita Tiwari and Meenu Chawla, "EEG-based Emotion Recognition using Transfer Learning based Feature Extraction and Convolutional Neural Network", ICDSIA 2023, 28 - 29 Apr 2023.
42. Vaibhav Malpani, Sanyam Shukla and Manasi Gyanchandani, "Customized CNN for Traffic Sign Recognition Using Keras Pre- Trained Models", International Conference on Innovative Computing and Communications: Proceedings of ICICC 2023, 17-18 Feb 2023.
43. P. Verma, J. G. Breslin and R.K. Pateriya, "A Stacked Ensemble Method with Adaptive Attribute Selection to Detect DDoS Attack in Cloud-Assisted WBAN", 4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences MIND-2022, 18 Jan 2023.
44. Vijay Bhaskar Semwal, Abhishek Kumar and Vaibhav Soni, "Tracking of Fall Detection using IMU sensor: An IoHT Application", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, 19-20 Jan 2023.
45. Vijeta Verma, Sri Kherwat Sanitha and Sweta Jain, "Automatic Image Caption Generation Using ResNet& Torch Vision", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, 19-20 Jan 2023.
46. Vineet Pandey, Sweta Jain, and Sri kherwatsanitha, "An IoT Based Real-Time Fire And Smoke Detection Using Mobilenet", 11th International Conference On "Contemporary Engineering And Technology -2023"(ICCET - 2023), 1 -2 May 2023.
47. Vineet Pandey, Sweta Jain and Sri kherwatsanitha, "Advanced IoT-Based Fire and Smoke Detection System leveraging Deep Learning and TinyML", International Conference on Computing Communication and Networking Technologies (ICCCNT), 15-16 Jul 2023.
48. Virendra Patel, Sanyam Shukla and Mansi Gyanchandani, "Analysis of Different Loss Function for Designing Custom CNN for Traffic Sign Recognition", Workshop on Intelligent Systems and Online, 22-24 Apr 2022.
49. Vivek Kumar Patidar, Rajesh Wadhvani and Sanyam Shukla, "Quantile Regression Comprehensive in Machine Learning: A Review", IEEE International Students' Conference on Electrical, Electronics and Computer Science, Bhopal, Madhya Pradesh, India, 18-19 Feb 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 37 which includes all type of activities.

MoUs

S. No.	Name of Coordinator	Name of the agency with which MOU signed
1.	Deepak Singh Tomar and Nilay Khare	AIIMS Bhopal

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Sri Khetwat Saritha	Quantum Inspired Community Detection for Predicting COVID – 19 Hotspots Linked with Labour Migration in India	Granted

RESEARCH PROJECTS

1. Deepak Singh Tomar and R. K. Pateniy, "Information Security Education and Awareness (ISEA) Phase-II", Sponsored by MHRD Govt of India.
2. Jyoti Singhai and V. B. Semwal, "Impact of climate change and urbanization on water bodies of Madhya Pradesh using artificially intelligent image processing techniques: A critical analysis for development of model for surface water bodies monitoring system", Sponsored by MPCST (Madhya Pradesh Council of Science and Technology), M.P. Govt..
3. Vilash Warudkar and Pragati Agrawal, "Development of Miniaturised pressure Regulators (Non-moving type) for low-flow rate applications ", Sponsored by ISRO/ DOS, GoI.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Deepak Singh Tomar, Vijay Bhaskar Semwal	Conference	International Conference on Machine Learning, Image Processing, Network Security and Data Sciences, Bhopal, MP	119	19 Jan 2023	20 Jan 2023
2.	Meenu Chawla	Webinar	A webinar session on HPC/ Nvidia DGX-A100	95	22 Aug 2022	23 Aug 2022
3.	Mitul Kumar Ahirwar	Workshop	Artificial Intelligence and Deep Learning	78	02 Jan 2023	06 Jan 2023
4.	Sri Khetwat Saritha	High End Workshop	Application of Information and Communication Technology on Transportation Engineering and Logistics	25	14 Jul 2022	20 Jul 2022

LAB

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Brain Computer Interface (BCI) Lab	One Desktop PC and EEG recording machine	EEG Signal recording, Mental workload classification	Creation of EEG dataset
2.	Central Computing Facility (CCF)	HPC Facility, 10 performance grade workstations, 2 labs with 200 desktops	HPC for research scholars, placement activities, regular labs for UG, capability to handle large datasets, seamless gigabit network connectivity.Utilization of Workstations: a) Evaluation of Elastic Critical Movement for a fixed beam using ANSYS. b) Analysis of scouring around the different type of piers using Flow 3D. c) Analysis of depth of scour using Flow 3D. d) Analysis of Flow field around submerged vanes using Flow 3D. e) Effect of shapes of gryones on bed morphology and flow field using Flow 3D.	UG/PG/Ph.D. Students and faculty members from all the departments are using computer labs and high-performance cluster for their Academics, Research and Training purposes.

S. No	Name of Lab	Facilities/Equipments	Research Carried	Output
3.	Computer Vision Lab	5 Workstation	For Reserach Activity	Students are using computer labs for their Academics and Research purpose
4.	Computing Lab - PG 1	31 Systems	PG, PhD Research lab	Progressive Research on Network Security, Computer Vision
5.	Open Source Lab	100 Thin client Systems	Placement Related Activities	
6.	Parallel Computing Lab	1 Master Node, 22 Slave nodes	Big Data Analytics (Hadoop & Spark)	Progressive Research on Big Data Analytics
7.	WSN Lab	11 System	For PG/PhD research activities	

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	21
2.	Phd Scholars	54
3.	Chapter Publications	15
4.	International Journal Publication	49
5.	International Conference Publication	49
6.	Faculty Outreach	37
7.	MoU's	01
8.	Patents	01
9.	Research Projects	03
10.	Workshops/ Seminar Organized	04
11.	Lab Facilities Developed	07

Department of Electrical Engineering

Electrical Engineering Department has experienced and well qualified faculty in the area of Power System, Smart Grid, Electrical Drives, Power Electronics application and Renewable Energy. The department is planning to have more projects and industrial collaboration in future. Electrical Engineering Department is going to introduce New PG Program. Department has organised Conferences and Faculty Development Program (AICTE), which are widely attended by faculty members and Research Scholars. Faculty members of the department have published 47 research papers in International Journals and 45 research papers in International Conferences. Faculty of the department are involved in many outreach activities.

The department has planned to setup many new labs having state of art facilities for research and development activities by the students and faculty. Three externally funded R&D projects are running in the department. The faculty members have submitted research projects to various funding agencies for obtaining financial support to setup these labs. In future also, consistent efforts shall be carried out to setup new labs and create a research friendly environment in the department, so that the students can realize new ideas and create efficient and environment friendly equipments and appliances for sustainable development.

Electrical department has thirteen laboratories. Out of thirteen laboratories, four laboratories are dedicated for post graduate students /research scholars and nine laboratories are dedicated to undergraduate students. The prime UG labs are Electrical Machines lab, Network lab, Instrumentation lab, Control System lab, Power Electronics lab, Power System lab, Electronics lab etc. The laboratories for post graduate students include PLC and Drives lab, Digital controller lab, Advanced power System & Simulation lab. Some new research labs are in developing stage under different R&D research grants. All the labs are well equipped and functional.

FACULTY DETAILS

Professor	
Dr. Manisha Dubey	Dr. Shailendra Jain (on Lien)
Dr. N. P. Patidar	Dr. Sushma Gupta
Dr. R. K. Nema	Dr. Tripta Thakur (on Lien)
Dr. Sanjeev Singh	Dr. Y. Kumar
Dr. Savita Nema	
Associate Professor	
Dr. Anoop Arya	Dr. Ujjwal Kumar Kalla
Dr. S. C. Gupta	
Assistant Professor	
Dr. Amit Ojha	Dr. Priyanka Paliwal
Dr. Giribabu D.	Dr. Rishi K. Singh
Dr. More Raju	Dr. Shailendra Kumar
Dr. Mukesh K. Kirar	Dr. Suresh K. Gawre
Dr. Pankaj Swarnkar	

UG Programme

Bachelor of Technology (B.Tech.)	Electrical Engineering
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PG Programme

Master of Technology (M. Tech.)	Specialization
	1. Electrical Drives
	2. Power System Engineering

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Aditya Sirsa	Performance Investigation of Standalone Solar PV System with Fault Tolerant Multilevel Inverter
2.	Aftab Ahmed Ansari	Doubly fed induction generator based wind energy system
3.	Amarnath Patel	Not decided yet
4.	Amogh Narvaria	Adaptive control system
5.	Anchal Raghuvanshi	Application of Multilevel Converter in Electric Vehicle
6.	Anil Gupta	Control of Small Hydro Power Generation System and Their Integration with Other Energy Sources
7.	Anupam Shukla	Electric Vehicle
8.	BanothuSomanna	Renewable Energy system in microgrid
9.	Dheeraj Kumar	Solar Power Conversion with bidirectional power flow (Tentative)
10.	Goutam Kumar Yadav	Design and Analysis of Protection Technique for Microgrid
11.	Hiramani Shukla	Combine analysis of AGC & AVR for multiarea inter connected system
12.	Jatoh Rajender	Modeling and Control of Renewable Energy Based EV Charging Systems
13.	Jyoti Chouhan	Performance Investigations Of Multilevel Inverter with Reduced Switch Count for Hybrid Energy System
14.	Kaushal Kishor Ahirwar	Not decided yet

S. No.	Name	Title/Area of Research
15.	Lokesh Chhadokar	Multi-Objective Optimal Charging Scheduling for EV Integration in Distribution Systems
16.	Mirza Jawad Baig	Not decided yet
17.	Mohd Kaiser Azam Ansari	Investigations on protection scheme under increased penetration of renewable energy sources in power network
18.	Mukund Subhash Ghole	Smart controller based demand response framework for device scheduling
19.	Nareesh Kumar Varathe	Multilevel Inverter
20.	Naveen Kumar	Not decided yet
21.	Nirbhay Tiwari	Not decided yet
22.	Nishant Thakkar	Microgrid planning in MCDM Framework
23.	Pragya Gawhade	Design and Development of Efficient Multilevel Inverter for Renewable Energy Source
24.	Prateek Mundra	Impact Assessment of Penetration of Renewable Energy Sources on Indian Power Sector
25.	Rahul Arora	Design and analysis of power electronic converters for BLDC Motor Drives
26.	Ritu Verma	Investigations on Protection Schemes for Solar PV integrated Grid
27.	Sanjay Kumar Kakodia	Speed control of PMSM for E-vehicle
28.	Sanjeev Bhushesh	Simulation, Modeling and Experimental Validation of Semiconductor based Thermoelectric Generator
29.	Satyam Patel	Microgrid Planning
30.	Shailu Sachani	Investigations on Adaptive Fractional Order Sliding Mode Control for Robotic Manipulator: An Application to Medical Field
31.	Shubhansh Chaurasia	Not decided yet
32.	Shweta Mehroliya	Distribution Automation
33.	Siddhant Gudhe	Multi-source bidirectional converters for Electric Vehicles
34.	Sumeet Kumar Wankhede	Planning and Control of Distributed Energy Resources in Smart Grid Network
35.	Sunil Gautam	Model order reduction techniques and controller design for rigid dynamic systems
36.	Tushar Kumar	Planning and Analysis of Smart distribution system for public Electric Transportation
37.	Uliya Mitra	Power Generation through Fuel Cell
38.	Vaibhav Kumar Sharma	Not decided yet
39.	Virendra Singh Kharkwal	Not decided yet
40.	Vivek Kumar	Not decided yet

BOOK PUBLICATIONS

1. N. P. Patidar, "Data Mining Applications to Power System Voltage Security Assessment", Lambert Academic Publication.
2. Vikas Khare, Chetna J. Khare and Savita Nema, "Decision Science and Operations Management of Solar Energy Systems", Academic Press, Elsevier, 2022.

CHAPTER PUBLICATIONS

1. A. Chandrakar and Priyanka Paliwal, "An Intelligent Mechanism for Utility and Active Customers in Demand Response Using Single and Double Q Learning Approach", In: K.Namrata, N. Priyadarshi, R.C. Bansal, J. Kumar (eds.), Smart Energy and Advancement in Power Technologies. Lecture Notes in Electrical Engineering, Springer, 2023.
2. A. P. Singh, D. Kumar and S. Nema, "A New Asymmetric Switched-Capacitor Self-Voltage Balancing Multilevel Inverter", In: atyaji Chakrabarti, Arun Kumar Bar, Swati Chowdhuri, Debashis Jana, Nirban Chakraborty and Sanjoy Mondal (eds.), Renewable Resources and Energy Management, 2023, CRC Press, 2023.
3. Anoop Arya, Karuna Nikum, A. Wagh, Shweta Mehroliya and Prateek Mundra, "Policies and Prospects to Promote Microgrids for Rural Electrification in Present Indian Scenario: A Comprehensive Review", In: Aashish Kumar Bohre, Pradyumn Chaturvedi, Mohan Lal Kolhe and Sri Niwas Singh (eds.), Planning of Hybrid Renewable Energy Systems, Electric Vehicles and Microgrid Modeling, Control and Optimization, Springer nature, Singapore, 2022.
4. Anoop Arya, Shweta Mehroliya, Uliya Mitra, Sushma Gupta, Rishi Kumar Singh and Prateek Mundra, "Design and Performance Analysis of Grid Connected Hybrid Distributed Generation using DIgSILENT Power Factory", In: Ashutosh K. Giri, Sabha Raj Arya and Dimitri Vinnikov (eds.), Distributed Energy System: Design, Modelling and Control, CRC Press Taylor & Francis Group, 2023.
5. Anoop Arya, Uliya Mitra and Sushma Gupta, "Active, Passive and Hybrid Filters in DG Systems for Power Quality Improvement", In: Ashutosh K. Giri, Sabha Raj Arya and Dimitri (eds.), Distributed Energy System: Modelling and Control, CRC Press Taylor & Francis book, 2022.
6. Anoop Arya, Uliya Mitra, Sushma Gupta, Shweta Mehroliya, Shilpi Tomar and Karuna Nikum, "Active, Passive and Hybrid Filters in DG Systems for Power Quality Improvement", In: Ashutosh K. Giri, Sabha Raj Arya and Dimitri Vinnikov (eds.), Distributed Energy System: Design, Modelling and Control, CRC Press Taylor & Francis Group, 2023.
7. M. K. Kirar, "Remote Monitoring and Control of Irrigation Water Pumping System Using IoT", In: S. Dwivedi (eds.), Flexible Electronics for Electric Vehicles, Springer, 2023.
8. More Raju, Haritha Dhanlalji Parmar, Ankur Singh Rana and Shailendra Kumar, "Application of Ant Lion Optimization Technique for Microgrid Infrastructure", In: Ashutosh K. Giri, Sabha Raj Arya, Josep M. Guerrero and Shailendra Kumar (eds.), Power Quality: Infrastructures and Control, Springer, 2023.

9. N. P. Gupta and Priyanka Paliwal, "Implementation of MPPT in Grid Interfaced Solar-PV Generating Unit", In: K.Namrata, N. Priyadarshi, R. C. Bansal and J. Kumar (eds.), Smart Energy and Advancement in Power Technologies. Lecture Notes in Electrical Engineering, Springer, 2023.
10. Pushpendra Dang, Suresh Kr Gawre and Amit Ojha, "Dynamic Performance Analysis of Neural Network based MPPT under Varying Climatic Condition & Control", In: Jitendra Kumar, Manoj Tripathy, Premalata Jena (eds.), Applications in Modern Power Systems, Springer Nature Singapore, 2022.
11. S.K. Wankhede, P. Paliwal and M. K. Kirar, "DG Optimal Placement and Sizing Considering Active Power Losses and Voltage Profile Factor", In: Gupta, O.H. (eds.), Recent Advances in Power Systems, Springer, 2022.
12. Shailendra Kumar and More Raju, "Grid-Interactive Solar Energy Conversion Systems", In: Ashutosh K. Giri, Sabha Raj Arya, Dmitri Vinnikov (eds.), Distributed Energy Systems, Taylor & Francis Group, CRC Press, 01 Dec 2022.

INTERNATIONAL JOURNALS

1. Aftab Ahmed Ansari and Giribabu D., "Fault Ride-Through Operation Analysis of Doubly Fed Induction Generator-Based Wind Energy Conversion Systems: A Comparative Review", *Energies*, Vol. 15, 21, pp. 1-34, 2022.
2. Akash D Sarode, Shailendra Kumar and Sanjeev Singh, "Power Quality Improvement in PMBLDC Motor Drive Using Front End Converter with Reduced Power Stages", *Recent Advances in Power Electronics and Drives. Lecture Notes in Electrical Engineering*, Springer, Vol. 973, pp. 245-258, 01 Jan 2023.
3. Ankur Singh Rana, B. Bhavani Bhagyasree, T. M. Hanini, Sreenu Sreekumar and More Raju, "Optimisation of Economic and Environmental Dispatch of Power System with and without Renewable Energy Sources", Vol. 35(02), pp. 491-518, 2023.
4. Arun Rathore, Anupam Kumar and N. P. Patidar, "Techno-socio-economic and sensitivity analysis of standalone micro-grid located in central India", *International Journal of Ambient Energy*, Taylor & Francis, on-line published, Feb. 2023.
5. B. Patnaik and S. Kumar and S. Gawre, "Recent Advances in Converters and Storage Technologies for More Electric Aircrafts: A Review", *IEEE Journal on Miniaturization for Air and Space Systems*, Vol. 3, No.3, pp. 78-87, 2023.
6. Deepak Verma, Savita Nema and Rakeshwni Agrawal, "A Different Approach for Maximum Power Point Tracking (MPPT) Using Impedance Matching through Non-Isolated DC-DC Converters in Solar Photovoltaic Systems.", *Electronics*, Vol. 11 No. 7, pp. 1-19, 2022.
7. Dhananjay Kumar, Rajesh Kumar Nema and Sushma Gupta, "A New Fault-Tolerant Multilevel Inverter Topology with Enhanced Reliability for PV Application", *Arabian Journal for Science and Engineering*, Vol. 47, pp. 14841-14858, 2022.
8. Dhananjay Kumar, Rajesh Kumar Nema and Sushma Gupta, "Development of Open Switch Fault-Tolerant Capability in CCS-MLI Topology", *ECTI Transaction on Electrical Engineering Electronics, and Communications*, Vol. 20, No.2, pp. 197-205, 01 Jun 2022.
9. Giribabu D., "Experimental implementation of SEIG-based wind energy system using neural network controller", *International Journal of Power Electronics*, Vol. 16, 2, pp. 226-247, 2022.
10. Hiramani Shukla and More Raju, "Combined frequency and voltage regulation in multi-area system using an equilibrium optimiser based non-integer controller with penetration of electric vehicles", *International Journal of Ambient Energy*, Vol. 44, Issue 1, pp. 1522-1548, 2023.
11. Hiramani Shukla, Srete Nikolovski, More Raju, Ankur Singh Rana and Pawan Kumar, "SMES-GCSC Coordination for Frequency and Voltage Regulation in a Multi-Area and Multi-Source Power System with Penetration of Electric Vehicles and Renewable Energy Sources", *Energies*, Vol. 16 (1), pp. 1-27, 2023.
12. Hiramani Shukla, Srete Nikolovski, More Raju, Ankur Singh Rana and Pawan Kumar, "A Particle Swarm Optimization Technique Tuned TID Controller for Frequency and Voltage Regulation with Penetration of Electric Vehicles and Distributed Generations", *Energies*, Vol. 15 (21), pp. 1-31, 2022.
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NATIONAL JOURNALS

1. Jatoth Rajender, Manisha Dubey and Yogendra Kumar, "Modeling and control of renewable energy based EV charging systems", *Nature Electronics Journal SCIE Q1 Nature Electronics*.

INTERNATIONAL CONFERENCES

1. A. Mishra, J. Purohit, M. Nizam and S. K. Gawre, "Recent Advancement in Autonomous Vehicle and Driver Assistance", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
2. A. Shrivastava and P. Paliwal, "A State-of-Art Review on Applications of Machine Learning Based Approaches on DSM Programs", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, 19 Feb 2023.
3. A. Shrivastava and P. Paliwal, "Energy Management in a smart community using deterministic approach at varying load demand", 2022 International Conference on Computer, Power and Communications (ICCCP), 14-16 Dec 2022.
4. A. Shukla and S. Nema, "A Review on Strategies of Electrical Drive Utilization in Solar Powered Airplane", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
5. Akash Solanki, Shweta Mehroliya and Anoop Arya, "Reconfiguration of the Distribution Network using a Whale Optimization Algorithm", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
6. Aman Banthia and P. Paliwal, "Determination of Battery Life Using State of Health Data and Linear Regression", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, 19 Feb 2023.
7. Anchal Raghuvanshi and Amit Ojha, "An Overview of the Regenerative Braking Technique and Energy Storage Systems in Electric, Hybrid and Plug-In Hybrid Electric Vehicles", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
8. Arun Rathore, Anupam Kumar and N. P. Patidar, "Probabilistic Analysis of Solar-Wind Gravity Energy Storage for Off-Grid Communities", 4th International Conf. on Energy, Power and Environment (ICEPE-2022), 2022.
9. Ashish Dixit, Pankaj Swarnkar and R. K. Nema, "Grid Integrated Bidirectional EV Battery Charger in V2G-G2V Mode With Improved Power Quality", 8th IEEE International Student's conference on Electrical, Electronics and Computer Science (SCEECS), MANIT, Bhopal, 18-19 Feb 2023.
10. Dilip Kumar Patel, Preeti Patenya and S. Nema, "A Novel Condensed Device Count Multilevel Inverter using Seventeen Levels for Electric Drive Applications", 4th International IEEE Conference on Energy, Power and Environment (ICEPE) at Shilong, 29 Apr-01 May 2022.
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12. Hiramani Shukla, More Raju and Prashant Khare, "Importance of Secondary Controller and Its Parameters Optimization Using Particle Swarm Optimization Technique for AGC", 2nd Electric Power and Renewable Energy Conference (EPREC-2021), 27 May 2022.
13. Jyoti Chouhan, Amit Ojha and Pankaj Swarnkar, "A Comparative Study of Five Level Reduced Switch Count Multilevel Inverter", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
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15. Jyoti Chouhan, Amit Ojha and Pankaj Swarnkar, "PSO-Based Distributed Generation Planning", 2nd IEEE International symposium on sustainable energy, signal processing and cyber security ISSSC 2022, MANIT, 15-17 Dec 2022.
16. Linge Sagar Gajanan, Mukesh Kirar and More Raju, "Cyber-Attacks on Smart Grid System: A Review", Third International Conference on Artificial Intelligence and Smart Energy (ICAIS), Coimbatore, 24 Feb 2023.
17. M. K. Azam, S. Nema and S. K. Gautam, "Grid connected charging station for electric vehicle Based on Various Renewable Energy System", IEEE 6th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON), Durgapur, India, 17-19 Dec 2022.
18. M. S. Ghole, A. Tiwari and P. Paliwal, "Optimal Placement of Distributed Generator using BFPPO", 2022 2nd Odisha International Conference on Electrical Power Engineering, Communication and Computing Technology (ODICON), Bhubaneswar, 11-12 Nov 2022.
19. M. Y. S. Krishna, Anoop Arya and Shaziya Ansari, "Real Time Door Unlocking System using Facial Biometrics based on IoT and Python", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
20. Mahesh Pawar, N P Patidar, Kashif Khan, Shuja Kashif Khan and Aushaf Umar Khan, "Congestion Avoidance Mechanism in Adhoc On-Demand Distance Vector Routing Protocol for Mobile Adhoc Networks", Proceedings of the International conf. on Electronics and Renewable Systems (ICEARS-2022), IEEE 2022.
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23. N. Singh and P. Paliwal, "Planning and monitoring of smart grid Architecture using Internet of Things, NIT Durgapur", 17-19 Dec 2022.

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25. Padmasetty Kasi Rao, More Raju, Shivcharan Gupta and Kishan Dharawat, "Frequency Regulation in Microgrid Considering Virtual Inertia with Firefly Algorithm Optimized Controller", 3rd Electric Power and Renewable Energy Conference (EPREC-2022), Department of Electrical Engineering, NIT Jamshedpur 2022, 19 Feb 2023.
26. Pooja Mandre, BanothuSomanna and Savita Nema, "ANN based Solar MPPT for BLDC Motor load using Bidirectional Converter", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
27. R. Verma, S. K. Gawre and N. P. Patidar, "An Analytical Review on Measures of Microgrid Protection", 2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), 14-17 Dec 2022.
28. Rituraj Mandloi, Jatoh Rajender and Manisha Dubey, "Grid Integrated Electric Vehicle Bi-Directional Charging Station", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT, Bhopal, 19-20 Feb 2023.
29. S. K. Gautam, S. Nema and R. K. Nema, "Order Abatement of Interval Systems using Stability Equation and Modified Routh Approximation method", IEEE 6th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON), Durgapur, India, 2022.
30. S. K. Gawre, "Cyber Physical Security of a Smart Grid: A Review", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
31. S. Kumari, A. Mishra, A. Singhal, V. Dahiya, M. Gupta and S. K. Gawre, "Fault Detection in Transmission Line Using ANN", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
32. Sajal Sahu, Virendra Kumar Verma, Giriraj Yadav, Agnoor Hema, Riya Arya, Suresh Kumar Gawre and Ritu Verma, "Piezoelectric Based Power Generation For Portable Charging System", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
33. Sandeep Kumar Patel, Manisha Dubey and N. P. Patidar, "Voltage Control of a Standalone PV Power System", 2022 IEEE International Students' Conference on Electrical, Electronics and Computer Science, 2022.
34. Shailu Sachan, Amogh and Pankaj Swarnkar, "Speed Regulation of Stepping Motor using Metaheuristic Algorithm", 8th IEEE International Student's conference on Electrical, Electronics and Computer Science (SCEECS), MANIT, Bhopal, 18-19 Feb 2023.
35. Shshank Shrivastava and Pankaj Swarnkar, "Comparative study of cell balancing techniques for battery module performance optimization", 8th IEEE International Student's conference on Electrical, Electronics and Computer Science (SCEECS), MANIT, Bhopal, 18-19 Feb 2023.
36. Shweta Mehroliya, Anoop Arya and Ashish Kumar Sahu, "Bio Inspired Computing based Optimization of Power Loss in Radial Distribution Systems", 2022 IEEE 6th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON), Durgapur, India, 17-19 Dec 2022.
37. Siddhant Gudhe and Sanjeev Singh, "Control of Traction Motor and Accessories in Electric Vehicle using Multi Source Converter", IEEE 10th Power India International Conference (PIICON), New Delhi, India, 26-27 Nov 2022.
38. Sourabh Mishra, Amisha Raj, Richa Dubey, Divya Tewari, Purushottam Dubey, Suresh Kumar Gawre and Jahanvi Purohit, "IoT and Machine Learning based Standalone Health Monitoring System", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
39. U. Mitra, A. Arya and S. Gupta, "A Brief Overview on Fuel Cell Electric Vehicles", International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS), Nagpur, India, 18-19 Nov 2022.
40. U. Mitra, A. Arya, A. Khan, N. Javara, S. K. Gawre and M. Arya, "Simulation and Performance Analysis of a Fuel Cell Hybrid Electric Vehicle", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), 18-19 Feb 2023.
41. Uliya Mitra, Anoop Arya and Arshad Khan, "Simulation and Performance Analysis of a Fuel Cell Hybrid Electric Vehicle", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
42. Uliya Mitra, Anoop Arya and Rupesh Dwivedi, "Modelling Proton Exchange Membrane Fuel Cell for Power Generation Using Multi-Stage Power Conversion System", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 18-19 Feb 2023.
43. Uliya Mitra, Anoop Arya and Sushma Gupta, "A Brief Overview on Fuel Cell Electric Vehicles", 2022 International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS), Nagpur, India, 18-19 Nov 2022.
44. Uliya Mitra, Anoop Arya and Sushma Gupta, "A Wind Diesel Hybrid System Simulation for Power Generation using PMSG", IEEE International Conference on Intelligent Controller and Computing for Smart Power (ICICSP), 21-23 July 2022.
45. Vishwambhar Kulkarni, Sanjeev Singh and P. S. Jamwal, "Optimized Field Oriented Control for Induction Motor Driven Electric Vehicles", IEEE 2nd International Conference on Sustainable Energy and Future Electric Transportation (SeFeT), Hyderabad, India, 4-6 Aug 2022.

NATIONAL CONFERENCE

1. A. Ranjan and D. Giribabu, "Design of LCL Filter For Grid Connected Three Phase Three Level Inverter to Meet IEEE 519 Standards", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT Bhopal, 12 Feb 2023.
2. A. Ranjan, D. Giribabu and Sanjay Kakodia, "Energy Management System and Electric Motors of Electric Vehicles: A Review", IEEE International Conference on Current Development in Engineering and Technology, Sage University, Bhopal, 15 Dec 2022.
3. Aftab Ahmed Ansari, Giribabu D and Anwar Ahamed Ansari, "Decoupled Control of Rotor Side Power Electronic Converter for Grid Connected DFIC Based Wind Energy System", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT Bhopal, 12 Feb 2023.
4. Navin kumar and Giribabu D, "Performance Improvement of SASEIG based WECS using Five Level Converter", IEEE International Conference on Current Development in Engineering and Technology, Sage University, Bhopal, 15 Dec 2022.

5. Navin kumar and Gimbabu D, "Performance improvement of SEIG based WECS using Artificial Neural Network", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT Bhopal, 12 Feb 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 43 which includes all type of activities.

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	More Raju	Automatic Motor Bike Side Stand	Published
2.	Mukesh Kirar	Apparatus for Generating High Frequency Magnetic Field to test Magnetic Field Interference on Electric Devices	Granted
3.	Mukesh Kirar	Surge Protection Earthing Arrangement	Granted
4.	Priyanka Paliwal, Tripta Thakur, Anoop Arya	Processing System For Microgrid Expansion	Granted

RESEARCH PROJECTS

1. Rishi Singh, Pankaj Swarnkar and Amit Ojha, "Design of Controller for Robotic Manipulator used in Medical Science", Sponsored by Medical Education M.P. Bhopal.
2. Sanjeev Singh, Shailendra Kumar and Manisha Dubey, "Design and Development of Grid Interactive Residential Rooftop PV System with Islanding/ Resynchronization Capabilities", Sponsored by MeiT (NaMPET).
3. Shailendra Kumar, Sanjeev Singh and Sushma Gupta, "Development of Fast Bidirectional Battery Chargers for Electric Vehicles Considering Power Quality Aspects", Sponsored by MPCST.

