Annual Report
2021-22

Contents

VISION

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

MISSION

To produce technical professionals abreast with competence, logical mind set, moral and ethical values and inner strength synchronous with 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 Tatya 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.

BOARD OF GOVERNORS

Dr. N. S. Raghuwanshi
Director,
MANIT, Bhopal

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

Ms. Darshana M.Dabral
Joint Secretary & Financial Advisor
Integrated Finance Division
Govt. of India
Ministry of Education
Dept. of Secondary & Higher Education
Shastri Bhawan
New Delhi – 110 115

NIT Council Nominee

Vacant

Vacant

State Government Nominees

Sh. Akash Tripathi
Principal Secretary
Dept. of Tech. Education & Skill Dev.
Govt. of Madhya Pradesh,
Bhopal

Maj. Gen. Shyam Shrivastava (Retd)
House No. 14A/503,
Prime Height, Dwarakadham Colony,
Airport-Karond Byepass Road,
Bhopal - 462038

Director of IIT from the Zone

Prof. Suhas S. Joshi
Director
Indian Institute of Technology, Indore
Khandwa Road, Simrol
Indore – 453552 (M.P.)

MANIT Senate Nominees

Dr. Namita Srivastava
Professor
Dept. of Maths
MANIT, Bhopal

Dr. D.P. Singh
Asst. Professor
Dept. of Computer Science Engg.
MANIT, Bhopal

Secretary

Shri. Binod Doley
Registrar, MANIT, Bhopal

FINANCE COMMITTEE

Dr. N. S. Raghuwanshi
(Officiating Chairperson& Member)
Director,
MANIT, Bhopal

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

Ms. Darshana M. Dabral
(Member)
Joint Secretary & Financial Advisor
Integrated Finance Division
Govt. of India
Ministry of Education
Dept. of Secondary & Higher Education
Shastri Bhawan
New Delhi – 110 115

Dr. Namita Srivastava
(Member)
Professor
Dept. of Maths
MANIT, Bhopal

Maj. Gen. Shyam Shrivastava (Retd)
(Member)
House No. 14A/503,
Prime Height, Dwarakadham Colony,
Airport-KarondByepass Road,
Bhopal – 462038

Shri. Binod Doley
(Member Secretary)
Registrar, MANIT, Bhopal

BUILDING AND WORKS COMMITTEE

Dr. N. S. Raghuwanshi
(Chairman)
Director, MANIT, Bhopal

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. Ramesh Kumar
(Member)
Superintending Engineer (Civil)
CPWD Bhopal Central Circle
52-A, NirmanSadan, Arera Hills
Bhopal – 462 011

Shri. Rajan Agrawal
(Member)
Superintending Engineer (Elect.)
CPWD Bhopal CentralElectrical Circle
52-A, NirmanSadan, Arera Hills
Bhopal – 462 011

Dr. G. Dixit
(Member)
Dean (P & D)
MANIT, Bhopal

Dr. D. P. Singh
(Member)
Asst. Professor
Dept. of Computer Science Engg.
MANIT, Bhopal

Shri. Binod Doley
(Member Secretary)
Registrar, MANIT, Bhopal

SENATE MEMBERS

SENATE MEMBERS

Dr. Narendra Singh Raghuwanshi Director & Chairman Senate Committee	Shri Binod Doley, Registrar & Secretary Senate Committee
Prof. Vijay Borghate External Member	Shri. Anish Varshney External Member
Dr. Alka Bharat 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, BiologicialScinece and Engineering	Dr. Rahul M. Shrivastava Professor, BiologicialScinece and Engineering
Dr. Vijay K. Bulasara Asso. Professor & HOD, Chemical Engieering	Dr. Alok Mittal Professor, Chemistry
Dr. Amit Dubey Professor & HOD, Chemistry	Dr. Savita Dixit Professor, Chemistry
Dr. Anil K. Sharma Professor, Civil Engieering	Dr. Charu Parashar Professor, Civil Engieering
Dr. Jyoti Sarup Professor, Civil Engieering	Dr. M. S. Chauhan Professor, Civil Engieering
Dr. M. S. Hora Professor, Civil Engieering	Dr. Mukul Kulshreshta Professor, Civil Engieering
Dr. Nitin Dindorkar Professor, Civil Engieering	Dr. P. K. Agrawal Professor & HOD, Civil Engieering
Dr. P. K. Jain Professor, Civil Engieering	Dr. Ruchi Khare Associate Professor, Civil Engineering& Head, Centre of Excellence in Water Management (WM)
Dr. S. K. Dubey Professor, Civil Engieering	Dr. S. K. Katiyar Professor, Civil Engieering
Dr. Vishnu Prasad Professor, Civil Engieering& Dean (SW)	Dr. Meenu Chawla Professor, Computer Science and Engieering& Head, Centre of Artivicial Intelligence (AI)
Dr. Nilay Khare Professor & HOD, Computer Science and Engieering	Dr. R. K. Pateriya Professor, Computer Science and Engieering
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. 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. Jigyendra Sen Yadav Professor, Electronics and Communication Engineering	Dr. Jyoti Singhai Professor, Electronics and Communication Engineering & Dean (FW)

SENATE MEMBERS

Dr. Kavita Khare Professor & HOD, Electronics and Communication Engineering	Dr. Madhu Shandilya Professor, Electronics and Communication Engineering
Dr. R.K. Baghel Professor, Electronics and Communication Engineering	Dr. R. N. Yadav Professor, Electronics and Communication Engineering & Prof. (I/C Examination)
Dr. Arvind Mittal Professor, Energy Centre & Dean (Academic Affairs)	Dr. Prashant Baredar Professor & HOD, Energy Centre
Dr. Vinita Mohindra Professor & HOD, Humanities	Dr. Amit Banerji Professor, Managemant
Dr. Shuchi Shrivastava Professor & HOD, Managemant	Dr. Sanjay Shrivastava Professor & HOD, Materials and Metallurgical Engieering
Dr. K. R. Pardasani Professor, Mathematics, Bioinformatics and Computer Applications	Dr. Madhvi Shakya Professor, Mathematics, Bioinformatics and Computer Applications HOD & Chairman Admission
Dr. Namita Shrivastava Professor, 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 Engieering
Dr. G. Dixit Professor, Mechanical Engieering& Dean (P&D)	Dr. J. L. Bhagoriya Professor, Mechanical Engieering
Dr. K. R. Aharwal Professor, Mechanical Engieering	Dr. R. K. Dwivedi Professor, Mechanical Engieering& Head, Centre of Excellence in Product Design & Smart Manufacturing (CPDSM)
Dr. R. K. Mandloi Professor, Mechanical Engieering	Dr. R. M. Sarviya Professor, Mechanical Engieering
Dr. Rajesh Gupta Professor & HOD, Mechanical Engieering	Dr. Rajesh Purohit Professor, Mechanical Engieering
Dr. S.P.S. Rajput Professor, Mechanical Engieering	Dr. Siraj Ahmed Professor, Mechanical Engieering
Dr. V. K. Soni Asso. Prof., Mechanical Engieering&Asso. Dean (D.I. & UG)	Dr. Fozia Haque Asso. Professor & HOD, Physics
Dr. M. M. Malik Professor, Physics	Dr. Rajnish Kurchania Professor, Physics

ADMINISTRATIVE HEADS

Dr. Narendra Singh Raghuwanshi Director	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. V. M. Das Architecture & Planning	Dr. Kiran Singh Biological Science & Engineering
Dr. P. K. Agrawal Civil Engineering	Dr. Vijay Kumar Bulasara Chemical Engineering
Dr. Savita Dixit Chemistry	Dr. Nilay Khare Computer Science and Engineering
Dr. N. P. Patidar Electrical Engineering	Dr. Kavita Khare Electronics & Communication Engineering
Dr. Vinita Mohindra Humanities	Dr. Rajesh Gupta Mechanical Engineering
Dr. Sanjay Shrivastava Materials & Metallurgical Engineering	Dr. Madhavi Shakya Mathematics, Bioinformatics & Computer Applications
Dr. (Mrs.) Shuchi Srivastava Management Studies	Dr. Fozia Haque Physics
Dr. Meenu Chawla Artificial Intelligence	Dr. Prashant V. Baredar Energy Centre
Dr. Akhilesh Barve Rolta Incubation Centre	Dr. Ruchi Khare Water Management

CHAIRMAN OF VARIOUS COMMITTEES

Dr. Rajnish Kurchania Chairman, Library Committee	Dr. Namita Srivasatava Chairman, Internal Complaints Committee (ICC) for prevention of sexual harassment against women
Dr. Jyoti Singhai Chairman, Advisory Committee on Faculty Recruitment (ACoFAR)	Dr. Akhilesh Barve Chairman, Incubation Centre
Dr. Madhvi Shakya Chairman, Admission Committee	Dr. C. M. Krishna Chairman, Anti Ragging Committee
Dr. K. R. Aharwal Chairman, Council of Wardens (COW)	

ADMINISTRATIVE OFFICERS

Dr. Aruna Saxena Training and Placement Officer	Shri Gaurav Dwivedi Deputy Registrar Establishment Section
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 Rajesh Lokhande Assistant Registrar Finance and Accounts	Shri Manav Kumar Singh Assistant Registrar Establishment Section
Shri Anilkumar Shersingh Mistri Assistant Registrar Finance and Accounts	Shri Pankaj Kumar Sharma Assistant Librarian Central Library
Dr. Rajesh Mishra SAS Games and Sports	Shri Abhishek Sahni Technical Officer CCF
Shri Prashast Manglik Technical Officer CRF	

Director's Note

Maulana Azad National Institute of Technology is pleased to release its Annual Report for the year 2021-2022 and I am delighted to share with you 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, our faculty strength is 231 and students strength including UG/ PG/ PHD/M.Sc. is 6019. It is projected that after complete implementation of EWS, the students' number will go up to 7500. We offer 9 UG and 30 PG programmes apart from MBA, MCA, one Dual Degree Course and 2 MSc. Programmes in Physics and Chemistry.

The corona virus (COVID-19) pandemic struck globally and has affected higher education institutions (HEIs) and their operations, indirectly impacting the progress of the Sustainable Development Goals. Although facing severe emotional strains, the substantial access to remote learning, teaching & working, the faculty and staff has achieved many milestones as evident internationally at R&D level and locally at neighbouring society & slum area.

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. There are 13 faculty of the Institute who are listed in the Stanford University Report 2021 as the top 2% most influential Scientists of the world 2020. Specially, we have continuously improved on our credentials in research as evidenced by way of publications, citations, and h-index. There are more than 8000 citations in 2021.

During the pandemic the Institute also addressed many issues pertaining to social distances and developed in-house facilities like hands free sanitizer machine, face masks, 3-D printed hand washing machine etc.

There is a remarkable increase in students pursuing Ph.D. The PhD student's strength has increased from 126 PhD students in 2018 to 407 in the year 2022. 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 1447 degrees were awarded. These included 89 Ph.D., 920 UG and 438 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 39 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 129 in 2019 to 163 in 2022. 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, Data

centre 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.

MANIT is now on Shodhganga with 196 PhD thesis uploaded on the portal.

Technical Education Quality Improvement Program (TEQIP) phase-III project started in April 2017 for a duration of three years. Phase-III project was specifically focused on improving on quality of technical education with the help of good performing institutes by forming a pair of mentor and mentee institute. MANIT, Bhopal was selected as a mentor institute for BTKIT, Dwarahat (Govt of Uttarakhand).

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.

Two GIAN courses were conducted by the Department of Chemical Engineering and Department of Chemistry, in which resources persons from engineering and departments were invited and students from all over India.

We are 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. We have implemented NEP-2020 by introducing one Section of Hindi in the class of first year. Two new M.Sc. programmes have commenced in Physics and Chemistry along with one dual program in Mathematics and Data Science.

MANIT is mentoring IIIT Bhopal, since its inception in 2017.

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 2021-22. Wishing NIT Bhopal to reach new heights!!!

Narendra Singh Raghuwanshi

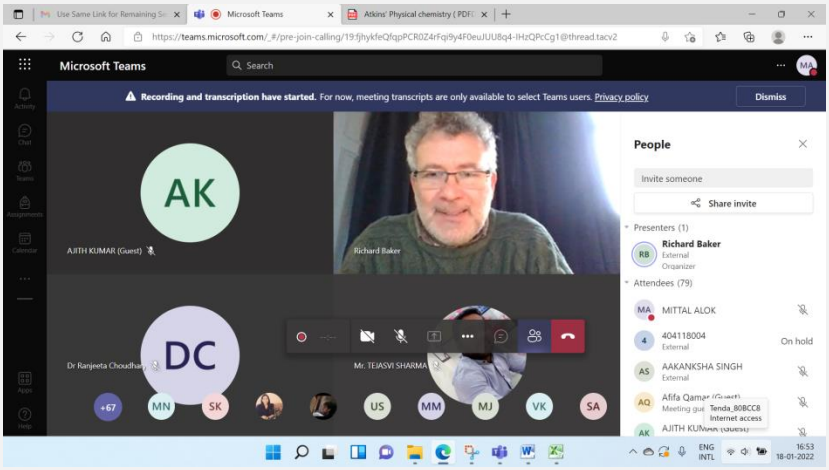
HIGHLIGHTS AND ACHIEVEMENTS

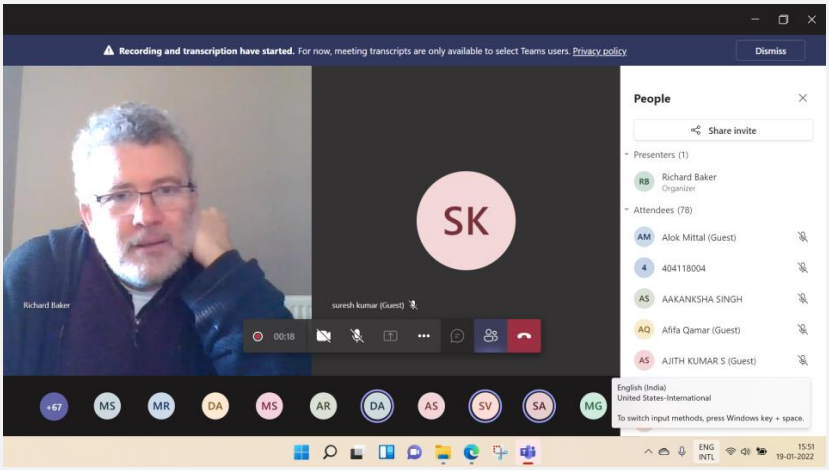
The Institute portrays major achievements as highlights of this year. These includes GIAN Courses, International collaborations, Research and Consultancy, Patents, Centres and other majoy achievements.

GIAN Courses

Fuel Cells: Fundamental Concepts, Material Chemistry and Applications

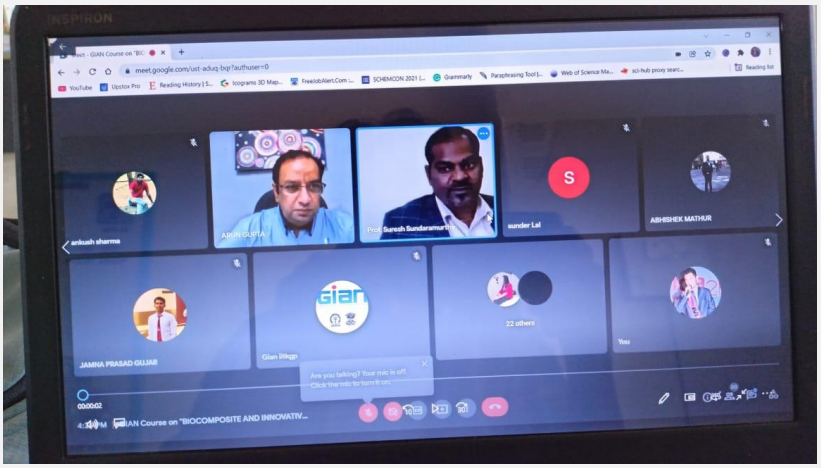
Department of Chemistry





Biocomposite and Innovative materials

Department of Chemical Engineering



International Collaboration

Water 4 Change is an International collaboration between the Department of Science and Technology (DST) and the Netherlands Organisation for Scientific Research (NOW)

Department of Architecture and Planning

Updating of Data Related to GHG emissions and Low Carbon Policies in India", sponsored by Mizuho Information and Technologies Ltd., Tokyo, Japan.

Department of Architecture and Planning

27th AIM International Workshop

Department of Architecture and Planning

CREST (Climate-Resilient Energy Sensitive Resilient Environment) project

Two Research Scholars of Architecture and Planning department MANIT received international funding under this project.

MOU's • ISRO • LAPP • L&T • Ministry of Education • MP Police • MPCST • BMC	
PATENTS	Method of Making Biodegradable Natural Fibre Composite Using Cow Dung Sample holder for optical Gas Sensing
NEP Implementation	NEP Webinar Curriculum Revision ISRO Incubation centre NPTEL Courses
Incubation Centre's established ISRO Incubation Centre Centre of Excellence in Cable Technology Centre of Artificial Intelligence	
Consultancy	
Prestigious Project of Madhya Pradesh First Astronomical Observatory at Dongla Ujjain and Auditorium project completed Department of Architecture and Planning	

Prestigious Project of Madhya Pradesh First Astronomical Observatory at Dongla Ujjain and Auditorium project completed Department of Architecture and Planning	 
Other Achievements	MANIT is now on Shodhganga with 196 PhD thesis uploaded on the portal. We have registered on the portal of digilocker National Academic Depository (NAD) and Academic Bank of Credits (ABC). Campus wide networking and Central Computing Facility including Data centre, HPC and new IOT labs are also established. 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 greenary management. 

भारत सरकार / Government of India
महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद / Mahatma Gandhi National Council of Rural Education
उच्चशिक्षाविभाग/Department of Higher Education
शिक्षामंत्रालय / Ministry of Education

सत्यमेव जयते

Where there is Rural Wellbeing there is Universal Prosperity

District Green Champion Certificate

This is to certify that **MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY BHOPAL** is hereby recognized as **District Green Champion** for **Bhopal** District, Madhya Pradesh for the Academic Year 2021-22. The institution has successfully elevated the Swachhta Action Plan, adopted and implemented best practices in the areas of Sanitation, Hygiene, Waste Management, Water Management, Energy Management and Greenery Management.

Dr W G Prasanna Kumar
Chairman, MGNCRE
Ministry of Education, Government of India

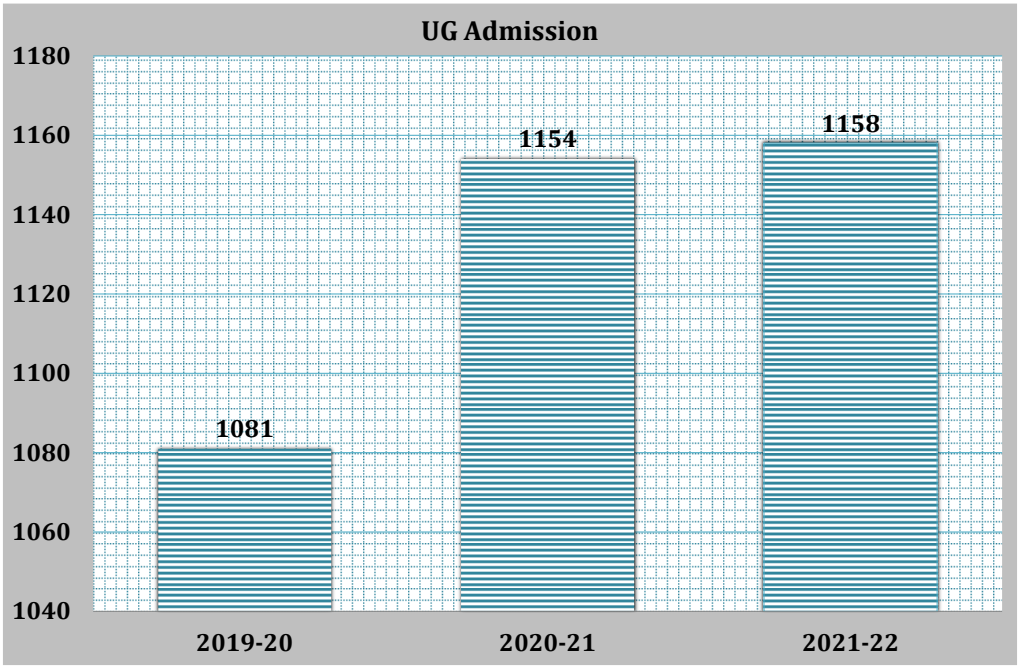
तारीख / Date : 12.03.2022
ज्ञापनसंख्या/ Memo no: MGNCRE/SAP22/33

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.