CONSULTANCY PROJECTS

1. M.S. Chouhan and Mukesh Kirar, K. Dharawat, "Third Party Inspection of income tax building", Sponsored by CPWD Bhopal.
2. Mukul Kulshrestha and Priyanka Paliwal, "Review of Preliminary Design of Statue of Oneness Project at Omkareshwar, MP", Sponsored by MPSTDC.
3. Mukul Kulshrestha and Priyanka Paliwal, "Developing tools for enhancing Hand Hygiene for All: Installation and capacity building in the State of Madhya Pradesh", Sponsored by UNICEF.
4. R. K. Nema, Savita Nema, G. Dixit and Rajesh Gupta, "3rd party inspection of 03 numbers of CNG Crematorium at Chakrateerth Ujjain", Sponsored by Ujjain Smart City Limited, Ujjain.
5. R. K. Nema, Savita Nema and G. Dixit, "3rd Party inspection of Gas based Crematorium at Mandsaur, M.P.", Sponsored by Alpha Equipments, Vadodara, Gujarat.
6. R. K. Nema, Savita Nema and G. Dixit, "3rd party inspection of CNG Crematorium at Dewas, (M.P.)", Sponsored by Alpha Equipments, Vadodara, Gujarat.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Pankaj swarnkar	Lecture Series (Training Program)	Design of Fuzzy Logic System	110	15 Dec 2022	21 Dec 2022
2.	Sanjeev Singh, Shailendra Kumar, Mukesh Kumar Kirar	ATAL FDP	Innovations and Challenges of Energy Storage Technologies	44	10 Oct 2022	21 Oct 2022
3.	Sushma Gupta	National Level Research Scholar Meet	Innovations and Recent Advancement on Renewable and Sustainable Technologies		28 Jul 2022	29 Jul 2022

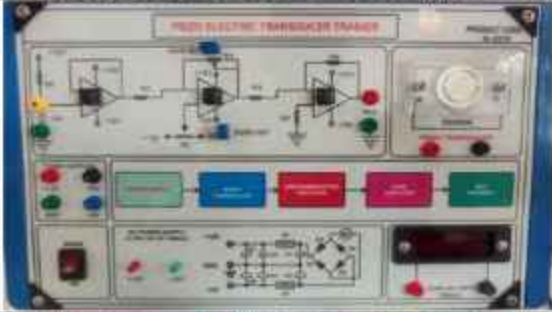
LAB DETAILS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Microgrid Integrated EV Charging Lab	SPV Panel (5 kWp), Four leg Voltage source converter with each leg separate, VSI compact Module, Digital Storage Oscilloscope 4 channel, Current Sensor Circuit Module, Voltage Sensor Circuit Module, Hardware in Loop (HIL) Real time simulator (make Typhoon)	One Research Scholar is working on EV Charging Converter	Publications

EQUIPMENT PURCHASED DURING THE PERIOD 1ST APRIL 2022-31ST MARCH 2023

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
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NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
DFIG/SEIG Based Wind Emulator	Real time implementation and validation of wind energy system for doubly fed induction generator and squirrel cage induction generator.	
WAVCET 300U Controller	This controller is used for FPGA based digital implementation of renewable energy systems and hybrid electric vehicles.	
Desktop Computer	Desktop computer is used for simulation and hardware in loop implementation of the drive systems.	
LVDT Trainer Kit	Measurement of Displacement with Linear Variable Differential Transformer (LVDT)	
Temperature Trainer Kit	Study of LM35,RTD,Thermocouple using Temperature transducer kit	
Anderson Bridge kit	Find out the values of unknown capacitance by Anderson bridge	

NAME OF EQUIPMENT	PURPOSE / USE	PHOTO
Optical Transducer Kit	Study of Characteristics of phototransistor using Optical Transducer kit	 A black breadboard-style circuit kit with various electronic components like resistors, capacitors, and integrated circuits, and a small digital display.
Piezo Resistive Transducer trainer Kit	Study of Characteristics of phototransistor using Optical Transducer kit	 A white circuit board with multiple sections, including a central display, several buttons, and various electronic components.
Multi Meter	Temperature Trainer kit Anderson Trainer kit Maxwell Bridge kit LVDT Trainer Kit Use for Measuring parameters	 Two red digital multimeters with black and red test leads.
DSO	Experiment : UG Student -Used for Lissazious Pattern Trainer Kit for PHD -Use for Research purpose by Research Scholars	 A black digital storage oscilloscope showing a green sine wave on its screen.
Humidity Temperature Kit	Experiment : UG Student	 A handheld digital device with a screen and buttons, likely a humidity and temperature sensor.
ACE ML Bx 1302 T		 A breadboard with various electronic components and wires connected to it.

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
Current probe		
3 phase variac		
Multi channel DC power supply		
Real time simulator		
Voltage sensor		
Current sensor		
Multitapping frequency inductor		

NAME OF EQUIPMENT	PURPOSE / USE	PHOTO
Differential voltage probe		
Computer system HP intel i7		
LCR meter		
Three phase induction machine		
Current probe		
Four lag voltage source converter		

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
Battery bank		
Power quality analyser		
Phasor Measurement Unit	PG and PhD students are using for research	
Numerical Relay Protection setup	UG and PG lab Experiments	
DC power supply	For Experiments	
DSO	Display and store wave forms	
Function Generator	Generate Wave form Signals	

NAME OF EQUIPMENT	PURPOSE / USE	PHOTO
Operational Amp	Experiment	
Digital Trainer kit	Experiment	
DC power supply	For PG and Research Projects	
DC Load	For PG and Research Projects	
DSO	For PG and Research Projects	
Multi meter	For PG and Research Projects	
Battery Meter	For PG and Research Projects	

NAME OF EQUIPMENT	PURPOSE/ USE	PHOTO
Solar Panel	For PG and Research Projects	
Solar Inverter	For PG and Research Projects	
Battery Bank	For PG and Research Projects	

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	21
2.	Phd Scholars	40
3.	Book Publications	02
4.	Chapter Publications	12
5.	International Journal Publication	47
6.	National Journal Publication	01
7.	International Conference Publication	45
8.	National Conference Publication	05
9.	Faculty Outreach	43
10.	Patents	04
11.	Research Projects	03
12.	Consultancy Projects	06
13.	Workshops/Seminar Organized	03
14.	Lab Facilities Developed	01

Department of Electronics and Communication Engineering

Vision:

To produce technical professionals abreast with competencies, mind-set and ethical values synchronous with the futuristic requirements of the globe and to strengthen the national economy. Department will strive to be the cradle for innovations.

Cadence Tools - Design of full-custom integrated circuits:

Creation of digital integrated circuits,

Simulation and functional verification of RTL including Verilog, VHDL based models,

Co-design of integrated circuits and packages.

Synopsys Tools - Frontend and backend VLSI circuit design:

Integrated circuit floorplanning and layout designing.

Review of waveforms generated from a number of tools, including HSPICE, HSPICE, and NanoSim.

Synthesizing HDL and

Verilog code with timing analysis.

Mentor Graphics Tools - VLSI and Embedded circuit design.

Xilinx Vivado,

Xilinx 9.2i

with Spartan - 3E and

Vertex - II pro

Microwave benches of X Band

Vector Network Analyzer of Agilent made up to 6 GHz

CADFEKO Electromagnetic Simulator

IE-3D Antenna Design Simulator

Optical Fiber System with:

OTDR Building blocks

Laser diode module consisting of LD unit, LD Driver & APD module

Fiber Optic Power Source

Fiber Optic Power Meter

Fiber Event 500m

Optical Fiber System with:

1. 1310 & 1550nm Laser Diode Module with Glass Fiber

2. WDM/DWDM Kit/Modules – 4 no.

3. Connectorisation and UV Splicing Kit

Optiwave Software

MATLAB with Image processing & Signal Processing Tool Box

On line Imaging Kit

Biometric Imaging Kits

LabView Setup

TIDM6437 and DM6467

Da vinci processor

FACULTY DETAILS

Professor	
Dr. Aditya Goel	Dr. Kavita Khare
Dr. Ajay Somkuwar	Dr. Madhu Shandilya
Dr. Arvind Rajawat	Dr. R. K. Baghel
Dr. J. S. Yadav	Dr. R. N. Yadav
Dr. Jyoti Singhai	
Associate Professor	
Dr. Dheeraaj K. Agarwal	Dr. Lalita Gupta
Assistant Professor	
Dr. Akhila Subba Rao	Dr. Om Prakash Meena
Dr. Alpana Pandey	Dr. Rahul Kumar Chaurasiya
Dr. Bhawna P. Shrivastava	Dr. Sangeeta Nakhate
Dr. D. K. Raghuvanshi	Dr. Sukeshni Tirkey
Dr. Laxmi Kumre	Dr. Tarun Kumar Gupta (LIEN)
Dr. Manish Kashyap	Dr. Vijayshri Chaurasia

UG Programme

Bachelor of Technology (B.Tech.)	Electronics Communication & Engineering
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PG Programme	Specialization
Master of Technology (M. Tech.)	1. Digital Communication 2. VLSI & Embedded System

PHD SCHOLAR DETAILS

S. No	Name	Title/Area of Research
1.	Abhay Pratap Singh	Nano tech using AI
2.	Adil Tanveer	VLSI Design and Embedded Systems
3.	Alok Kumar	VLSI Design and Embedded Systems
4.	Aman Dubey	Signal Processing
5.	Aman Sharma	Signal Processing
6.	Amit Tomar	Antenna and Microwave
7.	Anagh Sankar Das	Antenna and Microwave
8.	Asha Verma	Antenna and Microwave
9.	Ashish K. Parashar	Signal Processing and communication
10.	Bharat Singh Choudhary	VLSI Design and Embedded Systems
11.	Ebtasam A.S.	Signal Processing
12.	Gaurav Tiwari	VLSI Design and Embedded Systems
13.	Gireesh Kamal Gautam	Signal Processing
14.	Hemant Dangi	Signal Processing
15.	JetvaBanothu	VLSI Design and Embedded Systems
16.	Kanaparthi Suresh	Signal Processing
17.	Mamta Patankar	Signal Processing
18.	Manish kumar Soni	Communication
19.	Meenal Rajput	Communication
20.	Mohit Choubey	Signal Processing and AI
21.	Narendra Kumar Patel	Antenna nad Microwave
22.	Neha Rathore	Signal Processing
23.	Patil Nilesh Shankar	Signal Processing
24.	Praveen K.Tyagi	Signal Processing
25.	Priti S Lokhande	VLSI Design and Embedded Systems
26.	Priyanka Chouksey	Signal Processing
27.	Rahul Prasad	Communication AI
28.	Rakesh Kumar Gumasta	Communication
29.	Rakhee Jain	Signal Processing
30.	Sanjay K.Pawar	Signal Processing
31.	Santosh Onkar	Signal Processing
32.	Shivnarayan Ahirwar	Signal Processing
33.	Shreya Gupta	VLSI Design and Embedded Systems
34.	Swati Gautam	Signal Processing
35.	Swati Soni	Signal Processing
36.	Umashankar Singh	VLSI Design and Embedded Systems
37.	Vaibhav Prakash Nagrale	Signal Processing
38.	Vivek	Signal Processing
39.	Vivek Kumar Yadav	Signal Processing
40.	Yogesh Kumar Gupta	Communication
41.	Zainab Aizaz	VLSI Design and Embedded Systems

BOOK PUBLICATIONS

1. Bhavana Prakash Shrivastava and Ajay Shrama, "Basics of Computer Networks", Mahi Publications, 2023.
2. Dharmendra Singh Yadav, Siromani Balmukund Rahi and Sukeshni Turkey, "Advanced Field Effect Transistors: Theory and Applications", CRC Press Routledge Taylor and Francis Group, United Kingdom, 2023.
3. Rahul Kumar Chaurasiya, Dheeraj Agrawal and Ram Bilas Pachori, "AI-Enabled Smart Healthcare Using Biomedical Signals", IGI Global, 2022.

CHAPTER PUBLICATIONS

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8. K. Khare, A. K. Dadoria, and A. Khursheed, "Novel Subthreshold Modeling of FinFET-Based Energy-Effective Circuit Designs", In: Balwinder Raj and Ashish Raman (eds.), *Nanoscale Semiconductors*, CRC Press, 2022.
9. Neha Rathore, Praveen Kumar Tyagi and Dheeraj Agrawal, "A Review of Automated Diagnosis of ECG Arrhythmia Using Deep Learning Methods", In: Rahul Kumar Chaurasiya, Dheeraj Agrawal and Ram Bilas Pachori (eds.), *AI-Enabled Smart Healthcare Using Biomedical Signals*, IGI Global, 2022.
10. Neha Rathore, Praveen Kumar Tyagi and Dheeraj Agrawal, "Analogy of Wrist Pulse Signals in the Context of ECG Signals: A Review", In: Rahul Kumar Chaurasiya, Dheeraj Agrawal and Ram Bilas Pachori (eds.), *AI-Enabled Smart Healthcare using Biomedical Signals*, IGI Global, 2022.
11. Praveen Kumar Tyagi, Dheeraj Agrawal and Pushyamitra Mishra, "A Review of Automated Sleep Apnea Detection using Deep Neural Network", In: Mohan Lal Kolhe, Kailash J. Karande and Sampat G. Deshmukh (eds.), *Artificial Intelligence, Internet of Things and Smart Materials for energy applications*, CRC Press, 2022.
12. Rini S. Thakur, Shubhojeet Chatterjee and R.N.Yadav, "Medical Image Denoising using Convolutional Neural Networks", In: S. S. Rajput (eds.), *Digital Image Enhancement and Reconstruction*, Academic Press, Elsevier, Oct 2022.
13. Rini S. Thakur, Shubhojeet Chatterjee and R.N.Yadav, Lalita Gupta, "Medical Image Denoising using Convolutional Neural Networks", In: Shyam Singh Rajput, Nafis Uddin Khan, Amit Kumar Singh and Karm Veer Arya (eds.), *Digital Image Enhancement and Reconstruction*, Elsevier, 6 Oct 2022.
14. Srishty Dwivedi, R.N.Yadav and Lalita Gupta, "A Comparative Analysis of Image Restoration Techniques", In: S. S. Rajput (eds.), *Digital Image Enhancement and Reconstruction*, Academic Press, Elsevier, Oct 2022.
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16. Swati Gautam, Ajay Sharma and Bhavana Prakash Shrivastava, "Critical Review Analysis on Deep Learning Based Segmentation Techniques for Water-body Extraction", In: Ashok Sharma, Sandeep Sengar and Parveen Singh (eds.), *Meta-Learning Frameworks for Imaging Applications*, IGI Global, 2023.
17. Z. Aizaz, and K. Khare, "Energy-Efficient Approximate Multipliers for ML-Based Disease Detection Systems", In: Balwinder Raj, Brij B. Gupta and Jeetendra Singh (eds.), *Advanced Circuits and Systems for Healthcare and Security Applications*, CRC Press, 2022.
18. Z. Aizaz, K. Khare and A. Tirmizi, "Efficient Approximate Multipliers for Neural Network Applications", In: Robert J. Howlett and Lakshmi C. Jain (eds.), *Smart Innovation, Systems and Technologies*, Springer Nature Singapore, 2022.
19. Z. Aizaz, K. Khare and A. Tirmizi, "Approximate Computing-Based Unsigned Multipliers for Image Processing Applications", In: Anand D. Darji, Deepak Joshi, Amit Joshi and Ray Sheriff (eds.), *Advances in VLSI and Embedded Systems*, Springer Nature Singapore, 2022.

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4. Aditya Powari, Dharmendra Sadhwani, Lalita Gupta and R.N. Yadav, "Optimization of the Exponential Bounds on the Gaussian Q Function using Interior Point Algorithm and its Application in Communication Theory", *IEEE Open Journal of the Communication Society*, Vol. 3, pp. 1540-1552, Sept 2022.
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6. Amol K. Boke, Sangeeta Nakhate and Arvind Rajawat, "An AES Implementation with Improved PDL Based PUF Key Generator for IoT Devices", *IETE Technical Review*, 2023.
7. Anagh Sankar Das, Aditya Goel and Sangeeta Nakhate, "Performance analysis of wideband microstrip patch antenna with amplified radiation", *Microsystem Technologies*, Vol. 28 Issue 11, pp. 2429-2441, 2022.

8. Bhavana Prakash Shrivastava, "Different Techniques of Image SR Using Deep Learning: A Review", *IEEE Sensors Journal*, Vol. 23, pp. 1724-1733, 2023.
9. Bhavana Prakash Shrivastava and Aayushi Priya, "Multilevel progressive recursive dilated networks with correlation filter (MPRDNCF) for image super-resolution", *Multimedia Systems*, pp. 1-13, 2023.
10. Bhavana Prakash Shrivastava, "Facial image super-resolution using progressive network interleaved correlation filter", *Multimedia Tools and Applications*, pp. 1-20, 2023.
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12. Bhupendra Singh Kirar, Dheeraj Kumar Agrawal and Seema Kirar, "Glaucoma Detection Using SS-QB-VMD Based Fine Sub Band Images from Fundus Images", *IETE Journal of Research*, 2022.
13. Deepak Parashar and Dheeraj Kumar Agrawal, "Classification of glaucoma stages using image empirical mode decomposition from fundus images", *Journal of Digital Imaging*, Vol. 35, pp. 1283-1292, 2022.
14. E. A. Siddiqui, V. Chaurasia and M. Shandilya, "Classification of lung cancer computed tomography images using a 3-dimensional deep convolutional neural network with multilayer filter", *Journal of Cancer Research and Clinical Oncology*, Vol. 149, 2023.
15. E. A. Siddiqui, V. Chaurasia and M. Shandilya, "Detection and classification of lung cancer computed tomography images using a novel improved deep belief network with Gabor filters", *Chemometrics and Intelligent Laboratory Systems*, Vol. 235, pp. 104763-, 2023.
16. Kavita Khare and Bhavana Prakash Shrivastava, "A Novel Guided Box Filter Based on Hybrid Optimization for Medical Image Denoising", *Applied Science (MPDI)*, Vol. 13, pp. 1-26, 2023.
17. Manish Triwari and Vijayshri Chaurasia, "Nodal State Comparison-based Dynamic Hold Technique for Low Power or Gates in Domino Logic", *IETE Journal of Research*, 2023.
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22. P. Singh, R. K. Chaurasia and B. Acharya, "Low-area and high-speed hardware architectures of LBlock cipher for Internet of Things image encryption", *Journal of Electronic Imaging*, Vol. 31.3, pp. 33012-33012, 2022.
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24. P. S. Lokhande and S. Nakhate, "Comparative Analysis of Delay-Based and Memory-Based Physical Unclonable Functions", *ETE Technical Review*.
25. Praveen Kumar Tyagi and Dheeraj Agrawal, "Automatic detection of sleep apnea from single-lead ECG signal using enhanced-deep belief network model", *Biomedical Signal Processing and Control*, Vol. 80, pp. 104401-104408, 2022.
26. Priya Choudhary, Jyoti Singhai and J.S. Yadav, "Skin lesion detection based on deep neural networks", *Chemometrics and Intelligent Laboratory Systems*, Vol. 230/104659, pp. 1-10, 2022.
27. Pulkit Singh and B. Agrawal, "Low-area and High-speed Hardware Architectures of KLEIN Lightweight Block Cipher for Image Encryption", *Journal of Electronic Imaging*, Vol. 32.1, pp. 13012-13012, 2023.
28. Rahul Prasad and Rajendra Kumar Baghel, "A Novel Fault Diagnosis Technique for Wireless Sensor Network Using Feed forward Neural network", *IEEE Sensors Letters*, Vol. 6, no. 1, pp. 1-4, 2022.
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30. Rajnish Kumar Patel and Manish Kashyap, "Automated diagnosis of COVID stages from lung CT images using statistical features in 2-dimensional flexible analytic wavelet transform", *biocybernetics and biomedical engineering*, Elsevier, Vol. 42, pp. 829-841, 2022.
31. Rajnish Kumar Patel and Manish Kashyap, "Automated screening of glaucoma stages from retinal fundus images using BPS and LBP based GLCM features", *Int J Imaging Syst Technol*, Wiley, Vol. 33, pp. 246-261, 2022.
32. Rajnish Kumar Patel and Manish Kashyap, "Automated diagnosis of COVID stages using texture-based Gabor features in variational mode decomposition from CT images", *Int J Imaging Syst Technol*, Wiley, Vol. 33(3), pp. 807-821, 2023.
33. Rajnish Kumar Patel and Manish Kashyap, "Machine learning- based lung disease diagnosis from CT images using Gabor features in Littlewood Paley empirical wavelet transform (LPEWT) and LLE", *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, Taylor and Francis, pp. 1-15, 2023.
34. Rini S. Thakur, Shubhojeet Chatterjee, R.N. Yadav and Lalita Gupta, "Nature-Inspired DBN based Optimization Techniques for Image De-noising", *Intelligent Systems with Applications*, Elsevier, Vol. 18, Article No. 200211, May 2023.
35. Rishi Sharma, Anjali Potnis and Vijayshri Chaurasia, "Modelling of dielectric resonator based filter antenna covering 2.5/2.6 (B41/n41) bands using machine learning algorithms", *AEU - International Journal of Electronics and Communications*, Vol. 164, pp. 154642, 2023.
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38. Sumit Kumar Gupta and Aditya Goel, "Design and analysis of three-dimensional m-sequence bipolar OCDMA spectral amplitude code", *Optical and Quantum Electronics*, Vol. 54, pp. 186-186, 2022.
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42. Tarun Gupta and Bhavana Prakash Shrivastava, "Noise and linearity analysis of recessed-source/drain junctionless Gate All Around (Re-S/D-JL-GAA) MOSFETs for communication systems", *Microelectronics Journal*, Vol. 136, pp. 1-7, 2023.
43. Tarun Gupta and Bhavana Prakash Shrivastava, "Impact of temperature variation on noise parameters and HCI degradation of Recessed Source/Drain Junctionless Gate All around MOSFETs", *Microelectronics Journal*, Vol. 134, pp. 1-7, 2023.
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46. Yashwant Kurmi, Suchi Gangwar and Aditya Goel, "Leaf images classification for the crops diseases detection", *Multimedia Tools and Applications*, Vol. 81, Issue 6, pp. 8155-8178, 2022.
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INTERNATIONAL CONFERENCE

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2. Abahy Pratap Singh, R. K. Baghel and Sukeshni Turkey, "Enhanced low dimensional MOSFETs with", 2023 IEEE International SCEECs, MANIT Bhopal, 18 Feb 2023.
3. Abhay Pratap Singh, R.K. Baghel and Sukeshni Turkey, "Enhanced low dimensional MOSFETs with variation of high K dielectric materials", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECs), Bhopal, India, 2023.
4. Abhay Pratap Singh, P. N. Shankar, R.K. Baghel and Sukeshni Turkey, "A Review on Graphene Transistors", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECs), Bhopal, India, 2023.
5. Afsheen Khurshid and Kavita Khare, "Performance Tuning of Nano-Interconnects using PSO Optimized Buffer Insertion Strategy", 2022 3rd International Conference for Emerging Technology (INCET) Belgaum, India, 27 May 2022.
6. Afsheen Khurshid, Kavita Khare and Zainab Aizar, "Signal Integrity Analysis in Coupled GNR Nano Interconnects Integrated with Buffer Repeaters", International Conference on VLSI, Communication and Signal processing, MNIT Allahabad, Prayagraj, 14 Oct 2022.
7. Ajay Sharma, Bhavana Prakash Shrivastava and Nilesh Paul, "Facial Image Super-Resolution with CNN, A Review", IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECs MANIT Bhopal, 19 Feb 2023.
8. Anagh Sankar Das, Aditya Goel and Sangeeta Nakhate, "Wideband Patch Antenna for Stable Radiation Pattern Generation", IHCSP-2023, MANIT Bhopal, 4-5 Mar 2023.
9. Asha Verma and O. P. Meena, "A Review of Metamaterial Absorber and its Absorption", IEEE International Students' Conference on Electrical, Electronics and Computer Science, 18 Feb 2023.
10. Ayush Bhargava, Vijayshri Chaurasia and Madhu Shandilya, "A Review on Automatic Lung Lesion Detection from Various Imaging Techniques", 5th International Conference on Data, Engineering and Applications, Bhopal, 23-24 Dec 2023.
11. Divya Gautam, Kavita Khare and Bhavana P. Shrivastava, "Application of linear optimization technique to design a fixed coefficient multiplierless sample rate conversion filter for multiple-of-three decimation factor", 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECs), 18 Feb 2023.
12. E. A. Siddiqui, Vijayshri Chaurasia and Madhu Shandilya, "A review of Optimization techniques for classification of Computed Tomography images", 4th International Conference on Data, Engineering and Applications, Bhopal, 23-24 Dec 2022.
13. Kaushal Kishore and Lalita Gupta, "A Comparative Analysis of Low Power FINFET SRAM Cells on Different Technology Node with Variable Number of Transistors", IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECs 2023, MANIT Bhopal, 18-19 Feb 2023.
14. Manasa Lukka, Sangeeta Nakhate and Shreyasi Ghosh Dastidar, "Review on BIST architectures of DRAM", IEEE International student's conference on Electrical, Electronics and Computer Science, 18 Feb 2023.
15. Manish Kashyap, "On the Role of Perceptual Information in Image Classification", SPRINGER 2nd International Conference on Signal and Data Processing, 10-11 June 2022.
16. Manish Tiwari, Vijayshri Chaurasia and Ebtasam Ahmad Siddiqui, "Enhanced Image Compression Using Fractals and Principle Component Analysis", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.

17. Manish Tiwari, Ayush Bhargava and Vijayshri Chaurasia, "Automated Lung Cancer Detection using Prewitt Gradient Kernel & SVM from CT-Lung Images", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
18. Manish Tiwari, Mamta Patankar and Vijayshri Chaurasia, "Detection of Tuberculosis Bacilli Using Deep Learning", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
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23. Rajesh Mahadeva, Mohini Rathore and Vijayshri Chaurasia, "Edge Detection and Color Mapping Based Diabetic Retinopathy from Fundus Images", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
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25. Ranveer Pratap Lal, Mamta Patankar and Vijayshri Chaurasia, "Breast Cancerous Nucleon Digital Histogram Segmentation", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
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27. Rohan Ruhel and Manish Kashyap, "Hardware Modeling and Behavioral Simulation of (Supplemental Restraint System) SRS System in Vehicles", 1st IEEE International conference on Renewable Energy and Sustainable E-Mobility Conference (RESEM), 17-18 May, 2023.
28. Rohit Soni, Ananya Baghel and S. Paliya, R. Mamtani, Lalita Gupta, "Connection of Big Data Analytics & Artificial Intelligence", IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECs 2023, MANIT Bhopal, 18-19 Feb 2023.
29. Rohit Soni, Ananya Baghel, S. Paliya and Lalita Gupta, "Review of Big Data Analytics", IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECs 2023, MANIT Bhopal, 18-19 Feb 2023.
30. Shreyashi Ghosh Dasudhar and Sangeeta Nakhate, "Effect of thermal incorporation in IR-Drop analysis of multilayered network and it's reduction technique", IEEE International student's conference on Electrical, Electronics and Computer Science, 19 Feb 2023.
31. Sucheta Bhardwaj, Ebtasam Ahmad Siddiqui and Vijayshri Chaurasia, "Detection and Classification of Lung Cancer CT Images Using Mask R-CNN Based Generated Mask Method", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
32. Sucheta Bhardwaj, Vijayshri Chaurasia and Ebtasam Ahmad Siddiqui, "Feature Extraction Based Domain Kickout Method for Fractal Image Compression", IEEE International Conference on Innovations in High Speed Communication and Signal Processing, Bhopal, India, 04-05 Mar 2023.
33. Yogesh Kumar Gupta, Aditya Goel and Ayush Tiwari, "Performance Analysis of High-Speed MIMO FSO System In Various Data Formats", IHCSP-2023, MANIT Bhopal, 04-05 Mar 2023.
34. Zainab Aizaz, Kavita Khare and Afreen Khursheed, "Pix2Pix Generative adversarial Networks (GAN) for breast cancer detection", 2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), 26 Nov 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 44 which includes all type of activities.

MOU DETAILS

S. No.	Name of Coordinator	Name of the agency with which MOU signed
1.	Jyoti Singhai	L& T Mumbai
2.	Lalita Gupta	Madhya Pradesh Police

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Aditya Goel	Optimised dispersion compensating fiber based on LP ₀₁ mode for WDM	Granted Patent No.- 395273
2.	Aditya Goel	Method for designing DFF for WDM Optical Transmission system	Granted Patent No.- 417531
3.	Dhara Kumar Agrawal	Ayurvedic Tablet Shaping Device	Published

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
4.	Vijayshri Chaurasia	Leakage Current Controlled by Sleep Switch for Low Power Application	Granted
5.	Vijayshri Chaurasia	System of Effective Keeper Based Domino Circuit for Low Power Application	Granted
6.	Vijayshri Chaurasia	Method for Automatic and Efficient MR Images Denoising Using DenseNet and Advanced NLM Filtering	Published

RESEARCH PROJECTS

1. Ankur Beohar and Kavita Khare, "In-silico of Cylindrical (Cyl) Gate all Around (GAA) Tunnel Field Effect Transistor (TFET) Biosensor for detection of COVID 19 Circuit Applications", Sponsored by SERB.

CONSULTANCY PROJECTS

1. D. K. Raghuwanshi, Kavita Khare and R. N. Yadav, "3rd party Inspection", Sponsored by Heavens techno system.
2. D.K. Raghuwanshi, Aditya Goel and R. N. Yadav, "Testing and inspection of procured Laptops (hp Intel core i5 14 Inch LAPTOP-Notebook, Model: HP 240GS) and Desktops in 2023", Sponsored by M.P. JanAbhiyan Parishad, under M.P. Govt. Planning Economics and Statistics Department.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Aditya Goel, Laxmi Kumra, Vijayshri Chaurasia	International Conference	International Conference on Innovations in High Speed Communication and Signal Processing	112	04 Mar 2023	05 Mar 2023
2.	R. K. Chaurasiya	STTP	Artificial Intelligence and Deep Learning (AIDL)	78	02 Jan 2023	06 Jan 2023

LAB DETAILS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	VLSI Lab	licenced Simulation software for VLSI Design – VIVADO Hardware: • Basys 3 boards • Analog discover kit • Zybo boards • Nexys 4 DDR • Spartan – 3E • Vertex –II pro	Mtech And PhD	Graduated Mtech Scholars/ PhD Degree Awarded
2.	Project Based Lab	Soldering, Bread Board, Multimeter, Common Electronic Components	-	For the projects of final year ECE students

SUMMARY

S. No.	Particulars	Total
1.	Faculty Members	23
2.	Phd Scholars	41
3.	Book Publications	03
4.	Chapter Publications	19
5.	International Journal Publication	49
6.	International Conference Publication	34
7.	Faculty Outreach	44
8.	MoU's	02
9.	Patents	06
10.	Research Projects	01
11.	Consultancy Projects	02
12.	Workshops/Seminar Organized	02
13.	Lab Facilities Developed	02

Department of Humanities

To strive for communication and career enhancement for both graduate and post graduate students and serve as a valuable resource to the nation.

FACULTY DETAILS

Professor	
Dr. Vinita Mohindra	
Associate Professor	
Dr. Anjali Jain	
Assistant Professor	
Dr. Anjali Dhengle	Dr. Namrata
Dr. Ashis Kumar Pradhan	Dr. Pushpender Yadav
Dr. Deepak Kumar	

UG Programme	
NIL	

PG Programme	Specialization
NIL	

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Ajayan T.S	Exploring the challenges of Pradhan Mantri Ujjwala Yojana keeping the perspective of Affordability, Accessibility and Women's Empowerment
2.	Anshita Sachan	Environmental Economics
3.	Bhavya Advani	Environmental Economics
4.	Deepak kumar	English Language Teaching
5.	Dharmveer Singh Yadav	English Literature
6.	Dileep Verma (JRF-UGC)	Reservation Policy in India
7.	Dinesh Ahirwal	Public health Policies and Poverty in rural context
8.	Haniom Tiwari	Science and Policy of the Government
9.	Jasleen Kaur Anand	Memory Studies
10.	Lolu Farshana M.	Political Psychology
11.	Nirbhay Trigon	A Study of the use of Theatre as a pedagogical tool for effective teaching at the fundamental stage in India with the special reference to NEP 2020.
12.	Prachi Agarwal	Waste Management and government policy
13.	Pragati Kumari	English Literature
14.	Prityanshu Singh	Behavioural Economics
15.	Sandeep Tripathi (JRF-UGC)	MNREGA and Sustainable Goals: An Analysis with Poverty Alleviation
16.	Saurabh Bhargava (JRF-UGC)	Pradhan Mantri Fasal Bima Yojna (PMFBY): A way forward to strengthen it
17.	Shaily Patel	A comparative study of self efficacy and career management in relation to personal life of social and natural sciences students
18.	Shalini Singh (JRF-UGC)	Adarsh Gram Yojna with special reference to Madhya Pradesh
19.	Shivani Tiwari	Laxmi Ladli Yojna in Madhya Pradesh: An Assessment
20.	Shivanig Pathak	Environmental Economics with finance interlinkages
21.	Udit Kumar Sahu	Energy Economics
22.	Vani K.	English Language Teaching

BOOK PUBLICATIONS

1. Anjali Jain, "SPACE", Indra Publication House Bhopal, 2023.

CHAPTER PUBLICATIONS

1. Deepak Kumar, "Paragraph Writing", In: Nidhi Tiwari (eds.), Pedagogy of English Teaching, RIE, NCERT Bhopal, 2023.
2. K. Vani, Shuchi Srivastava and Deepak Kumar, "Language Evoking Ideologies: The Impact of Gender in ESL Classrooms", In: Vashist Shivani (eds.), Women in Literature: for the Women or by the Women, Authors Press, Delhi, 2022.

- Saurabh Bhame and Pushpender Yadav, "Stabilising Farmer's Income through Pradhan Mantri Fasal Bima Yojna: An Overview", In: Manju Singh, Nupur Tandon, Vidy Potdar and Preeti Bhatt (eds.), *Resilience and Transformation for Global Restructuring*, Ethics Press, 2022.

INTERNATIONAL JOURNALS

- Aman Kumar, Arvind Mittal and Ashis Kumar Pradhan, "Magnitude and determinants of energy intensity: evidence from Indian firms", *Environmental Science and Pollution Research*, Vol. 30, pp. 3270-3281, 2023.
- Anshita Sachan, Udit Kumar Sahu, Ashis Kumar Pradhan and Ronny Thomas, "Examining the drivers of renewable energy consumption: Evidence from BRICS nations", *Renewable Energy*, Vol. 202, pp. 1402-1411, 2023.
- Ashis Kumar Pradhan and Gouishankar S. Hiremath, "Nexus between external commercial borrowings and foreign exchange reserves in India: mercantilism or moral hazard?", *Transnational Corporation Review*, pp. 1-14, 2022.
- Ashis Kumar Pradhan, Ronny Thomas, Sandhyarani Rout and Alok Kumar Pradhan, "Magnitude and Determinants of Mortalities Related to COVID-19: Evidence from 94 Countries Using Regression Techniques", *Fudan Journal of the Humanities and Social Sciences*, Vol. 15(4), pp. 475-499, 2022.
- Biplab Kumar Guru, Ashis Kumar Pradhan and Ramakrishna Bandaru, "Volatility contagion between oil and the stock markets of G7 countries plus India and China", *Resources Policy*, Vol. 81, pp. 1-10, 2023.
- Chinmaya Ranjan Kumar, Chittaranjan Nayak and Ashis Kumar Pradhan, "What determines crop diversification in North-East zone of India?", *Journal of Public Affairs*, Vol. 22(2), pp. 1-10, 2022.
- Deepak Kumar, L.Vertivendan, K.Velmurugan and Kumaraswamy, "Semantic Marginal Autoencoder Model for the Word Embedding Technique for the Marginal Denoising in the Different Languages", *International Journal of Intelligent Systems and Applications in Engineering (IJISAE)*, Vol. 3, pp. 204-210, 2023.
- Provas Kumar Sarker, Chi Keung Marco Lau and Ashis Kumar Pradhan, "Asymmetric effects of climate policy uncertainty and energy prices on bitcoin prices.", *Innovation and Green Development*, Vol. 2(2), pp. 1-6, 2023.
- Sreenu Nenavath, Ashis Kumar Pradhan, Vinh Vo Xuan and B. Koteswara Rao Naik, "Impact of accounting conservatism on IPO underpricing: evidence from India", *Cogent Economics & Finance*, Vol. 10(1), pp. 1-21, 2022.

INTERNATIONAL CONFERENCE

- Deepak Yadav, Deepak Kumar and Anjali Jain, "Use of Folktales to Promote Value-based Education in English Language Classrooms of Technical Institutes", *Innovations in Clean Energy Technologies 2023*, 8-10 April 2023.
- Dileep Verma and Pushpender Yadav, "Social Equity and Reservation Policy in India for Inclusive Development", *International Conference on Sustainable Development Goals and Gender Perspective (ICSDGAGP)*, Department of Electrical Engineering, SVNIT, Surat, Gujarat, 15-16 Dec 2022.
- Hariom Tiwari and Pushpender Yadav, "An Analysis of status of Girl Education in India: Importance, Challenges and Government Initiatives", 15-16 Dec 2022.
- Pushpender Yadav, "Violence against Women in India: An Assessment with Theoretical View " international conference on youth global submit organised by the Rajiv Gandhi National Institute of Youth and Development, Ministry of Youth Affairs, Government of India, 15-17 Mar 2022.
- Pushpender Yadav, "Child Abuses: Its Impact on Mental Health in India " international conference on women in Learning and Leadership, Organised by the ICC, National Institute of Technology Warangal, 8-9 Mar 2022.
- Pushpender Yadav, "Swachh Bharat Abhiyan and Role of Water in its Success " International E-Conference on sustainable livelihoods: water, climate change and Geo-spatial Development, Organised by the Institute of Public Enterprises Hyderabad in collaboration with Sri Lanka Rain Water Harvesting Forum Pelawatta, 7-8 Oct 2022.
- Sandeep Tripathi and Pushpender Yadav, "How is COVID-19 Restructuring the Global Democratic Structures and Governance", 2nd PANNIT-HSS, International Conference on Resilience and Global Restructuring, MNIT-Jaipur, 7-9 Jan 2022.
- Sandeep Tripathi and Pushpender Yadav, "The Imperative of Sustainable Development in India and Its Correlation with the World's largest Social Security Net MNREGA", 19-20 Sept 2022.
- Sandeep Tripathi and Pushpender Yadav, "A study of the world's largest Security Net MNREGA and Sustainable Goals", *International Conference on Sustainable Development Goals and Gender Perspective (ICSDGAGP)*, Department of Electrical Engineering, SVNIT, Surat, Gujarat, 15-16 Dec 2022.
- Saurabh Bhame and Pushpender Yadav, "Stabilising Farmer's Income through Pradhan Mantri Fasal Bima Yojna: An Overview", 2nd PANNIT-HSS, International Conference on Resilience and Global Restructuring, MNIT-Jaipur, 7-9 Jan 2022.
- Saurabh Bhame and Pushpender Yadav, "Towards Sustainable Crop Insurance in India: Rejuvenating Pradhan Mantri Fasal Bima Yojna", *International Conference on Climate and Weather related Extremes, ICCWE*, Department of Water Resources Development and Management, Indian Institute of Technology, Roorkee, Uttarakhand, 19-20 Sept 2022.
- Shalini Singh and Pushpender Yadav, "Empowering Marginalised Women in the Digital Age: Post Pandemic Aftermath, *International Conference on Sustainable Development Goals and Gender Perspective (ICSDGAGP)*", 15-16 Dec 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 25 which includes all type of activities.

PATENTS

S. No	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Gourav Dwivedi, Deepak Kumar, Prashant Baredar	Fuel Separator for Separation of Solid Particles	Published
2.	Sudhanshu Kumar, Deepak Kumar	Combined Ball and Multi Rollers Burnishing Tool with Adaptive Diameter	Published

RESEARCH PROJECTS

1. Anjali Dhengle and Vinita Mohindra, Sidhant Rokade and Varsha Rokade, "Exploration of Psychological Benefits to Indian Rural Women due to Pradhan Mantri Gramin Sadak Yojana", Sponsored by NIRDA.
2. Deepak Kumar and Sudhanshu Kumar, "A Study of Learning Gap during Covid-19 Period among Government Elementary School Students in the Aspirational Districts of madhya Pradesh and Strategies to Bridge the gap", Sponsored by Indian Council of Social Science Research (ICSSR).

PROGRAMMES

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Deepak Kumar	Workshop	Developing Soft Skills and Effective Science Communication	25	03 July 2023	09 July 2023
2.	Pushpender Yadav		Vigilance Awareness Week, 2022		31 Oct 2022	06 Nov 2022

EXPERT LECTURES

S. No.	Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
1.	Pushpender Yadav	Mr. Pradeep Dwivedi (IAS) Assam Cadre	Expert Lecture on Job Opportunities and Motivation	02 Oct 2022
2.	Pushpender Yadav	Ms. Jagriti Awasthi (IAS) UP Cadre	Expert Lecture on Student Life and Challenges	11 Dec 2022
3.	Pushpender Yadav	Mr. Arvind Shah (IAS) M.P. Cadre	Expert lecture on Youth and Struggle	20 Nov 2022
4.	Pushpender Yadav	Mr. Lochan Kumar (IES) CPWD	Expert Lecture on Engineering Services	17 Sep 2022

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	07
2.	Phd Scholars	22
3.	Book Publications	01
4.	Chapter Publications	03
5.	International Journal Publication	09
6.	International Conference Publication	12
7.	Faculty Outreach	25
8.	Patents	02
9.	Research Projects	02
10.	Workshops/Seminar Organized	02
11.	Expert Lectures Organised	04

Department of Management

Department of Management Studies (DMS) is one of the emerging management departments in the country which develops business graduates with a holistic perspective and versatile in functional areas of business and industry. Since its inception, the Department has produced management graduates who are currently serving globally in reputed business organizations both in public and private sector organizations. The DMS imbibes the overall openness of the culture in MANIT, Bhopal, valuing all its stakeholders. Department of Management studies launched the MBA programme in July 2006.

The Department offers Two programmes. The full-time MBA Programme is designed to be completed in two years. Full time Doctoral Programme (Ph.D.) offered in areas such as Marketing Management, Strategic Management, Supply Chain Management, Financial Management and Information Systems. The programmes of the DMS are designed to respond to intellectual and practical requirements of the business and industry.

Academic Programmes:

- Two-year full time Master's programme in Business Administration (MBA)
- Full time Doctoral Programme in Management Studies

Vision

The Department of Management studies MANIT is dedicated to the pursuit of excellence and innovation in research and teaching. It aspires to leadership in all areas of research activity, and advocacy for policy – locally, nationally and internationally – to improve Business and social outcomes.

Our aspiration is to become one of the leading global providers of business and Management education and research.

We aim to critically evaluate and influence policy design, corporate governance, and business practices to secure the best possible outcomes for our stakeholders and for the broader societies in which we operate.

Mission

The mission of DMS MANIT is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence and also to create ideas that deepen and advance our understanding of management and with those ideas to develop innovative, principled, and insightful leaders who change the world.

We aim to be an exemplary service department, in building a vibrant, diverse community that values and embrace a full spectrum of experiences, view points and intellectual approaches in delivering the highest quality services to our students, in line with the overall strategy of the MANIT. We put Students at the heart of what we do, and across the department you can expect us to adhere to the following values:

- Create an outstanding student experience via collaboration to maximize the intellectual, social and economic potential of all our learners and communities.
- An extensive range of academic subjects in all major subject groups, quality and depth of provision across all subjects.
- Close inter-relationship between teaching, scholarship, and research, strong support for individual researchers as well as research groups.
- Education which enhances the ability of students to learn throughout life.

Strategic Objectives

- MBA Student Recruitment Plan.
- Development of Curriculum and Employability Strategy.
- Promote a global outlook to achieve meaningful and sustainable interaction with key stakeholder groups, including alumni and employers.
- Providing opportunities for broadening the experience of students and staff through participation.
- Continuous improvement using a variety of methods, including measuring satisfaction, setting challenging targets and monitoring our performance against service level agreements

FACULTY DETAILS

Professor	
Dr. Amit Benarji	Dr. (Mrs.) Shuchi Srivastava
Assistant Professor	
Dr. Bikrant Kasari	Dr. Nandavath Sreenu
Dr. G. S. Kushwaha	Dr. Priyanka Verma
Dr. Hergovindsingh	Dr. Varsha Rokade

UG Programme

NIL

PG Programme

Master of Business Administration (MBA)

Specialization

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Afaq Siddiqui	A study of the impact of COVID-19 Pandemic on Small Entrepreneurs of Central India
2.	Harshit Gandhi	Technology adoption in Marketing
3.	Neha	cryptocurrency
4.	Sachin Gargwal	Digital transformation
5.	Saurav Sharma	Finance
6.	Shashwath mishra	infrastructure Financing Project
7.	Somshekar	Digital finance
8.	Viveknagar	Marketing

BOOK PUBLICATIONS

1. Gyaneshwar Singh Kushwaha and Rahul Gaybhiye, "Employee Performance and Mindfulness: Theory, Practice and Research", Nikhil Publishers & Distributors, Agra.

CHAPTER PUBLICATIONS

1. Hergovindsingh and Pallavi K, "Prospects of Artificial Intelligence (AI) towards the circular economy", In: Tavishi tewari et al (eds.), Examining the Intersection of Circular Economy, Forestry, and International Trade, 223-237. <https://doi.org/10.4018/978-1-7998-4990-2.ch018>, IGI Global USA, 2022.
2. Hergovindsingh, Pallavi K and H V samalia, "Exploring the dark side of Gig economy, markets and jobs. Book No 978-981-16-8405-0", In: Springer nature publications (eds.), GIG economy and perspectives, Springer nature publications, 2022.
3. Amit Khare and Priyanka Verma, "A study on Satisfaction level of Multilevel Marketing Distributors in Contemporary Business Environment of India ", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana, Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.
4. Nenavath Sreenu, "Revenue Diversification and Performance of Indian Banks in a Deregulation Era: An Empirical Analysis", In: Nadia Mansour (eds.), The Role of Fintech in the Post-COVID-19 World: Law and Regulation, Atelier publishers, 2022.
5. Nirbhay Mahor and Amit Banerji, "Impact of Knowledge Diffusion on the Performance of Indian Pharmaceutical Companies ", In: Mihir Joshi, Mohsen Brahmi, Luigi Aldieri, Concetto Paolo Vinci (eds.), Exploring Business Ecosystems and Innovation Capacity Building in Global Economics , , .
6. Poorva Sakergayen and Priyanka Verma, "Improving future of Rural Finance in India through Financial Inclusion of Rural poor ", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana, Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.
7. Priyanka Verma and Pujesh Bhardwaj, "Digital Branding Positioning Strategies-Effects on Consumer Buying Behaviour", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana, Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.
8. Priyanka Verma and Rajshree Soni, "Online Advertising :Backbone of Successful Marketing in Pandemic", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana, Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.
9. Priyanka Verma and Aditi Shrivastava, "The Impact of Financial Determinants on Investment decisions :An analytical Study", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana, Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.
10. Priyanka Verma and Vaishali Wankhede, "Employees' Productivity Enhancement:Determining factors with specific reference to Union Bank in Bhopal City", In: Priyanka Verma, R.Purohit, R.S Rana, Saraswati Rana and Rasmi Dewidi (eds.), Advances in Mechanical Engineering and Management, Walnut, 2023.

INTERNATIONAL JOURNALS

1. Abdul Rashid and Varsha Rokade, "Impact of Retail Service Quality on Customer Reactions: The Mediating Effect of Retailer Personality", Indian Journal Of Marketing, Vol Vol 53, Issue 2, pp. 43-68, 2023.
2. Amit Banerji and Anand Gaurav Chandravanshi, "Factors Effecting Private Consumption in India: An ARDL Approach", Jindal Journal of Business Research, Vol. 11(2), pp. 107-122, 2022.
3. Nenavath Sreenu, "Impact of Crude Oil price Uncertainty on Stock Market Returns in India: Evidence from Oil Price Volatility Index", Energy strategy review publisher by Elsevier, Vol 39, pp. 89-104-15, 2022.
4. Nenavath Sreenu, "Impact of Green Finance and Fintech on Sustainable Economic Development: Evidence from India", Journal of Heliyon -Finance and Economics, Vol. 9, pp. 1-14, 2023.
5. Nenavath Sreenu, "Impact of Fintech and Green Finance on Environmental Quality Protection in India: By Applying the Semi-Parametric Difference-in-Differences ", Renewable energy, Vol. 189, pp. 432-441-9, 2022.
6. Nenavath Sreenu, "The Impact of Accounting Conservatism on IPO Under-pricing: Evidence from India", Cogent Finance and Economic Publisher by Taylor & Francis, Vol. 10, pp. 1-16, 2022.
7. S Swarup and G S Kushwaha, "Effects of Temperature Rise on Clean Energy-Based Capital Market Investments: Neural Network-Based Granger Causality Analysis", Sustainability, Vol. 14(18), 2022.
8. S Swarup and G S Kushwaha, "Nickel and Cobalt Price Volatility Forecasting Using a Self-AttentionBased Transformer Model", Applied Sciences, Vol. Applied Sciences, 2023.

NATIONAL JOURNALS

1. Hergovindsingh and R Murthy, "Exploring new education policy of India, through historic lens from employability aspect", Journal of Engineering & Technology Education, pp. 55-62, 2022.

INTERNATIONAL CONFERENCE

1. Abhay Vyas and G S Kushwaha, "Accelerating the Shift to Electric: A Review of Government Purchasing Incentives for E-Vehicles", 2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM -17-18-May 2023) MANIT Bhopal.
2. Abhay Vyas and G S Kushwaha, "Sand Battery: An Innovative Solution for Renewable Energy Storage (A Review)", 2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM -17-18-May 2023) MANIT Bhopal.
3. Abhay Vyas, Aditya Sirsa, G S Kushwaha and Amit Ojha, "Critical success factors for renewable energy usage by the students in campus: an exploratory case study", 2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM -17-18-May 2023) MANIT Bhopal.
4. Abhay Vyas, G S Kushwaha, Vasant Pandey and Shivam Swaru, "Green Purchasing Behavior Exhibited by Students of Higher Educational Institutes: An Empirical Study", 9th Management Doctoral Colloquium And Vgsom Research Scholars' Day 2023, IIT-KGP, 31-Jan-2-Feb-2023.
5. Abhay Vyas, G S Kushwaha, Vasant Pandey and Parv Gupta, "Medical Practitioners Attitude towards IoT (Internet of Things) Adoption in Sustainable Healthcare: An Empirical Study", Sustainable Business Management March 23-25, 2023, IIT-Roorkee.
6. Manisha Singh, Rakhi Tiwari and Varsha Rokade, "Lock Down Effect on Work Efficiency: A Study in Indian Perspective", International Conference on Shaping the Future of Management Education for Sustainable Emerging Economies- Organized by IIT Roorkee, 20 - 22 November, 2022, 20 Nov 2022.
7. Nenavath Sreenu, "Digital Financial Inclusion (DFI) Can Improve the Economic Growth: A Study of India "12th Conference on Excellence in Research and Education, theme: Digital Decade: E-Learning, E-Business, and E-Working organized by IIM Indore, 3-5 June 2022.
8. Nenavath Sreenu, "Impact of Green Finance and Fintech on Sustainable Economic growth: Empirical Evidence from India " AIB-South Asia Conference 2023 Environment Sustainability and Governance Issues in International Business and Trade 8-10 January 2023 O.P. Jindal Global University Sonapat Narela Road, Sonapat-131001, Haryana, India, 8-10 Jan 2023.
9. Shivam Swaroop and Gyaneshwar Singh Kushwaha, "Assessing the adoption of smart farming techniques in central India using fuzzy DEMATEL analysis method", Annual International Research Conference and Doctoral Workshop IIM Lucknow, Noida Campus, 7-11 Dec 2022, .
10. Vasant Pandey, Gyaneshwar Singh Kushwaha, Shuchi Srivastava and Abhay Manohar Vyas, "An Empirical Study on Attitude Aspect of Customer towards Digital Payment System", International Conference on Sustainable Business Management, Indian Institute of Technology Roorkee, 23-25 Mar 2023.
11. Vasant Pandey, Gyaneshwar Singh Kushwaha, Shuchi Srivastava and Abhay Manohar Vyas, "Gig Economy: A Study on Opportunity and Challenges Faced by the Gig Workers", 9th Management Doctoral Colloquium and Vgsom Research Scholars' Day 2023, IIT -KGP (31-Jan-2-Feb-2023).
12. Vivek Nagar and Priyanka Verma, "Organic Farming: A Sustainable Solution to solve the Problem of Food Security in India", International conference on Sustainable Business Management(SBM-2023), 23-25 Mar 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 13 which includes all type of activities.

PROGRAMMES

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Nenavath Sreenu	Workshop	Ten day Research methodology workshop	40	03 Dec 2022	12 Dec 2022

EXPERT LECTURES

S. No.	Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
1.	Priyanka Verma	Dr Kalyan Bhaskar, Associate Professor, XLRI Jamshedpur	Sustainability :What,Why& How	19 Apr 2023
2.	Priyanka Verma	Dr Nilesh Gupta, Professor, IIM ,Nagpur	Fintech in India	20 Apr 2023
3.	Priyanka Verma	Dr Sunil Kumar Jauhar	Proposed method for third-party reverse logistics partner selection and order allocation in the cell phone industry	21 Apr 2023

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	08
2.	Phd Scholars	08
3.	Book Publications	01
4.	Chapter Publications	10
5.	International Journal Publication	08
6.	National Journal Publication	01
7.	International Conference Publication	12
8.	Faculty Outreach	13
9.	Workshops/Seminar Organized	01
10.	Expert Lectures Organised	03

Department of Materials and Metallurgical Engineering

Achievements: The department has seven nos. of expert faculties in multi-dimensional research areas along with various distinguished research projects that have been granted to the department by different funding agencies. Many research articles, book chapters, and conference papers have been published in reputed journals by the faculty of MME. Multiple workshops, conferences, and expert lectures have been conducted in the MME department.

Future Ambition/ vision: Create a vibrant and nurturing educational environment and prepare students with a broad outlook; reforming world-class, cutting-edge research and striving for excellence in the relevant areas of material science and engineering. Promoting technical innovations and entrepreneurship with a focus on the 'Make in India' concept.

LAB FACILITIES AVAILABLE

MME department has various lab facilities for UG and PG students as follows: Corrosion Lab, foundry lab, materials testing lab, metal extraction lab, metallography lab, heat treatment lab, material characterization lab, and materials processing lab and creep lab. Apart from the above-mentioned UG and PG lab, the department has developed various research laboratories like polymer and composite lab, powder and ceramic lab, welding and joining lab, casting and solidification lab, lightweight materials processing lab, magnetic materials and plasma processing lab to facilitate the research work among the students and the faculties as well.

FACULTY DETAILS

Professor	
Dr. Sanjay Srivastava	
Assistant Professor	
Dr. Jayashree Baral	Dr. Ramkishor Anant
Dr. Mangesh Lodhe	Dr. Sasikumar Chandrabalan
Dr. Ramesh Kumar Nayak	

UG Programme

Bachelor of Technology (B. Tech.)	Material and Metallurgical Engineering
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PG Programme

Master of Technology (M. Tech.)	Specialization Material Science & Technology
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PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Amit Bhargav	Electromagnetic joining
2.	Dheerendra Patel	Utilisation of Industrial Waste as a Mould Material
3.	Lokendra Kumar Katiyar	Modification and Characterization of Nanostructured Bainitic Steel via Surface Mechanical Attrition.
4.	Manish Kumar	Superhard Composite Thin Films for Tools and Automobile Components
5.	Mohd Farhaan	Surface hardening and growth of high and medium entropy alloy on metals by arcing
6.	Pavan Meena	Thermal and Structural analysis of Dissimilar weld joint of austenitic stainless steel to P91 steel
7.	Rahul Kumar	Compound casting of similar metal
8.	Rahul Sharma	Synthesis and analysis of Mg based alloys
9.	Sanim Khan	The Development of Nano-Diamond Layered Composites for Thermal Management Applications
10.	Saurav Jain	Compound casting of Dissimilar metal

BOOK PUBLICATIONS

1. Ramesh Kumar Nayak, Mohan Kumar Pradhan and Ashok Kumar Sahoo, "Machining of nanocomposites", CRC Press, 2022.

CHAPTER PUBLICATIONS

1. Guru Prakash, Ramkishor Anant and Rahul Gupta, "Microwave Welding as an Alternative Nonconventional Welding Technique", In: Amit Bansal, Hitesh Vasudev (eds.), Advances in Microwave Processing for Engineering Materials, Taylor & Francis Group, 2022.
2. Ramesh Kumar Nayak and Hamed Yazdani Nezhad, "Development of fibre-reinforced polymer composites through direct digital manufacturing", In: Hamed Yazdani Nezhad and Vijay Kumar Thakur (eds.), Composites Assembly for High Performance Fastener-less Structures, IET, 2022.

INTERNATIONAL JOURNALS

1. B. Mehta and C. Sasikumar, "Mechanochemical Synthesis of PZT Powders and the Effects of Mechanical Activation on Solid-State Sintering Kinetics", Transactions of the Indian Institute of Metals, Vol. 76 (3), pp. 849-857, 22 Oct 2022.

- Jayashree Baral, S. Das and R. Sarvesha, "An innovative process for synthesizing Mg-Al alloy-based composites", *Metallogr Microstruct Anal.*, Vol. 11, pp. 245-254, 2022.
- L. Kush, S. Srivastava, C. Sasikumar, S. K. Vajpai, Y. Srivastava and Y. Jaiswal, "Effect of A-site doping on electrical properties of $\text{La}_{2-x}\text{Pr}_x\text{FeCoO}_6$ double perovskite prepared by sol-gel technique", *Journal of Solid State Chemistry*, Vol. 315, pp. 1-12, 01 Nov 2022.
- L. Kush, S. Srivastava, C. Sasikumar, S. K. Vajpai, Y. Srivastava and Y. Jaiswal, "Composition-dependent tunability of thermoelectric properties at low temperature for Pr-doped LPFCO double perovskite", *Journal of Materials Science: Materials in Electronics*, Vol. 33 (22), pp. 17535-17550, July 2022.
- Lokendra Kumar Katiyar, Mohd Farhan Ansari and C. Sasikumar, "Stress-induced modification on microstructure and mechanical properties of dual-phase steel sheets by repetitive corrugation and straightening", *Sadhana*, Vol. 47 (3), 119, pp. 1-14, Jun 2022.
- Mohd. Sarim Khan and C. Sasikumar, "A water droplet erosion-induced fatigue crack propagation and failure in X20Cr13 martensitic stainless-steel turbines working at low pressure", *Engineering Failure Analysis*, Vol. 139, pp. 1-13, Jun 2022.
- Pavani Meena and Ramkishor Anant, "On the interaction to thermal cycle curve and numerous theories of failure criteria for weld induced residual stresses in AISI304 steel using Element Birth and Death technique", *Journal of Material Engineering and Performance*, 2023.
- Ramesh Kumar Nayak and Jatin Sadarang, "Feasibility Study of Stone-Dust as an Alternative Material to Silica Sand for Al-Si (A356) Alloy Casting", *International journal of metal casting*, Vol. 16, pp. 1388-1396, 2022.
- Ramesh Kumar Nayak and Jatin Sadarang, "A Study on the Suitability of Mahanadi Riverbed Sand as an Alternative to Silica Sand for Indian Foundry Industries", *Transactions of the Indian Institute of Metals*, Vol. 75, pp. 1169-1179, 2022.
- Smaranika Nayak, Ramesh Kumar Nayak and Isham Panigrahi, "Effect of nano-fillers on low-velocity impact properties of synthetic and natural fibre reinforced polymer composites- a review", *Advances in Materials and Processing Technologies*, Vol. 8, pp. 2963-2986, 2022.
- Sonali Rout, Ramesh Kumar Nayak and S. C. Patnaik, "Development of Improved Flexural and Impact Performance of Kevlar/Carbon/Glass Fibers Reinforced Polymer Hybrid Composites", *Journal of Composites Science*, Vol. 6 (9), pp. 1-14, 2022.

INTERNATIONAL CONFERENCES

- Jayashree Baral, S. Das and Prudhvi Sukowsh, "Effect of heat treatment on the precipitation of $\text{Mg}_{17}\text{Al}_{12}$ in Mg-7Al alloy", *FLAME-2022*, 03 Aug 2022.
- Lokendra Kumar Katiyar and C. Sasikumar, "Development of hard and tough tool steel through precipitation of ultrafine carbides from super saturated solid solution", *Materials Today: Proceedings* 66, pp. 3822-3829, June 2022.
- Mohd. Sarim Khan and C. Sasikumar, "Failure analysis of AISI 420 steel turbine blade operating at low-pressure", *Materials Today: Preceding* 66, pp. 3804-3808, June 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 04 which includes all type of activities.

PATENTS

S. No	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	S Suresh, C Sasikumar, Jyoti Verma, Komal Singh, Ravi	Carbon Doped Silica-Nanostructured Cu/CuO catalyst for plasma conversion of CO_2 to CO	Filed

RESEARCH PROJECTS

- Bharat Modhera and C Sasikumar, "Design and Development of Ultrasonic Transducers", Sponsored by S-TIC, ISRO.
- Ramesh Kumar Nayak, "Investigation on the development Al-Al Cladding Material through Compound Casting Process- Experiments and Numerical Simulations", Sponsored by Ministry of Mines, Gov. of India and NALCO R&D, Bhubaneswar.

PROGRAMMES

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Ramesh Kumar Nayak	Conference	2 nd International conference on Advances in Materials and Manufacturing Technology, ICAMMT-2022	90	22 Nov 2022	26 Nov 2022

LAB

S. No	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Heat Treatment Lab	Jominey End Quench Tester	Development of Bainitic Steel	Teaching Practical Courses, UG/PG Projects
2.	SMAT Facility	Shot Peening Machine	Surface Modification of Steel	Teaching Practical Courses, UG/PG Projects

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	06
2.	Phd Scholars	10
3.	Book Publications	01
4.	Chapter Publications	02
5.	International Journal Publication	11
6.	International Conference Publication	03
7.	Faculty Outreach	04
8.	Patents	01
9.	Research Projects	02
10.	Workshops/Seminar Organized	01
11.	Lab Facilities Developed	02

Department of Mathematics, Bioinformatics and Computer Applications

Department of Mathematics, Bioinformatics and Computer Applications laboratories include the Computer Applications Laboratory, Data Sciences Lab, Data Mining and Soft Computing Laboratory, Advance Network Research Lab, and Computation and Modelling Laboratory, which provide fast internet access, email facilities for faculties, students and staff, computation facilities and online classes, etc.

FACULTY DETAILS

Professor	
Dr. Kamal Raj Pardasani	Dr. Sanjay Sharma
Dr. Madhvi Shakya	Dr. Sujoy Das
Dr. Namita Shrivastava	
Associate Professor	
Dr. Chandan Kumar Verma	Dr. Usha Chouhan
Assistant Professor	
Dr. Amit Bhagat	Dr. Manoj Kumar Jha
Dr. Dheerendra Mishra	Dr. Pushpendra Kumar
Dr. Ghanshyam Thakur	Dr. R.Vishnu Priya, Left institute on 29/10/2022

UG Programme

NIL	
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PG Programme

Specialization

Master of Technology (M. Tech.)	1. Bioinformatics
	2. Computational System Biology
Master of Computer Application (MCA)	

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Abhinav Gupta	Computational Biology
2.	Abhishek Kumar Shukla	Improving Query Expansion Techniques for Information Retrieval Models
3.	Akanksha Saxena	The Study of the Convergence Behavior of Higher Order Iterative Methods under Relaxed Continuity Conditions
4.	Akanksha Sharma	Financial Mathematics
5.	Anand Pawar	Computational Models to Study Interdependence of calcium and IP3 Dynamics in a Neuron Cells
6.	Ankit Kumar	Motion Estimation
7.	Anup	Portfolio Optimization
8.	Ayushi	Computational Biology
9.	Bhavana Singh	Computer Vision
10.	Chandrapal Singh Dangi	Managing and optimizing service function chains of application over edge networks
11.	Deepak K Khare	Human object Interaction in Human Activity Recognition
12.	Dheeraj Kumar Dixit	Efficient Fake News Detection using Machine Learning from News Data
13.	Indu Rani	Financial Mathematics
14.	Komal Pursharthi	Lattice Based Cryptography
15.	Kuldeep Namdeo	Multivariate Public Key Cryptography
16.	Manish Nagar	Quantum Cryptography
17.	Meenakshi Soni	IOT, Quantum Computing
18.	Mohd. Sultan Khan	Insilico Evaluation and Analysis of Immunodominant Epitopes for Vaccine Design
19.	Monika Triwari	Optimization in water reservoir operation
20.	Jagdish Phade	Portfolio selection using fuzzy optimization technique
21.	Muzammil Khan	Novel algorithms for optical flow estimation and Its Applications
22.	Navneet Gupta	Object Tracking and Analysis through Motion in Videos Using Deep Hybrid Learning
23.	Neha Solanki	Portfolio Optimization
24.	Niharika Das	Efficient Segmentation of Cardiac MR Images Using Deep Learning
25.	Nikita Yadav	Weather Forecasting
26.	Nitish Kumar Mahala	Fire-Smoke Prediction
27.	Prashant K Nag	Design of Artificial Intelligent Deep Learning Models for Human Emotion Detection
28.	Priya Singh	Hybrid approach for asset selection and optimal portfolio construction using intelligent techniques
29.	Purva Rawel	Design and Analysis of Authentication and Secure Communication Protocols for Vehicular Ad-Hoc Network

S. No.	Name	Title/Area of Research
30.	Rajat Jaiswal	Portfolio Optimization
31.	Rohit Raj Sharma	Supersingular Isogeny Graph Based Cryptography
32.	Rudraksha Mukherjee	Bioinformatics
33.	Sanjay Mishra	Data Driven Hybrid Approach for Forecasting Water Consumption in Sustainable Agriculture
34.	Shaifali Bhatt	Prediction, Analysis and Post Fire Effects of Forest Fire Using Machine Learning Techniques
35.	Shashi Raj Solanki	Computational Biology
36.	Shubhangi Porwal	Option Pricing
37.	Sonu Kumar	Image denoising
38.	Sonu Kumar	Multicompartment Mathematical Model of Analysis and Prediction of Corona Virus Disease
39.	Sudhansu Kumar	Data Mining
40.	Vaibhav Sharma	Computational and Systems Biology
41.	Vikash Pal Veelon	Data Mining

CHAPTER PUBLICATIONS

1. Mintyraj Singh and Dheerendra Mishra, "Security and Privacy Aspects of Authorized and Secure Communications in Dew-assisted IoT Systems", In: Debashis De, Samarjit Roy (eds.), Dew Computing: The Sustainable IoT Perspectives, Springer Nature Singapore Pte Ltd., 2023.
2. Muzammil Khan, Pushpendra Kumar and Nitish Kumar Mahala, "CNN Based Fire Prediction Using Fractional Order Optical Flow and Smoke Features", In: Nidhi Gupta (eds.), Application of Optimization and Machine Learning in IoT and Image Processing, CRC, 2023.