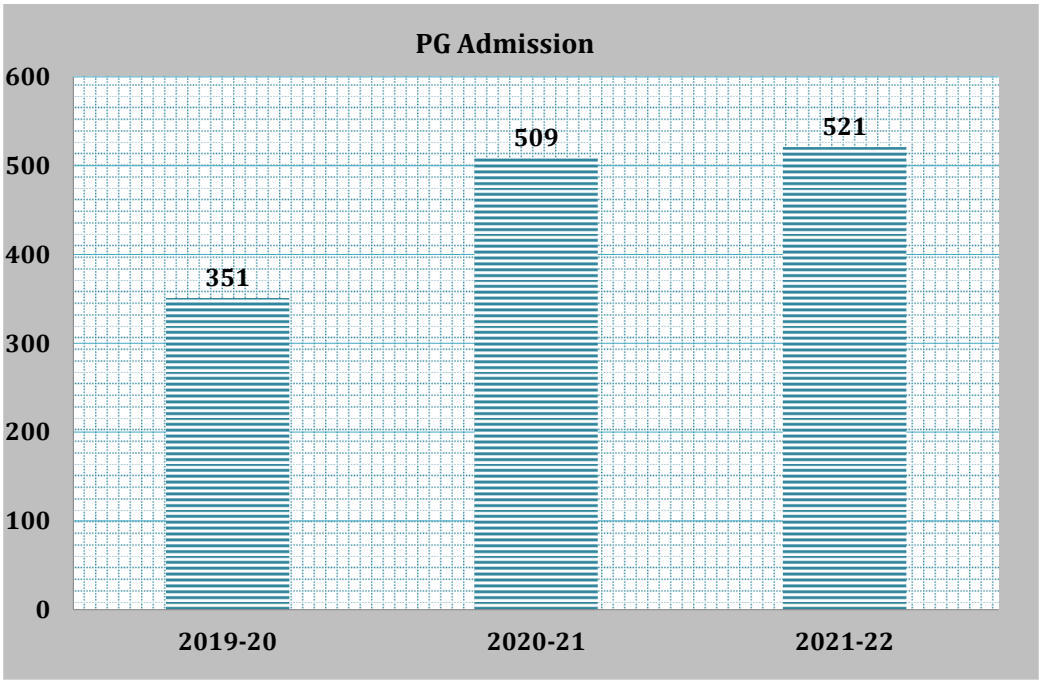
Comparative statement of UG admissions



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.

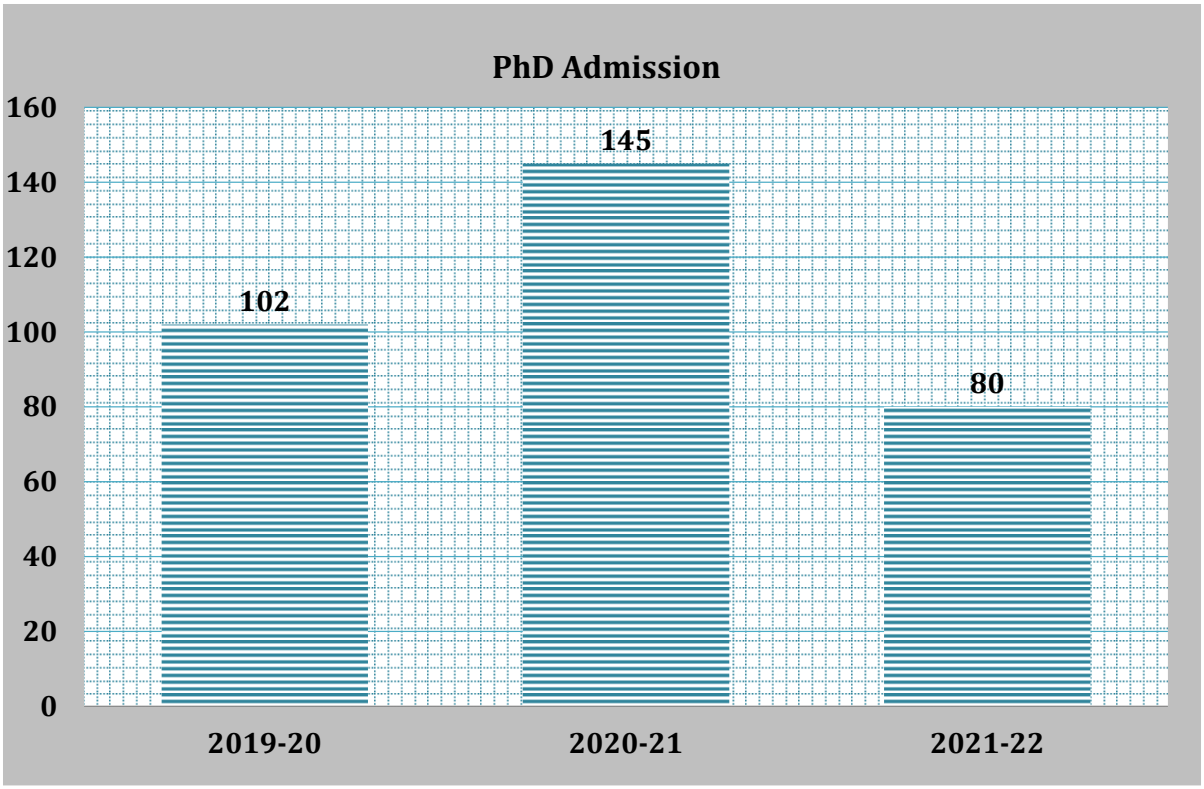
Comparative statement of PG admissions



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

Architecture and Planning

The Department of Architecture and Planning, MANIT Bhopal has been engaged in imparting Architecture education for last 56 years. Currently two Post Graduate M. Planning programmes are running in the Department, one with specialization in 'Urban Planning' and the other with specialization in 'Housing' having. In addition to Bachelor of Architecture, Bachelor of Planning programme also started in 2007.The Department has 26 regular faculty members. The faculty members and students are actively involved in knowledge-based activities like being PIs and CO-PIs in international and national research project teams, delivering expert lectures, conducting and participating in outreach activities with other institutes of National Importance. Faculties are working on diverse areas of Architecture domain and Planning domains.

Faculty members and research scholars gave rich research output by publishing13 papers in international journals and 18 papers in Internationalconferences this year. Faculty members also published two books and contributed in seven book chapter publications. The department received international and national funding for research projects like Water for Change, Low-Carbon policies, Climate-Resilience and Social Equity in Urban Transportation. Two research scholars received funding through one of the research project to visit foreign university and worked under supervision of faculties of University of Bath. Faculties are involved in consultancy services to many government and non government organisations like MPCST, Urban Area Administration department, MPPWD etc. Also, the department has signed a MoU with Police Training and Research Institute (PTRI) Government of Madhya Pradesh. The Department of Architecture and Planning is also appointed as Independent facilitating Agency for conducting Social Audit of PMAY Projects.

Faculty and Programmes

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.CharumitraKapshe	Ar. Savita Subherwal Raje
Dr. Nakul Dhagat	Dr.Seemi Ahmed
Dr. Preeti Onkar	Dr. Sonia Taneja
Dr. Rajat Soni	
Assistant Professor	
Prof. Anugrah Anilkumar Nagaich	Prof. Rahul Tiwari
Dr. Anuj Jaiswal	Dr. Rajshree Kamat
Prof. Arshi Parashar	Dr. Supriya Vyas
Prof. Bulbul Shukla	Dr. Surabhi Mehrotra
Dr. Navneet Munoth	Prof. Vicky Lalramsangi
Prof. Neha Pranav Kolhe	

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

PG Programmes	**Specialization**
Master of Planning	1. Housing
	2. Urban Development

PhD Scholars

Name	**Title/Area of Research**
Aishwarya Dwivedi	Impacts of Climate change on urban settings
Aishwarya Kasture	Delineation of Urban Core
Amit Kumar Biswal	Evaluating Public spaces in Urban areas
Anugrah Anilkumar Nagaich	Geospatial Technology for Urban Planning
Akansha Shrivastava	Recreational open space (ROS) opportunities for adolescents and its association to their health
Chandra Prabha	Urban Water Quality Assessment and Management of Municipal Waste water System: A case study of Kanpur City
Chitra Srivastava	Thermal-Carbon Evaluation approach for resilient city
Divya S. Agrawal	Flood-Drought Resilience through 'Nature based solutions'

Name	Title/Area of Research
Habibul Haque	Development of framework for sustainable and resilient smart city infrastructure a case of Bhopal
Kaushal Kumar	Energy Optimization
Kriti Trivedi	Water Sensitive Behaviour Assessment of Urban Indian households
Leena Thombre	Developing a Framework for Evaluating Conviviality of Public Open Spaces in an Indian City-A Case of Bhopal
Manmeet Chandra Verma	Urban Planning and Public Health
Mrunmayi Wadwekar	Developing spatial circularity index for wastewater reuse in an urban area
Mukul Prasad	Urban planning policies
Neha Pranav Kolhe	Assessment of Slum Redevelopment Models: A Case of Bhopal City
Nirupam Das	Urban Wetland Protection Framework For Resilient Planning
Pranav Gupta	Land Take Decisions for delineating Urban boundary- A Rational approach
Rajat Singh	Customer Satisfaction in Urban Water Systems
Rakesh Kumar	Ganga river, Soil Conservation Framework
Rakesh Mistry	Thermal variability in urban residential neighborhoods: A parametric study in composite climate
Ram Suhawan Patel	Urban Modelling Tools for storm Water runoff
Sandeep Patel	Urban Planning and Utility Services
Shantanu Singh	A comprehensive Resilience index for Urban Floods in Indian cities.
Smita Maheshwari	Vulnerability assessment of water bodies
Sreemoyee Mitra	Solar Envelope
Tanya Dwivedi	Assessment of Water Equity in Indian Cities
Vicky Lalramsangi	ResilientPublic open spaces
Vikram Chaurasiya	Broad Area: Solid waste management, circular economy
Vinay Shrivastav	Design performance indicators for smart cities in India

Book Publications

1. Rahul Tiwari, "Atal Prerna", Indra Publishing House, India, 2021.
2. Rahul Tiwari and Jayant Singh, "Analyzing Impact of Speed Display System and Electronic Remote Enforcement on Driver Behavior towards Over Speeding', Walnut Publication, USA, 2022.

Chapter Publications

1. Rahul Tiwari, Umang Patel and Atmagya Raj, "Review of Battery Technologies Available for Promoting Electric Mobility in Urban India", In: Fakher Chaari, Francesco Gherardini and Vitalii Ivanov (eds.), Lecture Notes in Mechanical Engineering, Springer, 2021.
2. Purnima Kori and Rajshree Kamat, "Impact of Climate Change on Water Resource, Case Study-Bhopal", In: N. P. Patidar, P. M. Mishra, Kamal Singh and Dheeraj Palwalia (eds.), Lecture Notes on Advances in Civil Engineering Walnut Publication, 2021.
3. Rajshree Kamat and Vedankur S. Kedar, "Mapping the urban flood vulnerable areas through GIS techniques: A case study of Bhopal, Madhya Pradesh, India", In: N. P. Patidar, P. M. Mishra, Kamal Singh and Dheeraj Palwalia (eds.), Lecture Notes on Advances in Civil Engineering Walnut Publication, 2021.
4. Bhawna Shrivastava, Yogesh Garg and Nakul Dhagat, "Concert Evaluation of Housing Delivery Methods in Indian Cities", In: MadogniVianouIrenee (eds.), Research Developments in Science and Technology, B. P. International, 2022.
5. Sahil Harbansh and Rajshree Kamat, "Urban informal economy under a global pandemic, an Indian planning perspective", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil Engineering for sustainable development: Construction Technology, Environment and Structures, Walnut Publication, 2022.
6. Aditi Jain and Rajshree Kamat, "Disaster and risk management: landslides", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil Engineering for sustainable development: Geotechnical, Transportation and Water Resources Walnut Publication, 2022.
7. Aditi Jain and Rajshree Kamat, "Effect of COVID-19 on urban planning and management: A case study of Bhopal", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil Engineering for sustainable development: Construction Technology, Environment and Structures, Walnut Publication, 2022.

Publication in International Journals

1. Aditya K. Singh, Vinay Mohan Das and Yogesh K. Garg, "Investigating Architectural Patterns of Indian Traditional Hindu Temples through Visual Analysis Framework", Civil Engineering and Architecture, Volume 10, pp. 513-530, 2022.
2. Arshi Parashar and Harshit SosanLakra, "Saudi Vision for a Happy City: Analyzing architecture students' perspective for Riyadh, Saudi Arabia", Ekistics and the New Habitat, Volume 81(2), pp. 52-68, 2022.

3. Deepak Kumar and Bulbul Shukla, “Urban Green Spaces for Promoting Healthy Living and Wellbeing: Prospects for Housing”, ECS Transactions, Volume 106(1), pp. 18835-18859, 2022.
4. Leena Thombre and CharumitraKapshe, “A framework of Built Environment attributes for evaluation of conviviality of a Public open space”, Ecology, Environment and Conservation, Volume 27(2), pp. 947-955, 2021.
5. Leena Thombre and CharumitraKapshe, “Role of aesthetics in conviviality of public open spaces in new market, Bhopal: A case study”, Urban Design and Planning, Volume 174(4), pp. 133-144, 2021.
6. Leena Thombre and CharumitraKapshe, “Verification of Connection between Legibility and Conviviality of Public Open Spaces-A Case of New Market, Bhopal”, Ecology, Environment and Conservation, Volume 28(1), pp. 219-226, 2022.
7. Manmeet Chandra Verma and Rahul Tiwari, “Analyzing expectation of landowners from Brownfield TOD project: A case study from MP Nagar, Bhopal”, Material Today: Proceedings, Volume 46, Part 11, pp. 5187-5193, 2021.
8. P. Onkar and B. M., "The economic domino effect on housing and construction sector-a case of India", Journal of Financial Management of Property and Construction, Vol. ahead-of-print No. ahead-of-print.
9. Pranav Gupta and Alka Bharat, “An integrated approach for capturing intermediate Demographic Changes, Journal of Urban Planning and Development”, Journal of Urban Planning and Development, ASCE, Volume 148(2), 2021.
10. Pranav Gupta and Alka Bharat, “Developing Sustainable development Index as a tool for appropriate Urban Land take”, Environment, Development and Sustainability, 2021.
11. Rahul Tiwari and Yashswani Sharma, “Public policies to promote renewable energy technologies: Learning from Indian experiences”, Material Today: Proceedings, Volume 49, Part 2, pp. 366-371, 2022.
12. S. S. Vishwanathan, Amit Garg, Vineet Tiwari, Manmohan Kapshe and Tirthankar Nag, “SDG implications of water-energy system transitions in India, for NDC, 2°C, and well below 2°C scenarios”, Environmental Research Letters, Volume 16(8), pp. 1-15, 2021.
13. Sanjeev Kumar and Krishna K. Dhote, “A grounded theory approach for the assessment of urban development policies in Indian cities”, Current Science, Volume 113891(121/12), pp. 1561-1571, 2021.

Publications in International Conference

1. Aditi Parihar, Surabhi Mehrotra and Neha Pranav Kolhe, “Measuring Change in Ecological Footprint Due to Covid 19: An Analysis of Five Cities of India”, International Conference of Recent Trends in Applied Sciences and Computing Engineering, RTASCE-2021, 17-19 Dec 2021.
2. Deepak Kumar and Bulbul Shukla, “Urban Green Spaces for Promoting Healthy Living and Wellbeing: Prospects for Housing”, International Conference on Technologies for Smart Green Connected Societies, 29 Nov 2021.
3. Gopal Kumar and Supriya Vyas, “A Multidisiplinary approach to analyse growth typology in peri-urban areas”, Sanmantrana 2022, Indore, 17-19 Jan 2022.
4. HarkeshDewangan and Surabhi Mehrotra, “Impervious Land Cover Pattern and Its Impact on Urban Water Logging: Case of New Delhi, India”, IEEE International Geoscience and Remote Sensing Symposium. IGARSS 2021, 11-16 Jul 2021.
5. Neha Pranav Kolhe, “Noise, Building Material and Urban Climate in Residential Area: A Case of Urban Area”, International Conference Indigenous C2C 2022 Conception to Construction, Indore, 24-26 Mar 2022.
6. Neha Pranav Kolhe and Aditi Parihar, “A Comparative Assessment of Air Pollution in urban areas during pre and post COVID-19 pandemic: A case of Kolkata city”, International Conference on Recent Trends in Applied Sciences and Computing Engineering, 17-19 Dec 2021.
7. Neha Pranav Kolhe and Elvin Roy, “Megastructures and Urbanism”, International Conference Indigenous C2C 2022 Conception to Construction, Indore, 24-26 Mar 2022.
8. Neha Pranav Kolhe and Gargi Deori, “Determining Noise Pollution in Residential Area through Gauging”, International Conference on Environmental Science and Engineering, 20-22 Jan 2022.
9. Nirupam Das and Surabhi Mehrotra, “Wetlands in Urban Contexts: A Case of Bhoj Wetland”, IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2021), 11-16 July 2021.
10. Rakesh Mistry and Surabhi Mehrotra, “Assessment of thermal comfort using WBGT index in the Neighbourhoods of Bhopal city”, International Conference of Recent Trends in Applied Sciences and Computing Engineering, RTASCE-2021, 17-19 Dec 2021.
11. Rakesh Mistry and Surabhi Mehrotra, “Spatio-temporal variations of the daytime surface temperature across different land cover in Bhopal city”, International Conference on Environmental Science and Engineering (ICESE) 2022, 20-22 Jan 2022.
12. Supriya Vyas and Sneha Vyas, “Post Pandemic New normal Residential planning”, Sanmantrana 2022, SVVV, Indore, 17-19 Jan 2022.
13. Supriya Vyas and Sneha Vyas, “Architectural building Appraisal-Sadar manzil, Bhopal”, PACE-III IPS, Indore, 24-26 Mar 2022.
14. Surabhi Mehrotra, Neha Pranav Kolhe and Aditi Parihar, “Measuring Change in Ecological Footprint due to Covid 19: An Analysis of Five Cities of India”, International Conference on Recent Trends in Applied Sciences and Computing Engineering, 17-19 Dec 2021.
15. Swati Singh and Surabhi Mehrotra, “Geospatial Analytics of Air Pollution: Case of Kanpur City”, International Conference of Recent Trends in Applied Sciences and Computing Engineering, RTASCE-2021, 17-19 Dec 2021.
16. Swati Singh and Surabhi Mehrotra, “Assessment of air pollution levels using geospatial techniques for suggesting mitigating measures: case of Kanpur city”, International Conference on Environmental Science and Engineering (ICESE) 2022, 20-22 Jan 2022.

Publications in National Conference

1. A. Jain, R. Jain and Jagdish Singh, "Sustainable adaptation strategies for the resilient cities 2050 across the spectrum of physical conditions case example of BHARAT", National Conference on CITIES 2050: Planning, Governance and Management.

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. Manmohan Kapshe, CharumitraKapshe and Nakul Dhagat, "Updating of Data Related to GHG emissions and Low Carbon Policies in India", sponsored by Mizuho Information and Technologies Ltd., Tokyo, Japan.
3. Sukumar, Rajnish Kurchania, Alka Bharat and Krishna Dhote, "Climate-Resilient Energy Sensitive Resilient Environment (CREST) project", sponsored by British Council.
4. Yogesh Garg and Rahul Tiwari, "Exploring Social Equity Issues of Present Urban Transport Scenario in Indian Context", sponsored by Indian Council of Social Science and Research (ICSSR), New Delhi.

Consultancy Projects

1. 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.
2. Ashutosh Sharma, "BJP Office Relocation", sponsored by Bhartiya Janta Party, Madhya Pradesh.
3. Jagdish Singh, "Consultancy Project on Heritage Impact Assessment of rock shelters on Adamgarh Hills, Narmadapuram MP April 2022", sponosored by Devine City Builders.
4. Jagdish Singh, "Vetting of City entry Junctions ", sponsored by Jabalpur Smart City Limited (JSCL).
5. Krishna Kumar Dhote and Preeti Onkar "Social Audit off 27 urban local bodies project on PMAY (Urban).
6. Krishna Kumar Dhote Consultancy services for HVAC, Firefighting, STP, Lift and Coordination of Architectural Services for 10 Mega ITI (Amount 1.10 Crore).
7. Preeti Onkar "Auditorium and Observatory Project at Dongla Ujjain belonging to MP Council of Science and Technology, Bhopal

Outreach Activity

Faculties are engaged in various outreach activities like Expert lectures, Member expert Accredition, Member of National and International committees, Observers, Examiners, Convenor etc. Total number of Outreach Activities this year is 86 which includes all type of activities.