INTERNATIONAL JOURNALS

1. Afzal Hussain, Chandan Verma and Namita Srivastava, "Insilico exploration of the potential inhibitory activity of DrugBank compounds against CDK7 kinase using structure-based virtual screening, molecular docking, and dynamics simulation approach", Arabian Journal of Chemistry, Vol. 16, pp. 1-11, 2022.
2. Akanksha Saxena, Jai Prakash Jaiswal and Kamal Raj Pardasani, "An Extension on the Local Convergence for the Multi-Step Seventh Order Method with ψ -Continuity Condition in the Banach Spaces", Fractal & Fractional, Vol. 6(12), pp. 713, 2022.
3. Akanksha Saxena, Jai Prakash Jaiswal and Kamal Raj Pardasani, "Broadening the convergence domain of Seventh-order method satisfying Lipschitz and Holder conditions", Results in Nonlinear Analysis, Vol. 5(4), pp. 473-486, 2022.
4. Akanksha Saxena, Jai Prakash Jaiswal and Kamal Raj Pardasani, "Convergence Criteria of a Three-Step Scheme under the Generalized Lipschitz Condition in Banach Spaces", Mathematics, Vol. 10(21), pp. 3946, 2022.
5. Akanksha Saxena, Jai Prakash Jaiswal and Kamal Raj Pardasani, "Extending the Domain with Application of Four-Step Nonlinear Scheme with Average Lipschitz Conditions", Mathematics, Vol. 11(8), pp. 1774, 2023.
6. Anand Pawar and Kamal Raj Pardasani, "Computational model of calcium dynamics-dependent dopamine regulation and dysregulation in a dopaminergic neuron cell", European Physical Journal Plus, Vol. 138(1), pp. 30, 2023.
7. Anand Pawar and Kamal Raj Pardasani, "Effect of disturbances in neuronal calcium and IP3 dynamics on β -amyloid production and degradation", Cognitive Neurodynamics, Vol. 17(1), pp. 239-256, 2022.
8. Anand Pawar and Kamal Raj Pardasani, "Effects of disorders in interdependent calcium and IP3 dynamics on nitric oxide production in a neuron cell", European Physical Journal Plus, Vol. 137(5), pp. 1-19, 2022.
9. Anand Pawar and Kamal Raj Pardasani, "Mechanistic insights of neuronal calcium and IP3 signaling system regulating ATP release during ischemia in progression of Alzheimer's disease", European Biophysics Journal with Biophysics Letters, Vol. 52(3), pp. 153-173, 2023.
10. Anand Pawar and Kamal Raj Pardasani, "Simulation of disturbances in interdependent calcium and β -amyloid dynamics in the nerve cell", European Physical Journal Plus, Vol. 137(8), pp. 1-23, 2022.
11. Anand Pawar and Kamal Raj Pardasani, "Study of disorders in regulatory spatiotemporal neurodynamics of calcium and nitric oxide", Cognitive Neurodynamics, Vol., pp. 1-22, 2022.
12. Deepak Chhikara, Saurabh Rana, Ankita Mishra and Dheerendra Mishra, "Blockchain-driven authorized data access mechanism for digital healthcare", Journal of Systems Architecture, Vol. 131, pp. 102714, 2022.
13. Dharmendra Dangi, Amit Bhagat and Dheeraj Kumar Dixit, "Sentiment analysis of social media data based on chaotic coyote optimization algorithm based time weight-AdaBoost support vector machine approach", Concurrency and Computation: Practice and Experience, Vol. 34(3), 2022.
14. Dharmendra Dangi, Dheeraj Kumar Dixit and Amit Bhagat, "Sentiment analysis of COVID-19 social media data through machine learning", Multimedia Tools and Applications, Vol. 23(1), 2022.
15. Dharminder, Pradeep Kumar Dadsena and Dheerendra Mishra, "Construction of system friendly attribute based fully distributed access control architecture for e-healthcare", Multimedia Tools and Applications, Vol. 82, pp. 1-17, 2023.
16. Dheeraj Kumar Dixit, Amit Bhagat and Dharmendra Dangi, "An accurate fake news detection approach based on a levy flight honey badger optimized CNN model", Concurrency and Computation: Practice and Experience, Vol. 35(1), pp. NA-NA, 2023.
17. Dheeraj Kumar Dixit, Amit Bhagat and Dharmendra Dangi, "Automating fake news detection using PPCA and levy flight-based LSTM", Soft Computing, Vol. 26, pp. 12545-12557, 2022.

18. Dheerendra Mishra, Saurabh Rana, Chirag Goyal and Gagandeep Singh, "FOESG: anonymous session key agreement protocol for fog assisted smart grid communication", *International Journal of Ad Hoc and Ubiquitous Computing*, Vol. 42, pp. 137-147, 2023.
19. G. S. Thakur, "Fuzzy Soft Sets (FSSs) Distance and Similarity Measures", *NeuroQuantology*, Vol. 20(22), pp. 1198-1205, 2022.
20. Muzammil Khan and Pushpendra Kumar, "A level set based fractional order variational model for motion estimation in application oriented spectrum", *Expert Systems with Applications*, Vol. 219, pp. 119628-, 2023.
21. Nihanika Das and Sujoy Das, "A review on right ventricle cardiac MRI segmentation", *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, Vol. 11(4), pp. 1348-1358, 2022.
22. Nihanika Das and Sujoy Das, "Epoch and accuracy based empirical study for cardiac MRI segmentation using deep learning technique", *PeerJ*, 2023.
23. Nihanika Das and Sujoy Das, "Segmentation of Cardiac MR Images using MATLAB", *Journal of Information Processing Systems*, Vol. Accepted, 2022.
24. Pragya Verma and Madhvi Shakya, "Epoch and accuracy based empirical study for cardiac MRI segmentation using deep learning technique", *PeerJ*, 2023.
25. R. Vishnu Priya and Prashant Kumar Nag, "Text-based emotion recognition using contextual phrase embedding model", *Multimedia Tools and Applications*, 2023.
26. S. K. Suryawanshi, Usha Chouhan and Jyoti Kant Choudhari, "Insilco Anticancer Peptide Prediction from *Curcuma longa*", *Molecular & Cellular Biomechanics (MCB)*, Vol. 19(4), pp. 191-208, 2022.
27. Shanil Sharma, Dheerendra Mishra and Saurabh Rana, "A privacy oriented authorized key agreement framework for vehicular edge computing", *Security and Privacy*, Vol. 6(1), pp. e277, 2023.
28. Somdutt Mujwar and Kamal Raj Pardasani, "Molecular Docking Simulation-based Pharmacophore Modeling to Design Translation Inhibitors Targeting c-di-GMP Riboswitch of *Vibrio cholera*", *Letters in Drug Design & Discovery*, Vol. 20(06), pp. 745-754, 2023.
29. Sonu Kurmi and Usha Chouhan, "A multicompartiment mathematical model to study the dynamic behaviour of COVID-19 using vaccination as control parameter", *Nonlinear Dynamics*, Vol. 109(3), pp. 2185-2201, 2022.
30. Sudhanshu Kumar and G. S. Thakur, "Fuzzy Soft Set Based Rain Fall Pattern Mining from Non-Stationary Stream Data", *Neuro Quantology*, Vol. 20(22), pp. 1244-1252, 2022.
31. Tanya Sharma, R. Kumar and Kamal Raj Pardasani, "Linear stability analysis of asymmetrically heated hybrid nanofluid with variable viscosity and thermal conductivity", *European Physical Journal Plus*, Vol. 137(12), pp. 1306, 2022.

INTERNATIONAL CONFERENCE

1. Abhijit Kasi, Mohammad S Obaidat, Purva Rewal and Dheerendra Mishra, "On the security of authenticated key agreement schemes for e-healthcare", 2022 International Conference on Communications, Computing, Cybersecurity, and Informatics (CCCCI) Dalian, China, 17 Oct 2022.
2. Ankita Maitra, Pushpendra Kumar and Manoj Jha, "A Comprehensive Review on the Identification of Blood Based Biomarkers for Alzheimer's Disease Detection through Computational Approaches", 4th International Conference on Communication and Intelligent Systems (ICCIS 2022), NIT Delhi, 19-20 Dec 2022.
3. Bhavana Singh, Muzammil Khan and Pushpendra Kumar, "Study of Various Deep Learning Models for COVID-19 Detection Based on Fractional Order Optical Flow", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND-2022), MANIT Bhopal, 19-20 Jan 2023.
4. Dheeraj Kumar Dixit, Amit Bhagat and Dharmendra Dangi, "A comparative analysis for detecting fake news using supervised machine learning algorithms", Computing, Networks and Renewable Energy (CNRE-2022) I. K. Gujral Punjab Technical University, Kapurthala, 09 Jun 2022.
5. Monika Tiwari, Namita Srivastava and Ruchi Khare, "Reservoir optimization by using Rao Algorithm", International Conference on Computational Sciences, Modeling computing and soft computing, Manipal.
6. Pragya Verma and Madhvi Shakya, "Differently expressed Genes Interactomics Study Shows Dopaminergic and Glutamatergic Synapse Association in Cases of Depression using RNA-Seq", International Conference on Computing, Networks and Renewable Energy (CNRE-2022), I. K. Gujral Punjab Technical University, Kapurthala, 9-11 Jun 2022.
7. Purva Rewal, Abhijit Kasi, Mohammad S Obaidat and Dheerendra Mishra, "On the Security of Content key Distribution Framework for DRM systems", 2022 International Conference on Communications, Computing, Cybersecurity, and Informatics (CCCCI) Dalian, China, 17 Oct 2022.
8. Pushpendra Kumar, Muzammil Khan and Nitish Kumar Mahala, "A segmentation Based Robust Fractional Variational Model for Motion Estimation", International Conference on Computer Vision and Image Processing (CVIP-2022), VNIT Nagpur, 4-6 Nov 2022.
9. Pushpendra Kumar, Dipshi Jayaswal and Muzammil Khan, "A Comparative Analysis of Different CNN Based Models for COVID-19 Detection using CXR and CT Images", International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND-2022), MANIT Bhopal, 19-20 Jan 2023.
10. Pushpendra Kumar and Muzammil Khan, "A Nonlinear Fractional Order Optical Flow and CNN Based Framework for Fire Prediction Using Smoke Features", 8th International Conference on Computing Communication and Security (ICCCS-2023), Baba Farid College of Engineering & Technology, Bathinda, INDIA, 3-4 Mar 2023.
11. Rajat Jaiswal, Namita Srivastava and Manoj Jha, "Maximizing Portfolio Performance using Hybrid Portfolio Construction", World Conference on Mathematical Sciences and Applications, Goa, 15 Mar 2023.
12. Shreya Gupta, Muzammil Khan and Pushpendra Kumar, "Prediction of Fire Signatures Based on Fractional Order Optical Flow and Convolution Neural Network", International Conference on Computer Vision and Image Processing (CVIP-2022), VNIT Nagpur, 4-6 Nov 2022.

13. Sunil Kumar Patel and G. S. Thakur, "An Electricity MCP Forecast Based on Improved Cascaded Neural Network for Russian Wholesale Electricity Market", 2022 International Conference on Applied Artificial Intelligence and Computing (ICAAIC), 16 Jun 2022.
14. Suvarna Sharma and Amit Bhagat, "Information Extraction from Web Pages Using Hyperlinks", Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), Noida, India, 13 Oct 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 33 which includes all type of activities.

RESEARCH PROJECT

1. Chandan Kumar Verma and Afzal Hussain, "Scaffold hopping, Pharmacophore modeling, Virtual screening and molecular simulation for the identification of novel and selective inhibitors of Candida albicans N-Myristoyltransferase towards antifungal drug discovery using computational drug repurposing", Sponsored by Indian Council of Medical Research, New Delhi.
2. Pushpendra Kumar, "Prediction of Fire Signatures Using Smoke Features Based on Fractional Order Optical Flow in Videos", Sponsored by DST-SERB, New Delhi.
3. Pushpendra Kumar, "Development of Fractional Order Regularization Optical Flow Model Based Smoke Detection System in Surveillance Videos", Sponsored by NBHM-DAE, Mumbai.

LAB

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Advanced Network Research Lab	10 Systems	Research Lab	
2.	Computation and Modelling Lab	20 Systems	Research Lab	
3.	Computer Applications Laboratory	77 Systems	MCA Lab	
4.	Data Mining and Soft Computing Lab	15 Systems	Research Lab	
5.	Data Science Lab	26 Systems	U.G. & P.G. Lab	

SUMMARY

S. No.	Particulars	Total
1.	Faculty Members	13
2.	Phd Scholars	41
3.	Chapter Publications	02
4.	International Journal Publication	31
5.	International Conference Publication	14
6.	Faculty Outreach	33
7.	Research Projects	03
8.	Lab Facilities Developed	05

Department of Mechanical Engineering

One of the oldest departments of the institute, the Department of Mechanical Engineering has more than one thousand students and thirty-seven faculty members. Currently, the department offers One Undergraduate (UG) and Four Postgraduate (PG) programs. The department is actively engaged in high quality research in Design, Materials, Thermal, Manufacturing and Industrial Engineering. Innovative teaching methods, industrial collaborations, and state-of-the-art infrastructural facilities are some of the strengths of the department. It also offers opportunity to students from other departments to opt for minor specialization in accordance with the provisions of NEP - 2020.

Vision: "Committed to the cause of value-based education in Mechanical engineering, envisions itself as a fountainhead of innovative human enterprise, with inspiration initiatives for Academic Excellence".

The department has a well-established tradition of producing excellent engineers and outstanding human beings. It remains committed to multi-faceted development of students, inculcate technical knowledge with a society-centric perspective and inspire them to take multiple original initiatives aimed at making India a powerhouse of knowledge and industrial progress.

LAB FACILITIES AVAILABLE

- **Computational Fluid Dynamics Lab**
The Computational Fluid Dynamics lab has 20 workstations with Intel (R) Xeon(R) X3450 processor with 2.80 GHz speed. These workstations are installed with various commercial software like ANSYS FLUENT, MATLAB etc. These workstations are available to the student of the department to understand the basics of numerical fluid flow and heat transfer phenomenon. The students are provided with various tutorials so that they can simulate Fluid Mechanics and heat Transfer problem using these software to understand physics behind the particular problems.
- **Manufacturing Technique Workshop**
Adequate ventilation and lighting are provided. Display boards of tools and work instructions are provided. This lab is a well-equipped laboratory which provides knowledge to students for operating and handling manufacturing machine by themselves and performing the given task. Display boards of tools and work instructions are provided. This laboratory is scheduled for Mechanical engineering students. Apart from curriculum, some additional experimental setups are there which helps the students to enhance their knowledge. Students also get opportunity to implement their ideas through various application oriented micro projects.
- **Workshop**
This Lab gives the basic working knowledge required for the production of various engineering products. It explains the construction, function, use and application of different working tools, equipment, machines as well as the technique of manufacturing a product from its raw material. A workshop may introduce a new idea, inspire participants to further explore it on their own, or may illustrate and promote actual process practice. It is a great way to teach hands-on skills as it gives learners an opportunity to try out new methods and fail in a safe environment.
- **Heat and Mass Transfer Lab**
Heat and Mass Transfer laboratory provides fundamental and industrial knowledge about modes of heat and mass transfer, like conduction, convection, radiation, mass transfer, and their application. The lab consists of various equipment which describe basic heat transfer modes of conduction, convection and radiation and refrigeration and air conditioning equipment. The lab is mainly utilized by students of mechanical engineering department.
- **Computer Aided Design (CAD)**
This Lab introduces student to the geometrical modeling softwares that are need to carry for process planning. Process planning is an engineering activity that determines the appropriate procedures for transforming raw materials into a final product as specified by an engineering design. Engineering designs are conventionally documented using detailed diagrams indicating important design characteristics such as dimensions, tolerances, materials, and other pertinent specifications. Even though these diagrams convey a large amount of information about a design, they are incomplete in that they do not describe the manufacturing steps necessary to produce the final part. Effective process plans provide this information. In practice, design, process planning, and manufacturing are interrelated since the capabilities and characteristics of available equipment, manufacturing processes, and personnel can have a significant impact on the final design of a product.
- **Heat Engines lab**
This lab provides the machines and equipment used to determine experimental data of various engines. It includes cut models of 4 stroke diesel engine, 2 stroke petrol engine, 4 stroke and two stroke petrol engines with required specifications, Multi cylinder SI engine, Single cylinder Diesel engine for performance and speed test which is suitable to tests on variable compression ratios.
- **Material Characterization lab**
This Lab gives idea on hands on practice with refrigerating circuits and develop air-conditioning systems. This laboratory is scheduled for UG Mechanical engineering students and is provided with various facilities to student. The Refrigeration & Air Conditioning lab of the department offers the students the opportunity to gain valuable hands-on experience with state-of-the-art environment where students become proficient in both the physical and creative skills needed in the field of Mechanical Engineering.

- **Refrigeration & Air Conditioning lab**

Refrigeration & Air Conditioning Lab gives idea on hands on practice with refrigerating circuits and develop air-conditioning systems. This laboratory is scheduled for UG Mechanical engineering students and is provided with various facilities to student. The Refrigeration & Air Conditioning lab of the department offers the students the opportunity to gain valuable hands-on experience with state-of-the-art environment where students become proficient in both the physical and creative skills needed in the field of Mechanical Engineering.

- **Turbo machines lab**

This lab offers study of different types of pumps such as rotodynamic as well as positive displacement, different types of turbines such as impulse and reaction turbine i.e. Kaplan and Francis turbine and multistage air compressor are done.

- **Internal Combustion Engine lab**

The Internal Combustion Engine lab consists of various engine test equipment, engine test rigs platforms, redwood viscometer, flash point and fire point tester, and pump calorimeter. The laboratory is also equipped with a cut engine section, various auto parts accessories for a better learning experience. The laboratory is widely used for various project works. The laboratory has additional computer facilities for a better learning experience.

- **Metrology and Measurement Lab**

A Metrology and Measurement Lab is a facility dedicated to the study and practice of metrology and measurement science. Metrology is the scientific study of measurement, encompassing both the theory and practical application of accurate and reliable measurement techniques across various fields. The lab would be equipped with a wide range of measurement instruments and devices, such as calipers, micrometers, rulers, gauges, Tool maker microscope, surface plate, Sine bar, Sine center, and more. These instruments are used for precise and accurate measurements in different physical quantities. Additionally, they might be involved in research and development projects related to measurement technologies, improving measurement accuracy, and exploring new measurement methods.

New Labs/centre established

Additive Manufacturing Laboratory

Additive manufacturing laboratory is established to increase the spectrum, coverage and overall efficiency of different dimensions in additive manufacturing. This laboratory aims to provide state-of-art facilities to increase the interest of UG/PG students and researchers in the cutting-edge technologies of additive manufacturing through research projects, consultancy.

Material Characterization lab

Materials Characterization labs offer equipment for liquid, powder, surface and bulk materials characterization, as well as expert analytical services for product quality assurance, failure analysis, and forensic evaluations.

Robotics Lab

The Objectives of the Robotics Lab at Department of Mechanical Engineering MANIT Bhopal

- To demonstrate the movement of robotic joints with computers/microcontrollers.
- To provide a practical understanding of Robotics theory concepts on various programming methods, path planning, kinematics and dynamics, grippers, end effectors, and integrated sensors.
- To provide a practical understanding of Soft Robotics concepts on smart polymers.
- To design and develop smart robots with the help of latest technologies for various real time applications.

Renewable Energy Lab

Renewable Energy Lab is Research Lab used by PG and Ph.D. students for their research work. Equipment used for research purpose is shown above and is called as Solar Air Heater. The aim of this lab is to improve the performance of conventional solar air heater using artificial roughness. Artificial roughness not only breaks resistance to heat flow but induces greater turbulence in duct thereby improving heat transfer coefficient and efficiency of roughened plate solar air heater. This lab provides set-up like manometer for measuring air flow, ammeter to measure current supplied to heater, voltmeter to measure voltage across the heater, variac to vary heat flux on plate and data logger for measuring air and plate temperatures.

FACULTY DETAILS

Professor	
Dr. C. M. Krishna	Dr. Rajesh Gupta
Dr. Gajendra Dixit	Dr. Rajesh Purohit
Dr. J. L. Bhagoria	Dr. Ravi Kumar Dwivedi
Dr. K. R. Aharwal	Dr. S. P. S. Rajput
Dr. R. M. Sarvya	Dr. Siraj Ahmed
Associate Professor	
Dr. Akhilesh Barve	Dr. Sanjay Soni
Dr. Atul Lanjewar	Dr. Vilas Warudkar
Dr. Manoj Arya	Dr. Vimlesh Kumar Soni
Dr. R. S. Rana	

Assistant Professor	
Dr. Abhinav Varshney	Dr. Mohd Taufik
Dr. Ajay Pandey	Dr. Narendra Gaybhiye
Dr. Ajay Verma	Dr. Pradeep Kumar Soni
Dr. Akhilesh Soni	Dr. Pushvami Mishra
Dr. Alok Singh	Dr. Sudhanshu Kumar
Dr. Amit Suhane	Dr. T. N. Verma
Dr. Amit Telang	Dr. Vijay Panchore
Dr. Arvind Kumar	Dr. Vikash Kumar
Dr. Deepak Kumar	Dr. Vinod Yadav
Dr. Manish Vishwakarma	Dr. Vishal Parashar

UG Programme	
Bachelor of Technology (B. Tech.)	Mechanical Engineering

PG Programme	Specialization
Master of Technology (M. Tech.)	1. Engineering Materials
	2. Industrial Design
	3. Maintenance Engineering
	4. Stress & Vibration Analysis
	5. Thermal Engineering

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Abhisar Chouhan	Topic to be decided
2.	Abhishek Patel	Experimental Investigation on Material development for fabrication of prosthetics parts using fused filament.
3.	Adarsh Chaurasiya	Composite materials
4.	Ahmed Raza	Investigation of Burnishing Process Parameters on Surface Characteristics of Steel Material
5.	Ajeet Yadav	Not decided yet
6.	Akshay Kumar	Synthesis and Optimization of Mechanical Properties of Aluminium Composite Reinforced with High Entropy Alloy.
7.	Akshay Kumar	Modelling and Optimization Studies on Barriers of Industry 4.0 Technologies in Manufacturing Industry
8.	Ambuj Pateriya	Investigation of Dynamics of Rotor Bearing System and Analysis of rotor Bearing Parameter to Reduce Oil whirl Instabilities.
9.	Amit Kumar	Modeling and Experimental Investigation of Machining Performance in Rotary Tool Electrical Discharge Machining
10.	Amod Kumar	Synthesis, Mechanical and Corrosive Behaviour of AA6082-SiCp-TiO ₂ p Hybrid Composite.
11.	Anil Chourasiya	Optimization techniques of process parameter for machining
12.	Ankit Kumar	Optimization of R600a Vapour Compression Refrigeration System using hybrid Nano lubricant based PAG And Mineral oil.
13.	Anoop Pratap Singh	Investigation of tribological behavior of nano particle based lube oil and prediction of performance attributes
14.	Arun Shrivastava	Solar air heater
15.	Ashish Jain	Deformation Induced transformation of austenite in steels.
16.	Atul Gautam	Development of Novel Machine Learning Technique for Improvisation of Offshore Wind Resource Assessment
17.	Avinash Selot	Additive manufacturing
18.	Bhagwan Singh Lovevanshi	Material and Design
19.	Brajesh Kumar Ahirwar	Thermal engineering
20.	Chandrabhushan Tiwari	Thermal engineering
21.	Deepa Ahirwar	Composite
22.	Deepak Kumar Pathak	Performance Measurement and Analysis of Green Supply Chain Management Practices.
23.	Derkant Varde	Performance analysis of falling film tower with plastic surface in liquid desiccant systems.
24.	Dharam Singh	Solar air heater
25.	Dilip Sen	Topic to be decided
26.	Gourav Singh	IMPLANT DESIGN
27.	Harshad Raghuvanshi	Experimental and Numerical Investigation of Cold Room Performance Using Modified Air Circulation Arrangements.

S. No.	Name	Title/Area of Research
28.	Jailal Prabhakar Patel	SOLAR ENERGY
29.	Jeeshan Ansari	Topic to be decided
30.	Jitendra Singh	Investigation of solar air heater artificially roughened with discrete arc integrated with staggered elements
31.	Jitesh Kumar	Topic to be decided
32.	Kapil Chaudhri	Thermal Performance analysis of solar air heater with Artificial roughness on the absorber plate.
33.	Kartik Rohit	Industrial Engineering
34.	Kaustubh Singh	Thermal Engineering
35.	Krishnanand	Additive Manufacturing
36.	Mahendra Kumar Soni	Topic to be decided
37.	Mahesh Kumar Meravi	Vibration analysis of rotating beam
38.	Manish Kumar Mohit	Study of Thermo - Hydraulic Performance of Miniature Heat Sinks with Tins.
39.	Manohar Kumar	Experimental Investigation for Performance Assessment of Thermo Mechanical Behavior of Green Composites.
40.	Manoj Biswas	SOLAR AIR HEATER
41.	Manoj Kumar Diwaker	Investigation of Thermal hydraulic performance of double pipe heat exchange with inserts and Ceo2 water nano fluid
42.	Maruf Nizam	Topic to be decided
43.	Mayank Maurya	Topic to be decided
44.	Md Jamil Akhtar	Topic to be decided
45.	Md Waheed	Composite Material
46.	Moh Shahid Khan	Robotics
47.	Neelam Dubey	Thermal Engineering
48.	Neetesh Kumar Gupta	Topic to be decided
49.	Nilesh Tipan	Material Synthesis and Design Optimization of Biodegradable Orthopaedic Implant.
50.	Nishant Patel	Topic to be decided
51.	Patel Bhavik Vasudevabhai	Experimental and Numerical Investigations of Heat Transfer Enhancement in Heat Exchanger Tube with Inserts using Nanofluid.
52.	Pradip Kumar Verma	Composite Material
53.	Prashant Kumar	Investigations on heat transfer and pressure drop characteristics for flow through pipes using twisted tape and nanofluid
54.	Prashant Paraye	HEAT EXCHANGER
55.	Prva Tiwari	Study of thermal stability of retained austenite in steels
56.	Prayank Dixit	Experimental Investigation of Mechanical and Tribological Behaviour of Aluminium Matrix Composite Reinforced with Agriculture Waste.
57.	Rahul Shrivastava	Development and Performance Investigation of Improved Natural Fiber Reinforced Composite
58.	Rakesh Kumar Patel	Modeling and Experimental Investigation of powder mixed dielectric properties and its effect on EDM process Performance.
59.	Rupesh Baroniya	MHD flow in sudden expansion
60.	S Kartik Shubham	Nano composite
61.	Sakshi Naga	Thermal
62.	Sankalp Gour	Mechanics of soft materials
63.	Saurabh Jain	EDM process
64.	Shalu Patel	advance composite material
65.	Shashank Mishra	Material Design
66.	Shashikanta Sahoo	Optimization of Process Parameters in Friction Stir Welding of Dissimilar Aluminium Alloys for Enhancement of Mechanical Properties
67.	Shrikant Kol	Liquid desiccant
68.	Shubham Jain	Experimental Investigation of EDM parameters for applied Bio Medical Material Using Nature Inspired Metaheuristic optimization Algorithm
69.	Shubham Sachan	Local to Global Supply Chain Evolution: Tackling Indigenous: Technological Hesitancy
70.	Sonali Shrivastava	Wind Energy
71.	Srinivasulu Vardhini	Robotics
72.	Subodh Kumar	Composite materials
73.	Sudhir Kumar	Experimental and Numerical Investigation of Ground Coupled Heat Exchanger.
74.	Sumit Kumar Porwari	Topic to be decided
75.	Surendra Singh Dewada	Development and Characterization of Hdpe Nanocomposite Filament for Fused Deposition Modeling
76.	Surjeet Singh	An Investigation into The Influence of Process Parameters on Mechanical and Metallurgical Properties of Dissimilar Metal Alloy Joint Fabricated Through Friction Stir Welding
77.	Tarique Anwar Qureshi	WIND ENERGY
78.	Tausey Yazdani	Topic to be decided
79.	Utpal Nath	Modeling of Laser Bending Process with Inverse Estimation

S. No.	Name	Title/Area of Research
80.	Vijay Katore	Topic to be decided
81.	Vinay Yadav	Topic to be decided
82.	Vipul Deshmukh	Performance improvement in tubular heat exchanger by vortex generator and swirl flow devices inserts
83.	Yashwant Kumar Yadav	Development and Characterization of High Performance Hybrid Polymer Composite Material From Waste Pet Using Chemical Recycling
84.	Yasir Baig	Wind Energy

BOOK PUBLICATIONS

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2. Amarjeet Singh, Manoj Arya and Anoop Arya, "Exergy Analysis of Regeneration in Aqueous Desiccant Cooling System", LAP Lambert Academic Publishing, 2023.
3. Ravindra Singh Rana, Rajesh Purohit, Priyanka Verma, Mohammad Taufik and Rashmi Dwivedi, "Recent Advances in Manufacturing and Design", walnut publication, 2023.

CHAPTER PUBLICATIONS

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2. A Martin Babu and Arvind Kumar, "Energy Storage and Solar Still Numerical analysis of ETSC with water and CeO_2 Nanofluid using CFD".
3. Ajay Verma, Nisha singhal, "New Age Competitiveness: An Overview", In: E: Competitiveness in the New Era IntechOpen.
4. Anoop Pratap Singh, R.K.Dwivedi and Amit Suhane, "Impact of of Nanoparticles in Lube Oil Performance: A Review", In: CRC Press Taylor an Francis (eds.), Advanced Materials and Manufacturing Processes.
5. Arun Shrivastava and Vikash Kumar, "Strategies for Waste Recycling, Reuse, and Reduction", In: Arun Shrivastava Vikash Kumar (eds.), Sustainable Approaches and Strategies for E-Waste Management and Utilization, IGI Global, 2023.
6. Areek Gupta, Rajesh Purohit, Mohammad Taufik and Vishal Francis, "On the Application of Piezoelectric-based Smart Materials in the Automobile Industry", In: Ravindra Singh Rana, Rajesh Purohit, Priyanka Verma, Mohammad Taufik, Rashmi Dwivedi (eds.), Advances in Nanomaterials and Composites, Walnut Publication, 2023.
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8. Brajesh K Ahirwar and Arvind Kumar, "A review on Nanofluids for Solar Thermal", In: Rana, Saraswati Rana, Rashmi (eds.), and Management.
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13. Rudraksh Sharma, Kajal Meena and Snehal Prajapati, "Parametric study on themaximum efficiency of dielectricelastomer generators for micropowergeneration", Recent Trends in Nanotechnology for Sustainable Living and Environment.
14. Sankalp Gouz, Deepak Kumar and Vinod Yadav, "Electromechanicalinstability modelling of particle-reinforced dielectric elastomericactuators" Advances in Matenal Science and Metallurgy.
15. Sudhanshu Kumar and Dilip Sen, "Effect of Tool Movement in Electro-Discharge Machining Process-A Review", In: Harshit Dave (eds.), Advances In Manufacturing: Processes & Systems, Springer, 2022.
16. Sudhanshu Kumar, Dharmendra Kumar and Dilip Sen, "Study of Gap Flow Simulation for Machining Gap in Electric Discharge Machining Process-A Review", In: Ramesh Nayak, Mohan Pradhan (eds.), Recent Advances in Materials and Manufacturing Technology, Springer, 2023.
17. Suzabhi Purohit, Jahanvi Purohit, Meenakshi Rajpurohit and Mohammad Taufik, "Superconductivity and Superconducting Materials; Advances in Nanomaterials and Composites", In: Ravindra Singh Rana, Rajesh Purohit, Priyanka Verma, Mohammad Taufik, Rashmi Dwivedi (eds.), Advances in Nanomaterials and Composites, Walnut Publication, 2023.
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19. U.K.Dwivedi, Shashank Mishra and Vishal Parashar, "Rapid prototyping", In: Kunal Pal, Sarika Verma (eds.), Advances in Biomedical Polymers and Composites, Elsevier, 2023.
20. Vishal Parashar, Shubham Jain and P.M. Mishra, "Optimization of Tool Wear Rate Using Artificial Intelligence-Based TLBO and Cuckoo Search Approach", In: M.L.Kohle, K.J.Karande (eds.), Artificial Intelligence, Internet of Things (IoT) and Smart Materials for Energy Applications, CRC Press, 2022.

1. A. K. Gupta and M. Taufik, "Investigation of dimensional accuracy of material extrusion build parts using mathematical modelling and artificial neural network", *Int. J. Interact. Des. Manuf.*, 2023.
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4. A. Patel and M. Taufik, "Extrusion-Based Technology in Additive Manufacturing: A Comprehensive Review", *Arab. J. Sci. Eng.*, Vol., pp. 1-34, 2022.
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7. Ahmad Raza and Sudhanshu Kumar, "A critical review of tool design in burnishing process", *Tribology International*, Vol. 174, pp. 7717-, 2022.
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12. Amit Kumar and M K Pradhan, "An ANFIS modelling and genetic algorithm-based optimization of through-hole electrical discharge drilling of Inconel-825 alloy", *Journal of Materials Research*, Vol. 38, pp. 312-327, 2023.
13. Amit Kumar, M K Pradhan and Raja Das, "Measurement of EDMed surfaces roughness using convolutional neural network", *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 2023.
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16. Bhramant Dandoutiya and Arvind Kumar, "Comparison of mathematical models to estimate the thermal conductivity of TiO₂-water based nanofluid: A review", *Thermal Science*, Vol. 26(1 Part B), pp. 579-591, 2022.
17. Bhramant Dandoutiya and Arvind Kumar, "W-cut twisted tape's effect on the thermal performance of a double pipe heat exchanger : a numerical study", *Case Studies in Thermal Engineering*, Vol. 34, pp. 102031, 2023.
18. Arora C., Kamat A and Shanker S, "Integrating agriculture and industry 4.0 under "agri-food 4.0" to analyze suitable technologies to overcome agronomical barriers", *British Food Journal*, Vol. 124 No. 7, pp. 2061-2095, 2022.
19. Chandrabhushan Tiwari, Tikendra Nath Verma, Gaurav Dwivedi, "Sustainability evaluation, optimization and research dynamics of microalgae methyl ester in a research diesel engine", *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering (JPME)*, Vol., pp. 1-13, .
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21. D Baro, V Yadav and S Mahto, "Dynamic modelling and analysis of smart cantilever beam using FEM", *International Journal on Interactive Design and Manufacturing*, Vol. 17, pp. 1199-1214, 2023.
22. Deepak Kumar and Somnath Sarangi, "Constitutive modeling of anelectro-magneto-rheological fluid", *Scientific Reports*, Vol. 12(1), pp. 1201, 01 Mar 2022.
23. Deepak Kumar, Subrat Kumar Behera and Kirti Arya, "An alternative form of energy density function demonstrating the electro-elastic deformation of a dielectric cylindrical actuator", *Mechanics of Soft Materials*, Vol. 4(1), 01 Jun 2022.
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25. Dharam Singh and Vikash Kumar, "Thermal performance investigation of frustum roughened solar air heater", *Solar Energy*, Vol. 255 (2023), pp. 339-354.
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65. Shubham Jain and Vishal Parashar, "WEDM process parameters optimization by preference-based CS & PSO algorithm for LCP", *Materials and Manufacturing Processes*, Vol. 38, 2023-Issue 7, pp. 1-20, 2023.
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78. Sumanta Das, Akhilesh Barve and N. C. Sahu, "Analysing the challenges to sustainable food grain storage management: a path to food security in emerging nations", *International Journal of Food Science and Technology*, Vol. in Press, pp. -, Year-2023.
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INTERNATIONAL CONFERENCES

- Ahmad Raza and Sudhanshu Kumar, "Influence of ball burnishing process on surface hardness of AISI 1045 steel material", *International Conference 20th ISME Conference on Advances in Mechanical Engineering*, 19-21 May 2022.
- Amit Kumar, M K Pradhan and Saurabh Jain, "Parametric Optimization of the EDM Using a Genetic Algorithm on Machining of Al7075/SiC/WS2 Composites", *International conference on Advances in Materials and Manufacturing*, 22.11.2022.
- Amit Suhane, Vinod Yadav and Navneet Dubey, *CPIE-2023, NIT Kurukshetra*, 10-12 Mar 2023.
- Amit Suhane, Alok Singh and Akshay Kumar, *CHEMSMART-2022*, 16-18 Dec 2022.
- Amit Suhane and Priyank Dixit, *ICMPC-2022 Bhopal*, 22-24 Apr 2022.
- Harshad Raghuvanshi, K. R. Aharwal and Narendra Gajbhiye, "Effect of Vent Position on Temperature Inhomogeneity inside Apple Storage Package: A Numerical Study", *Fluid Mechanics and Fluid Power*, 2022, 14 Dec 2022.
- Manish Kumar, Krishnanand and Abhinav Varshney and Mohammad Taufik, "Hand Prosthetics Fabrication using Additive Manufacturing", *International Conference On 4th Innovative Product Design and Intelligent Manufacturing Systems (IPDIMS 2022) At: NIT Rourkela*.
- Manoj K Diwaker and Arvind Kumar, "Single phase THE in Tube type HERs: A review", *Intl. Conf. on Advances in Mechanical Engg. MANIT Bhopal*, 24-26 Mar 2022.
- Manoj K Diwaker and Arvind Kumar, "An updated review of HTET in Tube type HERs", *Intl. Conf. on FMFP IIT Roorkee*, 14-16 Dec 2022.
- Navneet Dubey, Utpal Nath and V Yadav & A Suhane, "Estimation of Peak Stress of AM30 Magnesium Alloy During Hot Plane Strain Compression", *7th International Conference On Production And Industrial Engineering (Cpie-2023) Dr. B. R. Ambedkar National Institute of Technology Jalandhar-144027, INDIA*, 12 Mar 2023.
- Rupesh Baroniya, Manoj Arya and N. L. Gajbhiye, "Asymmetry Analysis of the MHD flow in sudden Expansion", *IIT, Roorkee*, 14-16 Dec. 2022.
- Rupesh Baroniya, Manoj Arya and Narendra Gajbhiye, "Asymmetry analysis of the MHD flow in sudden expansion", *Fluid Mechanics and Fluid Power*, 2022, 14 Dec 2022.
- Saurabh Jain, M K Pradhan and Amit Kumar, "Application of Digital Image Processing on Machined Surfaces: A Review", *International conference on Advances in Materials and Manufacturing*, 22 Nov 2022.
- Soumya Bhandari, Krishnanand, Alok Singh and Mohammad Taufik, "3D Printing Methods and Materials for Sensor Fabrication", *International Conference on 4th Innovative Product Design and Intelligent Manufacturing Systems (IPDIMS 2022) at: NIT Rourkela*, 22 Nov 2022.
- Sudhanshu Kumar, Dharmendra Kumar and Dilip Sen, "Study of Gap Flow Simulation for Machining Gap in Electric Discharge Machining process-A Review", *International conference on Advances in Materials and Manufacturing (2022) MANIT Bhopal*, 22-26 Nov 2022.
- Sudhanshu Kumar, Dilip Sen and Dharmendra Kumar, "Electrical discharge machining with tool movement-A Review", *International Conference 20th ISME Conference on Advances in Mechanical Engineering*, 19-21 May 2022.
- Sunil Dodkey and Narendra Gajbhiye, "Numerical investigation of pressure drop and MHD flow through sudden expansion in the presence of inclined magnetic field", *Fluid Mechanics and Fluid Power*, 2022, 14 Dec 2022.
- Uliya Mitra, Anoop Arya and Manoj Arya, "Simulation and Performance Analysis of a Fuel Cell Hybrid Electric Vehicle", *8th IEEE International Students' Conference on Electrical, Electronics and Computer Science, SCEECs '23*.
- Utpal Nath, Vinod Yadav and S. S. Bhaduria, "Effects of workpiece size on bending angle in laser forming of Al 6061-T6 sheet", *7th International Conference on Production and Industrial Engineering (CPIE-2023) Dr. B. R. Ambedkar National Institute of Technology Jalandhar-144027, INDIA*, 12 Mar 2023.
- Virender Kumar, Rupesh Baroniya and Manoj Arya, "Asymmetry Analysis of the Hydrodynamic flow in a Gradually Expanded Channel at Different Extraction Angles", *Innovations in Clean Energy Technologies (ICET-2023) at Energy Centre, Maulana Azad National Institute of Technology, Bhopal, M.P.*, 8-10 Apr 2023.

NATIONAL CONFERENCE

- Manoj K Diwaker and Arvind Kumar, "An updated review of HTET in Tube type HERs", *National Conf. on FMFP IIT Roorkee*, 14-16 Dec 2022.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 33 which includes all type of activities.

PATENTS

S. No	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Ajay Verma	CHAIR	Published
2.	Akhilesh Barve	Semi-Automated Trolley Attachment For Warehouse Picking Operations	Granted
3.	Deepak Kumar	Biaxial Stretching Device for Soft Materials	Granted

S. No	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
4.	Deepak Kumar	Automated Biaxial Stretching device With Scisso-mechanism	Published and Utility Filed
5.	Mohammad Taufik	Filament And Pellet Integrated Coextruder For Additive Manufacturing	Granted
6.	Siraj Ahmed, Ravi Kumar Dwivedi & Rajan Kumar	Dual Wear Tribometer	Patent Certificate: S. No. 022122789 Patent No. 422991 Date of Grant: 24.02.2023
7.	Vikash Kumar	Automatic Tree Shaper With Adjustable Blades	Grant
8.	Vikash Kumar	Smart Basket For Tracking Products and Billing	Grant
9.	Vikash Kumar	Drone for Pest Control	Grant

RESEARCH PROJECTS

1. Akhilesh Barve and Dr. Deepak Kumar, "Programmable Automated Field Deployable High-Frequency Rainwater Sampler", Sponsored by ISRO.
2. Akhilesh Barve, "Development of PET Waste Plastic and Bamboo-Based Composite Tiles", Sponsored by IIT MADRAS.
3. Narendra Gajbhiye, "Numerical investigation of MHD flow and pressure drop in 3-D sudden expansion with partitioned channels using wall-function treatment", Sponsored by Science and Engineering Research Board (SERB).
4. Narendra Kumar, Vishal Francis, Mohammad Taufik and Ravi Pratap Singh, "Development of UV assisted 3D printing system for PCB manufacturing", Sponsored by Indian Space Research Organisation (ISRO).
5. Sudhanshu Kumar, "Generation of Accurate Bore Cavity by Developing an Algorithm in Electro Discharge Boring (EDB) Process", Sponsored by DST-SERB.

CONSULTANCY PROJECTS

1. J L Bhagoria and Vikash Kumar, "Testing of absorber plate or solar air collectors", Sponsored by Manoj Dubey NIT Patna.
2. K.R.Aharwal and Manoj Arya, "Implementation of Technical Standards for Cold Storage Infrastructure for Fresh Food and Vegetables", Sponsored by National Horticulture Board, Ministry of Agriculture & Farmer Welfare, Govt. of India.
3. Vinod Yadav and Deepak Kumar, "Proof Checking of Structural Design of Solar Module Mounting Structure for PM KUSUM Component-B Project Pan India", Sponsored by Veracity Energy and Infrastructure Pvt. Ltd. Bhopal.
4. Vinod Yadav and Deepak Kumar, "Vetting of the DPR of water supply system under AMRUT 2.0", Sponsored by Cantonment Board, Saugor, Govt. of Madhya-Pradesh.

PROGRAMMES

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration From date	To date
1.	T N Verma	WS	Research Ethics in Engineering	25	14 Nov 2022	20 Nov 2022
2.	T N Verma	WS	Advance Research Tool Application in Renewable Energy	25	05 Dec 2022	11 Dec 2022

LABS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Renewable Energy Lab	Outdoor And Indoor Solar Air Heating System Coupled With Solar Dryer	For UG and PG	
2.	Materials Characterization Lab	Electropolisher, Manual Polishing Machine	Materials Characterization Lab	Electropolisher, Manual Polishing Machine
3.	Robotics Lab	6 Axis DOBOT	Soft Actuator Fabrication and Modeling	Publications
4.	Turbomachines	Pelton Turbine Test Rig, Centrifugal Pump Test Rig, Models of Hydraulic Turbine and Centrifugal Pump	For UG classes	Learning of Performance and working
5.	Additive Manufacturing	FFF 3D Printers (No. 2), Filament and Pellet Integrated additive manufacturing system, Wire coating machine, wire making machine, Melt flow index tester, Surface roughness tester, work station (No. 2)	Additive Manufacturing	UG PG projects, Patent, Publication, Workshop/STTP

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	37
2.	Phd Scholars	84

S. No	Particulars	Total
3.	Book Publications	03
4.	Chapter Publications	20
5.	International Journal Publication	82
6.	International Conference Publication	20
7.	National Conference Publication	01
8.	Faculty Outreach	33
9.	Patents	09
10.	Research Projects	05
11.	Consultancy Projects	04
12.	Workshops/Seminar Organized	02
13.	Lab Facilities Developed	05

Department of Physics

FACULTY DETAILS

Professor	
Dr. M.M. Malik	Dr. Rajnish Kurchania
Associate Professor	
Dr. Fozia Z. Haque	
Assistant Professor	
Dr. Jyoti Rani	Dr. Piyush K. Patel

UG Programme	
NIL	

PG Programme	Specialization
Master of Technology (M. Tech.)	1. Nano Technology
M.Sc. Physics	

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Aravind Kumar	Structural, optical and transport properties of metal oxides
2.	Bharat Bharadwaj	Functional Nanomaterials
3.	Kajol Taiwade	Study of transition metal doped Cr_2O_3 nanostructures for window layer of thin film solar cells
4.	Krishna Kumar Patel	Synthesis and characterization of piezoelectric nanocomposite for energy harvesting applications
5.	Naveen Kumar	Study of structural, ferroelectric and magnetoelectric properties of lead free multiferroic composites
6.	Vivek Chandel	Study of cerium oxide nanoparticles with lignin for UV Shielding applications

CHAPTER PUBLICATIONS

1. Archana Nigralwal, Arun kumarsharma and Fozia Z. Haque, "Study on Thermal and Electrical Conduction Properties of Nano Zinc Particle-Reinforced Polyester-Graded Composites", In: Archana Nigralwal, AK. Sharma, FZ. Haque Springer Nature (eds.), Recent Advances in Materials and Manufacturing Technology, Springer Nature, 2023.
2. Endresh Soni, Ujjwal K. Prajapati, and Jyoti Rani, "Characterization Techniques of Nanowires", In: Ram K. Gupta (eds.), Nanowires Applications, Chemistry, Materials, and Technologies, CRC Press (Taylor & Francis Group), 2023.
3. Jyoti Bamne, Nitru Singh and Fozia Z. Haque, "Effect of Rare Earth Y3+ Doping on the Formation of Anatase Phase of TiO_2 Nanoparticles", In: Jyoti Bamne, Nitru Singh, Arvind Mittal, Kajol Taiwade, P. K. Sharma, and Fozia Z. Haque (eds.), Advanced Microscopy: A Strong Analytical Tool in Materials Science, .
4. Kumar Navin and Rajnish Kurchania, "Nanosensors Based on Magnetic Materials", In: Ram K. Gupta, Sanjay R. Mishra, Tuan Anh Nguyen (eds.), Emerging Applications of Low Dimensional Magnets, CRC Press (Taylor & Francis Group), 2022.
5. Mohammad Ramzan Parra, Hafsa Siddiqui and Fozia Z. Haque, "Assessment of ZnO Thin Films for Its Suitability as a Transparent Conducting Layer in DSSC Fabrication", In: Mohammad Ramzan Parra, Hafsa Siddiqui, Padmini Pandey, Jyoti Bamne, and Fozia Z. Haque (eds.), Advanced Microscopy: A Strong Analytical Tool in Materials Science.
6. Naveen Kumar, Rajnish Kurchania and Jyoti Rani, "Multifunctional Flexible and Wearable Sensors", In: Ram K. Gupta (eds.), Flexible and Wearable Sensors: Materials, Technologies, and Challenges, CRC Press (Taylor & Francis Group), 2023.
7. Nitru Singh, Neha Singh and Fozia Z. Haque, "Gas Sensing through Photoluminescence Method Using Cr_2O_3 Nanostructures for NH_3 ", In: Nitru Singh, Neha Singh, Jyoti Bamne, K.M. Mishra, Vivek Chandel and Fozia Z. Haque (eds.), Advanced Microscopy: A Strong Analytical Tool in Materials Science, .
8. Sonal Santosh Bagade, M.M. Malik and Piyush K. Patel, "Optical Coating Systems for High-Efficiency Solar Cells", In: (eds.), Functional Coatings: Innovations and Challenges, John Wiley & Sons, Inc., NJ, USA, 2023.
9. Ujjwal K. Prajapati, Mohit Solanki and Jyoti Rani, "Nanowires for Solar Cells", In: Ram K. Gupta (eds.), Nanowires Applications, Chemistry, Materials, and Technologies, CRC Press (Taylor & Francis Group), 2023.

INTERNATIONAL JOURNALS

1. Archana Nigralwal, Arun Kumar Sharma and Fozia Z. Haque, "Enhancement in Mechanical Properties on addition of Bamboo powder in wood dust powder filled polyester composites for fibre board applications", European Chemical Bulletin, Vol. 12(7), pp. 1104-1112.
2. Archana Nigralwal, Arun Kumar Sharma and Fozia Z. Haque, "Influence of Nano Silica on improvement of mechanical properties of banana-sisal fibre epoxy hybrid composites", European Chemical Bulletin, Vol. 12(10), pp. 3150-3154.
3. Archana Nigralwal, Arun Kumar Sharma and Fozia Z. Haque, "Structure and Thermal Behaviour of different concentration PEG loaded PVA Nanofibers", Vol. 25, pp. 1-23, 01 Aug 2023.
4. Deepak Jha, Anamika Dixit and A. Sushrutha, Piyush K. Patel, "Optical Simulations and Optimization of Highly Efficient GaAs based Quantum Dot Solar Cell", Optics Communications, Vol. 523, pp. 128717.

- Kumud Dubey, Jyoti Bamne and Fozia Z. Haque, "Defects and oxygen vacancies modified properties of transition metal doped CeO₂ nanoparticles", *Materials Science & Engineering B*, 15-11-2022.
- Pramod Kumar Patel, M. M. Malik and Tarun Kumar Gupta, "Optimization Techniques for Reliable Low Leakage GNR/FET-Based 9T SRAM", *IEEE Transactions on Device and Materials Reliability*, Vol. 22, pp. 506-516, 01 Dec 2022.
- Rajnish Kurchania, Utkarsh Namdeo, Yashi Jain and Deepika Shrivastava, "Analysing the structural, mechanical and thermal stability in lithium-based half-Heusler compounds LiAlSi and LiAlGe: a first-principles study", *Bulletin of Materials Science*, Vol. 46 (3), pp. 117-, 2023.
- Rashmi Yadav, Anchit Modi and M M Malik, "Influence of Y substitution on structural, magneto-transport, and magnetic properties of La_{2-x}Y_xCoMnO₆ (0 ≤ x ≤ 0.3) double perovskites", *Journal of Magnetism and Magnetic Materials*, Vol. 554, 01 Aug 2022.
- Saket S Phadkule, Kumar Navin, Archana Nigrawal, Richard J Ball and Rajnish Kurchania, "Effects of ZnO and SiO₂ Nanoparticle Additions on the Structural, Water Absorption and Mechanical Properties of Polyvinyl Alcohol (PVA) Films", *Nano Hybrids and Composites*, Vol. 35, pp. 41-54, 2022.
- Satyam Kumar, Vikas N Thakur and Rajnish Kurchania, "Improved humidity sensitivity and possible energy harvesters in lithium modified potassium niobium tantalate oxide", *Materials Chemistry and Physics*, Vol. 288, pp. 126384, 2022.
- Satyam Kumar, Vikas N Thakur and Rajnish Kurchania, "Improved humidity sensitivity and possible energy harvesters in lithium modified potassium niobium tantalate oxide", *Materials Chemistry and Physics*, Vol. 288, pp. -, 01-09-2022.
- Satyam Kumar, Vikas N Thakur, Rajnish Kurchania and Ram S Katiyar, "Improved humidity sensitivity and possible energy harvesters in lithium modified potassium niobium tantalate oxide", *Materials Chemistry and Physics*, Vol. 288, pp. 126384-, 2022.
- Shaikh Sameer Muneersab, Yashi Jain, Deepika Shrivastava and Rajnish Kurchania, "Investigation of thermoelectric response, mechanical stability and thermodynamic behavior of Sr₂MgPdO₆ and Sr₂MgPtO₆ double perovskites: A DFT insights", *Physica B: Condensed Mater*, Vol. 666, pp. 415094, 2023.
- Sonal Santosh Bagade, Shashidhar Patel and M.M. Malik, Piyush K. Patel, "Recent Advancements in Applications of Graphene to Attain Next-Level Solar Cells", *C-Journal of Carbon Research*, Vol. 9, pp. 70.
- Sonal Santosh Bagade, Shashidhar Patel and M.M. Malik, Piyush K. Patel, "Recent Advancements in Applications of Graphene to Attain Next-Level Solar Cells", *C-Journal of Carbon Research*, Vol. 9, pp. 70-, 15-07-1905.
- Yashi Jain, Shaikh Sameer Muneersab, Deepika Shrivastava and Rajnish Kurchania, "Structural, mechanical, electronic, vibrational and thermoelectric properties of novel double perovskites Ba₂MgPdO₆ and Ba₂MgPtO₆ within DFT framework", *Materials Science in Semiconductor Processing*, Vol. 158, pp. 107381, 2023.

INTERNATIONAL CONFERENCES

- Kumud Dubey, Shubha Dubey and Fozia Z. Haque, "Structural and optical properties of newly synthesized Fe₂WO₆ compound", *Recent Advancements in Materials Science and Nanotechnology*.
- Afreen Khursheed, Kavita Khare and Fozia Z. Haque, "Automation of optimal metal density filling for deep sub micron technology designs", *International Conference on Advances in Materials Science, Communication and Microelectronics*.
- Anubhab Ray, Soumendu Sinha and Fozia Z. Haque, "Design of CMUT Cells for High-intensity Focused Ultrasound Applications", *2022 IEEE International Conference of Electron Devices Society Kolkata Chapter (EDKCON)*.
- Yusuf Wali, Subhra Priyadarshini Behura and Fozia Z. Haque, "A Study on Gas-Sensing Performance of Metal Oxide Nanostructures for Detecting NH₃", *International Conference on Frontiers in Materials Engineering - 2022*.
- Subhra Priyadarshini Behura, Yusuf Wali and Fozia Z. Haque, "A Review of TiO₂/ZnO Nanocomposite as Gas Sensor", *International Conference on Frontiers in Materials Engineering - 2022*.
- Sonal Santosh Bagade, Sudhansu B Barik and MM Malik, Piyush K. Patel, "Impact of band alignment at interfaces in perovskite-based solar cell devices", *Advancements in Material Science and Technology - iCAM 2022* held during November 02 - 04, 2022 jointly organized by Satyabhama Institute of Science and Technology, Chennai, India in association with Alexander Dubcek University of Trencin, Slovakia, 02-04 Nov 2022.
- Sudhansu B Barik, Pooja Patidar and Sonal Santosh Bagade, Aravind Kumar, RK Nayak, Piyush K. Patel, "Recent progress in reinforcement of nanofillers in epoxy-based nanocomposites", *Advancements in Material Science and Technology - iCAM 2022*, Satyabhama Institute of Science and Technology, Chennai, India in association with Alexander Dubcek University of Trencin, Slovakia, 02-04 Nov 2022.
- Shweta Rajawat, Vaibhav Koutu and MM Malik, "Biopolymers as silver nanoparticle carriers for targeted drug delivery", *International e-Conference on Biopolymers*.
- Archana Nigrawal, Arun Kumar Sharma and Fozia Z. Haque, "Development and Electrical Conductivity Behavior of Nano zinc powder Filled Polyester Graded Composites", *ICAMMT 2022*, 2022.
- Archana Nigrawal, Arun Kumar Sharma and Fozia Z. Haque, "Utilization of Rice Husk in Energy Storage and Energy Conservation Devices", *ICEECS 2023*, 2023.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 06 which includes all type of activities.

PATENTS

S. No	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Fozia Z Haque, Archana Sharma Nigrawal, Arun Kumar Sharma	Tiles Made From Waste Cooking Oil	Granted
2.	Fozia Z Haque, Archana Sharma Nigrawal, Arun Kumar Sharma	Soy husk hybrid combined with other husk, bamboo powder filled polymeric composites for thermal insulation panel in walls	Filed
3.	Fozia Z Haque, Archana Sharma Nigrawal, Arun Kumar Sharma	Roof Tiles For Eco-Friendly Rooftop Prepared by Cooking Waste Oil	Filed
4.	Fozia Z Haque, Archana Sharma Nigrawal, Arun Kumar Sharma, Abhinav bhargav, Prashant Baredar	Composition for Sustainable Fine Aggregate Concrete in Buildings using PVA Nano Calcium carbonate powder and Soy Husk	Granted

RESEARCH PROJECTS

1. Fozia Z Haque and Archana Nigrawal, "Utilization of Waste Soya Bean husk and Sisal Fibre for Sustainable Building Material", Sponsored by DST.

PROGRAMMES

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Fozia Zia Haque	Workshop	International Day of Light IDL-2022: Freeze the Photon		16-May-22	27-May-22
2.	Fozia Zia Haque		UNESCO-INDIA-AFRICA-HACKATHON		22-Nov-22	25-Nov-22

SUMMARY

S. No	Particulars	Total
1.	Faculty Members	05
2.	Phd Scholars	06
3.	Chapter Publications	09
4.	International Journal Publication	18
5.	International Conference Publication	10
6.	Faculty Outreach	06
7.	Patents	04
8.	Research Projects	04
9.	Workshops/Seminar Organized	01

Energy Centre

Vision

To be a global Centre of excellence in technical and professional education for graduating engineers and serve as a valuable resource to the nation Mission

Contribute to the development of next generations of highly qualified and ethical professionals through specialized training and knowledge build-up in areas of green technology and renewable energy.

Promote the vision of the Centre among academic, industrial, and public sectors through demonstration and dissemination of green technology projects and create environment.

Develop eco-friendly sustainable technologies to ensure the energy security of the country and the world.

Partner with industry, research organizations and government in India and abroad for the commercialization of research ideas.

Improve the quality of life of citizens of India, conserving natural resources, and serve as an engine for socio economic and sustainable development.

Promote and establish a clear pathway to make MANIT a green campus within the next ten years and to propagate green campus ideas and methodologies.

LAB FACILITIES AVAILABLE IN THE DEPARTMENT

The following labs have been developed for M.Tech(Renewable Energy) Program and incorporated as Energy Lab I and Energy Lab II in 1st and 2nd Semester of M.Tech (Renewable Energy) course.

1. Energy Conservation and Audit Lab
2. Solar Energy Lab
3. Power Conversion Lab
4. Wind Energy Lab
5. Bio Energy & Heat Transfer lab
6. Energy Modelling and Simulation Lab
7. Conference Hall with modern teaching aid
8. Cable Technology Lab (in collaboration with LAPP India Ltd)

Received NBA Accreditation for Renewable Energy M. Tech. for SIX years

Organized International Conference-ICET-2023

Top 2% scientist list by Stanford University had TWO names from Energy centre--Dr. Prashant Baredar and Dr. Gaurav Dwivedi

Hydrogen Energy Lab

TWO SERB Karyashala had been organised by Energy Centre Faculty

FACULTY DETAILS

Professor	
Dr. Arvind Mittal	Dr. Prashant Baredar
Associate Professor	
Dr. Archana Soni	
Assistant Professor	
Dr. Gaurav Dwivedi	Dr. Meena Agrawal
Ms. Kavita Gidwani	

UG Programme

NIL	
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PG Programme

PG Programme	Specialization
Master of Technology (M. Tech.)	1. Energy Management Systems
	2. Renewable Energy

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Aditya Sirsa	Performance Investigation of Standalone Solar PV System with Fault Tolerant Multilevel Inverter
2.	Akash Patel	Solar Energy System
3.	Arun Dwivedi	Energy Modelling and Efficiency
4.	Bharat Girdhani	Data Analysis (ML and DL) in Renewable Energy System
5.	Harsh Patidar	Wind Energy System

S. No.	Name	Title/Area of Research
6.	Lokesh Udhwani	Active daylight System
7.	Lovebrat Saxena	Concentrated Solar Power
8.	Malle Lingamaiah	Design and Control of Solar PV High-Power Grid Interfaced Electric Vehicle Charging System
9.	Mukesh kumar Rathore	Pitch Angle control In VAWT
10.	Pushpendu Dwivedi	Cooling methods of Solar PV system
11.	Raj Kumar Malviya	Solar Thermal Absorber
12.	Sakshi Sarathe	Air Quality
13.	Sameer Kumre	Biomass
14.	Sujeet Kesharvani	Alternative Fuels
15.	Vikas Shende	Wind Energy System

CHAPTER PUBLICATIONS

- Mauparna Nandan, Soma Mitra, Antara Parai, Rituraj Jain, Meena Agrawal and Umesh Kumar Singh, "Chapter 1 Telemedicine (e-Health, m-Health): Requirements, Challenges and Applications", In: Mauparna Nandan, Soma Mitra, Antara Parai, Rituraj Jain, Meena Agrawal and Umesh Kumar Singh (eds.), Designing Intelligent Healthcare Systems, Products and Services Using Disruptive Technologies and Health Informatics, CRC Press 6000 Taylor & Francis Group, 2023.
- Puneet Verma, Olusegun D Samuel, Tikendra Nath Verma and Gaurav Dwivedi, "Solar Thermal Receivers-A Review Manish Saini, Abhishek Sharma, Varun Pratap Singh, Gaurav Dwivedi, Siddharth Jain", In: Puneet Verma, Olusegun D Samuel, Tikendra Nath Verma, Gaurav Dwivedi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Vol. II, Springer Singapore, 2022.
- Rahul Rajawat, Anuj Kumar, Gaurav Dwivedi and Anoop Kumar Shukla, "Clean Energy Using Hydroelectric Generation from Rivers", In: Rahul Rajawat, Anuj Kumar, Gaurav Dwivedi & Anoop Kumar Shukla (eds.), Sustainable and Clean Energy Production Technologies, Springer, 2022.
- Saumya Satija, Mohd Tajuddin and Meena Agrawal, "Chapter 14 A Review Study on Different Machine Learning Algorithms Used for COVID Outbreak Prediction", In: Saumya Satija, Mohd Tajuddin and Meena Agrawal (eds.), Designing Intelligent Healthcare Systems, Products and Services Using Disruptive Technologies and Health Informatics, CRC Press 6000 Taylor & Francis Group, LLC, 2023."
- Subho Upadhyay, Shubham Mishra, Shrey Verma and Gaurav Dwivedi, "In-Depth Analysis of Various Aspects of Charging Station Infrastructure for Electric Vehicle", In: Subho Upadhyay Shubham Mishra, Shrey Verma, Gaurav Dwivedi (eds.), Renewable Energy Systems: Modeling, Optimization and Applications, 2022.