MoUs

Name of Department	Name of Coordinator	Name of the agency with which MOU signed
Architecture and Planning	Rahul Tiwari and Yogesh K. Garg	Police Training and Research Institute (PTRI) Government of Madhya Pradesh

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Bulbul Shukla	Workshop	Architectural Software I	36	17-Sep2021	24-Sep-2021
Rahul Tiwari, Yogesh K. Garg Vinay Mohan Das	Short Term Training Program	Safe Mobility Planning to Reduce Road Fatalities	35	28-Mar-2022	01-Apr-2022
Surabhi Mehrotra,Bulbul Shukla	FDP (ATAL, AICTE)	Remote Sensing and GIS Application in Spatial Planning and Development	70	07-Nov-2021	11-Nov-2021
Surabhi Mehrotra	Workshop	Post Pandemic Fitness and Vitality	85	09-Jun-2021	13-Jun-2021

Expert Lecture Organised

Name of the	Name of the Expert with affiliation	Title of lecture	Date

Faculty Coordinator			conducted
Bulbul Shukla	Dr. Anand Wadwekar	Indian Urbanism	28-Mar-2022
Bulbul Shukla	Dr. Arathy Gopal	Research Writing	26-Feb-2022
Surabhi Mehrotra	Dr. Shashi Kant Pandey, Zonal Head (N & NE), All India Institute of Local Self Government (AIILSG), Delhi	Data types and statistical tests	28-Feb-2022
Surabhi Mehrotra	Dr. Harshit Lakra	Qualitative Survey techniques	12-Feb-2022
Surabhi Mehrotra	Dr. Shashikant Sharma, Scientist ISRO Ahmedabad	Talk on ISRO Geoportal for Visualization of Earth observation Data and Archival System (VEDAS)	12-Apr-2021

Lab

Name of Lab	Facilities/Equipments	Research Carried	Output
Urban Informatics Lab	1. WBGT Heat stress, Air pollution, Air temperature monitoring Sensors 2. Object based classification and Environment monitoring software	1. Spatial analytics to monitor Covid 19 and suggesting travel recovery plan 2. Influence Zone mapping of Wetland 3. Thermal mapping of Neighbourhoods	COVID research projectunderNITSER Workshop on Remote Sensing and GIS Application in Spatial Planning and Development Research papers
Advance Furniture Lab	Thickness Planner, Surface Planner Machine, Spindle Moulder, Basic Copy Lathe, Radial Circular Saw, Pneumatic chisel Mortiser, Teno Mac, Wood Turning Lathe Machine, Planner Blade Grinder, Jigsaw Machine, Air Compressor with nozzles and jet for polishing, Air Blower, 3D Printer, Laser Cutter and Manual tools for wood working like hammer, chisel, screw driver, mechanized drill machine, grinder, storage container, etc	Process of making a model	Hands on Training

Summary

Particulars	Total Numbers
Faculty Members	26
Phd Scholars	30
Book Publications	02
Chapter Publications	07
Publication in International Journal Publication	13
Publication in International Conference Publication	16
Publication in National Conference Publication	01
Faculty Outreach	86
MoU's	01
Research Projects	04
Consultancy Projects	07
Workshops/Seminar Organized	04
Expert Lectures Organised	05
Lab Facilities Developed	02

DEPARTMENT OF BIOLOGICAL SCIENCE AND ENGINEERING

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, Bioiformatics, Molecular Signalling and Host Pathogen interations. 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 04 well equipped labs offering exposure and training for 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 curses and to start new UG courses.

Department have 04 well equipped labs for students covering different areas of biotechnology.

Faculty and Programmes

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

UG Programme	
NIL	

PG Programme	**Specialization**
Master of Technology (M. Tech.)	1. Biotechnology

PhD Scholars

Name	**Title/Area of Research**
Bijna Mathew	Bacterial infection (Transcription factors)
Ruchi Khare	Biosensors
Rupal Rai	Bacterial infection (Acid tolearance)
SandeePJhade	Natural products
Sarit Prabha	Bioinformatics
Shrutika Sharma	Bioinformatics
Vinayak Singh	Bacterial infection (Antibiotic resistance and metabolism)

Chapter Publications

1. Mohammad Yasir, Ruchi Khare and Rahul Shrivastava, “Possibility of Probiotic in Colorectal Cancer: A Specific Countenance to Research”, In: I. P. Kaur and P. K. Deol (eds.), Probiotic Research in Therapeutics, Springer, 2021.

Publication in International Journals

1. Pushpendra Singh, Mohammad Yasir and Rahul Shrivastava, “Ethnopharmacologic screening of medicinal plants used traditionally by tribal people of Madhya Pradesh, India, for the treatment of snakebites”, Journal of Herbal Medicine, Volume 29, 100483, 2021.
2. Pushpendra Singh, Mohammad Yasir and Rahul Shrivastava, “Effects of carbamate pesticides intermediates on Escherichia coli membrane architecture: An in vitro and in silico approach”, Environmental Analysis, Health and Toxicology, Volume 36(3), 2021.
3. Pushpendra Singh, Ruchi Khare and Rahul Shrivastava, “In silico identification of promising inhibitor against RNA-dependent RNA polymerase target of SARS-CoV-2”, Mol Biol Res Commun, Volume 10(3), pp. 131-140, 2021.
4. Rajat Anand, Shivendra K. Chaurasiya and Ambuj K. Kushwaha, “Involvement of Cathepsins Protein in Mycobacterial Infection and Its Future Prospect as a Therapeutic Target”, International Journal of Peptide Research and Therapeutics, Volume 28(76), pp. 1-15, 2022.

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.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 02 which includes all type of Activities.

Labs

Name of Lab	Facilities/Equipments	Research Carried	Output
Plant Genomics Lab	Plant Tissue Culture Facility RT-PCT, PCR, SDS-PAGE, Electrophosesis etc.	PhD and PG	Research
Proteomics Lab	Elisa Plate Reader, BOD, CO2 incubator, HPLC Electropheresis Unit, Biosafety Cabinet	PhD and PG	Research
Molecullar signalling	Target Thermal Cycler (PCR), Electroloting 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	PhD and PG	Research

Summary

Particulars	Total Numbers
Faculty Members	04
PhD Scholars	07
Chapter Publications	01
Publication in International Journal Publication	04
Faculty Outreach	02
Research Projects	01
Lab Facilities Developed	03

DEPARTMENT OF CHEMICAL ENGINEERING

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, 19 papers have published in the reputed international journals. Many papers have also presented in renowned international and national conferences.

Two external funded projects are 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.

About Labs:

1. AAS Series of AA-7000, Simadzu
2. GC Nucon 5700 series
3. Carbon and Sulphur Analyser Set up Indigenous
4. Miicroscope from COSLAB with 100Xmagnification for visualizing the mechanism of bubble formation in multiphase flow
5. Gas Chromatography- Mass Spectrometry (GC-MS), SHIMADZU, Model No. – GCMS – QP2020
6. Fourier Transform Infrared Spectrometer (FTIR), SHIMADZU

Faculty and Programmes

Associate Professor	
Dr. Vijayakumar Bulasara	
Assistant Professor	
Dr. Bharat K. Modhera	Dr.Rupak Kishor
Dr. Dharmendra Pandey	Dr. S. Suresh
Dr. Jay Mant Jha	Dr. Subhajit Patra
Dr. Kanchapogu Suresh	Dr. Sumit Hansapal Dhawane
Dr. Rajeev Parmar	Dr. Sunder Lal Pal

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

PG Programme	**Specialization**
Master of Technology (M. Tech.)	1. Industrial Safety and Pollution Abatement

PhD Scholars

Name	**Title/Area of Research**
Abhshiek Mathur	Development of lightweight materials for air quality monitoring and control
Dhiraj Kishor Tatar	Nano fluid and heat transfer
Jamna Prasad Gujar	Valuable products from Glycerol

Chapter Publications

1. Akash Pratim Bora and Sumit H. Dhawane, “Vegetable oil based epoxy composites”, In: Anish Khan and Showkat Bhawani (eds.), Vegetable Oil Based Composites-Processing, Properties and Applications, Springer Nature, 2022.
2. Amarendra K. Dash, Vivek K. and Jay Mant Jha, “Recent Trends in Biomass Conservation and Management”, In: Dan Bahadur Pal and Pardeep Singh (eds.), Utilization of Waste Biomass in Energy, Environment and Catalysis, CRC Press, Taylor & Francis, 2022.
3. Amit K. 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 K. Ghosh, Michael Nelles, H. N. Chanakya and Debendra Chandra Baruah (eds.), Biomethane through Resource Circularity: Research, Technology and Practices, Taylor & Francis Group (CRC Press), 2022.
4. Amit K. Tiwari, Jay Mant Jha and Dan Bahadur Pal, “Biosorption of Precious Metals from Wastewater”, In: RangabhashiyamSelvasembian and Pardeep Singh (eds.), Biosorption for Wastewater Contaminants, John Wiley & Sons Ltd., 2021.
5. Deepanwita Deb, Arartrika Roychowdhury and Sumit H. Dhawane, “An overview of pretreatment strategies for the development of enzyme-based biorefinery with special emphasis on Pectinases”, In: Pradeep Verma (eds.), Enzymes in Valorization of Waste (Vol 1): Enzymatic Pre-treatment of Waste for Development of Enzyme based Biorefinery, CRC Press, 2022.

6. Eslam G. Al-Sakkari, Mai O. Abdelmigeed and Sumit H. Dhawane, "Inorganic wastes as heterogeneous catalysts for biodiesel production", In: Bhaskar Singh and Abhishek Guldhe (eds.), Waste and Biodiesel Feedstocks and Precursors for Catalysts, Elsevier, 2022.
7. Indrajit Pal and S. Suresh, "Integrated water management model for Costal Resilient City Planning for Hydro-Meteorological Hazards-a case study of 2015 Chennai Flood (INDIA)", In: Yizhao Yang and Anne Taufen (eds.), APRU Sustainable Cities and Landscapes Handbook, Taylor & Francis (Routledge), U.K., 2022.
8. Joyita Mitra and Sumit H. Dhawane, "Synthesis of supports for lipase immobilisation using wastes for enhancing efficiency and reusability of enzymes", In: Pradeep Verma (eds.), Thermochemical and catalytic conversion for future biorefineries, Springer Nature, 2022.
9. Piyush Dwivedi, Arka Ghosh and Sumit H. Dhawane, "Critical Evaluation of the role of Enzymes in the Integrated Biorefinery", In: Pradeep Verma (eds.), Thermochemical and catalytic conversion for future biorefineries, Springer Nature, 2022.
10. Rahul, Vivek Kumar and Jay Mant Jha, "Biomass Accretion and Control Strategies in Gas Biofiltration", In: Dan Bahadur Pal and Pardeep Singh (eds.), Utilization of Waste Biomass in Energy, Environment and Catalysis, CRC Press, Taylor & Francis, 2022.
11. Rupak Kishor, Suneeta Kumari and NarayanasamySelvaraju, "Recent Trends in Advanced Oxidation and Catalytic Processes for Removal of Heavy Metals, Dyes, and Xenobiotics", In: Biswanath Bhunia and Muthusivaramapandian Muthuraj (eds.), Recent Trends and Innovations in Sustainable Treatment Technologies for Heavy Metals, Dyes and Other Xenobiotics, Bentham Science Publishers, 2022.
12. Rupali Jha, Shipra Dwivedi and Bharat Modhera, "Measurement and Practices for Hazardous Waste Management", In: Deepak Yadav, Pradeep Kumar, Pradeep Singh and Daniel A. Vallero (eds.), Hazardous Waste Management: An overview of Advanced and Cost Effective Solutions, Elsevier, 2021.
13. S. Suresh, Tabassum-Abbasi and Tasneem Abbasi, "Evaluation of a pilot-scale SHEFROL unit set up for rapid, inexpensive and clean-green treatment of greywater", In: Siddiqui, Faisal Khan, S. M. Tauseef, Waddah S. Ghanem and Vikram Garaniya (eds.), Advances in Behavioral Based Safety, Springer-Nature, 2022.
14. Sumit H. Dhawane, Eslam G.Al-Sakkari and Deepak Yadav, "Cost-effective viable solutions for existing technologies", In: Deepak Yadav, Pradip Kumar and Daniel Vallero (eds.), Hazardous Waste Management: An Overview of Advanced and Cost-Effective Solutions, Elsevier, 2022.
15. Vivek Kumar, Jay Mant Jha and Amarendra K. Dash, "Waste Biomass Pretreatment using Novel Material", In: Dan Bahadur Pal and Pardeep Singh (eds.), Utilization of Waste Biomass in Energy, Environment and Catalysis, CRC Press, Taylor & Francis, 2022.

Publication in International Journals

1. Aiman Haider, Priyanka Khadatkar and S. Suresh, "Fluorides-Foundation for healthy teeth: A Dental Perspectives", Journal of Sol-Gel Science and Technology, Volume 100, pp. 375-387, 2021.
2. Aiman Haider, Priyanka Khadatkar and S. Suresh, "Double trouble: A review on the ongoing mucomycosis crisis and the dental outlook", International Journal of Dental Science and Innovative Research, Volume 4(6), pp. 151-156, 2021.
3. Battula Kumara Raja, Umang Goswami and Bharat Modhera, "Conversion of Glycerol to Solketal using Heterogeneous Catalysts", Journal of The Institution of Engineers (India): Series E, Volume 103, pp. 145-148, 2022.
4. Dan Bahadur Pal, Arvind Singh and Jay Mant Jha, "Low-cost biochar adsorbents prepared from date and delonix regia seeds for heavy metal sorption", Bioresource Technology, Volume 339, pp. 125606(1)-125606 (10), 2021.
5. 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, Volume 9(2), pp. 101-114, 2022.
6. DeenDayalGiri, Jay Mant Jha and Neha Srivastava, "Waste seeds of Mangifera indica, Artocarpus heterophyllus, and Schizizium commune as biochar for heavy metal removal from simulated wastewater", Biomass conversion and biorefinery, pp. 1-10, 2022.
7. DeenDayalGiri, Jay Mant Jha and Neha Srivastava, "Sustainable removal of arsenic from simulated wastewater using solid waste seed pods biosorbents of Cassia fistula L", Chemosphere, Volume 287, pp. 132308 (1)-12, 2022.
8. Madhusudan Baghel, C. M. Krishna and S. Suresh, "Development of Al-SiC composite material from rice husk and its parametric assessment", Materials Research Express, Volume 9, pp. 1-13, 2022.
9. N. Anoop, Suresh Sundaramurthy and Jay Mant Jha, "Plasma catalysis: a feasible solution for carbon dioxide valorization?", Clean Technologies and Environmental Policy, Volume 23(10), pp. 2789-2811, 2021.
10. Rashi Gupta, Roshan Saini and Rajeev Parmar, "Analysis of stability of silica nano-particle-laden microbubble dispersion", Environmental Science and Pollution Research, pp. 1-8, 2022.
11. Richa Mishra, Uttpal Anand and S.Suresh, "Investigation over water quality of rivers Ganga and Yamuna during Kumbh-2019", Pollution Research, Volume 12, pp. 1-14, 2021.
12. S. S. Tiwari, Shivkumar Bale and S. Suresh, "Numerical simulations of a postulated methanol pool fire scenario in a ventilated enclosure using a coupled FVM-FEM approach", Processes (MDPI), Volume 10(5), pp. 918-929, 2022.
13. S. Suresh, R. Modi and A. K. Sharma, "Pre-COVID-19 pandemic: Effects on air quality in the three Cities of India using Fuzzy MCDM Model", Journal of Environmental Health Science and Engineering, Volume 20(1), pp. 41-51, 2021.
14. S. Verma, Harsh Bajpai and S. Suresh, "Development of Asbestos Free Advance Material for Thermal Insulation using Marble Waste", Biomass Conversion and Biorefinery, Volume 23, pp. 23-29, 2021.
15. Satyam Mishra, S. Suresh and M. S. Chauhan, "Review on Recent Progress in Carbonaceous Materials for the Nitrate Adsorption", ASCE Journal of Hazardous, Toxic, and Radioactive Waste, Volume 26(3), pp. 1-14, 2022.

16. Shikha Tiwari, Bharat Modhera and Debabandya Mohapatra, "Biological relevance of VOCs emanating from red onions infected with Erwinia (Pectobacterium) carotovora under different storage conditions", Postharvest Biology and Technology, Volume184, pp. 111761-111773, 2022.
17. U. Anand, F. Bianco and S.Suresh, "SARS-CoV-2 and other viruses in soil: an environmental outlook", Environmental Research, Volume 196, pp. 1-13, 2021.
18. U. Anand, Li X. and S. Suresh, "SARS-CoV-2 and other pathogens in municipal wastewater, landfill, leachate, and solid waste: a review about virus surveillance, infectivity, and inactivation", Environmental Research, Volume 203, pp. 111839-111852, 2022.
19. Vinayraj, Sunder Lal Pal and M. S. Chouhan, "Potential of Sugarcane Bagasse in Remediation of Heavy Metals", Accepted, 2022.

Publications in International Conference

1. Anjali Prasad, S. Suresh and Sunder Lal Pal, "Review on Metal Oxide catalysts for water splitting applications", SCHEMCON-2021, MANIT-IISER Bhopal, 22-23 Oct 2021.
2. Kanchapogu Suresh, "Cost-effective Fly ash Based Tubular Ceramic Microfiltration Membrane for Treatment of Livestock's Effluents", International Conference on Cutting-edge Research in Materials and Sustainable Chemical Technologies CRMSCT-2022, Manipal University Jaipur, 27-29 Jan 2022.
3. Kanchapogu Suresh, "Development of Cost-effective and Ecofriendly Tubular Ceramic Microfiltration Membrane for Poultry Farm Wastewater Treatment", International Conference on Advances in Chemical and Environmental Engineering (ACEE-2021), NIT Raipur, 16-17 Dec 2021.
4. Kaumik Gandhi, BhagyashriGaykwad and Bharat Modhera, "Green Synthesis of Nickel and Nickel Oxide Nanoparticles by Chemical Reduction Method", 2nd International Symposium on Modeling of Crystal Growth Processes and Devices (MCGPD-2021); Chennai, 05 Jul 2021.

Publications in National Conference

1. Jamna Prasad and Bharat Modhera, "Sustainable Production of Solketal from Glycerol over Heterogeneous Catalysts", Recent Advances in Chemical Engineering towards Sustainable Future (RACES – 2022), at SVNIT, Surat, 17 Feb 2022.
2. Rahul Jarariya and Kanchapogu Suresh, "Spinel Ferrite Nanomaterials-MgFe2O4-Synthesis by appropriate Microwave solution combustion (MSC) Method of visible light responsive Photocatalyst for RB21 Dye degradation", National Conference on Advances in Chemical Engineering and Science (ACES), IISER Bhopal, 25-26 Mar 2022.

Research Projects

1. Bharat Modhera, Debabandya Mohapatra and Alokesh Ghosh, "Development of Electronic Sensing System for Safe Management of Potato, Onion, and Tomato in Storage", sponsored by National Agricultural Scheme Fund, New Delhi.
2. Bharat Modhera and C. Sasikumar, "Design and Development of Ultrasonic Transducer", sponsored by Indian Space Research Organisation (ISRO), Bengaluru.

Consultancy Projects

1. M. S. Chauhan and S. Suresh, "Water Quality monitoring and assessment of Central Effluent Treatment Plant (CETP)", sponsored by Indore, Madhya Pradesh.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 11 which includes all type of Activities.

GIAN

Name of Faculty	Title of the Course	Name of the Faculty invited	Affiliation of the invited Faculty	Number of Participants	Duration	
					From	To
S. Suresh	Biocomposite and Innovative materials	Prof. Arun Gupta	UMP, Malaysia	56	25-Jan-2022	29-Jan-2022

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Jay Mant Jha, Dharmendra Pandey, Sundar Lal pal	Workshop	Synthesis, Characterization and Performance of Advanced Materials	40	10-May-2021	14-May-2021
S. Suresh, Sankar Chakma, Jay Mant Jha, S. Patra	Conference	Globally Advancement in Technology for Environment 2021	120	22-Oct-2021	23-Oct-2021

Lab

Name of Lab	Facilities/ Equipments	Research Carried	Output
High Pressure Catalytic Research Lab	1. GC-MS; 2. FTIR; 3. High pressure reactor; 4. Programmable Oven	1. Refinery Reactions; 2. Biofuels; 3. Modeling	Received projects and published publications

Summary

Particulars	Total Numbers
Faculty Members	11
PhD Scholars	03
Chapter Publications	15
Publication in International Journal Publication	19
Publication in International Conference Publication	04
Publication in National Conference Publication	02
Faculty Outreach	11
Research Projects	02
Consultancy Projects	01
GIAN Courses	01
Workshops/Seminar Organized	02
Lab Facilities Developed	01

DEPARTMENT OF CHEMISTRY

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. 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. 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. From the academic session 2021-22 department has also started a PG course in Chemistry. All the faculty members of the department are committed to provide quality research and excellence in academics.