INTERNATIONAL JOURNALS

- Akash Patel, Archana Soni and Prashant Baredar, "Analysis of temperature distribution over pipe surfaces of air-based cavity linear receiver for cross-linear concentration solar power system", Environmental Science and Pollution Research, Vol. 30 Issue 11, pp. 28621-28639, 2022.
- Aman Kumar, Arvind Mittal and Ashis Kumar Pradhan, "Magnitude and determinants of energy intensity: evidence from Indian firms", Environmental Science and Pollution Research, Vol. 30, pp. 3270-3281, 01 Aug 2022.
- Ambar Gaur, Gaurav Dwivedi and Prashant Baredar, "Influence of blending additives in biodiesel on physiochemical properties, engine performance, and emission characteristics", Fuel, Vol. 321, pp. 124072, 2022.
- Amit Kumar Paswan, Sujeet Kesharvani and Kavita Gidwani Suneja, "Performance and emissions characteristics of CI engine fueled with", Materials Today: Proceedings/Materials Today: Proceedings 78 (2023) 647-655, Vol. 78, pp. 647-655, 2023.
- Ankit Gupta, Bhupendra Gupta, Jyoti Bhalavi and Prashant Baredar, "CFD study on heat transfer and pressure drop of nanofluids (SiO₂/H₂O, Al₂O₃/H₂O, CNTs/H₂O) in a concentric tube heat exchanger", International Journal of Ambient Energy, Vol. 43, Issue 1, pp. 4578-4593, 2022.
- Anukul Pandey, Asim Ahmad, Om Prakash, Anil Kumar, S.M. Mozammel Hasmain, Puneet Verma, Ali Zare and Gaurav Dwivedi, "Dynamic analysis of daylight factor, thermal comfort and energy performance under clear sky conditions for building: An experimental validation", Materials Science for Energy Technologies, Vol. 5, pp. 52-65, 2022.
- Arun Dwivedi and Archana Soni, "Drivers and critical paths of carbon emissions in India: a structural path decomposition analysis", Energy Sources, Part B: Economics, Planning, and Policy, Vol. 17 Issue 1, pp. 2084185-, 2022.
- Arun Dwivedi, and Archana Soni, "The carbon footprint of India and its drivers: A structural decomposition analysis of global value chains", Sustainable Energy Technologies and Assessments, Vol. 56, pp. 103109-, 2023.
- Christopher C. Enweremadu, Olusegun David Samuel, Semiu T. Amosun, Gaurav Dwivedi, IDI Stanley Ufuoma, Hilary I. OWAMAH, Collins N Nwaokocha and Thangarajajeyaseelan, "Assessment of Corrosion and Mechanical Properties of Copper Components of Diesel Engines in Waste Oil Biodiesel Environment", Key Engineering Materials, Vol. 928, pp. 3-16, 16-08-2022.
- CK Pardhi, and Prashant Baredar, "Heat Transfer Augmentation using Twisted Tapes", Research Developments in Science and Technology, Vol. 8, pp. 129-136, .
- DukichandJaniya, Urvasi Gupta, Shailendra Kumar and Arvind Mittal, "Multifunctional Bidirectional Charging System for EVs and Grid with Improved Power Quality Using a Sparse Proportionate-NLMF Based Method", CSEE Journal of Power and Energy Systems, Vol. 9, no. 3, pp. 1203-1213, 05 Jun 2022.

12. Epani Ritesh Patro, Yegireddi Shireesha, Teegala Srinivasa Kishore, Gaurav Dwivedi, Ali Torabi Haghighi and Bade Venkata Suresh, "Natural energy materials and storage systems for solar dryers: State of the art", *Solar Energy Materials & Solar Cells*, Vol. 255, pp. -, 26-02-2023.
13. Gaurav Dwivedi, Puneet Verma, Chandrabhushan Tiwari and Tikendra Nath Verma, "Energy-Exergy Analysis of Diesel Engine Fueled with Microalgae Biodiesel-Diesel Blend", *Applied Science*, Vol. 13, 31 Jan 2023.
14. Gaurav Dwivedi, Madeeha Rehman, and Sujeet Kesharvani, "Numerical Investigation of Performance, Combustion, and Emission Characteristics of Various Microalgae Biodiesel on CI Engine", *Fuels*, Vol. 4, pp. 132-155, 29 Mar 2023.
15. Gaurav Dwivedi and Varun Pratap Singh, "Technical Analysis of a Large-Scale Solar Updraft Tower Power Plant", *Energies*, Vol. 16, pp. -, 02 Jan 2023.
16. Gaurav Dwivedi and, Puneet Verma, Mukesh Kumar Rathore, Meena Agrawal, Prashant Baredar and Anoop Kumar Shukla, "Fabrication and Performance Analysis of the Aero-Leaf Savonius Wind Turbine Tree", *Energies*, Vol. 16, pp. -, 25 Mar 2023.
17. Gaurav Dwivedi, Sujeet Kesharvani and Tikendra Nath Verma, "Computational analysis of chlorella protothecoides biofuels on engine combustion, performance and emission", *Sustainable Energy Technologies and Assessments*, Vol. 55, pp. -, 2023/2.
18. Harsh Pandar, Vikas Shende and Prashant Baredar, "Comparative evaluation of optimal Weibull parameters for wind power predictions using numerical and metaheuristic optimization methods for different Indian terrains", *Environmental Science and Pollution Research*, Vol. 30 Issue 11, pp. 30874-30891, 2022.
19. Harsh Pandar, Vikas Shende and Prashant Baredar, "Comparative analysis of wind potential and characteristics using metaheuristic optimization algorithms at different places in India", *International Journal of Environmental Science and Technology*, pp. 1-16, 2022.
20. Harsh Pandar, Vikas Shende and Prashant Baredar, "Comparative study of offshore wind energy potential assessment using different Weibull parameters estimation methods", *Environmental Science and Pollution Research*, Vol. 29, pp. 30-46341, 30 Nov 2023.
21. M.ZawbaahSalahKamelj, Varun PratapSingha, Siddharth Jain, Ashish Karna, Gaurav Dwivedi, Ashwani Kumar, Sachin Mishra, Naveen Kumar, Sharmae Mohit, and Bajajfj Hossam, "Heat transfer and friction factor correlations development for double pass solar air heater artificially roughened with perforated multi-V ribs", *Case Studies in Thermal Engineering*, Vol. 39, pp. -, 01 Oct 2022.
22. Mukesh Kumar Rathore, Meena Agrawal, Prashant Baredar, Anoop Kumar Shukla, Gaurav Dwivedi and Puneet Verma, "Fabrication and Performance analysis of the aero leaf savonius wind turbine tree", *Energies*, Vol. Vol 16 & Issue 7, pp. 3015-NA, 01 Mar 2023.
23. Nitesh Dutt and, Antra Ghosh Varun, Pratap Singh, Siddharth Jain, Ashish Karna, Ashwani Kumar, Gaurav Dwivedi, and Chandan Swaroop Meena, "Recent Developments and Advancements in Solar Air Heaters: A Detailed Review", *Sustainability*, Vol. 14, pp. 1-57, 26 Sep 2022.
24. Puneet Verma, Sujeet Kesharvani, Gaurav Dwivedi and Tikendra Nath Verma, "Sustainable alternative fuel derived from different feedstocks and its comparative life cycle assessment", *Sustainable Energy Technologies and Assessments*, Vol. 57, pp. -, 28 Mar 2023.
25. Puneet Verma, Sohail Sisodiya, Sachin Kumar Banait, Subhankar Chowdhury, Gaurav Dwivedi and Ali Zare, "The Impact of Coronavirus Disease of 2019 (COVID-19) Lockdown Restrictions on the Criteria Pollutants", *processes*, Vol. 11, pp. -, 16 Jan 2023.
26. Ravi Kumar, Sunil Kumar Singal, Gaurav Dwivedi and Anoop Kumar Shukla, "Development of maintenance cost correlation for high head run of river small hydro power plant", *International Journal of Ambient Energy*, Vol. 43, pp. 3124-3137, 31-12-2022.
27. S Charan Kumar, Amit Kumar Thakur, J Ronald Aseer and Gaurav Dwivedi, "Comprehensive review on effects of exhaust gas recirculation on nitrogen oxide emission in various biodiesel and nano additives blends fuelled compression ignition engine", *International Journal of Ambient Energy*, Vol. 43, pp. 6233-6249, 31 Dec 2022.
28. Shrey Verma, Puneet Verma, Subhashree Mohapatra, Dileep Mohanachandran, Gaurav Dwivedi, Sujeet Kesharvani, and V. S. K. V. Harish, "A Comprehensive Study on the Sustainable Transportation System in India and Lessons to Be Learned from Other Developing Nations", *Energies*, 16 Feb 2023.
29. Siddharth Jain, Ambar Gaur, Gaurav Dwivedi and Prashant Baredar, "Influence of blending additives in biodiesel on physiochemical properties, engine performance, and emission characteristics", *Fuel*, Vol. 321, pp. -, 01 Aug 2022.
30. Subhankar Chowdhury, Ambar Gaur, Subhashree Mohapatra, Shrey Verma, Shubham Mishra, Gaurav Dwivedi, Tikendra Nath Verma, and Puneet Verma, "Environmental pollution analysis during the lockdown imposed due to COVID-19: A case study", *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, Vol. 44, pp. 4679-4692, 15 Jun 2022.
31. Tikendra Nath Verma, Chandrabhushan Tiwari, and Gaurav Dwivedi, "Sustainability evaluation, optimization and research dynamics of microalgae methyl ester in a research diesel engine", *Proc IMechE Part E: J Process Mechanical Engineering*, pp. 1-13, 29 Mar 2023.
32. Tikendra Nath Verma and, Puneet Verma, Sujeet Kesharvani and Gaurav Dwivedi, "The Experimental Investigation of a Diesel Engine Using Ternary Blends of Algae Biodiesel, Ethanol and Diesel Fuels", *Energies*, 2023.
33. Tushar Choudhary, Abhinav Anand Sinha, Gaurav Saini, Sanjay, Anoop Kumar Shukla, Mohd. Zahid Ansari and Gaurav Dwivedi, "A novel comparison of energy-exergy, and sustainability analysis for biomass-fueled solid oxide fuel cell integrated gas turbine hybrid configuration", *Energy Conversion and Management*, Vol. 283, pp. -, 17 Mar 2023.
34. Upendra Rajak, Prerana Nashine, Prem Kumar Chaurasiya, Tikendra Nath Verma, Abhishek Dasore, Kamal Kishore Pathak, Gaurav Dwivedi, Anoop Kumar Shukla and Gaurav Saini, "The effects on performance and emission characteristics of DI engine fuelled with CeO₂ nanoparticles addition in diesel/tyre pyrolysis oil blends", *Environment, Development and Sustainability*, 2022.

35. Varun Pratap Singh, Siddharth Jain, Ashish Karn, Ashwani Kumar, Gaurav Dwivedi, Chandan Swaroop Meena and Raffaello Corroliano, "Mathematical Modeling of Efficiency Evaluation of Double-Pass Parallel Flow Solar Air Heater", *Sustainability*, Vol. 14, pp. -, 24 Aug 2022.
36. Varun Pratap Singh, Siddharth Jain, Ashish Karn, Gaurav Dwivedi, Tabish Alam and Ashwani Kumar, "Experimental Assessment of Variation in Open Area Ratio on Thermohydraulic Performance of Parallel Flow Solar Air Heater", *Arabian Journal for Science and Engineering*, 22 Dec 2022.
37. Veeresh Fuskele, Prashant Baredar and Rishindra Sarviya, "Wind turbine nacelle cooling systems: A review", *WIREs Energy and Environment*, Vol. 11 Issue 6, pp. e456-, 2022.
38. Vikas Shende, Harsh Patidar, Prashant Baredar and Meena Agrawal, "Estimation of wind characteristics at different topographical conditions using doppler remote sensing instrument-a comparative study using optimization algorithm", *Environmental Science & Pollution Research*, Vol. 30, pp. 48587-48603, 2023.
39. Vikas Shende, Harsh Patidar, Prashant Baredar and Meena Agrawal, "A review on comparative study of savonius wind turbine rotor performance parameters", *Environmental Science & Pollution Research*, Vol. 29, pp. 69176-69196, 01-10-2022.
40. Vikas Shende, Harsh Patidar and Prashant Baredar, "A review on comparative study of Savonius wind turbine rotor performance parameters", *Environmental Science and Pollution Research*, Vol. 29 Issue 46, pp. 69176-69196, 2022.
41. Vikas Khare, Cheshta J. Khare, Savita Nema and Prashant Baredar, "Path towards sustainable energy development: Status of renewable energy in Indian subcontinent", *Cleaner Energy Systems*, Vol. 3, pp. 100020-, 2022.

INTERNATIONAL CONFERENCES

1. Aruna Ekka, Kavita Gidwani Suneja and Priyanka Dhurvey, "Experimental and Numerical Analysis of Strength Characterisation of Concrete with Recycled Concrete Aggregate: A Case Study", *International conference on Advances in Materials and Manufacturing*, 22-26 Nov 2022.
2. Gaurav Dwivedi, Amit Kumar Paswan, Sujeet Kesharvani and Kavita Gidwani Suneja, "Performance and emissions characteristics of CI engine fuelled with blends of diesel and Polanga biodiesel", *Materials Today: Proceedings*, 24 Dec 2022.
3. Gaurav Dwivedi, Eka Srivastava, Sujeet Kesharvani and Anjali Agrawal, "Binary blending of different types of biofuels with diesel, and study of engine performance, combustion and exhaust emission characteristics", *Materials Today: Proceedings*, 2022/11.
4. Lingamaiah Malle, Arvind Mittal and Shailendra Kumar, "A Single Phase Grid-Integrated PV System Using Cascaded PI and PR Controller for Power Quality Improvement", *Power India International Conference (PIICON)*, NIT Delhi, 27/11/2022.
5. Lokesh Udhvani and Archana Soni, "A Review of Active Day Lighting System in Commercial Buildings with the Application of Optical Fiber", *International Conference on Mechanical Engineering Research*, 09-08-2022.
6. Mallayya, Santosh Jagadev and Prashant Baredar, "A Comparative Study of Parabolic Dish Concentrators Used in Various Systems", *Biennial International Conference on Future Learning Aspects of Mechanical Engineering*, Amity University, 3rd-5th August, 2022.
7. Pandey, Ashish, Arvind Mittal and Shailendra Kumar, "Bidirectional Power Control of Solar PV array and DABs Based Charger for Electric Vehicles", *IEEE International Conference on Sustainable Energy and Future Electric Transportation, SeFeT 2022*, 04-08-2022.
8. Rochika Saini, Bhupendra Gupta, Ambresh Shukla, Bhavana Godbole and Prashant Baredar, "CFD analysis of heat transfer enhancement in a concentric tube counter flow heat exchanger using nanofluids (SiO₂/H₂O, Al₂O₃/H₂O, CNTs/H₂O) and twisted tape turbulators", *International Conference on Nanotechnology for Sustainable Living and Environment (ICON NSLE)*, BITS Pilani, 14-16 April, 2022.
9. Siddharth Jain, Verendra Singh Kharkwal, Sujeet Kesharvani, Shrawani Verma and Gaurav Dwivedi, "Numerical investigation of engine characteristics of a diesel engine fuelled with ethanol and diethyl ether supplemented diesel-WCO biodiesel blend", *Materials Today: Proceedings*, 2023/2.

OUTREACH

Faculties are engaged in various outreach activities like Expert lectures, Resource person, Member of National and International committees, Observers, Examiners, Guest of Honour etc. Total number of Outreach Activities this year is 05 which includes all type of activities.

MOUs DETAILS

S. No.	Name of Coordinator	Name of the agency with which MOU signed
1.	Arvind Mittal	MPCST

PATENTS

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
1.	Gaurav Dwivedi	MULTIPLE SLOPE SOLAR DRYER AND SOLAR STILL	Filed
2.	Gaurav Dwivedi	Fuel Separator for separation of Solid particles	Filed

S. No.	Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
3.	Meena Agarwal, Kamal Upreti, Umesh Kumar Singh, Ranjana Dinkar Raut, Manuparna Nandan, Neha Gupta	Surgical Helmet in class 24 – 01	Design number 342910-001 Indian design patent registration number 131032 Certificate of Registration of Design Date of Issue 15 th March 2023
4.	Prashant Baredar	TILES MADE FROM WASTE COOKING OIL	Filed

RESEARCH PROJECTS

1. Gaurav Dwivedi, Prashant Baredar and Tikendra Nath Verma, "Enhancement in cold flow properties of waste cooking biodiesel & Diesel", Sponsored by MPCST.

CONSULTANCY PROJECTS

1. Gaurav Dwivedi and Prashant Baredar, "Kitchen Performance Test in Lulka Village, Raisen District", Sponsored by Shri Maa Sales.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Meena Agrawal	Campaign	Har Ghar Dhyani campaign		17 Jan 2023	21 Jan 2023
2.	Meena Agrawal	Workshop	Vigilance Awareness week		31 Oct 2022	06 Nov 2022
3.	Meena Agrawal	Event Activity	Education Day		11 Nov 2022	
4.	Meena Agrawal	Event Activity	Constitution Day		26 Nov 2022	
5.	Meena Agrawal	Activity	Orientation week		10 Nov 2022	14 Nov 2022

LAB DETAILS

S. No.	Name of Lab	Facilities/Equipments	Research Carried	Output
1.	Bio Energy & Heat Transfer lab			
2.	Cable Technology Lab (in collaboration with LAPP India Ltd)			
3.	Computer Lab	High-Performance Computing cluster (HPC), VMware Virtualization cluster, NVIDIA DGX A100		
4.	Energy Conservation and Audit Lab			
5.	Energy Modelling and Simulation Lab			
6.	Power Conversion Lab			
7.	SEEL Lab	Gas Chromatography and Mass spectrophotometer, Hydrogenation reactor, Setup for hydrogen production, Multi gas analyser specifically for methane and hydrogen, Multi Cylinder Engine, Real Time PM10 & PM 2.5 sampler, OzonePolludrone for ambient monitoring, Heavy Metal sensor, Dusttrack	Hydrogen and Air Quality Analysis	
8.	Solar Energy Lab			
9.	Wind Energy Lab	Wind Tunnel, Resource assessment Equipments, Bomb calorimeter	Resource assessment	In progress

SUMMARY

S. No.	Particulars	Total
1.	Faculty Members	06
2.	Phd Scholars	15
3.	Chapter Publications	05
4.	International Journal Publication	41
5.	International Conference Publication	09
6.	Faculty Outreach	05
7.	MoU's	01

S. No	Particulars	Total
8.	Patents	04
9.	Research Projects	01
10.	Consultancy Projects	01
11.	Workshops/Seminar Organized	05
12.	Lab Facilities Developed	09

Centre of Excellence in Water Management

To impart both conventional and state of the art knowledge for analysis and design of systems related to water resource.

To equip students with the capability to integrate theoretical and computational approaches for research in the area of water resources.

To inculcate professional and ethical attitude in students while working as a team for finding acceptable solutions to real life problems.

Well equipped laboratory of Water Resources Engineering. Weather Science lab is being developed.

Organized International Conference on Water and Environment, MANIT Bhopal, (Coordinators: Dr. Kamal Singh, Dr. Rakesh Kumar, Dr. Rutuja M. Chavan)

Organized five days training Programme on Dam Break Flood Modelling Using Hec-ras, MANIT Bhopal, (Coordinators: Dr. Jyoti Sarup, Dr. M. K. Choudhary, Dr. Rutuja M. Chavan)

Member in National and International committees

1. Life member of ISTE
2. Life member of Indian Society of FM& FP
3. Life member of Solar Energy Society of India
4. Fellow Member of Indian Association of Hydrologists
5. Life member of Indian Society for Hydraulics
6. Life member of Indian Society of Remote Sensing
7. Member of IEEE.
8. Life member of Central Board of Irrigation & Power.
9. Fellow Member of Institution of Engineers India

FACULTY DETAILS

Professor	
Dr. Charu Parashar	Dr. Vishnu Prasad
Associate Professor	
Dr. H.L. Tiwari	Dr. Ruchi Khare
Dr. M.K. Choudhary	
Assistant Professor	
Dr. A.K. Thawait	Dr. Rutuja M. Chavan

UG Programme

NIL

PG Programme

Master of Technology
(M. Tech.)

Specialization

1. Post Graduate Programme in Water Resources Engineering and Management

PHD SCHOLAR DETAILS

S. No.	Name	Title/Area of Research
1.	Alok Singh	Rainfall Runoff modelling
2.	Farruque Rahman	Sour analysis around bridge piers

INTERNATIONAL JOURNALS

1. Abhay Carpenter and M. K. Choudhary, "Water Demand and Supply Analysis using WEAP Model for Veda River Basin Madhya Pradesh (Nimar Region), India", Trends in Sciences, Vol. 19(6), pp. 3050-3061, 2022.
2. Alok Singh and A. K. Thawait, "Assessment of Streamflow in Ken River Basin using Swat Model", IJRES, Vol. 10& 12, pp. 54-59, 2022.
3. Ankur Sharma, Ruchi Khare and M.K. Choudhary, "Assessment of spatio-temporal variation of water balance components by simulating the hydrological processes of a large complex watershed", Environmental Earthsciences, Vol. 127, pp. 1-17, 2023.
4. Ankur Vishwakarma, M. K. Choudhary and M. S. Chauhan, "Non-parametric trend and the validity of a newly developed drought indicator for agricultural application over the central India region", Arabian Journal of Geosciences, Vol. 15(4), pp. 1-13, 2022.
5. Ankur Vishwakarma, M. K. Choudhary and M. S. Chauhan, "Assessment of CMIP5 and CORDEX-SA experiments in representing multiscale temperature climatology over central India", Water Practice and Technology, Vol. 17(9), pp. 1923-1936, 2022.
6. Rutuja Chavan, Anurag Sharma and Bimlesh Kumar, "Turbulence Anisotropy around Bridge Piers in Seepage Affected Sand Bed Channel", Journal of Turbulence, Vol. 23(1-2), pp. 52-67, 2022.

- Vikalp Chouhan, G. D. Singhal and Rutuja Chavan, "A review of sediment deflection in rivers using submerged vanes", ISH Journal of Hydraulic Engineering, pp. 1-17, 2022.
- Vikalp Chouhan, E. Padhi and Rutuja Chavan, "A Review of Bridge Scour Mitigation Measures Using Flow Deflecting Structures", ISH Journal of Hydraulic Engineering, pp. 1-14, 2023.

INTERNATIONAL CONFERENCES

- Ankur Sharma, Ruchi Khare, M.K. Choudhary and Vishnu Prasad, "Hydrologic Impact Evaluation of land use and Land Cover Change in Subbasins of Tapi River using SWAT Model", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 INTERNATIONAL), 22-24 Dec 2022.
- F. Rahman, A. K. Thawait and C. Rutuja, "Groundwater Quality Assessment for Drinking Purpose in Bhopal City, M.P Utilizing Geographic Information System and Water Quality Index", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International) at Punjab Engineering College Chandigarh, India, 22-24 Dec 2022.
- Manjeet Deharia and Rutuja Chavan, "Study of Various Shapes of Gyroscopes Using Flow 3D", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 INTERNATIONAL), 22-24 Dec, 2022.
- P. Sruthakeerthi and M. K. Choudhary, "Soft Computing Techniques Hybridised with Swarm Intelligence Metaheuristic Algorithms for Estimating Reference Evapotranspiration – a Review", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 INTERNATIONAL), 22-24 Dec 2022.
- Prabhat Singh and Rutuja Chavan, "Bed Load Transport in Non-uniform Sand Bed Channel: A Review", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 INTERNATIONAL), 22-24 Dec 2022.
- Rita Tiwari and Rutuja Chavan, "An Approach to Utilize the Static Energy of Obstructed Water to Enhance the Use of River Flows for Agricultural Water Supplies", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 INTERNATIONAL), 22-24 Dec 2022.
- S. Singh, N. Kumar and A. K. Thawait, "Effect of Soil Erosion and Sedimentation on Water Bodies", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International) at Punjab Engineering College Chandigarh, India, 22-24 Dec 2022.
- Suniti Kumari, H. Tiwari and Rutuja Chavan, "A review on Hydrodynamics of River Meandering", 27th International Conference on Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO 2022 International), 22-24 Dec 2022.
- Vikalp Chouhan, E. Padhi, Rutuja Chavan and G. Singhal, "Numerical Modeling for Optimization of the Aspect Ratio of Submerged Vanes for the Purpose of Sediment Deflection in Rivers", 9th IAHR International Symposium on Hydraulic Structures at Indian Institute of Technology, Roorkee, Roorkee, India, 24-27 Oct 2022.

MOUs DETAILS

S. No.	Name of Coordinator	Name of the agency with which MOU signed
1.	H.L. Tiwari	National Institute of Hydrology
2.	Vishnu Prasad	NIT, Surat (In progress)

RESEARCH PROJECTS

- H L Tiwari, "Identification and treatment study of heavy metals and chlorinated by products using fish scale morphological changes with sedimentation analysis for Upper lake of Bhopal", Sponsored by MPCST Bhopal.
- Vishnu Prasad, "Impact of Climate Change on Water Resources of Tapi Basin", Sponsored by Min. Of WRD, Govt. Of India.
- Vishnu Prasad, "Hydrological Survey Work at Raja Bhoj Airport, Bhopal", Sponsored by M/s Airport Authority of India.

CONSULTANCY PROJECTS

- M.K. Choudhary, "Vetting of the Report on the Clarification asked by Indian Railways for Afflux and other Parameters for the Construction of Proposed Talawada Barrage in Mahi River near Village: Kodipada, Tehsil Thadi, District Jhabua", Sponsored by Water Resources Division No.1 Jhabua, District, Jhabua.
- Ruchi Khare, "Vetting of Hydraulic Design and Drawing of Rural Water Supply Scheme, Orisa, District Denkanal", Sponsored by Laxmi Constructions Pvt Ltd., Kolhapur.
- Rutuja M. Chavan and M. K. Choudhary, "TPQA Consultancy for the Works of Construction of Eklavya Model Residential School (Emrs) at Various Locations in the State of Madhya Pradesh and Chattisgarh", Sponsored by National Projects Construction Corporation Ltd. Central Zone Raipur.
- Rutuja M. Chavan and M.K. Choudhary, "Vetting of DPR of Amrut 2.0 Scheme for Bhopal City", Sponsored by Municipal Corporation Bhopal.
- Rutuja M. Chavan and M.K. Choudhary, "Vetting of Hydraulic Design and Drawing of Distribution Network", Sponsored by Roy-Sachin (JV), govt. contractor, Danapur, Patna (Bihar).
- Rutuja M. Chavan and M.K. Choudhary, "Proof Checking of Design and Drawing of Storm Water Pumping Main and Canal Lining under Mandasaur SDRF Project", Sponsored by CMR Infrastructure Pvt Ltd.

7. Vishnu Prasad and Ruchi Khare, "Hydrological Analysis of Streams in Berkhera Budni 3rd Railway Line Project", Sponsored by Rail Vikas Nigam Ltd.
8. Vishnu Prasad and Ruchi Khare, "Vetting of Hydraulic Design and Drawing of Rural Water Supply Scheme, Orisa, District Kendrapada", Sponsored by Laxmi Constructions Pvt Ltd., Kolahapur.
9. Vishnu Prasad and Ruchi Khare, "Vetting of Hydraulic Design and Drawing of Rural Water Supply Scheme Segwal 1, District Badwani", Sponsored by Laxmi Constructions Pvt Ltd., Kolahapur.

PROGRAMMES DETAILS

S. No.	Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
					From date	To date
1.	Rutuja M. Chavan	High end workshop	Advanced Application of Hyperspectral And Microwave Remote Sensing	25	25 Jul 2022	31 Jul 2022

SUMMARY

S. No.	Particulars	Total
1.	Faculty Members	07
2.	Phd Scholars	02
3.	International Journal Publication	08
4.	International Conference Publication	09
5.	MoU's	02
6.	Research Projects	02
7.	Consultancy Projects	09
8.	Workshops/Seminar Organized	01

Central Computing Facility (CCF)

2022-2023 - Central Computing Facility (CCF) provides seamless gigabit network connectivity to the entire campus that connects all the Academic Departments, Hostels, Central Library, Administrative Departments, Teaching Blocks, Research Centres, Building sections, and Residences with managed architecture. Internet access is provided by two dedicated Internet links of 1 Gbps.

Facility is equipped with Smart Racks having Core Networking Infra, High Performance Cluster (HPC), Virtualization Cluster (VMware) and GPU Cluster (NVIDIA DGX). Recently established computer labs are having 10 performance grade workstations and 200 desktops with the latest configurations.

CCF is hosting multiple websites and services including Apache, DHCP, DNS, LDAP, NTP, KOHA, Reverse Proxy, VPN, MySQL Databases, ERP, Payment Gateways, SMS Gateway, CCTV management, Biometric Servers etc. on the same facility. UG/PG Students and faculty members from all the departments are using computer labs and high-performance cluster for their Academics, Research and Training purposes.

Trainings: NVIDIA DGX Training: 22nd & 23rd Aug 2022

Exams Conducted (Internal/External): PhD, CUET 2022,

Training and Placement Exams: 17 Nos. (Apr 2022 to Mar23)

Web Hosted Conferences:

- RESEM 2022-2023 [Renewable Energy & Sustainable E-Mobility]
- MIND 2022 [Machine Learning, Image Processing, Network Security and Data Sciences]

Utilization of Workstations:

- a) Evaluation of Elastic Critical Movement for a fixed beam using ANSYS.
- b) Analysis of scouring around the different type of piers using Flow 3D.
- c) Analysis of depth of scour using Flow 3D.
- d) Analysis of Flow field around submerged vanes using Flow 3D.
- e) Effect of shapes of groyones on bed morphology and flow field using Flow 3D.

Rolta Incubation Centre

Startup Selection Rounds | Date of the event: April'2022- March'2023

Two rounds of startup selection meetings were conducted in the year 22-23, and 06 startups were funded with an amount up to Rs. 50,000/- by the Centre.

वे-चार्चा-The Annual Podcast Series | Date of the event: August'2022 – December'2022

Speakers: Mr. Todd Dewett (5 times TEDx Speaker), Ms. Vandana Sharma (Ex-Army Officer, Kargil War veteran), Mr. Shamik Guha (Bagged an investment offer at Shark Tank India Season-2), Mr. Rishabh Jain (Popular Indian Financial Youtuber with 4.2M+ Subscribers)

The most dynamic personalities of the entrepreneurial and content creation world come forward to speak about their journey from an aspirant to an inspiration. The podcast features visionaries from diverse fields such as Finance, Entrepreneurship, Military, Sports and more.