Department has following UG and PG Laboratories:

i) Analytical Chemistry UG Lab
ii) Engineering Chemistry UG Lab
iii) Organic Chemistry PG Lab
iv) Physical Chemistry PG Lab
v) Analytical/Inorganic Chemistry PG Lab

Faculty and Programmes

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	

PG Programme	**Specialization**
M. Sc.	Chemistry

PhD Scholars

Name	**Titles/ Area of Research**
Anjali Yadav	Synthesis and Photophysical Characterization of Lead free Perovskite Nanomaterials using Spectroscopic and Microscopic Approaches
Asna Mariyam	Studies on the removal of some toxic dyes using a novel adsorbent-Ordered Mesoporous Carbon
Avala Ramesh	Synthesis & applications of 2D Transition Metal Dichalcogenides
Bharti Yadav	Water Treatment
Mitali Dugvekar	Processing and Characterization of Fiber Reinforced Composites from Recycled Products

Book Publications

1. Savita Dixit and Huma Ali, "Traditional Indian Herbs Curing Cancer", LAP Lambert Academic Publishing, 2021.
2. Savita Dixit and Kiran Rohit, "Elementary Idea of Composite Materials", LAP Lambert Academic Publishing, 2021.

Chapter Publications

1. Jyoti Mittal, Charu Arora and Alok Mittal, "Application of Biochar for the removal of Methylene Blue", In: IoannisAnastopoulos, Eder Lima, Lucas Meili and DimitriosGiannakoudakis (eds.) Biomass-Derived Materials for Environmental Applications, 2022.
2. P. Duttta, Charu Arora and Jyoti Mittal, "Metal Organic Frameworks for Detection and Adsorptive Removal of Pesticides", In: Inderjeet Tyagi, Joanna Goscianska, Mohammad HadiDehghani and Rama Karri (eds.), Sustainable Material for Sensing and Remediation of Noxious Pollutants, Elsevier.

Publication in International Journals

1. Jyoti Mittal, Asna Mariyam and Alok Mittal, "A Novel, Eco-Friendly Bio-Nanocomposite (Alg-Cst/Kal) for the Adsorptive Removal of Crystal Violet Dye from its Aqueous Solutions", International Journal of Phytoremediation, Volume 24(8), pp. 796-807, 2022.
2. Mitali Dugvekar and Savita Dixit, "Chemical Treatments for Modification of the Surface Morphology of Coir Fiber: A Review", Journal of Natural Fibers, Volume 19, 2022.

3. Mitali Dugvekar and Savita Dixit, "High density polyethylene composites reinforced by jute fibers and rice stalk dust: A mechanical study", Materials Today: Proceedings, Volume 47(5), pp. 5966-5969, 2021.
4. Mitali Dugvekar, "Mechanical Properties of Glass Fibers Reinforced Composites: A Concise Review", Turkish Journal of Computer and Mathematics Education (TURCOMAT), Volume 12(6), pp. 915-922, 2021.
5. P. Saharan, V. Kumar and Jyoti Mittal, "Efficient Ultrasonic Assisted Adsorption of Organic Pollutants Employing Bimetallic-Carbon Nanocomposites", Separation Science Technology, Volume 56(17), pp. 2895-2908, 2022.

Publications in International Conferences

1. Amit Dubey and Savita Verma, "Antibacterial and adsorption applications of 5-sulphosalicylic acid functionalized mesoporous silica SBA-15 nanocomposites", International conference on mechanical engineering and managerial applications for productivity enhancement and marketability, MMPM-2021, MANIT Bhopal, 15-16 Sept. 2021.

Research Project

1. Alok Mittal and Jyoti Mittal, "Design and Evaluation of Nanostructured Materials for Wastewater Treatment", sponsored by MHRD.
2. Jyoti Mittal and Alok Mittal, "Reinforcing Research Links in Water Treatment and Renewable Energy", sponsored by EPSRC (UK).
3. Sukanti Behera, "Thermoelectric performance of hybrid composite materials: Bismuth tellurides and conducting polymers on flexible substrate", sponsored by UGC-DAE CSR.
4. Dharmendar Kumar 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.
5. Dharmendar K. Sharma, "Exploring morphological effects on the Photophysical properties of Lead Free Halide Perovskite Nanocrystals", sponsored by UGC-DAE-CSR, Govt. of India.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 11 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status
Gajendra Dixit, Savita Dixit	A Modified Concrete Composition	Granted
Savita Dixit, Gajendra Dixit	Compositions of natural fiber reinforced composite material and process thereof	Granted
Savita Dixit, Sankalp Dixit, Gajendra Dixit	A biodegradable composite and method there of	Granted

GIAN

Name of Faculty	Title of the Course	Name of the Faculty invited	Affiliation of the invited Faculty	Number of Participants	Duration	
					From	To
Alok Mittal	Fuel Cells: Fundamental Concepts, Material Chemistry and Applications	Dr. Richard Baker	School of Chemistry, University of St. Andrews, United Kingdom	104	17-Jan-2022	21-Jan-2022

Foreign Visits

Name of Faculty	Purpose / Title of Programme	Country Visited	Duration	
			From	To
Alok Mittal, Jyoti Mittal	Reinforcing Research Links in Water Treatment and Renewable Energy	United Kingdom	26-Feb-2022	16-Mar-2022

Lab Facilities

Name of Lab	Facilities/Equipments	Research Carried	Output
Material Chemistry Lab	Furnance, Hot plate, Vacuum pump, Table top Hydraullic pellet press	Material synthesis	
Nanomaterial Synthesis Lab	Fumehood&Schelenk line Assembly, Equipped for HOT injection methods	Syntheis of All inorganic Perovskite Materials	Ongoing

Summary

Particulars	Total Numbers
Faculty Members	06
PhD Scholars	05
Book Publications	02
Chapter Publications	02
Publication in International Journal Publication	05
Publication in International Conference Publication	01
Faculty Outreach	11
Patents	03
Research Projects	05
GIAN Courses	01
Foreign Visits	01
Lab Facilities Developed	02

DEPARTMENT OF CIVIL ENGINEERING

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 30 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 and Programmes

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. Neeraj Tiwari	Dr. S. P. S. Rajput
Dr. Pritikana Das	Dr. Vivek Garg

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

PG Programme	**Specialization**
Master of Technology (M. Tech.)	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 Scholars

Name	**Title/Area of Research**
Aakanksha Rawat	Efficiencies of Irrigation
Abhijit Saha	Experimental Investigation and Analysis for Scour around Bridge Piers
Abhishek Soni	Evaluation of Ecofriendly Ultra High Performance Concrete (UPHC) containing Agriculture and Industrial Waste as a pratial Replacement of Sand.
Aditya Bhargava	Not decided yet
Akanksha Bilthare	Not decided yet
Akash Jaiswal	Behavior of Dual Layered Encased Stone Columns in Loose Sand Under Shear Load
Akash Singh Raghuvanshi	Not decided yet
Aman Tiwari	Numerical evaluation of capacity of laterally loaded pile adjacent to sloping ground
Amit Mandal	Not decided yet
Ankur Sharma	Impact of Climate Change on Hydrological Variables of Middle Tapi Basin
Ankur Vishwakarma	Projection of Drought Indices Trends and Irrigation Water Requirements of Major Crops in Bundelkhand Region
Anurag Saraogi	Not decided yet

Arun Kumar Rai	Accuracy Assessment of Land Use Classification using Remote sensing Techniques
Brijkishore	Numerical Simulation for Prediction of Cavitation in Axial Flow Hydraulic Turbine
Chandra Prakash Gaur	Not decided yet
Deepak Kr. Tiwari	Kolar ReverbasicModeling management
Dhananjay Kumar Tiwari	Not decided yet
Hemant Choudhary	Experimental Investigation of newly fabricated pervious paver block developed using construction and demolition waste
Himanshu Pathak	Not decided yet
Jitendra Namdeo	Dynamic analysis of beams using method of initial functions
Karan Moolchandani	Influence of crumbed rubber, thermal and stone industry waste on strength, durability and morphological properties of modified concrete
Karan Singh	Not decided yet
Mansi Tiwari	Not decided yet
Neeraj Kumar	Numerical and Physical Modelling of Granular Column to study the behavior under various load conditions
Nikita Palod	Multi-objective optimization of water distribution pipe network using Evolutionary Algorithms.
Nishant Singh	Development of a GIS based framework for Road Accident Analysis of urban Bhopal
Oman Sayyed	A study on the influence of micro and nano particle inclusions in concrete towards a sustainable solution
Parth Verma	Design, Development and Performance Evalution of Metakaolin based Geopolymer Concrete
Piyush Jain	Load settlement behaviour of bamboo reinforced granular material
Priyanshu Jain	Optimization of Water Distribution Networks for Energy Recovery Through Leakage Reduction
Pushpendra Singh Palash	Design Development and Application of geopolymer concrete
Rahul Tanwar	Not decided yet
Rakesh Tanty	Assessment of irrigation potential utilization in middle narmada basin using GIS approach
Sachin Kuamr	Not decided yet
Satyam Mishra	Batch and column adsorption studies for simultaneous removal of nitrate, sulfate and phosphate from aqueous solution
Saumya Anand	Not decided yet
Saurabh Kumar Anuragi	Not decided yet
Shashank Chaudhary	Not decided yet
Shivendra Singh Kushwah	Not decided yet
ShrishChandrawanshi	Structure-Soil-Structure interaction between Adjacent Buildings
Sphurty Raman	Not decided yet
Suneel Kumar	Not decided yet
Suniti Kumari	Not decided yet
Suprabeet Datta	Assessment of Capacity and Level of Service for Urban Uncontrolled Intersections under Indian Mixed Traffic Conditions
T. M. Prateek	Not decided yet
Tushar Golait	Nonlinear interaction analysis of irregular RC space frame-soil system on sloping grounds
UmareShubhangi Niranjan	Not decided yet
Upkar Singh	Not decided yet
Urvashi Srivastava	Not decided yet
Utkarsh	Not decided yet
Vaishali Yede	Not decided yet
Velagapalli Chiranjeevi	Not decided yet
Vijay Singh Solanki	Performance Indicator Benchmarking of Urban Public Transport System in India
Vinay Raj	Remediation of Metals: Lead, Cadmium, Chromium From Aqueous Solution through the Combination of Biosorbrnts
Yash Rathore	Not decided yet

Book Publications

1. Kamal Singh, H. L. Tiwari and Rakesh Kumar, “Advances in Civil Engg for Sustainable Development -GeoTechcal, Transportation and Water Resources”, Walnut Publication,
2. Kamal Singh, H. L. Tiwari and Rakesh Kumar, “Advances in Civil Engg. For Sustainable Development-Construction Technology, Environment and Structures”, Walnut Publication.

Chapter Publications

1. Ankit Balvanshi and H. L. Tiwari, "Runoff Simulation of basin using Mike 11 NAM and AWBM Model", Sustainable Water Resources Development and Management, Excel India Publisher, 2021.
2. Deepak Kumar Tiwari, H. L. Tiwari and Satanand Mishra, "Impact of Climate change on hydrological regime on Narmada river basin", In: Ramakar Jha, Vijay P. Singh, Vivekanand Singh, L. B. Roy and Roshni Thendiyath (eds.), Climate change Impacts on Water Resources, Springer Nature, 2021.
3. H. L. Tiwari, Arun Goel and A. K. Sharma, "Performance Improvement of USBR VI Stilling basin model for Pipe outlet", Hydrologic Modelling, Springer Nature Switerzerland, 2022.
4. H. L. Tiwari and Kamal Singh, "Study on Designing New Stilling Basin for Dam Pipe Outlet", New Approaches in Engineering Research, BP International Kolkata, 2021.
5. H. L. Tiwari and M. S. Hora, "Development of Stilling Basin Model at Zero depth of pipe outlet to basin floor: An advanced Research", In : P. Elangovan (eds.), New Approaches in Engineering Research, Volume 16, Pages 21-29 Chapter 3, International Kolkata, 01 Oct 2021.
6. R. K. Jaiswal, H. L. Tiwari and A. K. Lohani, "Assessment of Climate Change on Crop Water Requirement in Tandula Command of Chhattisgarh (India)", In: Ramakar Jha, Vijay P. Singh, Vivekanand Singh, L. B. Roy and Roshni Thendiyath (eds.), Climate Change Impacts on Water Resources, Springer Nature, 2021.
7. Rakesh Kumar, "Behaviour of geogrid encased granular pile in soft expansive clay", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil engineering for sustainable development (Geotechnical.Transportation and Water resources), Walnut Publication, 2022.
8. Rakesh Kumar, Akash Jaiswal and Satish Jain, "Prediction of subgrade soil strength from soil classification and compaction parameters for fine grained soils", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil engineering for sustainable development (Geotechnical.Transportation and Water resources), Walnut Publication, 2022.
9. Rakesh Kumar and Akash Jaiswal, "Performance of group of sand piles installed in soft clay bed under vertical load", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil engineering for sustainable development (Geotechnical.Transportation and Water resources), Walnut Publication, 2022.
10. Rakesh Kumar and Praveen K. Sinha, "Stabilization of silty soil using fly ash available at muzaffarpur thermal plant station", In: Kamal Singh, H. L. Tiwari and Rakesh Kumar (eds.), Advances in Civil engineering for sustainable development (Geotechnical.Transportation and Water resources), Walnut Publication, 2022.

Publication in International Journals

1. A. Balvanshi and H. L. Tiwari, "Quantitative Estimation of the Impact of Climate Change on Crop Evapotranspiration and Yield in Central Region of India", Russ. Meteorol. Hydrol, Volume 46(10), pp. 696-700, 2021.
2. Abhishek Mishra, Jyoti Sarup and D. C. Gupta, "Geospatial Approach for Tiger habitat suitability mapping A case study of Bandhavgarh National Park M.P", International Journal of Geography, Geology and Environment, Volume 3(2), pp. 1-7, 2021.
3. Abhishek Mishra, Jyoti Sarup and D. C. Gupta, "Landuse and Land coverchange detection of Bandhavgarh National Park, M. P. using sentinel-2 Satellite data", Journal of Emerging Technologies and Innovative Research, Volume 8(6), pp. a918-a923, 2021.
4. Ajay Sharma, Jyoti Sarup and D. C. Gupta, "Hyperspectral image processing to processing to resources in and around KajaliDongri, Jhabua district Madhya Pradesh", International Journal of Geography, Geology and Environment, Volume 3(2), pp. 8-15, 2021.
5. Ajay Sharma, Jyoti Sarup and D. C. Gupta, "Synergistic approach to evaluate the mineral resources: A new perspective", Int. J. Geogr. Geol. Environ., Volume 3(1), pp. 1-6, 2021.
6. Akansha, H. L. Tiwari and R. K. Jaiswal, "Hydrological Modelling", International Journal of Advances in Engineering and Management (IJAEM), Volume 3(11), pp. 886-889, 2021.
7. Akash Jaiswal, Rakesh Kumar, A. Jaiswal and R. Kumar, "Finite element analysis of granular column for various encasement conditions subjected to shear load", Geomechanics and Engineering, Volume 29, No. 6, pp. 645-655, 2022.
8. Bikram Prasad and H. L. Tiwari, "Investigation of spatial patterns erosion in the watershed of Kodar Reservoir Chhatisgarh using USPED model", ISH Journal of Hydraulic Engineering, 2022.
9. Bikram Prasad and H. L. Tiwari, "Comparative Study of Soil Erosion Models based on GIS & Remote Sensing", ISH Journal of Hydraulic Engg, Volume 28(1), pp. 98-107, 2022.
10. Deeksha Mishra, Jyoti Sarup and Suresh Goswami, "Analyzing the extent of drought in the Rajasthan state of India using vegetation condition index and standardized precipitation index", Modeling Earth Systems and Environment, Volume 7(8), pp. 601-610, 2021.
11. Deepak K. Tiwari, H. L. Tiwari and Raman Nateriya, "Meteorological spatiotemporal drought impact assessment on water storage of Kolar reservoir, India", Journal of Engineering Research, Volume 10(2B), pp. 40-50, 2022.
12. Deepak K. Tiwari, H. L. Tiwari and Raman Nateriya, "Geomorphology-Wavelet based approach to rainfall runoff modeling for data scarce semi-arid regions, Kolar river catchment, India", Journal of Engineering Research, Volume 10(B), pp. 29-40, 2022.
13. Deepak K. Tiwari, H. L. Tiwari and Raman Nateriya, "Runoff modeling in Kolar river basin using hybrid approach of Wavelet with Artificial neural network", Journal of Water and climate change, Volume 13(2), pp. 963-974, 2022.
14. Kartikeysa Mishra and H. L. Tiwari, "Sedimentation analysis for a reservoir using remote sensing and GIS techniques-Current Status of Research and Future Prospect", International Journal of Research and Analytical Reviews, Volume 8(4), pp. 929-941, 2021.

15. M. Kundan, Nitu Singh and P. K. Jain, "Estimation of swelling characteristics of expansive soil with influence of clay mineralogy", Acta Agriculturae Scandinavica, Section B, Soil & Plant Science, Volume 71(3), 2021.
16. M. M. Kamal, A. Abbas and Vishnu Prasad, "A numerical study on the performance characteristics of low head Francis turbine with different turbulence models", Materials Today: Proceedings, Volume 49 part 2, pp. 349-353, 2022.
17. Neha Kureel, Jyoti Sarup and Suresh Goswami, "Modelling vegetation health and stress using hyperspectral remote sensing data", Modeling Earth Systems and Environment, Volume 7(7), pp. 733-748, 2021.
18. Nikita Palod, Vishnu Prasad and Ruchi Khare, "Reliability-based optimization of water distribution networks", IWA Journal of Water Supply SCIE Q2, Volume 21(10), 11 Oct 2021.
19. Nishant Singh and S. K. Katiyar, "Application of geographical information system (GIS) in reducing accident blackspots and in planning of a safer urban road network: a review", Ecological informatics, July 2021.
20. Priyanshu Jain and Ruchi Khare, "Application of Parameter-Less Rao Algorithm in Optimization of Water Distribution Networks Through Pressure-Driven Analysis", Springer & European Water Resources Association (EWRA) Water Resources Management: An International Journal, Published for the European Water Resources Association (EWRA) SCI Q1, Volume 35(12), pp. 4067-4084, 2021.
21. Priyanshu Jain and Ruchi Khare, "Multi-objective Rao algorithm in resilience-based optimal design of water distribution networks", IWA Journal of Water Supply SCIE Q2, pp. 4346-4360, 2022.
22. R. K. Jaiswal, A. K. Lohani and H. L. Tiwari, "A Decision Support System Framework for strategic water resources planning and management under projected climate scenarios for a Reservoir Complex", Journal of Hydrology, Volume 603, pp. 127051, 2021.
23. Rajat Pandey, Jyoti Sarup and Suresh Goswami, "The thermal–optical trapezoid model-based soil moisture estimation using Landsat-8 data", Modeling Earth Systems and Environment, Volume 7(5), pp. 1029-1037, 2021.
24. Rutuja Chavan, Anurag Sharma and Bimlesh Kumar, "Turbulence Anisotropy around Bridge Piers in Seepage affected Sand Bed Channel", Journal of Turbulence, Volume 23(1-2), pp. 52-67, 2022.
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3. Akash Raghuvanshi and H. L. Tiwari, "Comparision of Spatial Interpolaton Methods for Mapping Seasonal Groundwater Levels", 26th International conference on hydraulics and water resources-Hydro 2021- International, Surat, 23-25 Dec 2021.
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2. P. K. Agarwal, P. K. Jain and Siddhartha Rokade, "Performance Evaluation of Rural Roads Constructed using Coir Geotextiles", sponsored by Coir Board, MSME GOI, Kochi.

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1. A. K. Sharma and H. L. Tiwari, "Proof Checking of Design Drawing of proposed Construction for Gopi Krishnan Multi-Village Scheme District Guna", sponsored by WPIL Ltd., Trinity Plaza 84/1A, topsia Road (South) Kolkata.
2. A. K. Sharma and H. L. Tiwari, "Proof Checking of Hydraulic Design & Drawing of proposed construction Vaidan-1 Multi village Scheme, Distt. Singrauli (M.P.)", sponsored by WPIL Ltd., Trinity Plaza 84/1A, topsia Road (South) Kolkata.
3. A. K. Sharma and S. Suresh, "Emission Inventory Study of 7 Non-Attainment Cities in M. P", sponsored by Center for Study of Science Technology & Policy, 10th Cross, Papannal Layout, Mayura Street, Bengaluru.
4. D. Kishan, M. S. Chauhan, K. Singh, S. P. S. Rajput, V. K. Soni, G. Dyanamina and S. Dwivedi, "Third Pary Quality Control Assurance inspection Centre for disability sports at Gwalior (M.P.) (SH:- Indore sports complex, Hostel Building, Out Door Sports, Auqatic Centre", sponsored by CPWD, Gwalior Project Division, Gwalior .
5. H. L. Tiwari and A. K. Sharma, "Vetting of Detailed Project report (DPR) Construction of Burpura Group of Villages Water Supply Scheme, district- Jhans", sponsored by NCC Ltd. Villa No. D2/150, Palm Spring, Sushant Golf City Ansal API, Near Shoping Square, Saheed Path, Lucknow.
6. H. L. Tiwari and J. Raheem, "Vetting of Hydrology Report for Minor Bridge (Expressway project in Gujrat)", sponsored by CDS Infra Project Ltd. 301, Ground Floor, Udyog Vihar Phase-II, Gurugram, Haryana.
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9. H. L. Tiwari, "Vetting of detailed project (DPR) for Construction of Surface water based water supply scheme of Mahdev GOV Scheme at District Mirzapur", sponsored by NCC Ltd. Villa No. D2/150, Palm Spring, Sushant Golf City Ansal API, Near Shoping Square, Saheed Path, Lucknow.