Startup Expo | Date of the event: 11-12 February, 2023

MANIT Bhopal hosted India's Largest Startup Expo at E-Summit'23, where MANIT witnessed Central India's Largest Megafest in February.

Chief Guests and Speakers: Shri Vishvas Sarang Ji, Mr. Ashneer Grover, Mr. Praful Billore, Mr. Sanyam Badola, Mr. Samir Dahot, Mr. Rahul Lakhmani, Shri S H Abbas Mehdi, Mr. Ronald Fernandez and Mr. Arnav Gupta.

This event brought together innovative startups from across the nation, encouraging connections within a vibrant community of potential customers and investors. We had also brought C-level executives from top corporations, government agencies, incubators, investors, and VC funds.



Business Plan Competition | Date of Event: 15 January 2023 & 13 February 2023

Speakers: Mr. Shyam Sekar S, Mr. Paresh Gupta, and Mr. Siddharth Chaturvedi

This event provided aspiring entrepreneurs with the opportunity to pitch their idea to a panel of experts. With the guidance of industry experts, participants refined their ideas and made them more marketable.

Stock Trading Simulation | Date of event: 6-10 February, 2023

Speakers: Mr. Ayush Shrivastav, Mr. Ruben Phukan, Mohammad Aslam Shaikh

With the chance to invest simulated money, this event allowed participants to calculate potential gains and losses, offering a risk-free environment to sharpen their trading acumen.

Crypto Trading Simulation | Dates of event: 6-10 February, 2023

Speakers: Mr. Arpit Agarwal, Mr. Ajeet Khurana

This captivating simulation event offered the exploration of the cosmos of cryptocurrencies, where one can access real-time market analysis and engage with a virtual investment platform.

Creator Camps | Date of Event: 11-13 February, 2023

Speakers: Mr. Anurag Dhobal, Mr. Anubhav Saxra, Ms. Vanika Sanghani, Mr. Justin Joseph and Mr. Naman Deshmukh.

This event included a series of interactive sessions with creative experts of the content creation realm.

Content Creation Conclave | Date of Event: 12 and 13 February, 2023

Creators: Mr. Amandeep Singh, Mr. Nishit Chauhan

On an ending note, the third day of E-Summit'23 witnessed Creators Show by the musical guests for the night Mr. Amandeep Singh and Mr. Nishit Chauhan with attendance of over 5,000+ from various institutes.

Hackathon | Date of event: 10-13 February, 2023

Mentors: Mr. Leenesh Singh, Mr. Ashutosh Singh, Mr. Harsh Bardhan Mishra, Mr. Tarun Agrawal

Judges: Mr. Kritarth Mittal, Mr. Leenesh Singh

Keynote Speaker: Mr. Mohammad Fraz.

It was a two-day event for coders to showcase their technical and creative skills by developing and presenting a working prototype solution to a real-world problem.

IPL Auction Simulation | Date of event: 13 February, 2023

This event focused on financial optimization, price bidding, and teamwork. It challenged judgmental skills, budget management and strategizing to form the best possible team. Out of 120 applying teams only 8 teams were selected for the final Bidding round. Every team was given 100 Crores virtual money to bid in the auction.

Ending Ceremony of E-Summit'23 | Date of event: 13 February, 2023

Speakers: Shri P. Narhari Ji, Mr. Sanjeev Agrawal

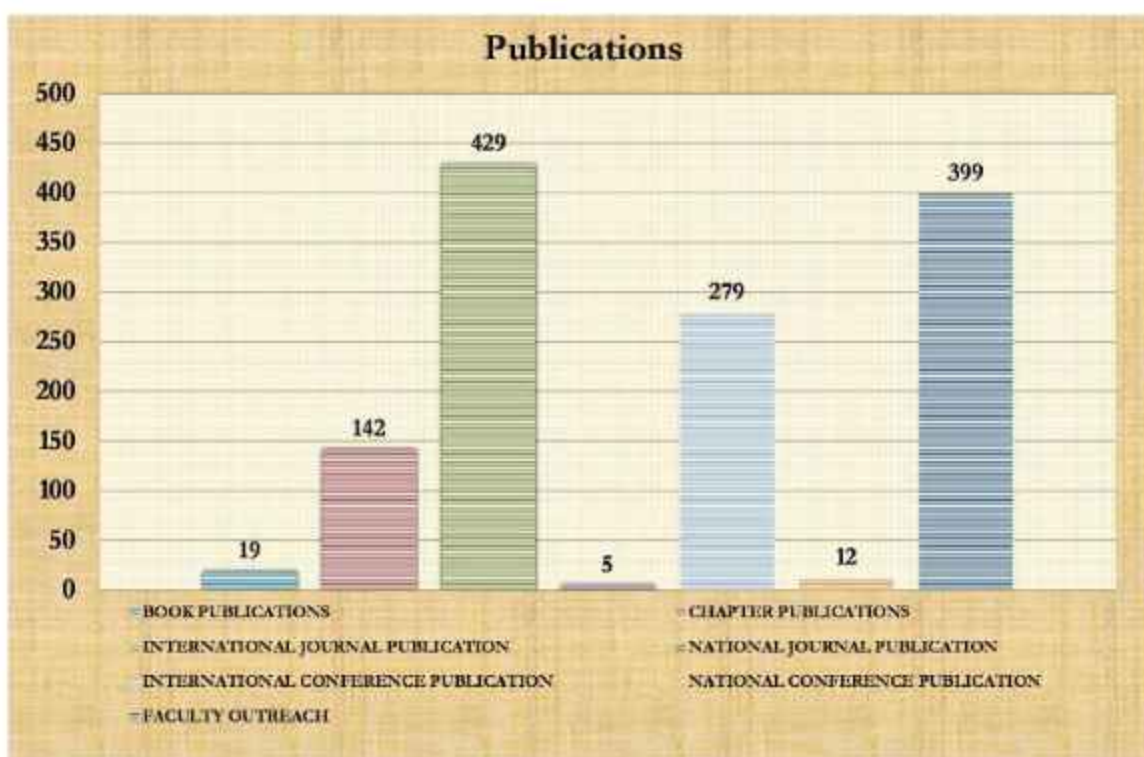
Shri P. Narhari Ji, the Chief Guest at E-Summit'23's closing ceremony, emphasized the significance of SMEs in the Indian Economy and encouraged students to become entrepreneurs. He discussed government support for startups, highlighting the benefits for founders and the nation.

Mr. Sanjeev Agrawal, the Guest of Honour, shared his college experiences and stressed the importance of working hard while enjoying college life. He expressed his vision of seeing MANIT students establish future unicorns in India, emphasizing the value of ventures for national prosperity.

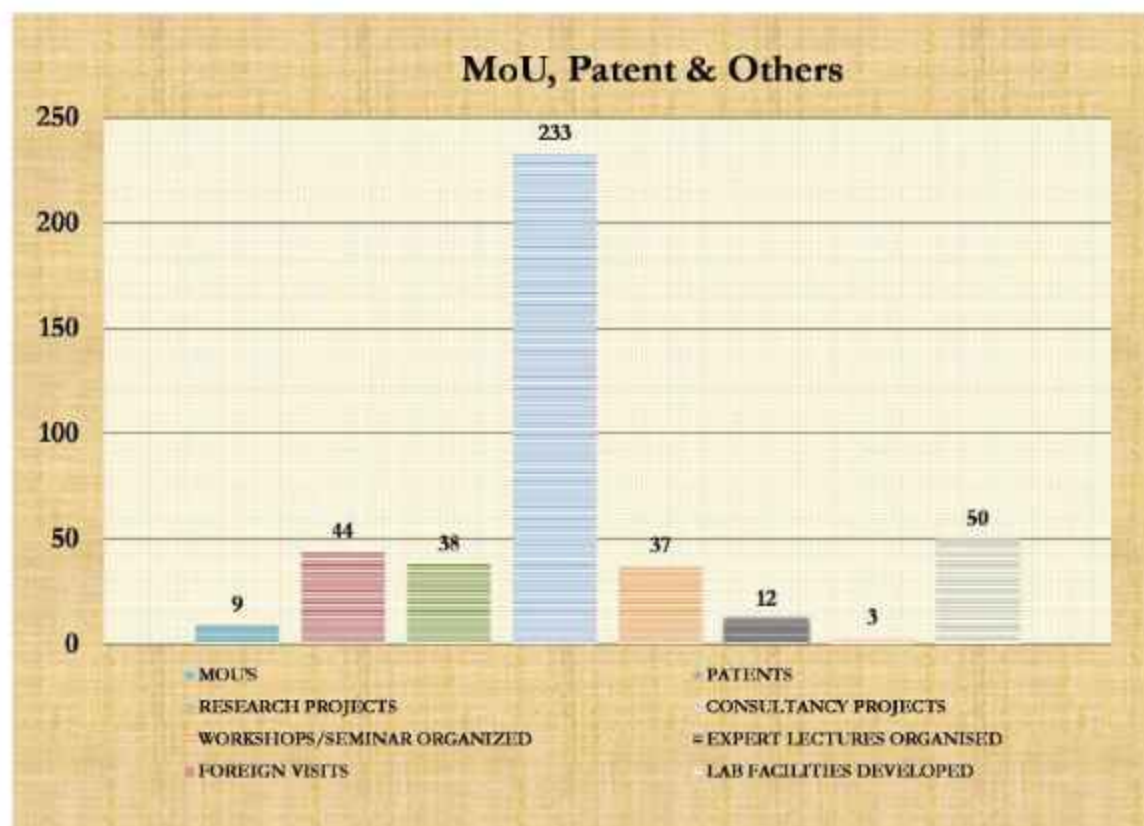
The cultural event of E-Summit included various events along cultural performance by Kabir Gayan troupe under SPICMAY Heritage Club of MANIT on 13th February 2023.

Summary of Departments and Centres

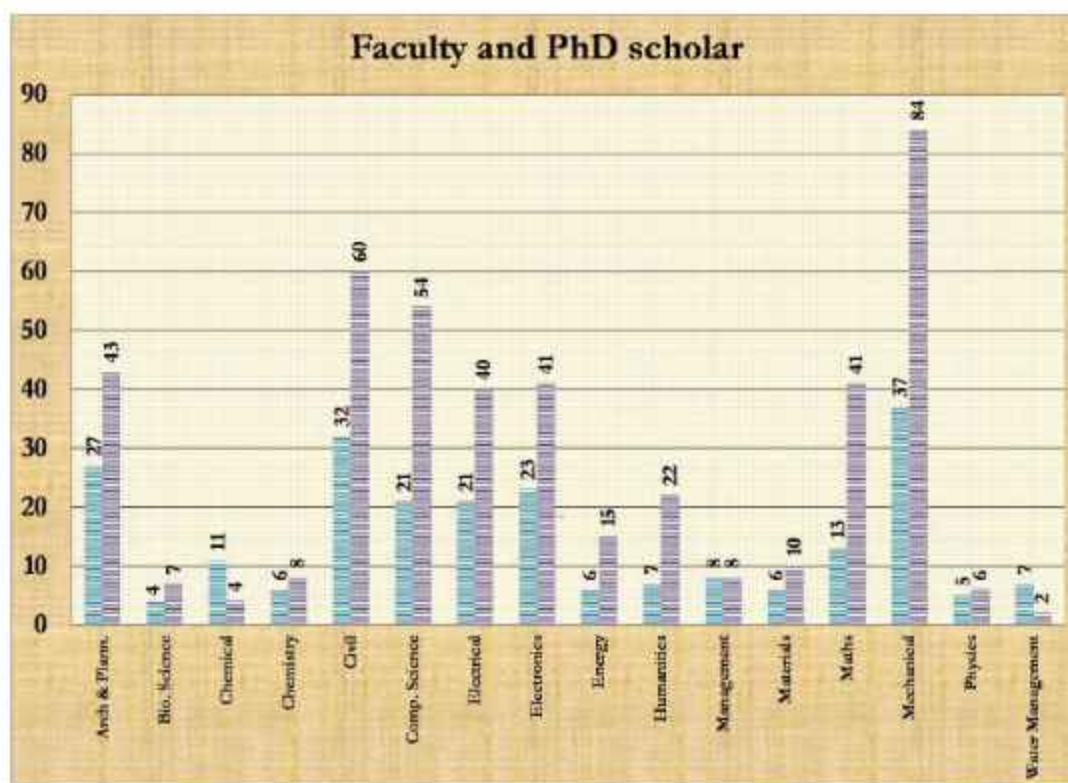
Publications/ Outreach/ Research and Consultancy



MoUs/ Patents/ Workshop/ Expert Lectures/ Foreign Visits/ GAIN/ Labs and Others



Faculty and PhD Scholars



Academic Programme and Admission

Admission Statistics

S. No.	Course/Degree	Total Seats	In Position out of Total Filled							
		Sanctioned/Approved	Filled	Gen	OBC	SC	ST	EWS	PwD	Vacant
1	UG	4716	4708	1747	1344	697	353	462	105	08
2	PG	1717	1062	434	308	164	43	102	11	655
3	Ph.D.	616	399	164	126	65	17	19	8	217
	Total	7049	6169	2345	1778	926	413	583	124	880

Under Graduate Courses

First Year B. Tech. /B. Arch./B. Plan.											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture	13	24	9	5	5	3	18	12	5	5	99
Planning	6	2	5	3	2	4	10	7	5	2	46
Chemical Engineering	20	4	10	2	4	2	20	4	7	5	78
Civil Engineering	21	5	12	4	6	2	30	8	15	2	105
Computer Science & Engineering	39	25	30	7	12	4	37	13	36	5	248
Electrical Engineering	30	10	16	4	9	2	38	10	23	2	144
Electronics & Communication Engineering	37	15	21	6	11	2	44	11	26	6	179
Materials & Metallurgical Engineering	15	3	12	2	4	2	18	4	8	2	70
Mechanical Engineering	39	11	23	5	14	2	67	16	26	6	209
Total	240	99	138	38	67	23	302	85	151	35	1178

Second Year B. Tech. /B. Arch./B. Plan.											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture	18	16	9	5	3	5	13	20	6	4	99
Planning	14	3	5	6	2	2	8	7	1	1	49
Chemical Engineering	23	6	10	2	5	1	16	4	5	2	74
Civil Engineering	36	9	13	4	6	2	24	6	8	2	110
Computer Science & Engineering	79	28	28	6	13	4	50	13	20	2	243
Electrical Engineering	45	10	13	7	8	2	27	9	11	2	134
Electronics & Communication Engineering	56	14	20	6	9	3	38	9	13	4	172
Materials & Metallurgical Engineering	19	3	10	2	5	1	17	4	7	1	69
Mechanical Engineering	65	17	25	6	14	2	45	13	17	4	208
Total	355	106	133	44	65	22	238	85	88	22	1158

Third Year B. Tech./B. Arch./B. Plan.											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture	17	17	8	6	2	7	17	11	7	4	96
Planning	15	5	6	2	1	2	8	5	2	1	47
Chemical Engineering	22	6	9	2	4	2	16	5	6	2	74
Civil Engineering	35	9	12	4	7	2	24	6	9	2	110
Computer Science & Engineering	81	25	28	6	13	4	52	12	19	4	244
Electrical Engineering	43	12	17	3	8	2	28	9	12	2	136
Electronics & Communication Engineering	56	14	20	6	11	2	38	9	13	4	173
Materials & Metallurgical Engineering	19	6	9	2	5	1	13	3	6	2	66
Mechanical Engineering	69	18	24	6	11	4	47	10	15	4	208
Total	357	112	133	37	62	26	243	70	89	25	1154

Fourth Year B. Tech./B. Arch./B. Plan.											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture	19	16	7	8	4	4	16	13	1	0	88
Planning	7	7	4	3	2	3	10	4	2	0	42
Chemical Engineering	24	6	9	0	5	1	18	2	2	1	68
Civil Engineering	35	10	14	2	6	2	25	3	5	1	103
Computer Science & Engineering	87	26	27	5	12	2	51	8	10	2	230
Electrical Engineering	45	12	17	2	9	2	30	4	7	2	130
Electronics & Communication Engineering	58	13	19	3	11	2	40	7	6	2	161
Materials & Metallurgical Engineering	21	8	9	1	5	1	19	2	2	0	68
Mechanical Engineering	62	23	30	2	11	2	50	5	8	1	194
Total	358	121	136	26	65	19	259	48	43	09	1084

Fifth Year B. Arch.

Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture	13	23	7	4	2	2	14	10	0	0	73
Total	13	23	07	04	02	02	14	10	00	00	73

Post Graduate Courses

First Year Master of Technology/Master of Planning											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Advanced Computing	4	5	2	1	0	0	7	1	1	0	21
Advanced Material Tribology	0	0	0	0	0	0	0	0	0	0	00
Artificial Intelligence	6	0	3	1	1	1	7	1	2	0	22
Automation and Robotics	5	0	0	0	0	0	0	1	0	0	06
Bio-informatics	0	3	1	0	0	0	1	0	0	0	05
Biotechnology	3	5	1	0	1	0	0	2	0	0	12
Chemical Engineering	0	0	2	0	0	0	0	0	0	0	02
Computation & System Biology	0	0	0	0	0	0	0	0	0	0	00
Computer Networking	0	3	1	0	0	0	0	0	0	0	04
Digital Communication	2	1	1	1	0	0	0	1	0	0	06
Electrical Drives	4	4	1	1	0	0	2	0	0	0	12
Energy System Management	1	0	0	0	0	1	1	2	0	0	05
Environmental Engineering	4	0	1	1	0	0	6	2	1	0	15
Geoinformatics & Its Applications	2	1	0	0	0	0	1	0	0	0	04
Geotechnical Engineering	3	1	2	1	0	0	7	1	0	0	15
Housing	1	4	1	0	0	0	0	2	0	0	08
Hydro Power Engineering	0	0	0	0	0	0	0	0	0	0	00
Industrial Design	2	0	1	0	0	0	3	0	0	1	07
Industrial Engineering and Management	3	1	2	0	0	0	1	0	1	0	08
Information Security	4	3	3	1	0	0	3	0	0	0	14
Industrial Tribology and Maintenance Engineering	0	0	0	0	0	0	0	0	0	0	00
Maintenance Engineering	0	0	0	0	0	0	0	0	0	0	00
Materials Science & Technology	0	0	3	0	0	0	0	0	0	0	03
Nanotechnology	1	0	0	0	0	0	0	0	0	0	01
Power System Engineering	2	0	1	1	1	0	0	1	0	0	06
Renewable Energy	0	1	2	0	1	0	2	1	1	0	08
Stress & Vibration Analysis	0	0	0	0	0	0	0	0	0	0	00
Structural Engineering	6	1	4	2	0	0	7	2	4	1	27
Thermal Engineering	0	0	0	0	0	0	0	0	0	0	00
Transportation Engineering	8	2	4	0	0	0	3	2	2	1	22
Urban Planning	5	2	2	0	0	0	2	3	0	0	14
VLSI & Embedded Systems	4	0	3	0	0	0	6	4	3	1	21
Water Resources Engineering	3	0	0	1	0	0	3	0	0	1	08
Total	73	37	41	11	04	02	62	26	15	03	276
Second Year Master of Technology/Master of Planning											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Advanced Computing	8	1	1	2	0	0	5	0	2	0	19
Advanced Material Tribology	0	0	1	0	0	0	0	0	0	0	01
Artificial Intelligence	6	1	3	0	0	1	6	0	3	0	20
Bio-informatics	2	1	0	0	0	0	0	0	1	0	04
Biotechnology	4	7	1	1	1	0	0	4	0	0	18
Chemical Engineering	0	0	0	0	0	0	0	0	0	0	00
Computation & System Biology	0	2	0	0	0	0	0	0	0	0	02
Computer Networking	5	4	1	2	0	0	2	3	0	1	18
Digital Communication	4	3	0	0	0	0	1	0	0	0	08
Electrical Drives	9	3	1	1	0	0	4	1	0	1	20
Energy System Management	2	1	1	1	0	0	2	0	1	0	08
Environmental Engineering	4	2	2	1	0	0	6	1	0	2	18
Geoinformatics & Its Applications	0	0	2	0	0	0	1	0	0	0	03
Geotechnical Engineering	6	0	0	3	0	0	4	4	2	0	19
Housing	2	4	0	0	0	0	4	1	0	0	11
Hydro Power Engineering	0	1	2	0	0	0	0	1	0	0	04
Industrial Design	5	0	2	0	0	0	4	0	0	0	11
Information Security	5	1	3	0	0	0	4	0	1	2	16

Industrial Tribology and Maintenance Engineering	8	1	0	1	0	0	3	1	0	0	14
Materials Science & Technology	2	0	0	0	0	0	2	0	0	0	04
Nanotechnology	1	1	1	0	0	0	1	0	0	0	04
Power System Engineering	5	3	2	2	1	1	3	3	0	0	20
Renewable Energy	4	1	2	1	0	0	0	0	1	0	09
Stress & Vibration Analysis	0	1	0	0	0	0	1	0	0	0	02
Structural Engineering	6	1	2	1	2	0	6	0	2	0	20
Thermal Engineering	5	0	4	0	1	0	5	0	3	0	18
Transportation Engineering	6	1	4	0	0	2	5	1	2	0	21
Urban Planning	6	5	1	2	2	0	3	0	1	1	21
VLSI & Embedded Systems	5	3	2	1	0	0	3	1	2	1	18
Water Resources Engineering	5	3	2	1	0	0	0	2	0	0	13
Total	115	51	40	20	07	04	75	23	21	08	364

Master of Business Administration

First Year of MBA											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Master of Business Administration	8	5	1	2	0	0	1	6	0	0	23
Total	08	05	01	02	00	00	01	06	00	00	23
Second Year of MBA											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Master of Business Administration	8	10	0	1	0	0	0	2	1	0	22
Total	08	10	00	01	00	00	00	02	01	00	22

Master of Computer Application

First Year of MCA											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Master of Computer Application	20	12	10	5	6	2	23	8	17	2	105
Total	20	12	10	05	06	02	23	08	17	02	105
Second Year of MCA											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Master of Computer Application	29	11	7	4	6	2	23	7	11	4	104
Total	29	11	07	04	06	02	23	07	11	04	104
Third Year of MCA											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Master of Computer Application	30	9	11	4	7	2	23	9	7	3	105
Total	30	9	11	04	07	02	23	09	07	03	105

Dual Degree Courses

First Year of Mathematics and Data Science											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Mathematics and Data Science	08	2	4	1	1	1	8	2	2	1	30
Total	08	02	04	01	01	01	08	02	02	01	30
Second Year of Mathematics and Data Science											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Mathematics and Data Science	4	3	4	1	2	0	7	2	5	1	29
Total	04	03	04	01	02	00	07	02	05	01	29

M.Sc. Courses

First Year of M.Sc.											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Chemistry	1	3	1	2	1	0	1	4	2	3	18
Physics	3	1	2	0	0	0	5	0	3	0	14
Total	04	04	03	02	01	00	06	04	05	03	32
Second Year of M.Sc.											

Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Chemistry	5	2	1	1	0	0	1	5	1	0	16
Physics	2	5	2	0	0	0	3	2	0	1	15
Total	07	07	03	01	00	00	04	07	01	01	31

Doctoral Programmes

First Year											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture & Planning	0	2	0	1	0	0	0	0	0	0	03
Bioinformatics	0	0	0	0	0	0	0	0	0	0	00
Biological Science & Engineering	0	0	0	0	0	0	0	0	0	0	00
Centre for Remote Sensing GIS & GPS	0	0	0	0	0	0	0	0	0	0	00
Chemical Engineering	0	0	0	0	0	0	0	0	0	0	00
Chemistry	0	0	0	0	0	0	0	0	0	0	00
Civil Engineerings	5	0	4	0	1	0	4	0	0	0	14
Computer Application	0	0	0	0	0	0	0	0	0	0	00
Computer Science & Engineering	0	0	0	1	1	0	2	0	0	0	04
Electrical Engineering	1	0	0	0	0	0	5	0	0	0	06
Electronics & Communication Engineering	3	4	2	0	0	0	2	0	1	0	12
Energy	0	2	0	0	1	0	0	0	0	0	03
Humanities	1	2	0	0	0	0	0	0	0	0	03
Management Studies	3	1	0	0	0	0	0	0	0	0	04
Materials & Metallurgical Engineering	2	0	0	0	0	0	0	0	0	0	02
Mathematics	0	0	0	0	0	0	0	0	0	0	00
Mechanical Engineering	3	0	0	0	0	0	7	0	1	0	11
Physics	0	0	0	0	0	0	1	0	0	0	01
Centre of Excellence in Production Design and Smart Manufacturing	1	0	0	0	0	0	0	0	0	0	01
Mathematics, Bioinformatics and Computer Applications	2	2	0	0	0	0	2	1	0	2	09
Total	21	13	06	02	03	00	23	01	02	02	73

Second Year											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture & Planning	3	5	0	0	0	1	3	0	0	0	12
Bioinformatics	0	0	0	0	0	0	0	0	0	0	00
Biological Science & Engineering	0	1	0	0	0	0	0	0	0	0	01
Centre for Remote Sensing GIS & GPS	0	0	0	0	0	0	0	0	0	0	00
Chemical Engineering	0	0	0	0	0	0	0	0	0	0	00
Chemistry	0	0	0	1	0	0	0	0	0	0	01
Civil Engineerings	6	2	0	1	0	0	1	2	1	0	13
Computer Application	0	0	0	0	0	0	0	0	0	0	00
Computer Science & Engineering	1	2	1	0	0	0	0	0	0	0	4
Electrical Engineering	3	0	1	0	0	0	2	0	0	0	6
Electronics & Communication Engineering	2	0	0	0	0	0	1	1	0	0	4
Energy	1	0	0	0	0	0	0	0	0	0	01
Humanities	0	2	1	0	0	0	1	0	0	1	05
Management Studies	3	1	0	0	1	0	1	1	0	0	07
Materials & Metallurgical Engineering	0	0	0	0	0	0	1	0	0	0	01
Mathematics	2	1	1	0	0	0	1	0	0	2	07
Mechanical Engineering	5	2	2	1	0	0	4	1	2	0	17
Physics	0	0	0	0	0	0	1	0	0	0	01
Total	26	16	6	03	1	01	16	05	03	03	80

Third Year											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture & Planning	2	4	2	0	2	0	5	1	0	0	16
Bioinformatics	0	1	0	0	0		1	0	0	0	01
Biological Science & Engineering	0	1	0	0	0	0	2	0	0	0	03
Centre for Remote Sensing GIS & GPS	0	0	0	0	0	0	0	0	0	0	00
Chemical Engineering	1	0	1	0	0	0	1	0	0	0	05
Chemistry	0	0	0	0	0	0	1	0	0	0	01
Civil Engineerings	2	1	4	1	0	0	8	0	2	0	18

Computer Application	2	0	0	0	0	0	2	0	0	0	04
Computer Science & Engineering	4	3	1	2	1	0	3	3	1	0	18
Electrical Engineering	3	1	2	3	2	0	4	0	1	0	16
Electronics & Communication Engineering	2	0	3	0	2	0	5	2	0	0	14
Energy	0	1	2	0	1	0	2	0	1	0	07
Humanities	1	2	1	0	0	0	1	0	1	0	06
Management Studies	0	0	1	0	0	0	0	0	0	0	01
Materials & Metallurgical Engineering	1	0	0	0	1	0	2	0	1	0	05
Mathematics	0	1	0	1	0	0	0	0	0	0	02
Mechanical Engineering	6	1	4	1	2	0	11	0	2	0	27
Physics	0	0	0	1	0	0	1	0	0	0	02
Total	24	16	21	09	11	00	49	06	09	00	144
Fourth Year											
Branch	General		SC		ST		OBC		EWS		Total
	M	F	M	F	M	F	M	F	M	F	
Architecture & Planning	2	2	1	1	0	0	0	0	0	0	06
Bioinformatics	0	0	0	0	0	0	0	0	0	0	00
Biological Science & Engineering	0	0	0	1	0	0	0	1	0	0	02
Centre for Remote Sensing GIS & GPS	0	0	0	0	0	0	0	0	0	0	00
Chemical Engineering	0	0	0	0	0	0	0	0	0	0	00
Chemistry	0	0	0	0	0	0	0	1	0	0	01
Civil Engineering	10	0	2	0	0	0	0	3	0	0	13
Computer Application	0	0	1	0	0	0	0	0	0	0	01
Computer Science & Engineering	5	2	2	0	0	1	4	1	0	0	13
Electrical Engineering	5	0	3	0	0	0	1	2	0	0	11
Electronics & Communication Engineering	6	2	0	2	0	0	3	1	0	0	14
Energy	1	0	1	0	0	0	0	0	0	0	02
Humanities	0	0	0	0	0	0	0	0	0	0	00
Management Studies	2	0	0	0	0	0	0	0	0	0	02
Materials & Metallurgical Engineering	0	0	0	0	0	0	1	0	0	0	01
Mathematics	1	1	0	0	0	0	2	0	0	0	04
Mechanical Engineering	13	0	3	1	0	0	8	0	0	0	23
Nano Science & Engineering	1	0	1	0	0	0	1	0	0	0	03
Total	46	07	14	03	00	01	20	09	00	00	102

TOTAL NUMBER OF DEGREE RECIPIENTS

S.NO.	COURSE-BRANCH	NO. OF DEGREES
1.	B.Tech. Civil Engineering	93
2.	B.Tech. Mechanical Engineering	181
3.	B.Tech. Electrical Engineering	106
4.	B.Tech. Electronics & Communication Engineering	143
5.	B.Tech. Computer Science & Engineering	209
6.	B.Tech. Chemical Engineering	57
7.	B.Tech. Material and Metallurgical Engineering	56
8.	Bachelor of Architecture	76
9.	Bachelor of Planning	36
10.	Master of Computer Applications	94
11.	Master of Business Administration	31
12.	Master of Technology	425
13.	Master of Planning	34
14.	Ph.D.	36
Total		1577

List of Ph.D Scholar's awarded Degree in the XIX convocation

S.No.	Scholar No	Name	Branch
1.	143210001	Manita Saxena	Architecture and Planning
2.	143209004	Neha Pranav Kolhe	Architecture and Planning
3.	143210002	Vinay Prakash Shrivastava	Architecture and Planning
4.	143224001	Rashi Raizada	Biological Science and Engineering
5.	173117001	Yash Jaiswal	Chemical Engineering
6.	133211008	Hridayesh Varma	Civil Engineering
7.	173111009	Shafali Dubey Pathak	Civil Engineering
8.	143220005	Premnarayan Arya	Computer Applications
9.	143220003	Rahul Kumar Chawda	Computer Applications
10.	143220009	Rajit Nair	Computer Applications
11.	133220004	Rani Sahu	Computer Applications
12.	143220002	Sonal Telang Chandel	Computer Applications
13.	173104003	Sunil Kumar Mittal	Computer Applications
14.	163112003	Anil Kumar Kushwah	Computer Science and Engineering
15.	173112001	Banalaxmi Brahma	Computer Science and Engineering
16.	153212001	Gaurav Hajela	Computer Science and Engineering
17.	143112004	Gourav Kumar Shrivastava	Computer Science and Engineering
18.	133112006	Saurabh Khare	Computer Science and Engineering
19.	143213007	Manoj Kumar	Electrical Engineering
20.	143213014	Rakhi Yadav	Electrical Engineering
21.	143113001	Tarun Shrivastava	Electrical Engineering
22.	143213017	V. Shish Murty	Electrical Engineering
23.	143213004	Vidhya Fulmali	Electrical Engineering
24.	173114009	Deepak Parashar	Electronics and Communication Engineering
25.	143214002	Ravindra Arya	Electronics and Communication Engineering
26.	143118002	Mary Debbarna	Energy Centre
27.	153103001	Nawal K. Srivastava	Humanities and Social Sciences
28.	143216007	Avinash Kumar Namdeo	Mechanical Engineering
29.	143216008	Deepen Banotiya	Mechanical Engineering
30.	143216005	Himanshu Borade	Mechanical Engineering
31.	143216011	Manish Singh Bharti	Mechanical Engineering
32.	73201103	Mohd. Manzaruddin Qureshi	Mechanical Engineering
33.	143116004	Piyush Kumar Jain	Mechanical Engineering
34.	173116001	Pramod Kumar Sharma	Mechanical Engineering
35.	163116011	Rajkumar Bishnoi	Mechanical Engineering
36.	163116006	Sandeep Kumar Dwivedi	Mechanical Engineering