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14. J. Raheem and R. Kumar, “Vetting of Design and Drawings of High-Rise Multipurpose Prefab Warehouse project: CW Greater Noida, Gautam Buddha Nagar (U.P.)”, sponsored by Central Warehousing Corporation, 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas New Delhi.
15. J. Raheem and R. Kumar, “Vetting of Towards Retrofitting of the RCC Slab at MPCA Cricket Stadiium,Gwalior”, sponsored by CMM Infraprojects Ltd., 108, Shalimar Corporate Centre, 8-B, south Tukoganj, Indore (Jetganand& Son's Indore).
16. J. Raheem and Rishi K. Singh, “Structural Stability Audit of G+1 building built up area 795 Sqm at L I C City Branch Office No III, Near KatjuHospital,New Market Bhopal”, sponsored by L I C City Branch Office No III, Near KatjuHospital,New Market Bhopal.
17. J. Raheem and S. P. S. Rajput, “Proof Checking of Design & Drawing of Major Bridge at Ch. 209+836 on Godavari river and at Ch. 215+085 on Asna River”, sponsored by Kalyan (loha Nanded Waranga Highways Pvt. Ltd., Vidya Deep 15/3, manaramagani, Indore.
18. J. Raheem and S. P. S. Rajput, “Proof Checking of Structural Design & Drawing of oproposed construction of High level Bridge Division Pawai”, sponsored by Office Executive Engineer Irrigation Division Pavai, Distt. Panna.
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20. J. Raheem and S. P. S. Rajput, “Review of Structural Design prepared based on reverse engineering by "Pace Consultancy & Engineering Service" of existing tower of NBCC Greenview at Sector 37D, Gurgaon”, sponsored by Ramacivil India Construction Pvt. Ltd., H-240, Ashok Vihar, Phase-1 Delhi.
21. J. Raheem and V. Garg, “Stability Test for Residential and non-Residential Building at SPM Hoshangabad (M.P.)”, sponsored by Security Paper Mill, Hoshangabad (M.P.).
22. Kishan D., A. K. Sharma and R. Nateriya, “Vetting of Civil, Structural Design & Drawing for water supply scheme, in single package for 355 villages of Guna under M.P. Jalnigam (Gopi Krishan Multi Village Water Supply Scheme)”, sponsored by WPIL Ltd. Trinity Plaza, 84/1A Topsia Road (South), Kolkata. .
23. Kishan D., M. S. Chauhan, K. Singh, S. P. S. Rajput, S. K. Saritha and M. Raju, “Third party Quality Check of Works CRPF, Arang”, sponsored by CPWD, Raipur.
24. M. Kulshrestha and P. Paliwal, “Indepandent Third Party review of the preliminary design of upcokming state of onnear project at Omkareshwar, MPT”, sponsored by Madhay Pradesh State Tourism Development Corp. Bhopal.
25. M. Kulshrestha, “Review of Drawing & Design for proposed construction of 1000Kld ZLD STP plant at Cordite Factory, Aruvankadu, tamil Nadu”, sponsored by PiloShudaPani Seva Foundation, (PILO)G-35, Sector 6, Noida, UP.
26. M. Kulshrestha, P. Paliwal and C. Parashar, “Technological Innovations and Capacity Building for all in M. P”, sponsored by United Nations Children's Fund (UNICEF), Plot No. 41-42, Polytechnic Colony, shyamla Hills, Bhopal.
27. M. S. Chanuhan and A. K. Thawait, “Vetting of Plumbing/Sanitary services for SSH Bilaspur and Jagdalpur project”, sponsored by AKA Consultants (India) Pvt. Ltd. 8, SBI Office Colony, Near Bima Nagar, Opp, Anand Bazar Indore.
28. M. S. Chauhan and C. Parashar, “Proof Checking of PatyoraDanda Group of Villages Water Supply Scheme, District-Hamirpur (Surface Water) with relevent works including Commissioning and Operation& Maintenance for 10 Years- Request for according Vetting of Hydraulic Drawing & Design of45 MLD CapacityWTP& Intake well”, sponsored by C M R Infrastructure Pvt. Ltd., H-01, Sterling Green View, Phase-1, Chuna Bhatti, Kolar Road Bhopal.
29. M. S. Chauhan, “Scrutiny and Checking of hydraulic Design of Sewer Network for Mandla Sewerage Project”, sponsored by Jay VarudiInfraconPvt. Ltd., 12 rishi valley, Vaishali Nagar Near MANIT, College, Bhopal.
30. M. S. Hora and H. L. Tiwari, “Construction of High Level Bridge across Maini Riveer i/c approach Road on Bahma-Sarga Road”, sponsored by PWD Bridge Zone Raipur (CG).
31. M. S. Hora and H. L. Tiwari, “Proof Checking of Design and Drawing of 3 Nos Minor Bridges at Dahej Station under Vadodara Division of WCR”, sponsored by RCC Infrastructure Consultants Pvt. Ltd., 53 Siddesh Apartment 1st Floor S. E. Railway Layout-II Ranapartapnagar Nagpur.
32. M. S. Hora and H. L. Tiwari, “Proof Checking of High Level Bridge across DOGA DABRA Nalla in km 1/8 on Katulnar-Ghotpat Road”, sponsored by PWD Bridge Zone Raipur (C.G.) .
33. M. S. Hora and H. L. Tiwari, “Proof Checking of Structural Design and Drawing of High level bridge across Ahiran river on (Katghora bypass) Delwadih-Patnipali Road”, sponsored by PWD Bridge Zone Raipur (C.G.).
34. M. S. Hora and H. L. Tiwari, “Proof Checking of Structural design of substructure and foundation of abutments A1 & A2 of ROB of Span 1 x 42.5m (Bow string steel girder Ch: 16225.820 and underpass Crossing of ROB (3 Nos.) for

the project of C/L of Hathband station building in lieu of existing unmanned", sponsored by Ultratech Cement Ltd., 21/470, Civil Lines, Near CM House, Raipur (C.G.).

35. M. S. Hora and H. L. Tiwari, "Proof Checking of Structural Design & Drawing of Pump House of Mohanpura RBC Extension Micro Irrigation Project in District Rajgarh M.P.)", sponsored by Office of the Project Director, MohanpuraKundalia Project Management Unit, Rajgarh (M.P.).
36. M. S. Hora and H. L. Tiwari, "Proof Checking of Structural Design & Drawing of RE Wall of VUP at Km.191+462", sponsored by DilipBuildcon Ltd., Flat No. 301 Apartment No. A-06 SLPL Doctor Colony, Samaj Ekta Gruhnirman Society, somalwada Nagpur.
37. M. S. Hora and H. L. Tiwari, "Proof Checking of Stuctural design & drawing of proposed construction of Pump House of Kundalia RBC Extension Micro Irrigation project in Dist. Rajgarh", sponsored by MohanpuraKundalia Project Management Unit, Rajgarh (M.P.).
38. M. S. Hora and H. L. Tiwari, "Proof Checking of the structural design of foundation with temporary structures for proposed Launching of 36M Bow Sting Girder (BSGB) aand 45.7 M Open Web Girder Bridge (OWGB) OVER EXISTING Railway Tracks near CME Gate, Kharagpur, West Bengal", sponsored by SrijanInfrassociatePvt. Ltd., D-1 West Layout, Road No.1 Sonari, Jamshedpur.
39. M. S. Hora and N. Tiwari, "Cheecking of Design and Drawing of Lord Shri Ram Statue platrom at Ram Tekri Guna", sponsored by Rural Engineering Services Guna (MP).
40. M. S. Hora and N. Tiwari, "Proof Checking of Design & Drawing of Proposed Construction of Hihg Level Bridge across Indrawati River at 2/2 to 2/10 on BedreNugur-Lanka Road", sponsored by PWD Bridge Zone Raipur (CG).
41. M. S. Hora and N. Tiwari, "Proof Checking of High Level Bridge across Duma Nalla in km 2/4 on Ganjopara to Gudiyapara Road", sponsored by PWD Bridge Zone Raipur (CG) (Moksh Construction Jagdalpur).
42. M. S. Hora and N. Tiwari, "Proof Checking of Structural Design & Drawing of proposed construction of 4 Minor Bridge", sponsored by RVNL, Nagpur 2nd floor Flat No. 2A, Ozone Apartment, plot no. 35, Sai Nagar, Engineers Co-operative society, Near Hotel Chalets, Wardha Road, SomalwadaNagpur .
43. M. S. Hora and N. Tiwari, "Proof Checking of Structural Design & Drawing of 4 Nos. of Minor Railway Bridges in connection with proposed Yavatmal-Nanded New B. G. line project under Central Railways", sponsored by RVNL, Nagpur 2nd floor Flat No. 2A, Ozone Apartment, plot no. 35, Sai Nagar, Engineers Co-operative society, Near Hotel Chalets, Wardha Road, Somalwada Nagpur.
44. M. S. Hora and N. Tiwari, "Proof Checking of Structural Design & Drawing of Proposed construction of foundation with temporary Structures for Lunching of 60M. Steel Bow Sting Girder Bridge over Girimaiidan railway Station, Kharagpur, West Bengal", sponsored by Krishi Srijan (JV), 24, New Super Market Complex, west Layout, sonari, Jsr.
45. M. S. Hora and N. Tiwari, "Proof Checking of Structural Design and drawing of high level bridge across kharun River bridge on Supkona-dhodhra road in the state of Chhatisgarh", sponsored by PWD, Bridge Zone Raipur (C.G.).
46. M. S. Hora and N. Tiwari, "Proof checking of structural Design and Drawing of RCC Retaining Walls of height 3, 4m, 5m, & 6m (on city Side) and 6, 7, 8mt. (on river side for the project of Bilaspur Smart City Ltd. (BSCL) Bilaspur (C.G.)", sponsored by RGR Consultants, 3rd Floor RGR House, Besides RS Park, Near SBI Zonal Office, Byron Bazar Raipur.
47. M. S. Hora and N. Tiwari, "Proof Checking of Structural Design and Drawing of RE Wall at VUP Km. 185+134 & LVUP at Km 190+111", sponsored by DilipBuildcon Ltd., Flat No. Apartment No. A-06 SLPL Doctor Colony, Samaj Ekta Gruhnirman Society, somalwada Nagpur.
48. M. S. Hora and N. Tiwari, "Proof Checking of Structural Desing of Box bridges (11 Nos) and RUB (06) for the woek of Rails siding from new dable station to the proposed integrated multimodeal logistic hube (IMLH) at Nangal Choudhary under Delhi-Mumbai Industrial Corrdor (DMIC) Project", sponsored by ARK Engineers, Flat No.3B, 1st Floor Surya Apartment Pocket-A-11, Kalkaji Extention, New Delhi.
49. M. S. Hora and N. Tiwari, "Regarding vetting of design & drawings of proposed RCC Retaining walls and Ghats in Sehore District", sponsored by Narmada Development Division No.23, 59, Arera Hills, Narmada Bhawan, Bhopal.
50. M. S. Hora and N. Tiwari, "Structural Audit of Buildings at 400Kv ItarsiPowergrid S/s DiatHoshangabad (M.P.)", sponsored by Power Grid Corporation of India Ltd. E-5 Arera Colony bhopal.
51. M. S. Hora and R. Nateriya, "Proof checking of structural design for the construction of commercial cum residential multistoried complex in front of nanakheda Bus Stand, Ujjan", sponsored by Ujjain Development Authority, Ujjain.
52. M. S. Hora and R. Nateriya, "Proof Checking of Structural design and drawing of proposed high level bridge & approach road, culvert and protection wall on Nahli river under Sardar Sarover Project", sponsored by Muneer Ahmad Patel, Govt. Contractor & Consultant Engg. 119, Azad Road Sanawad (M.P.).
53. M. S. Hora and R. Nateriya, "Proof Checking of Structural Design & Drawing of Major Bridge NH-43 from Km 130.00 to Km 180.00 (Kanker to Bedma Section) in the state of Chhattisgarh under NHDP_IV through EPC basis", sponsored by Shriram EPC Ltd., 1st Floor, Rajah Annamalal Building No. 18/3, RukmanLakshmipathi Road, Chennai.
54. M. S. Hora and R. Nateriya, "Proof Checking of Structural Design & Drawing of Major Bridge 1. No. Nanded New B.G. Line project under Central Railways (8 Nos of Minor Bridges", sponsored by R V N L, 2nd, Floor Flat No. 2A, Ozone Apartment, Plot no 35 Sai Nagar, Engineers Co-operative Society, Near Hotel Chalets, Wardha Road Somalwada, Nagpur.
55. M. S. Hora and R. Nateriya, "Proof Checking of structural drawings/Layour of STP/ZLD Plants", sponsored by PilorShudaPani Seva Foundation, (PILO)G-35, Sector 6, Noida, UP.
56. M. S. Hora and R. Nateriya, "Regrading vetting of Design & Drawing of proposed RCC Retaining wal and Ghats in Sehore District", sponsored by SV Constructions, 259-268, BDA Complex, 7 No. Stop Shivaji Nagar, Bhopal.

57. M. S. Hora and V. Garg, "Construction of High Level Bridge across Lat Nalla on Goda-Tangar Road", sponsored by PWD Bridge Zone Raipur (C.G.).
58. M. S. Hora and V. Garg, "Proof Checking of Design & Drawing of 2-Lane ROB and approchase at Km 36+800 (jarua) on NH-26A in lieu of existing level crossing No. 11 on Katni-Bina Railway line on Chanage 1011/6-7 on Sagar to Bina road of sagar District", sponsored by Brijech Agarwal, Engineers & Contractors, Nirmala Sadan H. No. 27/1284, Near Gayatri Mandir, Main Road, Vinoba Nagar, Bilaspur, (CG).
59. M. S. Hora and V. Garg, "Proof Checking of Structural Design & Drawing of Proposed Construction Viaduct portion Design & RE Wall at crossings in the State of Bihar-Contract Package No.05 (in Katihar)", sponsored by Brijesh Agrwal, Engineers & Contractors, Nirmala Sada H No. 27/1284, Near Gayatri Mandir Main Road, Vinoba Nagar, Bilaspur (CG).
60. M. S. Hora and V. Garg, "Proof Checking of Structural Design & Drawing of proposed construction of RE Wall at ROB at Ch 1012m near Sindi Station on Nagpur Wardha section of Nagpur Division Maharashtra", sponsored by Deepak R. Lohiya, Engineer & Contractor, Amrit Kunj, Sarafa Line Durga Chowk, GondiaMaharashta.
61. M. S. Hora and V. Garg, "Proof Checking of Structural Design of Minor Bridghes, No.166, 167, 26, 46, 54, 64A, 65A & 28 CRCC slab & box bridgeforRamna-Singrauli Doubling Project between Kaalia Road to Anpura Station under DhandbadDiv", sponsored by RCC Infra. Consultants Pvt. Ltd., 53, siddesh apartments 1st floor S. E. Railway Layout-II RanapratapNagar Nagpur.
62. M. S. Hora, M. Kulshrestha and N. Tiwari, "Structural Audit of Boys Hostel Wing No. 2,3 &4", sponsored by Institute of Hotel Management Catering Technology & Applied Nutrition, Near Academy of Administration, 1100 Quarters Bhopal.
63. N. Dindokar and A. Sharma, "Proof Checking of Structural Design & Drawing for Proposed Construction of Govt. Office Building at Collector Office premises, Sidhi, Govt. Staff Residential (G, H & I Type) quarters at Sidhi Khurd & E-type quarters at Civil lines Sidhi (M.P.) owned by M. P. Housing & Infrastructure Development Board, Division-Singrauli (M.P.)", sponsored by Kushi and Associates, Swawstik Complex, Opp, Jabalpur Hospital, Russel Crossing Jabalpur.
64. N. Dindorka and A. Sharma, "Proof Checking of Structural Design & Drawing for proposed Construction of Over Bridge on Kalamna to Rajiv Gandhi Nagpur (Old Kamptee Road) in Tal Nagpur", sponsored by C S Construction, K-21, Siddha-Laxmi, Bharat Nagar, Amravati Road Nagpur.
65. N. Dindorka and N. Tiwari, "Proof Checking of Structural Design & Drawing of proposed construction of Govt. College ChhatrassalPichhore Distt. Shivpuri & Govt. MadhavaraoScindia P. G. College Shivpuri (M.P.)", sponsored by MPH & IDB, Guna.
66. N. Dindorka and N. Tiwari, "Proof Checking of Structural Design & Drawing of proposed construction of Govt. Nehru P. G. College Ashoknagar and Govt. P. G. College Guna (M.P.)", sponsored by M P H & I D B, Guna (Payment Bhopal.
67. N. Dindorkar and A. Sharma, "Proof Checking of Design & Drawing for proposed construction of Two Lane with paved shoulder with Flexible Pavement on Khalghat-Khargone Road (NH-347 C) Design Length-79.59Km (Excluding Kasrwad, Selani, Khargone &BistanBypasses)in the state of M.P. on EPC mode (Chainage 2+390, 67+665 & 71+210)", sponsored by Bansal Construction Works Pvt. Ltd., E-2/88, Arera Colony, Bhopal.
68. N. Dindorkar and A. Sharma, "Proof Checking of Revision Structural Design & Drawing of Proposed Construction of Kirshak Guest House Co-TraningCenter Bhopal", sponsored by Madhya Pradesh State Agriculture Marketing Board, 26, Arera Hills Kisan Bhawan Bhopal.
69. N. Dindorkar and A. Sharma, "Proof Checking of Structrual Design & drawing of Transfomer Cable and Conductor Testing Laboratory at Chindware, Chhatarpur, Guna, Gwalior & Sagar. (M.P.)", sponsored by Inventive Infra & Automation Engineering Pvt. Ltd., Bunglow No 2 Shivika Enclave, Bawadiya Kalan, Bhopal.
70. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing for proposed construction of College Building (Swami Vivekanand P.G. College Nimach, Sita Ram Jaju Girl's Mahavidyala Govt. College at Nimach, Govt. College GCALR, Ratlam, Govt. Girls College GGCR, Ratlam, Bhagat Singh Govt. College, Jora, Ratlam, Arts & Science P.G. Govt. College, Ratlam& Govt. College GCSLR, SailanaRatlam (M.P.)", sponsored by MPH & IDB Board Division Ratlam.
71. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing for proposed construction of commercial come residential High Rise Building at Sant Hirdaram Nagar Near Mandi Gulab Garden Zone-1 M.P. Nagar Bhopal", sponsored by Technokraft Infrastructure, 16AF-IV, amarStambh Press Complex Zone-1 M.P. Nagar, Bhopal (MRIG Construction).
72. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing of proposed Construction of FOB at Ashoknagar (M.P.)", sponsored by Rail Vikas Nigam Ltd. Bhopal.
73. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing of Madiya Multi Villages Water Supply Scheme of MPJNM (WTP 26.94 MLD, MBRs (1520 & 710 Approximately 2 Nos, OHT 50KL to 225KL 20 Nos & Intermediate PH with Sump of 710KL approximate)", sponsored by LCC Projects Pvt. Ltd., B Wing, 15th Floor Privition Building, Vikram Nagar, Ambji-Bopal Road, Bhiskon Temple, Ahmedabad, Gujrat.
74. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing of proposed Construction Agriculture College Building workshop Sump Well Tank at Ganjbasoda Distt. Vidisha", sponsored by MP State Co-operative Federation Ltd., Jahingirabad, Bhopal.
75. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design of proposed 250 seator Boy's Hostel katara hills Bhopal, Gyanoday School Bhopal and Gyanoday School Hoshangabaad", sponsored by Shailandra Sharma & Associates Architect Bhopal.

76. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design of Infrastructure Development of Colleges and Universities under World Bank Assistance Programme (OHEPEE Phase-II in the State of Odisha for Odisha Public Works Dept", sponsored by L. N. Malviya Infra Projects Pvt. Ltd., Plot no. 29, F/F Sector-11 New Delhi.
77. N. Dindorkar and A. Sharma, "Proof Checking of Structural Design & Drawing for proposed construction of Malti Level Car Parking at Collectorate Office Premises Bridges, Bilaspur (CG) Work under MD, Bilaspur Smart City Ltd.)", sponsored by Deepak Pandey, A Class Civil and Electrical Contractor, Shop No.1 Pt. Lakhan Lal Mishra Complex, Kankli Papa, Raipur (CG).
78. N. Dindorkar and A. Sharma, "Structural Audit Structural Audit of year 1983 Building Constructed at local head office Arera Hills Bhopal (M.P.)", sponsored by State Bank of India, Premises & Estate Department local Head Office, Hoshangabad Road, Bhopal (M.P.) .
79. N. Dindorkar and A. Sharma, "Structure Audit existing Barracks in Rajbhawan Campus Bhopal", sponsored by PWD, Maintenance Division No.1 Bhopal.
80. N. Dindorkar and A. Sharma, "Vetting of Design & Drawing of proposed Semi Commercial Complex at ChhotiOmti, Jabalpur (MP Housing & Infrastructure Development Board, Division-2 Jabalpur.)", sponsored by Kushi and Associates, Swawstik Complex, Opp, Jabalpur Hospital, Russel Crossing Jabalpur.
81. N. Dindorkar and C. Parashar, "Proof Checking of Structural Design & Drawing for FOB at Piprigaon for construction of Double Line Work between Bina to Guna (Pkg-III)", sponsored by Rail Vikas Nigam Ltd. Bhopal (RVNL Bungalow No. 116, Railway Officer Colony, Mala Road, Kota (Rajasthan).
82. N. Dindorkar and C. Parashar, "Proof Checking of Structural Design & Drawing for FOB at Mangaoli for construction of Double Line Work between Bina to Guna (Pkg-III)", sponsored by Rail Vikas Nigam Ltd. Bhopal (RVNL Bungalow No. 116, Railway Officer Colony, Mala Road, Kota (Rajasthan).
83. N. Dindorkar and C. Parashar, "Proof Checking of Structural Design & Drawing for FOB at Rehatwas for construction of Double Line Work between Bina to Guna (Pkg-III)", sponsored by Rail Vikas Nigam Ltd. Bhopal (RVNL Bungalow No. 116, Railway Officer Colony, Mala Road, Kota (Rajasthan).
84. N. Dindorkar and J. Raheem, "Proof Checking of Structural Design & Drawing for proposed construction of ROB at Railway Chainage 1156.740 meter of Satna-Maihar-Katni Section of WCR Jabalpur Division. ", sponsored by GRTCPL-AIPL JV, Shop No. 6, Triveni Complex, Near Gulati Petrolpump Nagpur Road, Jabalpur.
85. N. Dindorkar and J. Raheem, "Proof Checking of Structural Design & Drawing for proposed Construction of Office and Residential Complex at Fatehgarh Fire Brigade, Ward-08, Zone-02 Bhopal", sponsored by Supreme Buildcon (P) Ltd., Chamber No. 12, IInd Floor, Plot No. 138, Zone-Iind, M.P. Nagar, Bhopal .
86. N. Dindorkar and J. Raheem, "Proof Checking of Structural Desing& Drawing for Proposed construction of ROB Chainage: 20+637.149 to 20 +699.277, Chainage: 20 + 645. 844 to 20 + 767.928, Chainage: 20 + 627.609 to 20+ 689.687 and Chainage 20 + 655.418 to 20 + 717.501 at km 20/27-20/29 of Delhi Rohtak Section near Mundka Railway Station (Northern Railway)", sponsored by Krishna Constellation Pvt. Ltd., Ceigall India Ltd (JV) B-901, 9th Floor Golden Heights, Green Wood City, Meerut (U.P.).
87. N. Dindorkar and J. Raheem, "Structural Stability of Nine Years old Incomplete Construction work of Veterinary Hospital Science & Animal College at Rewa (M.P.)", sponsored by MPPH & IDB, Division-01, 11558, Rishi Cottage, Opposite Gorakhpur Thana Near (labour Court) Katinga, Jabalpur (M.P.).
88. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed construction of 56 LIG & 126 EWS at SillarporKarera M.P. (project Atal AshraYojna)", sponsored by MPH & IDB, Division Guna.
89. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed construction of Govt. College Shahgarh, Govt. College, Jirapur, Govt. College, Sarni& Govt. PG College Udaipura at (M.P.) (projeect under Bhopal Vikas Pradhikaran, Bhopal)", sponsored by Kalakaar, Architect, Engineer, 206, B. M. Tower, Opposite Lotus Showroom Sapna Sangeeta Road Indore (M.P.).
90. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed construction of Govt. Arts & Commerce College-Sagar, Govt. PG Girls College, Sagar, Govt. College, Bansa, Govt. College Patriyah, Govt. College, Hatta, Govt. Kamla Nehru Girls College, Damoh, Govt. PG College Damoh, Govt. PG College Tikamgarh, Govt. Chhatrasal Maharaja College, Maharajpur, Raja Harpal SinghGovt. College, Harpalpur Chhatarpur, Govt. Girls College Chhatarpur, Govt. Maharaja College, Chhatarpur at (M.P.) (projeect under Bhopal Vikas Pradhikaran, Bhopal)", sponsored by Kalakaar, Architect, Engineer, 206, B. M. Tower, Opposite Lotus Showroom Sapna Sangeeta Road Indore (M.P.).
91. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed construction of Govt. College Bandari, Govt. College Sirali, Govt. College Lidhora, Govt. College Mohangarh, Govt. Girls College Panna, Govt. College Naryavali, Govt. College Dolariya, Govt. College Gopalpur, Govt. College Ghoradongri and Govt. College Khimlasa at (M.P.) (projeect under Bhopal Vikas Pradhikaran, Bhopal)", sponsored by Kalakaar, Architect, Engineer, 206, B. M. Tower, Opposite Lotus Showroom Sapna Sangeeta Road Indore (M.P.).
92. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed Construction of over Bridge ShantinagarKawalapeth Railway Crossing in Tashil& Distt. Nagpur", sponsored by CS Construction, K-21, Siddha-Laxmi, Bharat Nagar, Amravati Road Nagpur.
93. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design & Drawing for proposed construction of Shop Cum Residential Complex at Old office Complex and Staff Quarters LandatHathital Colony Jabalpur (M.P.)", sponsored by AwaneeshNema& Associates, 1st Floor No.201A Khushi Plaza, BhanwartalWxtn. Napier Town Jabalpur.
94. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Design 7 Drawing for proposed Restroration work of RE Wall at ROB 1+462 (Rehabilitation and Up-gradation of Katni-Umaria Section of NH-78 from km. 0/000 to km

7/950 (katni bypass). M.P", sponsored by KalthiaEngineeging and Construction Ltd. Patel Infrastructure Pvt. Ltd. Joint Venture, Kalthia House, 193, SatyagarhChhavani, Opp. ISCON Mall, S. G. Highaway, ahmedabad (Gujrat).

95. N. Dindorkar and N. Tiwari, "Proof Checking of Structural Drawings for proposed construction of college Building at Badwani, Khandwa &Mandleshwar (M.P.)", sponsored by Shrikant Vaishampayan, Consulting Structural Engineers-Architects-valuers-Vastu Planners, Madhav Club Road, Rreeganj, Ujjain.
96. N. Dindorkar and P. Dhurvey, "Proof checking of Structural Design & Drawing of Proposed construction of college building Amadara, BaderaUnchehara Distt. Satna", sponsored by M P Housing & Infrastructure Devl. Board Division-Satna.
97. N. Dindorkar and P. Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of commercial come residential High Rise Building at Sant Hirdaram Nagar Near Mandi Gulab Garden Zone-1 M.P. Nagar Bhopal", sponsored by Technokraft Infrastructure, 16AF-IV, amarStambh Press Complex Zone-1 M.P. Nagar, Bhopal (DS Developers).
98. N. Dindorkar and P. Dhurvey, "Proof Checking of Structural Design and Drawing of proposed construction of Shopping Complex at Nadra Bus Stand Ward No.18 ZoneNo.4 Bhopal", sponsored by Technokraft Infrastructure, 16AF-IV, amarStambh Press Complex Zone-1 M.P. Nagar, Bhopal Shawar Siddiqui.
99. N. Dindorkar and P. Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of Govt. Excellence School No.1 Bhind, Govt. Model Higher Secondary School GohadBhind, Govt. M.L.B., Girlss School Bhind and Govt. Excellence School Datiya and Dog Kennel Ujjain (M.P.)", sponsored by Ajeet Kumar Lalwani, Architect, Planner, 225-D Gayatri Aptt. Zone 1 M. P. Nagar Bhopal.
100. N. Dindorkar and P. Dhurvey, "Proof Checking of Structural Design & Drawing for proposed construction of High Level Bridge Khamriya Tikre Amona road at Simravan River Distt. Satna (M.P.)", sponsored by NityantaInfraprojectsPvt. Ltd., Near of Shukla Rice Mill, chillaJaitwara, distt. Satna (M.P.).
101. N. Dindorkar and P. Dhurvey, "Structural Fesibility analysis of Major Bridge at CH 5.860 (Kopra River) and CH 20+370 (Sonar River) balance work at Damoh-Patharia Road (M.P.)", sponsored by A B Construction & Development Co., Line No. 14 Q. No. 31 Birla Nagar, Gwalior.
102. N. Dindorkar and R. Kumar, "Proof Checking of Structural Design & Drawing of Building of 100 Bedded Civil Hospital at Govindpura, Bhopal (M.P", sponsored by Arcons, Architectural Consutlancy Services, S-24 & S-28 Mezzanine Floor, G.T.B. Complex T.T. Nagar Bhopal.
103. N. Dindorkar, "Proof Checking of H. L. Bridge across Son River in KM 38/6, singola Nalla in KM 50/8, &Karanj Nalla in KM 52/10 on Rajegaon- Kirnapur-Lanji-Amgaon Road in Balaghat Distt", sponsored by Sundrani Infrastructure Co., Sharnagatti, 819 Sector-II Devendra Nagar Raipur (CG).
104. N. Dindorkar, "Proof Checking of Structural Design & Drawing for proposed Construction of ROB for four laning of HardaTemagav Project", sponsored by Harda Pathways Pvt. Ltd., 76 Mall Road, Mhow Dist. Indore.
105. N. Dindorkar, "Proof Checking of Structural Design & Drawing for proposed construction of Nagar Nigam Head Office Building at Bhopal", sponsored by Sahita Construction Company, Bhagya-Villa 174, Neelkanth Colony, Idgah Hills, Bhopal .
106. N. Dindorkar, "Proof Checking of Structural Design & Drawing for proposed construction of High Level Bridge across Sone river on NakjharBamuriSihawal Road in Km 7/10", sponsored by PWD, Bridge Construction Zone, Nirman Bhawan, Plot No.27 & 28, Iind Floor, Arera Hills Bhopal.
107. N. Dindorkar, "Proof Checking of Structural Design & Drawing of proposed Constrution of Tunnel No. 02, 03 & 04 Rewa-Sidhi new BG Rail Line West Central Railway Project", sponsored by S M S Ltd., IT Park, 20 S.T.P.I. Gayatri Nagar, Parsodi, Nagpur .
108. N. Dindorkar, "Proof Checking of Structural Design & Drawing of proposed Construction of Meghnagar rebalancing project Division Dhar Distt. Jhabua", sponsored by MPH & IDB, Division Dhar.
109. N. Dindorkar, "Proof Checking of Structural Design & Drawing of proposed Constructuion Super Specialty Hospital (240 Beds) at Bilaspur &Jagdalpur Chhattisgarh under PMSSY (Phase IV)", sponsored by Tekno Engineering Consultants, GF-50, Bhagat Mata Karma Parisar, New Rajendra Nagar, Raipur (CG).
110. N. Dindorkar, "Proof Checking of Structural Design of proposed Bus Terminal Complex at Vidhya Nagar Bhopal (MP)", sponsored by Bhopal Development Authority Bhopal.
111. N. Dindorkar, "Proof Checking of Structural Design of proposed construction 50 seator Girl's Hostel at Veterinary University Adhartal Jabalpur, 50 Seator Boy's and Girl's Hostel Building Patan &Sihora (M.P.)", sponsored by Shailandra Sharma & Associates Architect Bhopal.
112. N. Dindorkar, "Proof Checking of the construction of Bridge Across Dev River Near Rajegaon Village on RajegaonToLanjhi Road", sponsored by Sundrani Construction Co. Engineers & Contractors, Rukmani Bhawan, c-89, sector IV, Devendra Nagar, Raipur (CG).
113. N. Dindorkar, "Proof Checkingof Structural Design & Drawing of proposed Construction Govt. GSV College Mungaoli, Govt. Madhav college Chanderi Distt Ashoknagar& Govt. Girls College Shivpuri", sponsored by MP Housing and Infrastructure Devlp. Board Division Guna.
114. N. Dindorkar, "Vetting the Structural Drawing for Boundary Wall at Khelgaon Gwalior (MP)", sponsored by Earth Associates, E-3 Sr. MIG-12 Arera Colony, Bhopal.
115. N. Dindorkar, C. Parashar and A. Sharma, "Proof Checking of Structural Design & Drawing for proposed construction/expansion of College Building at Tendukheda, Nasrullahganj, Aathner, MakkroniaBuzurg, Pachore, Lateri, Narsinghgarh, Rahatgarh, Palera, Bina, Ganjbasoda, Tikamgarh, Jatara, Badamalehra, Luvkushnagar under Department of Higher Education (M.P.). ", sponsored by BDA Bhopal.
116. N. Tiwari and M. S. Hora, "Inspection of Floor Area in Construction of Salkanpur Devi Mandi at Salkanpur Distt. Sehore (M.P.)", sponsored by PWD, Division Budni Distt. Sehore (M.P.).

117. N. Tiwari and M. S. Hora, "Structural Audit for construction of Rainbasera with shoping Complex Ward No. 32 Zone No.2 at New Market Bhopal", sponsored by PWD, Division-1 Bhopal.
118. P. K. Agarwal and P. K. Das, "Mix Design of D.G.B.M & B.C. of construction of 12M wide Smart City Road at North and south TT Nagar with allied work under area bassed development Bhopal-Smart City", sponsored by Serman (India) Road Makers Pvt. Ltd., F-9, 1st Floor, Nadra Complex SBI ChourahaSultania Road, Bhopal.
119. P. K. Agarwal, "Audit of Component-wise expenditure incurred on infrastructure of Plastic Park developed by the corporation in village Ramot& to provide opinion onquality of the work", sponsored by MP Plastic Park Development Corp. Ltd., Tawa Complex First Floor Bittan Market E-5Arera Colony Bhopal.
120. P. K. Agarwal, "Safty Audit of project Highway at Final COD Stage-Reg. NH-361 from Km 320.580 to Km 400.575 (Package-II) in the Maharashtra", sponsored by DilipBuildconLtd.Flat No. 301, Apartment No. A-06, Slpl Doctor Colony, Samaj Ekta Gruhnirman Society, Somalwada, Nagpur.
121. P. K. Agarwal, "Safty Audit of project Highway at Final COD Stage-Reg. NH-361 from Km 465.500 to Km 524.690 length 59.190 Km) in the Maharashtra", sponsored by DilipBuildconLtd.Flat No. 301, Apartment No. A-06, Slpl Doctor Colony, Samaj Ekta Gruhnirman Society, Somalwada, Nagpur.
122. P. K. Agarwal, "Scrutiny of project proposals for the State of M.P. under Pradhan Mantri Gram SadakYojna (PMGSY)", sponsored by NRRDA, 5th floor-NBCC Tower, BheikajiCama Place, New Delhi.
123. P. K. Agarwal, R. Kumar, P. K. Das and Bivina G. R., "Security project proposals for the State of M. P. under Pradhan Mantri Gram SadakYojna (PMGSY)-Payment to the state technical agencies (STAs)", sponsored by NRRDA, 5th Floor, 15-NBCC Tower, bhikajiCama Place, New Delhi .
124. P. K. Agarwal, S. Rokade, P. K. Das and Bivina G. R., "Security project proposals for the State of M. P. under Pradhan Mantri Gram SadakYojna (PMGSY)-Payment to the state technical agencies (STAs)", sponsored by NRRDA, 5th Floor, 15-NBCC Tower, bhikajiCama Place, New Delhi .
125. P. K. Jain and N. Dindorkar, "Inspection of incomplete RCC Structure Checking of Design at Red CrossHospital Bhopal", sponsored by PIU, Unit PWD, Shead No.14-A Jawhar Chock, Bhopal (General Secratry Indian Red Cross Society Bhopal).
126. P. K. Jain and N. Dindorkar, "Slop Stability of embankment and Toe Wall of important Bridge of span 27 x 30.5m with an overall length 880m, division of Railway line between Biaora-Pachor Road Section on Guna (M.P.)", sponsored by West Central Railway Bhopal .
127. P. K. Jain and N. Dindorkar, "Soil Investigation of prioposed construction of Head Office Building of Nagar NigmaBhopalat opp. Saint Merry School Link Road No.2 Bhopal", sponsored by Nagar PalikaNigma Bhopal.
128. P. K. Jain, "Slope Stability Analysis of Bank of Major-Bridge at CH 5920, CH: 6020& CH: 6300 in connection with Double line between MDVK-KAROD-MAKR", sponsored by Rail Vikas Nigam Ltd., RVNL, Bungalow No. 116, Railway Officer Colony Mala Road, Kota Rajasthan.
129. P. K. Jain, "Structural Stability test Nitration Buildings No. NC-602 Ordnance Factory Itarsi", sponsored by Ordnance Factory Itarsi,.
130. R. Kumar, "Soil Testing 12 location at NH-78 from Katni to Umaria", sponsored by KalthiaEngineeging and Construction Ltd. Patel Infrastructure Pvt. Ltd. Joint Venture, Kalthia House, 193, SatyagarhChhavani, Opp. ISCON Mall, S. G. Highaway, ahmedabad (Gujrat).
131. R. Kumar and N. Dindorkar, "Geotechnical Infestigation for the proposed construction of Hostel & Dinning Hall for 1050 Students wioth double occupancy at IISER Bhopal", sponsored by CPWD, Bhopal Division-II 52 NirmanSadan 1st floor Arera Hills Bhopal.
132. R. Kumar and P. K. Jain, "Soil investigation for proposed Construction of 150000 liters Over Heas Tank with 20 Meter Staging Height at CFMT & TI, Budni (M.P.)", sponsored by CPWD, Division-2 Bhopal.
133. R. Kumar and P. K. Jain, "Soil Investigation for proposed construction of 0.375 unit Boys dormitory for 72 students with 1 o warden residence & 0.125 Unit Girls dormitory for 24 students with 1 No. warden residence at JNV, Harda", sponsored by CPWD, Indore Division-II, 201, NirmanSadan, 52-A Arera Hills Bhopal .
134. Rutuja M. Chavan, "Scrutiny of Detailed Project Report for the State of M.P. under Pradhan Mantri Gram SadakYojna (PMGSY) as Team Member in State Technical Agency of Madhya Pradesh of MANIT Bhopal, identified by National Rural Infrastructure Development Agency", sponsored by NRIDA.
135. S. P. S. Rajpuat, "Mix Design M-15,M-20,M25,M-30 & M-35 & Narbada Sand, Aggregate 10, 20mm testing for construction of Multistoried F type and G Type Government Houses project at TT Nagar Bhopal (under Smart City Bhopal)", sponsored by Yash Nand, Engineers & Contractors Bhopal.
136. S. P. S. Rajput, "Proof Checking of Construction of Shop &High Rise Residential Complex at Neelbad near Dushera Maidan (blcom A & B) Ward No. 26 Zone No.6", sponsored by Barun Builders and Consultants, Flat No. 9 block A, Star Pocket 3, Sagar Royal Heights, Distt Bhopal.
137. S. Rokade and P. Das, "Analysis and Design of Cement Concrete Pavement", sponsored by Office Nagar Parishad Kuravar Mandi Distt. Rajghar.
138. S. Rokade, K. Singh, P. K. Agarwal and P. K. Das, "Security project proposals for the State of M. P. under Pradhan Mantri Gram SadakYojna (PMGSY)-Payment to the state technical agencies (STAs)", sponsored by NRRDA, 5th Floor, 15-NBCC Tower, bhikajiCama Place, New Delhi.
139. S. Rokade, N. Dindorkar, K. Singh, J. Raheem and R. Chauhan, "Scrutiny of project proposals for the State of M.P. under Pradhan Mantri Gram SadakYojna (PMGSY)", sponsored by NRIDA, Ministry of Rural Development Govt. of India, 15 NBCC Tower, 5th Floor, BhikajiCama Place, New Delhi.
140. V. Garg and S. K. Dubey, "Mix Desing M-25 for construction of Additional 1 No. C Type, 2 Nos. D type and Auditorium at NTPC Khargone Township", sponsored by NTPC Ltd. Khargone (Shanti Procon LLP) Build Well Engineers-Khargoan.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 56 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
P. K. Agarwal	Foldable Walkway Pavement System For Different Types of Walk	Published

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
H. L. Tiwari	Seminar	Changing Trends in Remote Sensing & Space Technology	-	15-Aug-2021	15-Aug-2021
H. L. Tiwari	Seminar	Assessment of water in a basin	-	30-Sep-2021	30-Sep-2021
H. L. Tiwari	Seminar	Rooftop Rainwater Harvesting	-	29-Oct-2021	29-Oct-2022
H. L. Tiwari	Webinar	Webinar-World water Day -Ground Water making Invisible Visible	-	22-Mar-2022	22-Mar-2022
Jyoti Sarup	FDP - ATAL 2021	Remote Sensing and GIS application in spatial planning and development	55	12-05-2021	10-12-2021.
P. K. Agarwal	STPP	Road Safety for Engineers	-	28-Feb-2022	05-Mar-2022
Rakesh Kumar	Webinar Organised	Forensic Investigations of Energy Dissipators Foundations Using GPR	-	13-Oct-2021	
Rakesh Kumar	Webinar Organised	Ground Improvement Using Locally Available Materials	-	28-Dec-2021	
Rakesh Kumar	Webinar Organised	NDT Techniques To Determine Unknown Depth of Foundation	-	04-Feb-2022	

Expert Lecture Organised

Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
P. K. Jain	MMM Univercity of Technology Gorakhpur	Loil Properties used for evaluation of dynamic siol Parameters and liquefaction potential of sand deposits	24-Sep-2021
P. K. Jain	NirmaUniversity, Ahemadabad,	Use of local Materials for road construction	20-Dec-2021
P. K. Jain	DMI, Bhopal	Earthquake Resistant Building, Building Codes and soil Liquefaction	02-Feb-2022
H. L. Tiwari	Dr. K. S. Mishra Adnl Director Greneral Geological Survey of India	Changing Trends in Remote Sensing & Space Technology	15-Aug-2021
H. L. Tiwari	Dr. R. K. Jaiswal, Scientist E, NIH Roorkee (RO Bhopal)	Assessment of water in a basin	30-Sep-2021
H. L. Tiwari	Dr. S. M. Yadav, Professor, SVNIT Surat	Rooftop Rainwater Harvesting	29-Oct-2021

Lab

Name of Lab	Facilities/ Equipments	Research Carried	Output
Engineering Geology	Electronic Microscope for Petrography and Software for Analysis	Thin section study of Various treated Concrete Materials	Significant changes obsevred after treatment of concrete in strengths
Engineering Geology	Grinding, polishing machine	Basic preparation of Thin section	Micrometer size sections of concrete
Remote Sensing Lab	Arch GIS / ENVI Software	Anlysis of Hyperspectral and	Output is in the form of

Name of Lab	Facilities/ Equipments	Research Carried	Output
		Microwave Satellite data and generation of various thematic layers	integrated maps

Summary

Particulars	Total Numbers
Faculty Members	32
PhD Scholars	55
Book Publications	02
Chapter Publications	10
Publication in International Journal Publication	32
Publication in International Conference Publication	19
Publication in National Conference Publication	01
Faculty Outreach	56
Patents	01
Research Projects	02
Consultancy Projects	140
Workshops/Seminar Organized	09
Expert Lectures Organised	06
Lab Facilities Developed	03

DEPARTMENT OF COMPUTER SCIENCES AND ENGINEERING

Computer Science and Engineering

Technological change is ongoing phenomenal for improvement of 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 the inception, it is consistently creating its place of excellence not only within the institute but among its counter parts in the country and abroad. Department of CSE will continue to provide high impact on 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 activity. Students with high rank in competitive exams like JEE and GATE join the department at under graduate, post graduate, 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 46 research papers in reputed International journal, 28 International conferences and 13 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 developes Tools to gather and analyze Digital Evidences and Solar Irradiance Forecasting which gives real time model for reliable forecast 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).

Faculty and Programmes

Professor	
Dr.Meenu Chawla	Dr. R. K. Pateriya
Dr.NilayKhare	
Associate Professor	
Dr. Deepak Singh Tomar	Dr. Vasudev Dehalwar
Assistant Professor	
Dr. Akhtar Rasool	Dr. Namita Tiwari
Dr. B. N. Roy	Dr. Pragati Agrawal
Dr. Dhirendra Pratap Singh	Dr. Rajesh Wadhvani
Dr.Jaytrilok Choudhary	Dr.Sanyam Shukla
Dr. Jyoti Bharti	Dr. Sri Khetwat Saritha
Dr. Manasi Gyanchandani	Dr. Sweta Jain
Dr. Manish Pandey	Dr. Vaibhav Soni
Dr. Mitul Kumar Ahirwal	Dr. Vijay Bhaskar Semwal

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

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

PhD Scholars

Name	**Title/Area of Research**
Abha Singh Sardar	Decision Making
Abhishek Jadhav	Deep Learning
Aditya Dubey	Missing at Random Data Imputation Using Similarity Based Techniques
Alok Sahelay	Emotion Analysis

Name	Title/Area of Research
Anjali Gupta	Gait Analysis for Rehabilitation
Ankita Choudhary	A Novel Blockchain Framework for National Academic Credit Bank in Context of NEP 2020
Anupama Jain	Information Security
Arwind Kumar	Machine Learning
Ashish Kumar Raikwar	Machine Learning Artificial Intelligence
Ashwini Kumar Malviya	Quantum Cryptanalytic Attacks on Symmetric Block Cipher
Bhavana Swarnkar	Deep Learning Approaches for Medical Imaging
Chandra Prakash Singh	Image Cryptography
Chandrabhushan Prasad	Context Aware Recommender System using Graph Neural Network
Gaurav Shrivastav	Computer Networking
Harish Baraithiya	Cloud Computing
Kapil Kumar Soni	Design and Analysis of Quantum Based Pattern Matching Algorithm
Kaptan Singh	Enhanced Security, User Authorization and Ownership Transfer Framework for Web of Things
Khushboo Singh	Multiclass Classification of Human Emotions from EEG Signals using Deep Learning Model
Lalit Kumar	Parallel Approach for Population Based Metaheuritic Optimization Algorithms
Lokesh Yadav	A Hybrid Approach for Malware Analysis with API Call Sequence
Madhavi Patel	Image Captioning using Machine Learning
Mahesh Gour	Deep Learning Approaches for medical image segmentation and classification
Manoj Kr Jhariya	Digital Identification and Authentication Framework for Access Management if IoT Devices Using Blockchain
Mithun Singh Ahirwar	Human Activity Recognition
Muktesh Gupta	Time Series Analysis Using Machine Learning
Nikhil Nigam	A Framework to Optimize the Traffic Signal for IntelligentTraffic Management System Through Spatial Occupancy
Pratibha Tokas	Human Gait Analysis for rehabilitation
Rahul Jain	Human Gait Analysis, Biped Robotics
Rahul Singh	Agricultural Crop Damage Calculation Using Satellite Images and Machine Learning
Rajeev KumarGupta	IDS
Rakesh Bharti	An Integrated Approach for Text and Annotated Data to Predict Fake Post and Hate Speeches
Rashmi Lodhi	Cloud Computing
Reenu Rajpoot	Computer Vision with Deep Learning
Richa Goenka	Cyber Security
RijvanBeg	Malware Forensics
SadhnaBijrothiya	Human Activity Recognition
Sana Akbar	Quantum Computing
Santosh Kumar Sahu	Plant Foliar Disease Detection from Leaf Images Using Machine Learning Techniques
Sarita Sahani	An Ensemble of Deep Learning Models for Human Activity Recognition
Snehlata Yadav	Semantic Secure Broadcast Encryption Schemes Using Asymmetric Cryptography
Sonika Shrivastava	Cloud Compugting
Sourabh Shrivastava	Novel Variants of SVM for Classification
Sowkarthika K.	Machine Learning Algorithm for Classification
Sreemoyee Biswas	Enhanced data privacy using machine learning techniques for correlated large datasets.
Sumit Gupta	Community Detection in Large Social Garphs
Suneet Joshi	Improved Scheme for Anomaly Detection in Online Social Network
Surendra Solanki	Cognitive Radio
Sushil Chaturvedi	Application of Machine Learning
Varsha Kushwah	Machine Learning
Vishal Singh Bhati	Computer Vision and Image Processing
Yogesh Kumar Sharma	Information Security and Machine learning

Chapter Publications

1. Akash Pratim Bora, Pragati Agrawal and Sumit H. Dhawane, “Vegetable oil-based epoxy composites”, In: Akash Pratim Bora, Pragati Agrawal and Sumit H. Dhawane (eds.), Vegetable Oil Based Composites- Processing, Properties and Applications, Springer Nature, 2022.
2. Bhawna Swarnkar, NilayKhare and Manasi Gyanchandani, “Survey of Deep Learning Methods in Image recognotion& Analysis of Intrauterine residues”, In: Bhawna Swarnkar, NilayKhare and Manasi Gyanchandani (eds.), Machine Learning & Deep Learning in Medical data analytics & healthcare applications, CRC Press, 2022.

3. Dilip Kumar Choubey, Vaibhav Shukla and Vaibhav Soni, "Internet of Things: Technologies and Research Directions", In: Anand Sharma, Sunil Kumar Jangir, Manish Kumar, Dilip Kumar Choubey, Tarun Shrivastava and S. Balamurugan (eds.), Industrial Internet of Things, CRC Press, 2021.
4. Jaytrilok Choudhary and Dhirendra Pratap Singh, "Survey of Real-Time Object Detection for Logo Detection System", In: A. Sheth, A. Sinhal, A. Shrivastava and A. K. Pandey, (eds.), Intelligent Systems. Algorithms for Intelligent Systems, Springer, 2022.
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7. Md. Imteyaz Mohsin and Jyoti Bharti, "Fingerprint-A Survey on Feature Transformation", In: A. Pasumpon Pandian, Ram Palanisamy, M. Narayanan and Tomonobu Senjyu (eds.), Proceedings of Third International Conference on Intelligent Computing, Information and Control Systems. Advances in Intelligent Systems and Computing, Springer Nature Singapore Pvt Ltd, 2022.
8. Priyanka Gupta, Lokesh Yadav and Deepak Singh Tomar, "Internet of Things: A Comprehensive Study on Machine Learning-based Intrusion Detection Approaches", In: Mamta Khosla and Indu Saini (eds.), Proceedings of International Conference on Women Researchers in Electronics and Computing, AIJR Publisher, 2021.
9. Priyanka Gupta, Lokesh Yadav and Deepak Singh Tomar, "Internet of Things: A Survey on Fused Machine Learning-Based Intrusion Detection Approaches", In: Deepak Gupta, KojSambyo, Mukesh Prasad and Sonali Agarwal (eds.), Advanced Machine Intelligence and Signal Processing, Springer, Singapore, 2022.
10. PriyanshiKhare, Rajesh Wadhvani and Manasi Gyanchandani, "Generating Data for Real World Time Series Application with GRU-Based Conditional GAN", In: Mukesh Saraswat, Sarbani Roy, Chandreyee Chowdhury and Amir H. Gandomi (eds.), Proceedings of International Conference on Data Science and Applications, Springer Link, 2021.
11. Saman Qureshi, Sri Khetwat Saritha and D. Kishan, "Answer Selection in Community Question Answering Using LSTM", In: AakankshaSharaff, G. R. Sinha and Surbhi Bhatia (eds.), New Opportunities for Sentiment Analysis and Information Processing, IGI Global, 2021.
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13. Shreya Pandey and Jyoti Bharti, "Document Enhancement and Binarization using Deep Learning approach", In: A. Pasumpon Pandian, Ram Palanisamy, M. Narayanan and Tomonobu Senjyu (eds.), Proceedings of Third International Conference on Intelligent Computing, Information and Control Systems. Advances in Intelligent Systems and Computing, Springer, Singapore, 2022.
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15. Sudarshan Kapadnis, Namita Tiwari and Meenu Chawla, "Developments in Capsule Network Architecture:A Review", Suresh Chandra Satapathy, Peter Peer, Jinshan Tang, Vikrant Bhateja and Anumoy Ghosh (eds.), Intelligent Data Engineering and Analytics, Springer, 2022.
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17. Vikas Kumar and Sri Khetwat Saritha, "Sentiment Time Series Analysis on US Economic News", In: AakankshaSharaff, G. R. Sinha and Surbhi Bhatia (eds.), New Opportunities for Sentiment Analysis and Information Processing, IGI Global, 2021.
18. Virendra Akhil, Rajesh Wadhvani and Manasi Gyanchandani, "Clustering-Based Hybrid Approach for Wind Speed Forecasting", In: Deepak Gupta, Zdzislaw Polkowski, Ashish Khanna, Siddhartha Bhattacharyya and Oscar Castillo (eds.), Proceedings of Data Analytics and Management, Springer Link, 2021.

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2. Amarjeet Yadav, Aditya Dubey and Akhtar Rasool, "Data Mining Based Imputation Techniques to Handle Missing Values in Gene Expressed Dataset", International Journal of Engineering Trends and Technology, Volume 69(9), pp. 242-250, 2021.
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4. Anil K. Yadav, R. K Pateriya and Punit Gupta, "Hybrid Machine Learning Model for Face Recognition using SVM", Computers, Materials and Continua, Volume 72(2), pp. 2697-2712, Jan 2022.
5. Anjali Gupta and Vijay Bhaskar Semwal, "Occluded Gait Reconstruction in Multi Person Gait Environment Using Different Numerical Methods", Multimedia Tools and Applications, Springer, Volume 81(16), pp. 23421-23448, July 2022.

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8. B. S. Raghuwanshi and Sanyam Shukla, "Minimum Class Variance Class-Specific Extreme Learning Machine for Imbalanced Classification", Expert Systems with Applications, Volume 178, Sep 2021.
9. B. S. Raghuwanshi and Sanyam Shukla, "Minimum Variance-Embedded Kernelized Extension of Extreme Learning Machine for Imbalance Learning", Pattern Recognition, Volume 119, Nov 2021.
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11. Gaurav Hajela, Meenu Chawla and Akhtar Rasool, "Crime Hotspot Prediction Based on Dynamic Spatial Analysis", ETRI Journal, Volume 43(6), pp. 1058-1080, Dec 2021.
12. Gaurav Hajela, Meenu Chawla and Akhtar Rasool, "A Heuristic Approach to Crime Prediction based on Generalization of Crime Categories", Recent Patents on Engineering, Volume 15(4), pp. 74-79(6), 2021.
13. Mahesh Gour and Sweta Jain, "Automated COVID-19 Detection from X-ray and CT Images with Stacked Ensemble Convolutional Neural Network", Biocybernetics and Biomedical Engineering, Volume 42(1), pp. 27-41, 2022.
14. Mahesh Gour and Sweta Jain, "Uncertainty-Aware Convolutional Neural Network for COVID-19 Disease Detection using X-ray Images", Computers in Biology and Medicine, Volume 140, Nov 2021.
15. Manju Lata Sahu, MithileshAtulkar and Mitul K. Ahirwal, "Cloud-Based Remote Patient Monitoring System with Abnormality Detection and Alert Notification", Mobile Networks and Applications, Volume 1, 1-17, 2021.
16. Neeraj Shrivastava and Jyoti Bharti, "Breast Tumor Detection in MR Images Based on Density", International Journal of Image and Graphics, Volume 22(1), 2021.
17. Neeraj Tantubay and Jyoti Bharti, "An Efficient Biocrypto-System using Least Square Polynomial Curve Fitting with Interpolation Based New Chaff-Points Generation Method", Advances in Electrical and Computer Engineering, Volume 21(3), pp. 21-30, 2021.
18. Nidhi Dua, Shiva Nand Singh and Vijay Bhaskar Semwal, "Inception Inspired CNN-GRU Hybrid Network for human Activity Recognition", Multimedia Tools and Applications, Springer, pp. 1-35, 2022.
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24. 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 Classi"ication", Symmetry, Volume 14(2), 2022.
25. Sana Akbar and Sri Khetwat Saritha, "Quantum Inspired Community Detection for Analysis of Biodiversity Change Driven by Land-Use Conversion and Climate Change", Scientific Reports, Volume 11(1), pp. 1-13, 2021.
26. Santosh K. Sahu, Manish Pandey and Kanu Geete, "Classification of Soybean Leaf Disease from Environment effect using Fine Tuning Transfer Learning", Annals of the Romanian Society for Cell Biology, Volume 25(3), pp. 2188-2201, 2021.
27. Shubham Gupta, Sweta Jain and Bholanath Roy, "A TinyML Approach to Human Activity Recognition", In Journal of Physics Conference Series, Volume 2273(1), pp. 12-25, 2022.
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29. Sumit Gupta, Dhirendra Pratap Singh and Jaytrilock Choudhary, "A Review of Clique-Based Overlapping Community Detection Algorithms", Knowledge and information system, 2022.
30. Sweta Jain, PruthvirajChoudhari and Mahesh Gour, "Pulmonary Lung Nodule Segmentation from C.T. Scans Using Two-Stage CNN", The Computers Journal, 2021.
31. Vishwanath Bijalwan and Vijay Bhaskar Semwal, "HDL-PSR: Modelling Spatio-Temporal Features using Hybrid Deep Learning Approach for Post-Stroke Rehabilitation", Neural Processing Letters, Springer, pp. 1-20, 2022.

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1. A. R. K. Kowsik, R. K. Pateriya and P. Verma, "A Deep Learning based Hybrid Approach for DDoS Detection in Cloud Computing Environment", IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON), June 2021.
2. Abhinav Srivastava and Manish Pandey, "A Review on Deepfakes Detection using Machine Learning Techniques", 4th International Conference on Futuristic Trends in Networks and Computing Technologies (FTNCT-2021), Nirma University, India, 10-11 Dec. 2021.