Award and Medals

PRESIDENT OF INDIA GOLD MEDAL SESSION 2021-2022

COURSE-BRANCH	SCHOLAR NO.	NAME	GGPA
B.Tech. CIVIL ENGINEERING	181111017	Kartikya Mittal	9.72

Gold Medal Recipients Session 2021-22

S.No.	Course -BRANCH	Sch. No.	Name	GGPA	Position
1.	B.Tech. Civil Engineering	181111017	Kartikya Mittal	9.72	1 st
2.	B.Tech. Mechanical Engineering	181116004	Disha Murali	9.46	1 st
3.	B.Tech. Electrical Engineering	181113123	Aditya Pahariya	9.56	1 st
4.	B.Tech. Electronics & Communication Engineering	181114159	Meenavalli Bhargavi	9.32	1 st
5.	B.Tech. Computer Science & Engineering	181112002	Aditi Khandelwal	9.30	1 st
6.	B.Tech. Chemical Engineering	181117071	Princy Jain	9.21	1 st
7.	B.Tech. Materials and Metallurgical Engineering	181119014	Praveen Kumar Pandey	9.15	1 st
8.	Bachelor of Planning	181109014	Yashita Singh	9.04	1 st
9.	Bachelor of Architecture	171110219	Divyansu Jain	9.09	1 st
10.	Master of Computer Applications	192120091	Kirvi Vijay	9.66	1 st
11.	Master of Business Administration	202121012	Rakha	CGPA: 9.01	1 st

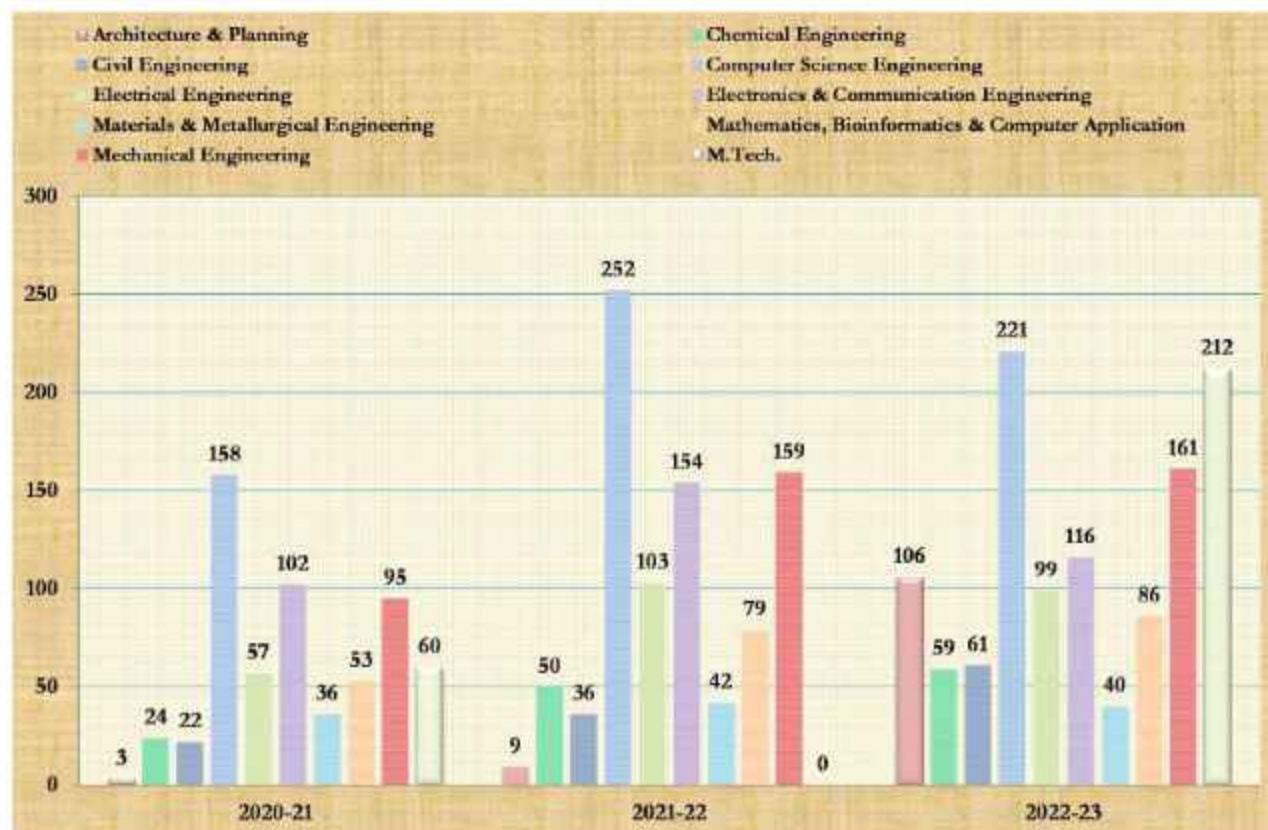
Silver Medal Recipients Session 2021-22

S.No.	Courses	Sch. No.	Name	GGPA	Position
1.	B.Tech. Civil Engineering	181111062	Abhishek Mewade	9.30	2 nd
2.	B.Tech. Mechanical Engineering	181116038	Lekhanish Ranka	9.21	2 nd
3.	B.Tech. Electrical Engineering	181113124	Nikita Parashar	9.33	2 nd
4.	B.Tech. Electronics & Communication Engineering	181114021	Sreehari C	9.26	2 nd
5.	B.Tech. Computer Science & Engineering	181112246	Varshika Agrawal	9.23	2 nd
6.	B.Tech. Chemical Engineering	181117049	Aayushi Jain	9.15	2 nd
7.	B.Tech. Materials and Metallurgical Engineering	181119019	Anoop Tiwari	9.12	2 nd
8.	Bachelor of Planning	181109009	Minhaj Qureshi	8.97	2 nd
9.	Bachelor of Architecture	171110010	Mahima Vishwakarma	8.87	2 nd
10.	Master of Computer Applications	192120009	Utkarsh Gupta	9.47	2 nd
11.	Master of Business Administration	202121001	Pujesh Bhardwaj	CGPA: 8.86	2 nd

Sponsored (Gold Medals) Recipients Session 2021-22

S.No.	Sponsored by	Category	Sch. No.	Name	Course/Branch	GGPA
1.	Dr. H.B.Khurasia Gold Medal	Overall meritorious girl student	181116004	Disha Murali	B.Tech. Mechanical Engineering	9.46
2.	Arpit Goyal Memorial Gold Medal	Topper in Computer Sc. Engg.	181112002	Aditi Khandelwal	B.Tech. Computer Science & Engineering	9.30
3.	Aanya Jain (D/o Anekan and Neetu, USA)	Topper in First Year Girl Student	181116004	Disha Murali	B.Tech. Mechanical Engineering	CGPA: 9.48
4.	Shruti Jain (D/o Sradwad and Ekta, USA)	Topper in Second Year Girl Student	181112002	Aditi Khandelwal	B.Tech. Computer Science & Engineering	CGPA: 9.68
5.	Vishwanath Mittle Gold Medal	Securing highest marks in the subject Basic Electrical and Electronics Engineering	181116271	Srishti Goyal	B.Tech. Mechanical Engineering	Marks: 89/100

Training and Placement



S. No.	Name of Branch	No of Students Selected	Package Offered (highest) in Lakhs
1	Computer Science and Engineering	221	82
2	Electronics and Communication Engineering	116	82
3	Electrical Engineering	99	51.03
4	Chemical Engineering	59	31.50
5	Civil Engineering	61	19
6	Mechanical Engineering	161	19
7	Metallurgy and Material Science Engineering	40	35

Major Employers of the year 2022-23

S. No.	Name of the firms/ organizations who have visited the campus	Brief profile of the Firm	Branch	No of offers
1	Adassian	IT	CSE, ECE, EE	9
2	Microsoft	IT	CSE, ECE, EE	24
3	Tekion	IT	CSE, ECE	3
4	Observe AI	IT	CSE, ECE, EE	2
5	Paypal	IT	All Branches	5
6	ServiceNow	IT	CSE, ECE, EE	3
7	Park+	IT	All Branches	4
8	Oracle	IT	CSE, ECE, EE	23
9	Flipkart	IT	CSE, ECE, EE	8
10	Google	IT	CSE, ECE, EE	5
11	Warner Bros Discovery	IT	CSE	1
12	Juspay	IT	All Branches	1
13	Zscaler	Network Security	All Branches	1
14	Nvidia	IT	CSE, ECE, EE	2
15	MathWorks	IT	CSE, ECE, EE, Mech	3
16	Goldman Sachs	IT	All Branches	6
17	Wells Fargo	Banking	CSE, EE, ECE	17

S. No.	Name of the firms/ organizations who have visited the campus	Brief profile of the Firm	Branch	No of offers
18	Jivox	IT	CSE, ECE	1
19	Jungle Games	IT	CSE, ECE	6
20	Box8	IT	CSE, ECE, EE	3
21	Celigo	IT	CSE, ECE, EE, Mech	3
22	Cashfree	IT	CSE, ECE, EE	5
23	Publicis Sapient	IT	CSE, ECE, EE	2
24	Infineon Technologies	Core	CSE, ECE, EE	1
25	Deutsche Bank	IT	CSE, ECE	27
26	CDOT	Core	CSE, ECE	16
27	BPCL	Core	Mech, Chem, CSE	15
28	JPMC	IT	CSE, ECE, EE	23
29	MSCI	Finance	CSE, ECE, EE	10

Students Activities

Student Clubs

MANIT has various Student clubs like Professional Clubs, Cultural Clubs, Heritage Club. CLUBS are one of the most important platforms which help the students to find their hidden skills and be a part of extra curricular activities. MANIT CLUBS works for the overall development of students of Institute.

Professional Clubs like E-CELL, Robotics, IEEE, etc, are academic oriented ones. Cultural CLUBS like Roobaroo, aims to promote our culture. SPIC MACAY Heritage Club is formed under the Ministry of Education with an objective to promote rich cultural heritage like Music, dance, food etc among youth. Some environmental and Social clubs like NSS, AAROH, PURGE are also working for the betterment of the society. Other Clubs also provide opportunity to enhance skills like PIXEL for Photography.

Information of Students Activity for the Duration 1st April 2022 – 31st March 2023

1. Student Associations:

Name of Post	Name
President	Vikram Mahla
Vice-President	Ashutosh Chaubey
General Secretary	Bhavya Sapra
Joint Secretary	Kapil Rathor
Treasurer	Ayush Chouksey
Secretary Literary, (Hindi)	Deeksha Verma
Secretary Literary, (English)	Mohammad Saad Imam
Secretary Cultural, (Inter University)	Satyam Kumar
Secretary Technical, (Inter University)	Abhijeet Singh Baghel
Secretary (Sports)	Rajababu Dhakad
Secretary (Discipline)	Ritul Choudhary
Secretary (Media)	Kolli Jahnavi
Secretary (Alumni)	Ishpreet Singh
Executive Member, M. Sc. (Nominated)	Sonal S. Banghde
Executive Member, MCA (Nominated)	Chandan Shah
Executive Member, M.Tech. (Nominated)	Cibanshu Sankhwa
Executive Member, NRI (Nominated)	Hassam Kaidejohar Manasi
Executive Member, PhD (Nominated)	MD Jamil Akhtar

2. Yoga & Physical Education:

Physical Education & Sports Activities 2022-23 began in the month of July'18 with the regular practice of all the Indoor as well as Outdoor sports which include Basketball, Volleyball, Cricket, Football, Kabaddi, Chess, Table Tennis, Badminton, Yoga and Carom. A Gymnasium trial for all the students was carried out in the month of August. The Gymnasium scrutiny included 5 km run, push up and crunches count.

Several Inter-Hostel, Inter-year and Inter-branch events were also organized by the department. MANIT Bhopal participated in several Inter-NIT Competitions which include Football, Cricket, Basketball (Boy), Volleyball (Boy & Girls), Kabaddi and Basketball (Boys).

Our Institute is conducting various activities under Physical Education and Sports with an aim to develop all round development of personality with its importance in the society at different level in our Country and conducting various intramural (Inter Branch, Inter year, Inter hostels etc) and Extramural (Inter NITS, Inter College etc) tournament with an objective of moulding the society for betterment. In relation to it the following activities are conducted and are enclosed below.

THE FOLLOWING ACTIVITIES WERE CONDUCTED UNDER YOGA, PHYSICAL EDUCATION AND SPORTS

1. As per SOP issued by the Ministry of AYUSH 8th International Yoga Day, 21st June 2022, Maulana Azad National Institute of Technology, Bhopal celebrated the event in a remarkable way through mass participation in the institute's major activity centre (LRC). Yoga practice was held from 6:00 am to 8:30 am. The event was marked successful with more than 700 participants actively participated in MANIT campus.





2. Gym Boys Fitness Trial Test was held at 5th August 2022 in our Institute Sports Complex for the Students. Many Students of participated executing their Fitness.
3. Gym Girls Fitness Trial Test were also held on 6th August 2022 in our Institute Sports Complex for the Students. Many students of participated and their fitness ability were also determined.
4. National Sports Day were also celebrated with an event of Tug of War competition for students Inter Branch on 29th Aug 2022.
5. Inter Branch Basketball Competition for both Boys & Girls Inter branch were also held in our Institute Basketball Court on 20th Sep 2022.



6. Institute's Tennis Court has been inaugurated along with a friendly match between Staff and Faculty in present of higher dignities on 16th September 2022.
7. Inter branch Football competition for both Boys and Girls were also held at our Institute Football field on 23rd Sep 2022.



8. Rashtriya Ekta Divas (Unity Day) were also celebrated with a Unity Run routed from Institute main Porch heading towards Sports Complex on 31st October 2022, Monday 7:00 to 8:00 A.M. for all the Faculty and Staff.
9. Our Institute has also Participated in Inter NIT Faculty and Staff cricket Tournament held NIT Nagpur 4th to 7th Dec 2022 in order to increase a friendly relation among the members of NITs and our Institute Cricket team have performed with great significant.



10. Our Institute has also participated in Inter NIT Faculty and Staff Badminton Tournament held at NIT Hamirpur on 17th to 19th Dec 2022 and Institute Faculty and Staff Badminton team have successfully secure Silver Medal.
11. Institute Football (men team) have also participated on Inter NIT Football competition held at NIT Rourkela from 10th to 12th Feb 2023.



12. MANIT has also organized Faculty and Staff cricket Tournament on 18th March 2023 held at IISER Bhopal between VNIT, IISER Bhopal & MANIT in significance of friendly relations among the Institute.
13. Institute Basket Ball men team have also participated on Inter NIT Basket Ball competition held at MNIT Jaipur from 23rd to 25th March 2023 and our Institute Basketball team have given a wonderful performance giving a tough competition.

Orientation Program



During the week, 10th to 14th November 2022, Grand Orientation Programme had been organised by our institute, MANIT Bhopal, to extend warm welcome to the new entrant Undergraduate students, ie the B.Tech./ B.Arch./ B.Plan. 1st year students of 2022-2023 entry batch. To mark the beginning with an everlasting impact our hon'ble Director Dr. N.S. Raghuvanshi Sir, whose profound inspiration and magnificent vision is guiding all of us to climb greater heights of glory everyday, gave his welcome address to the new students of our MANIT family. Our respected Dean Academics, Dr. Arvind Mittal Sir, a visionary with rich experience in the field of academics and Dean SW, Dr. K.R. Aharwal Sir, who happens to be a dynamic and systematic person addressed the students to orient them to the professional world of science and technology, in MANIT.

The students were appreciated with the quote that "SUCCESS IS DELIVERED ONLY TO THE DESERVING ONES" for their level of Determination, Dedication and Discipline which has enabled them to reach the pedestal of glory of NIT, Bhopal, by Dr. Meena Agrawal of Energy Centre, who has coordinated this orientation program very enthusiastically and vibrantly. Other Senior Professors and Revered Institute Authorities of Hostel, Medical, Sports, Digital initiatives, T & P, SAS faculty also shared their words of wisdom to guide all through the institutes' various practices, so as to have nice beginning of enthralling and fruitful college life. MANIT's long journey of more than 60 years film had been shown to make the students aware regarding the great achievements of our MANIT.

The second day of orientation program 11/11/2022 began with Departmental Presentations at Department level by All HODs of the degree awarding departments addressed the students of their respective departments and departmental presentations were given. The program for two days on 12-13 Nov 2022 was thrilling bus drive for Bhopal Darshan by tourism of City so as students can have feel of our beautiful city of lakes, Bhopal.

Great Motivational Talk on "Ancient Wisdom in Modern Times" by Abhishek Tiwari Sir, Manit Alumnus 2015 Batch, SDE2, Microsoft, Bengaluru was held on 14th Nov. 2022 at 10:00 am through our Inspire Club.

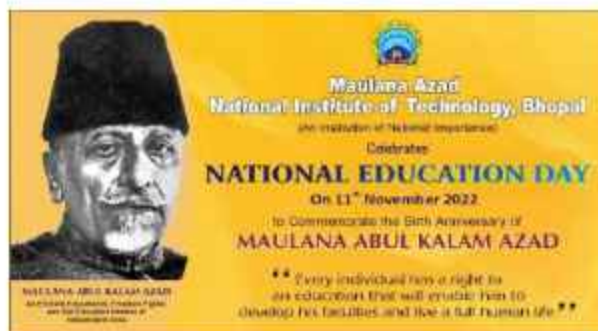
Another Alumnus Inspirational Talks had been given by Sudesh Morey Sir, Manit Alumnus, Managing Director of Dnmz System, Innovations Private limited on topic "Entrepreneurship as a career option for engineering students" on 14th Nov. 2022 at 11:30 am which were interactive and boosted the confidence level for the entrant students.





National Education Day:

MANIT celebrated the birth anniversary of Maulana Azad the first education minister, to mark the National Education Day on November 11, as per the past practices. Maulana Abul Kalam Azad's exemplary contributions to the field of education and institution building paved the way for the country's modern system.



- All Staff & Faculty members gathered in the morning at 10:00 am for Floral tribute and garlanding the Statues at main porch foyer on the Education Day on 11th Nov.2022.
- Also, in the evening of EDUCATION DAY Gurudev Sri Sri Ravishankarji address was there online on 11/11/2022 at 6.30 PM for all first year Students, Staff & Faculty organized in the all four Civil, Mechanical, Electrical and MME Auditoriums.

Constitution Day :

As per the above referred directives from MoE, our MANIT organized Celebration of Constitution Day on Friday, 25th Nov. 2022 and Saturday 26th Nov. 2022.

The event had a Quiz Competition and on the spot Speech Competition for students. The aforesaid event in MANIT has been coordinated by Dr. Meena Agrawal, Dr. Bharat Modhera and Dr. Rahul Tiwari. The coordinators have also planned to organise a Guest Lecture by faculty from Jagran Lake City University (JLU) Bhopal in Civil deptt. Auditorium on 25th Nov 2022.

On Saturday 26th Nov. 2022 the reading of Preamble was carried with great patriotic enthusiasm by Students, Staff & Faculty. The following had been the schedule for Celebration of Constitution Event:

Time	Program Schedule
Friday 25 th Nov. 2022	
03:00 pm-03:30 pm	On the Spot Speech Competition for Students
03:30 pm-04:00 pm	Quiz Competition
04:00 pm-05:00 pm	Guest Lecture by Law Faculty Patriotic talk – “India :The Mother of Democracy”
Saturday, 26 th Nov.2022	
11:00 AM	READING OF CONSTITUTION PREAMBLE By Faculty, Staff & Students at main porch foyer area of institute



2nd October Mahatma Gandhi Jayanti:



Har Ghar Tiranga

Patriotic Poetry Writing Competition: Patriotic poetry competition was organized at 4.00 pm on 12th August, 2022 at Institute premise. Total 39 participants participated in this competition along with faculty members. Most of participants wrote poetry on "Azadi ka Mahotsav" and "Har Ghar Tiranga". All the poetries were judged by our valuable judges. Best five poetries were awarded by the Director, MANIT on 15th August, 2022 (75th Independence Day).



Instant Essay Writing Competition: Instant Essay Writing competition was organized at 4.00 pm on 13th August, 2022 at Institute premise. Total 51 participants participated in this competition along with faculty members. A few instant topics like Is INDIA Really Independent?, INDIA @ 75, Self Reliant INDIA, My Vision for INDIA were provided to participants to write essay. All the essay were judged by our valuable judges. Best five essays were awarded by the Director, MANIT on 15th August, 2022 (75th Independence Day).



Rangoli Competition: Patriotic poetry competition was organized at 3.00 pm on 14th August, 2022 at Institute premise. Total 12 teams participated in this competition. All the team drew rangoli on the theme of "Azadi ka Mahotsav" and "Har Ghar Tiranga". All the rangolies were judged by our valuable judges. Best five rangolies were awarded by the Director, MANIT on 15th August, 2022 (75th Independence Day).



National Unity Day

As per the directives from MoE and our hon. Director Sir, we at MANIT have celebrated **NATIONAL UNITY DAY** (Rashtriya Ekta Diwas) to pay tribute to Sardar Vallabh Bhai Patel ji, the Iron Man of India. Office of Dean Students Welfare organized various events on 29th Oct. and **RUN FOR UNITY** on 31st Oct. at 07:30 am at main porch open area. Students took part together into the following activities:

- 1) Students participated in the Patriotic Quiz Competition regarding National Freedom Fighters contribution for nation
- 2) For awareness regarding incredible roles of our leaders and for National Integrity Essay Writing Competition on topic "Role of Sardar Vallabh Bhai Patel in UNIFICATION of INDIA" was organized. Students wrote in English as well as Hindi groups. Certificates and prizes have been given to the winner students as listed below.
 - (a) Winners of Essay Writing Competition in Hindi-First Abhishek Verma, M. Plan. Second Krishna Kumar Mishra, Chemical Engg; Third is Jyoti Varsha, branch MME

- (b) Winners of Essay writing competition in English-First is Saideep Reddy Mada, RE; Second is Sourabh Kaithwas, RE; Third is Shiv Prakash, ESM
- (c) Winners of Patriotic Quiz Competition have been-1 Avishkant Patidar, MCA ; 2 Chahat Gupta, MCA; 3 Shiv Prakash, Energy Management; 4 Mayank Agrawal, MCA

Faculty members and students also took part together enthusiastically for the RUN FOR UNITY coordinated by Dr. Rajesh Mishra, Sports Officer. Pics of the UNITY DAY Celebrations -2022 are attached herewith.

3. SPICMACAY Heritage Club

As per the directives of Ministry of Education, Government of India, in October 2022, Society for promotion of Indian Classical Music and Culture among Youth (SPICMACAY) is to be formed in all centrally funded Institutes. MANIT revived its SPICMACAY Heritage Club in December 2022, under the coordinatorship of Dr. Supriya Vyas and Dr. Surabhi Mehrotra. Several Cultural programs were organised under the guidance of Advisor Prof. Savita Raje.

This Club is working for promotion of culture, value and heritage education among youth. Following are the glimpses of program like Kathakali and Manipuri dance forms, conducted under SPICMACAY Heritage Club in March 2023.



Janjatiya Gourav Diwas.

MANIT, Bhopal celebrated 15th November as "*Janjatiya Gourav Diwas*" on 147th Birth anniversary of "Bhagwan Birsa Munda" at 4.00 pm on 15th November, 2022 at Seminar room, Department of Chemical Engineering, MANIT, Bhopal. The debate competition was held on the theme "Contribution of Janajati Heroes in Freedom Struggle". Total 38 participants participated in this debate competition along faculty members. Students gave their debate on various Janajati Hero like Bhagwan Birsa Munda, Tanya Bhil, Tilka Manji, Tilot Singh, etc. Debate competition was judge by faculty members. Top three students were honored by a Trophy with certificate. Certificates were issued to all the participants.

Students and faculty members participated in debate competition and share their views on various Janjati Heroes. At the end of program, best three among participants were honoured by a trophy and certificate.



Infrastructure Facilities

CENTRAL LIBRARY

Introduction: The Central library is divided into five distinct divisions, namely: Acquisition, Circulation, Digital Library, Documents & Records Keeping and Book Bank. Each division is headed by a senior library professional / employee with years of experience behind him. All divisional in-charges report to Deputy Librarian (Head, Central Library) and work under his supervision.

The operations of Central Library are managed by a Core Committee that has Dr. Rajnish Kurchania (Chairman), Dr. Pankaj Swarnkar (Member), Dr. Gaurav Dwivedi (Member), and Shri Pankaj Kumar Sharma (Deputy Librarian and Member). All policy decisions are taken after due deliberations amongst core committee members and/or the meetings of an extended library committee that has representation of all departments. All decisions are duly and promptly conveyed to all subscribers through notices, circulars and institute website.

Academic Staff:

Chairman: Dr. Rajnish Kurchania, Professor, Department of Physics
 Member: Dr. Pankaj Swarnkar, Department of Electrical Engineering
 Member: Dr. Gaurav Dwivedi, Energy Centre
 Librarian: Post Vacant
 Deputy Librarian: Mr. Pankaj Kumar Sharma
 Assistant Librarian: Post Vacant
 Information Analyst: N.A.
 Retired Staff: 02 (Shri V.K. Pandey & Shri H.S. Dhakad)

Print Collection Added during 2022-2023

General Books: 26
 Text Books: Nil
 Print Journals: Nil
 Ph.D. Theses: 56
 Total Collection of Central Library: 1, 53,770
 Total Collection of SC/ ST Book Bank: 21,598 Total Collection of General Book Bank: 7,074

List of online Resources Available for 2022-2023 (Through E-Shodhsindhu)

S. No.	Name of Online Resource	Name of Publisher
01	ACM Digital Library	ACM
02	ASCE Journals	ASCE
03	ASME Journals	ASME
04	ISID Database	ISID
05	Turnitin Plagiarism Detection Software	Shodh Shuddhi Access

List of E-Books Available for the year 2022-2023 (Subscribed by MANIT)

S. No.	Name of Publisher	URL
1.	CRC Press and Taylor & Francis	https://www.taylorfrancis.com/search?isLicensed=true&key= https://www.taylorfrancis.com/search?key=history&isLicensed=true
2.	John Wiley	http://www.wileyindia.com/manit/ https://bit.ly/3x8miEX
3.	McGraw Hill(MHE)	http://mcgrawhilleducation.pdn.ipublishcentral.com/bookshelf https://resolver.vitalsource.com/
4.	Institute of Physics(IOP)	https://iopscience.iop.org/bookList/50/1?query=(collection=%22IOP%20Concise%20Physics%22%20AND%20(authYear=2016))
5.	Springer Link	https://link.springer.com/
6.	World Scientific	https://www.worldscientific.com/page/holdings/maulana-azad-national-institute
7.	De Gruyter	https://www.degruyter.com https://www.degruyter.com/search?query=*%26startItem=0%26pageSize=10%26sortBy=relevance%26documentVisibility=licensed%26documentTypeFacet=book https://www.degruyter.com/search?query=*%26startItem=0%26pageSize=10%26sortBy=relevance%26documentVisibility=explicit
8.	Bloomsbury	https://www.bloomsburycollections.com/search?toggleAccess=accessOpen
9.	Elsevier	https://www.sciencedirect.com/

S. No.	Name of Publisher	URL
10.	AIP Publishing	https://publishing.aip.org/publications/books/view-the-collection/ https://www.scitation.org/
11.	CUP(Cambridge University Press)	https://www.cambridge.org/core/what-we-publish/books https://www.cambridge.org/core
12.	SAGE Publications	https://evidya.sagepub.in/evidya
13.	RIBA/Royal Institute of British Architects)	http://portal.igpublish.com/iglibrary/
14.	World Technologies	https://ebooks.wtbooks.org/
15.	Emerald Publishing	http://www.emeraldinsight.com/products/ebookseries/index.htm
16.	Titech Digital Media	https://tdmebooks.com/
17.	PHI Learning	https://elibrary.phindia.com/ebooks/bmljS7gsuBfCdRuFHKXz8g==
18.	Pearson	https://ebookcentral.proquest.com/lib/manit

E-Journals Available for the year 2022-2023 (Subscribed by MANIT, Bhopal)

S.N.	Name of Publisher	URL
1.	Emerald Publishing	http://www.emeraldinsight.com/ https://www.emerald.com/insight/
2.	Springer Nature	https://link.springer.com/ https://www.nature.com/
3.	Elsevier(ScienceDirect (Nine Subject Collection)	https://www.sciencedirect.com/
4.	CUP(Cambridge University Press)	https://www.cambridge.org/core/what-we-publish/journals
5.	IEEE(IEE LII)	http://www.ieee.org/ieeexplore
6.	IOP (Institute of Physics)	https://iopscience.iop.org/ https://iopscience.iop.org/journalList
7.	CRC Press and Taylor & Francis	https://www.tandfonline.com/
8.	SAGE Publications	https://journals.sagepub.com/action/showPublications?category=10.1177/social-sciences-and-humanities-psychology-and-counseling https://journals.sagepub.com/action/showPublications?category=10.1177/social-sciences-and-humanities-politics-and-international-relations https://journals.sagepub.com/action/showPublications?category=10.1177/social-sciences-and-humanities-management-and-organization-studies https://journals.sagepub.com/action/showPublications?category=10.1177/social-sciences-and-humanities-urban-studies-and-planning
9.	INFORMS Online Journals	http://journals.informs.org/
10.	Jove	https://www.jove.com/

The details of online resources are available on institute website

Bibliographic Database: Nil

List of Standard Subscribed by Central Library: Nil

Theses and Dissertation: 1576

Online / Offline Database and Software: Library Management Software, KOHA

Digital Library:

Total Number of Documents Delivery Service: Nil

Total No. of Turnitin and Anti plagiarism Checking Services: Available through E-Shodhsindhu Consortium.

Total No. of Book Accompany CD Copy Delivered: Nil

Total No. of Ph.D. Theses Digitized: Nil

Total Number of Computer Available: 40

Institutional Digital Repository (IDR): Nil

Facilities Created for Library Users

Library Facilities:-

1. Circulation of Books (including check in & check out alert)
2. OPAC Facility
3. Reference Service

4. Online Resources (eBooks, Databases, standards, patent & Journals)
5. New Arrivals Information available through Institute Website
6. Book Bank facility for Poor Students (Both General and SC/ST Categories)
7. Library Circulars / Notices / Policy Information / Library Forms / Online Resources information through institute website

National Digital Library: Institutional Membership of NDL (National Digital Library)

List of Hindi Books: Available on Institute Website

Any other Information:

1. Developed a separate reading room for students.
2. OPAC facility from anywhere in the institute campus

Institute Dispensary

Institute dispensary has outdoor medical facility for students, staff and their family members. Various specialist of different branch visit dispensary on particular day and time and are available. Free dispensing of medicines for common ailments is given. Free dressing facility is available. ECG machine, I/V Drip, Glucometer, Nebulizer and O₂ facility is available.

Medical in charge of the dispensary

Dr. Jyoti Lahn, MBBS MS (Obst& gynae) (Chief Medical Officer)

Medical Staff

Dr. Aditya Singh (MBBS), Mr. Santosh Choudhary (Pharmacist), Mrs. Laxmi (Nurse) and Mr. Devdatt Sahare (Jr. Assistant)

Visiting Consultant

Dr. Apoorv Jain (MBBS, MD Derma,) Skin Specialist, Dr. Bharti Soni (MBBS, MD Ophthalmology), Ophthalmologist and Dr. Deepali Joshi (BDS, MDS, Dental Specialist)

Timing

- All days open including Saturday & Sunday (Except National Holidays)
- Morning 8.30 to 12.30 pm
- Evening 4.30 to 7.00 pm