3. Abhinav Srivastava and Manish Pandey, "Machine Learning Applications in Digital Forensics: A survey", 2nd International Conference on Microelectronics, Communication Systems, Machine Learning & Internet of Things (MCMI-2021), Ranchi, India, 23-24 Oct. 2021.
4. Ajay and Manish Pandey, "Artificial Intelligence in Healthcare: Diabetic Retinopathy", 2nd International Conference on Data Analytics and Management (ICDAM-2021), India, 26 June 2021.
5. Ajay and Manish Pandey, "Artificial Intelligence in Healthcare: Amyotrophic Lateral Sclerosis", 2nd International Conference on Microelectronics, Communication Systems, Machine Learning & Internet of Things (MCMI-2021), Ranchi, India, 23-24 Oct. 2021.
6. Aman Anand Rai and Mitul K. Ahirwal, "Cognitive Load Classification During Arithmetic Task Using Single Convolution Layer based 2D-CNN", 3rd International Conference on Machine Learning, Image Processing, Network Security and Data sciences(MIND-2021), NIT Raipur, 11 Dec. 2021.
7. Aman Gupta, Meenu Chawla and Namita Tiwari, "Electricity Power Consumption Forecasting Techniques: A survey", 5th International Conference on Innovative Computing and Communication (ICICC-2022), Delhi university, India, 19-20 Feb. 2022.
8. AyushSoni, Akhtar Rasool and Aditya Dubey, "Data Mining based Dimensionality Reduction Techniques", 2022 International Conference for Advancement in Technology, Goa, India, 21 Jan. 2022.
9. Deeksha Agrawal, Meenu Chawla and Namita Tiwari, "Plant Leaf Disease Classification using Deep Learning:A survey", Third International Conference on Inventive Research in Computing Applications (ICIRCA-2021) Coimbatore, India, 2-4 Sep. 2021.
10. JatinNimade, Namita Tiwari and Meenu Chawla, "A Review on Attack Detection on Software Defined Network", International Conference on Intelligence System (ICIS-2022) UIT Uttaranchal University, 11-12 Mar. 2022.
11. Jyoti Bharti, Bhola Nath Roy and Lalit Lohiya, "Reconstruction of Partial Gait Cycle and Identification", 3rd International Conference on Intelligent Computing, Information and Control System (ICICCS-2021), Tirchy, India, 2-3 July 2021.
12. Jyoti Bharti and Lalit Lohiya, "Cross-View Gait Recognition using Deep Learning Approach", Fifth International Conference on Information and Communication Technology for Intelligent Systems, Ahmedabad, 23-24 Apr. 2021.
13. Kapil Sharma, Meenu Chawla and Namita Tiwari, "Intrusion Detection System Using Machine Learning Approach: A Review", 5th International Conference on Innovative Computing and Communication (ICICC-2022), 19-20 Feb 2022.
14. Kumar Gaurav, Bholanath Roy and Jyoti Bharti, "A Hybrid Deep Learning Model for Human Activity Recognition Using Wearable Sensors", Second International Conference on Machine Intelligence and Smart Systems (MISS 2021), Gwalior, 24-25 Sep. 2021.
15. Lalit Sonkeshariya, Lokesh Yadav and Deepak Singh Tomar, "A Comprehensive Study of Fake News Detection Using Machine Learning Techniques", International Conference on Emerging Trends in Engineering and Technology (ICETET-2021 July) SIEM Nashik (India), 07 Jul. 2021.
16. M. A. Aromal, Akhtar Rasool and Aditya Dubey, "Optimized Weighted Samples Based Semi-supervised Learning", 2021 Second International Conference on Electronics and Sustainable Communication Systems, Coimbatore, India, 04 Aug. 2021.
17. M. Bharti, J. Choudhary and D. P. Singh, "Detection and Classification of Pulmonary Lung Nodules in CT Images Using 3D Convolutional Neural Networks", 8th International Conference on Advanced Computing and Communication Systems (ICACCS), 15 Mar. 2022.
18. M. PhaniSushanth, Meenu Chawla and Namita Tiwari, "Review Deep Learning Techniques for Automatic Target Detection in Infra Red images", Applied Mechanics, Machine Learning and Advanced Computation (AMMLAC 2022) NIT Raipur, 16-17 Mar. 2022.
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20. Mangesh RamajiKose, Mitul K. Ahirwal and MithileshAtulkar, "Comparative Analysis of Node Dependent and Independent Graph Metrices for Brain Connectivity Network", 4th International Conference on Machine Intelligence and Signal Processing (MISP), NIT Raipur, 12 Mar. 2022.
21. Manish K. Sharma, Prince Kumar and Akhtar Rasool, "Classification of Actual and Fake News in Pandemic", 2021 Fifth International Conference on I-SMAC, Palladam, India, 11 Dec. 2022.
22. Manish Yadav and Namita Tiwari, "Performance Comparison of Image Restoration Techniques using CNN and their Applications", 5th International Conference on Computing Methodologies and Communication (ICCMC) 2021, Erode, Tamilnadu, 08-10 Apr. 2021.
23. Mayank Gupta, Sweta Jain and Sri Khetwat Saritha, "The Architectural Design of Smart Embedded Blind Stick by using IoT", 5th International Conference on Innovative Computing and Communication (ICICC 2022), Shaheed Sukhdev College of Business Studies, University of Delhi, New Delhi in Association with National Institute of Technology Patna & Korea Institute of Digital Convergence, South Korea, University of Valladolid, Spain, 19-20 Feb. 2022.
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27. MeghaSahu and Sri Khetwat Saritha, "Study on Various Collabrative Filtering Techniques to Recommend Movies", 2021 10th IEEE International Conference on Communication Systems and Network Technologies (CSNT), 18 June 2021.
28. Naman Jain, Namita Tiwari and Meenu Chawla, "A Review on the Integration of Blockchain and IoT", International Conference on Intelligence System (ICIS-2022) UIT Uttaranchal University, 11-12 Mar. 2022.
29. Nimisha Gupta, Mitul K. Ahirwal and MithileshAtulkar, "Modelling of Human Decision-Making Process and Effect of Human Factor- A Review", 2nd International Conference on Recent Advances in Computational Techniques: IC-RACT 2022, Amity University Mumbai, 10 Mar. 2022.
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31. P. Swathi and Sri Khetwat Saritha, "DeepFake Creation and Detection: A Survey", Proceedings of the 3rd International Conference on Inventive Research in Computing Applications, ICIRCA 2021, 02-04 Sep. 2021.
32. PrajktaKhedkar and Deepak Singh Tomar, "Software Bug Classification using Machine Learning", International Conference on Robotics, Machine Learning and Artificial Intelligence (ICRMLAI) Nashik, India, 25 Feb. 2022.
33. Prakhar Shrivastava, Kapil K. Soni and Akhtar Rasool, "Quantum Based Deep Learning Models for Pattern Recognition", International Conference on Information, Communication and Computing Technology, New Delhi, India, 08 May 2021.
34. Priyanka Gupta, Lokesh Yadav and Deepak Singh Tomar, "Internet of Things: A Survey on Fused Machine Learning-based Intrusion Detection Approaches", 3rd International conference on machine intelligence and signal processing (MISP-2021), NIT Arunachal Pradesh (India), 25 Sep. 2021.
35. Priyanka Jojan, Kapil Kumar Soni and Akhtar Rasool, "Classical and Quantum based Differential Cryptanalysis Methods", 2021 12th International Conference on Computing Communication and Networking Technologies, 06 July 2021.
36. Priyanshi.Khare, Rajesh Wadhvani and Sanyam Shukla, "Missing Data Imputation for Solar Radiation Using Generative Adversarial Networks", Proceedings of International Conference on Computational Intelligence, 01 Oct. 2021.
37. Raksha Verma, Sweta Jain and Saritha Khetwat, "Automatic Abnormality Detection in Musculoskeletal Radiographs(MURA) using Ensemble of Pre-trained Networks", International Conference on Frontiers of Intelligent Computing, 2022.
38. Riya Yadav, Manish Pandey and Santosh Kumar Sahu, "Smart Helmet for Coal Mine Monitoring", 5th International Conference on Intelligent Computing and Communication (ICICC-2021), Bengaluru, India, 26-27 Nov. 2021.
39. Riya Yadav and Manish Pandey, "Image Segmentation Techniques: A Survey", 2nd International Conference on Data Analytics and Management (ICDAM-2021), India, 26 June 2021.
40. Roshan Roy, M. R.Ahan and Vaibhav Soni, "Towards Automatic Transformer-based Cloud Classification and Segmentation", NeurIPS 2021 Workshop on Tackling Climate Change with Machine Learning, Montreal, Canada, 06 Dec. 2021.
41. S. Mansuri, D. P. Singh and J. Choudhary, "Modified DMGC Algorithm using ReLU-6 with Improved Learning Rate for Complex Cluster Associations", 6thInternational Conference on Intelligent Computing and Control Systems (ICICCS), 25 May 2022.
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54. Vecha Sri Charan, Akhtar Rasool and Aditya Dubey, "Stock Closing Price Forecasting using Machine Learning Models", 2022 International Conference for Advancement in Technology, Goa, India, 21 Jan 2022.
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57. Virendra Patel, Sanyam Shukla and Manasi Gyanchandani, "Regularizes CNN for Traffic Sign Recognition", International Confernce on Smart Technologies and Systems for Next Generation (ICSTSN 2022), 25-26 Mar. 2022.
58. Vivek Ranjan and Pragati Agrawal, "Fake News Detection: GA-Transformer and IG-Transformer Based Approach", 12th International Conference on Cloud Computing, Data Science and Engineering (Confluence) 27 Jan. 2022.
59. Y. Shailender and Mitul K. Ahirwal, "Analysis and Testing of Different Penalty Function Methods and Genetic Algorithm for Solving Beam-Slab Layout Design Problem", 2nd International Conference on Recent Advances in Computational Techniques: IC-RACT 2022, Amity University Mumbai, 10 Mar. 2022.
60. Yash Rai, Sri Khetwat Saritha and Bholanath Roy, "Interpreting Machine Learning Models using Model-Agnostic Approach", International Conference on Applied Mechanics, Machine Learning and Advance Computation (AMMLAC – 2022), organized by the Department of Mechanical Engineering and the Department of Computer Science and Engineering, NIT Raipur, 16-17 Mar. 2022.

Research Project

1. R. K. Pateriya and Deepak Singh Tomar, "Information Security Education and Awareness Project", sponsored by Department of Electronics and Information Technology, Ministry of Communication and Information Technology, Govt. of India.
2. Vijay Bhaskar Semwal, "Development of Heterogeneous Computing Model for Post-Injury Walking Pattern Restoration and Postural Stability: Cognitive Robotics Approach", sponsored by HEFA under CSR Grant schema (Ministry of Education).
3. Vilas Warudkar, Narendra Laxman Gajbhiye, Anoop Arya and Pragati Agrawal, "Development of Miniaturized Pressure Regulators (Non-moving type) for Low Flow Rate Application", sponsored by ISRO.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 56 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status
Manasi Gyanchandani, NilayKhare, Meenu Chawla, Kavita Khare, Priyank Jain, Hema Dubey, Ashish Mishra, Afreen Khursheed, Vaishali Shrivastava, Sanyam Shukla, Akhtar Rasool	A Smart Agriculture System And Method Integrated With IoT Devices	Published
Mitul Kumar Ahirwal, MithileshAtulkar, NirjharneeParida, Narendra Kumar Rout	An Improved Content-Based Image Retrieval System Based on Continuous Learning Quantitative Analytical Hierarchal	Granted
NilayKhare, Hema Dubey, Priyank Jain,Anita Saha, Manasi Gyanchandani, Ashish Mishra, Rajesh Wadhvani, Rahul Sahu	System And Method of Detecting and Regulating Parameters in a Greenhouse Environment	Published
Priyank Jain, Manasi Gyanchandani, NilayKhare	A Method for Enchanced Encryption in a HADOOP Based Distributed Custer	Granted
R. K. Pateriya	A System of intelligent attachment to control wheelchair by motions based on human gesture	Published

Workshops and Programmes organised

Name of Faculty	WS/WN/FDP / STTP / SEMINAR / CONFERENCE / TRAINING PROGRAMME	Title of Programme	Number of Participants	Duration	
				From	To
Mitul K. Ahirwal, Vijay B. Semwal	STTP	Artificial Intelligence and Deep Learning	78	17-May-2021	21-May-2021
Mitul K. Ahirwal, Vijay B. Semwal, Pragati Agarwal	FDP	Optimization Techniques for Deep Learning	86	03-Jan-2022	07-Jan-2022
Pragati Agrawal, NilayKhare	ATAL FDP	Parallel Algorithms for Computational Biology	38	06-Dec-2021	10-Dec-2021

Labs

Name of Lab	Facilities/Equipments	Research Carried
Wireless Sensor Network Lab	12-I5 Generation Systems	Project related to IoT Deep Learning, Human Activity Recognition
Central Computing Facility	1. High-Performance Computing cluster (HPC) 2. VMware Virtualization cluster 3. NVIDIA DGX A100	Research and Data Center
Computing Lab-III first floor A block CC	Equiped with 30 computers and one UPS	Used for Mtech and Phd Research Scholars

Summary

Particulars	Total Numbers
Faculty Members	21
PhD Scholars	51
Chapter Publications	18
Publication in International Journal Publication	31
Publication in International Conference Publication	60
Faculty Outreach	56
Patents	05
Research Projects	03
Workshops/Seminar Organized	03
Lab Facilities Developed	03

DEPARTMENT OF ELECTRICAL ENGINEERING

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. Year 2021-22 is totally different than other years due to covid pandemic. Department has taken all initiatives to teach students in online mode, taking virtual labs and taking this opportunity to connect with students to industry and academic experts worldwide. Department has organised 06 Conferences and Faculty Development Program (AICTE), which are widely attended by faculty members and Research Scholars.

Faculty members of the department have published 50 research papers in International Journals and 71 research papers in International Conferences. Faculty of the department are involved in many outreach activities. Two PG Programs (M.Tech. in Power System &M.Tech. in Electrical Drives) are accredited by NBA for 03 years. The department has planned to setup many new labs having state of art facilities for research and development activities by the students and faculty. Five 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.

Faculty and Programmes

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. Mukesh K. Kirar	Dr. Shailendra Kumar
Dr. More Raju	Dr. Suresh K.Gawre
Dr. Pankaj Swarnkar	

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

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

PhD Scholars

Name	**Title/Area of Research**
Abhishek Pratap Singh	Emerging best practices for electrical vehicle charging infrastructure
Aftab Ahmed Ansari	Doubly fed induction generator based wind energy system
Akanksha Jain	Renewable Energy
Amar Nath Patel	Electric Vehicle
AmoghNarwaria	Adaptive control system
AnchalRaghuwanshi	Electric Vehicle
Anil Gupta	Control of small hydro power generation system and their integration with other energy sources
Ankur Kumar Gupta	Improvement of Power Quality (Tentative)
Anupam Shukla	Not decided yet
Arun Rathore	Optimal planning of autonomous hybrid power system
Banothu Somanna	Renewable Energy system in microgrid
Dhananjay Kumar	Grid integration of Renewable Energy System

Name	Title/Area of Research
DulichandJaraniya	Design, control and implementation of grid interactive renewable energy based hybrid charging stations
Gautam Kumar Yadav	Microgrid Protection
Harish Kumar Sharma	Power Transformers
Hiramani Shukla	Combine analysis of AGC & AVR for multiarea inter connected system
Jatoth Rajender	DC Microgrid
Jaydeep Lakwal	Application of multilevel inverter for Railway Traction
Jyoti Chouhan	Multilevel converter based application
Kaushal Kishor Ahirwar	Not decided yet
Kavali Janardhan	Performance Investigation of Micro-Multilevel Inverter Based Grid Connected Solar PV system
Lokesh Chadokar	Multi objective optimal charging scheduling for EV integration in distribution system
Manju Gupta	Analysis of Load Management Techniques for Smart Grid Applications using Deviation Settlement Mechanism and Demand Response. (Synopsis Submitted)
Manoj Kumar	Implementation of Senserless Control of Permanent Magnet Synchronous Motor Based E-Rikshaw
Md. Kaisar Azam Ansari	Grid integration of Renewable Energy System
Mirza Jawad Baig	Soft Switching converters
Mohd. Navaid Ansari	Optimal Placement and Tuning of FACTS Devices for Modern Power System
Mukund Subhash Ghole	IoT based Demand Side Management
Naseam Haider Jafri	Design and Performance Evaluation of Fuel Cell Based Hybrid Traction System (In Progress)
Nikhil Kumar	Investigations on Optimal Placement and Control Strategies of Hybrid Charging Station for Electric Vehicle Application
Nisha Prasad	Modelling and Design of Linear Switched Reluctance Motor for High Speed Transit System (In Progress)
Nishant Thakkar	Microgrid planning in MCDM Framework
Pragya Gawhade	Application of power converters for grid integration of renewable energy sources based generation
Prateek Mundra	Renewable Energy
Rahul Arora	Controllers for PMBLDCM Drives
Ritu Verma	Micro-grid control and protection
Sanjay Kumar Kakodia	Speed control of PMSM for E-vehicle
Sanjeev Kumar Bhukesh	Thermo Electric Generator
Satyam Patel	Microgrid Planning
ShailuSachan	Robust control techniques for Robotics
Shivani Rai	Power Quality
Shweta Mehroliya	Distribution Automation
Siddhant M. Gudhe	Multi-Source Bidirectional Converter Topologies For Electric Vehicles
Sirish Murthy	Magnetic Load Offset and Linear Motors for High Speed Transit System
Sumeet Kumar Wankhede	Planning and Control of Distributed Energy Resources in Smart Grid Network
Sunil Kumar Gautam	Model Order Reduction and Controller Design
Tanmay Shukla	Electrical Vehicles
Tushar Kumar	Electric Vehicle
Uliya Mitra	Power Generation through Fuel Cell
Vidhya Fulmali	Maximum Power Point Tracking Techniques for Efficient Operation of Photovoltaic Systems

Book Publications

1. Narayan Prasad Patidar, Pushyamitra Mishra and Kamal Singh, “Advances in Electrical Engineering”, Walnut Publication, 2021.
2. Narayan Prasad Patidar, Pushyamitra Mishra and Kamal Singh, “Advances in Mechanical Engineering”, Walnut Publication, 2021.
3. Narayan Prasad Patidar, Pushyamitra Mishra and Kamal Singh, “Advances in Civil Engineering”, Walnut Publication, 2021.
4. Shailendra Kumar, Bhim Singh and Arun K. Singh, “Recent Advances in Power Electronics and Drives”, Springer, 2022.

Chapter Publications

1. Aftab Ahmed Ansari and GiribabuDyanamina, "Comparative Analysis of Controlling Methods for Doubly Fed Induction Generator Based Wind Energy System", In: S. Kumar, B. Singh and A. K. Singh (eds.), Recent Advances in Power Electronics and Drives, Springer, Singapore, 2022.
2. Aftab Ahmed Ansari and GiribabuDyanamina, "State of Art and comprehensive study on smart meter network", In: Sanjeet Dwivedi, Sanjeev Singh, Manish Tiwari and Ashish Shrivastava (eds.), Flexible Electronics for Electric Vehicles, Springer, Singapore, 2022.
3. Akriti Agrawal, Priyanka Paliwal and Tripta Thakur, "Economic Load Dispatch: A Holistic Review on Modern Bio-inspired Optimization Techniques", In: K. N. Das, D. Das, A. K. Ray and P. N. Suganthan (eds.), Algorithms for Intelligent Systems, Springer, Singapore, 2022.
4. Ashish K. Panda, GiribabuDyanamina and Rishi K. Singh, "Torque Ripple Reduction of PMSM Based Electric Vehicle", In: R. C. Bansal, A. Zemmari, K. G. Sharma and J. Gajrani (eds.), Proceedings of International Conference on Computational Intelligence and Emerging Power System, Springer, Singapore, 2021.
5. K. Verma, S. K. Gawre and S. Kumar, "Comparison between Novel Fault Detection Techniques in Solar PV Arrays: A Review", In: O. H. Gupta, V. K. Sood and O. P. Malik (eds.), Recent Advances in Power Systems, Lecture Notes in Electrical Engineering, Volume 812, Springer, 2022.
6. M. Kumar and Amit Ojha, "Design Consideration for e-Rikshaw with Regeneration Capability", In: Puneet Verma, Olusegun D. Samuel, Tikendra Nath Verma and Gaurav Dwivedi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Elsevier, 2022.
7. Mahesh Pawar, N. P. Patidar and Aushaf Umar Khan, "Multiple Inertial Measurement unit (Multi-IMU) Flight controller for Unmanned Arial Vehicle (UAV)", In: Sampat G. Deshmukh and Parikshit N. Mahalle (eds.), Intelligent computing in Engineering Systems, CRC Press, Taylor & Francis, 2022.
8. Nishant Thakkar and Priyanka Paliwal, "A State-of-the-Art Review on Multi-criteria Decision Making Approaches for Micro-grid Planning", In: K. N. Das, D. Das, A. K. Ray and P. N. Suganthan (eds.), Algorithms for Intelligent Systems, Springer, Singapor, 2022.
9. P. Dangi, A.Ojha, S. P. Singh, S. K. Gawre, S. Meshram and A. Mittal, "A Comprehensive Study on Adaptive MPPT Control Techniques for Efficient Power Generation", In: P. Dangi, A. Ojha, S. P. Singh, S. K. Gawre, S. Meshram and A. Mittal (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, Lecture Notes in Mechanical Engineering Springer, 2021.
10. P. Dangi, S. K. Gawre and A. Ojha, "Dynamic Performance Analysis of Neural Network Based MPPT under Varying Climatic Condition", In: Arun Kumar Singh and Manoj Tripathy (eds.), Control Applications in Modern Power Systems, Elsevier, 2022.
11. P. Gawhade and Amit Ojha, "Grid Synchronization Techniques: A Review", In: Puneet Verma, Olusegun D. Samuel, Tikendra Nath Verma and Gaurav Dwivedi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Elsevier, 2022.
12. P. Singh Dangi, A. Ojha, S. P. Gawre and A. Mittal, "A Comprehensive Study on Adaptive MPPT Control Techniques for Efficient Power Generation", In: Fakher Chaari, Francesco Gherardini and Vitalii Ivanov (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Elsevier, 2022.
13. P. Swarnkar, S. K. Gawre and G.Akodiya,"Comparative Analysis of Conventional and Sliding Mode Control Techniques for DC-DC Boost Converter for PV System Under Transient Conditions", In :S. Kumar, B. Singh and A. K. Singh (eds), Recent Advances in Power Electronics and Drives, Lecture Notes in Electrical Engineering, Volume 852, Springer, Singapore.
14. S. K. Wankhede, Priyanka Paliwal and M. K. Kirar, "DG Optimal Placement and Sizing Considering Active Power Losses and Voltage Profile Factor", In: O. H. Gupta, V. K. Sood, O. P. Malik (eds.), Recent Advances in Power Systems. Lecture Notes in Electrical Engineering, Springer, Singapor, 2022.
15. S. Maitreya, R. Mishra, A. Vatsa and Amit Ojha, "Study of Electrical and Mechanical Parameters of Electromagnetic Railgun", In: Puneet Verma, Olusegun D. Samuel, Tikendra Nath Verma and Gaurav Dwivedi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Elsevier, 2022.
16. Sanjay K. Kakodia and GiribabuDyanamina, "Comparative Analysis of Speed Control Methods for PMSM Drive fed Electrical Vehicle", In: Sanjeet Dwivedi, Sanjeev Singh and Manish Tiwari (eds.), Flexible Electronics for Electric Vehicles, Springer, Singapore, 2022.
17. Shailendra Kumar and More Raju, "Grid-Interactive Solar Energy Conversion Systems", In: Ashutosh Giri, Sabharaj Arya and Dmitri Vinnikov (eds.), Distributed Energy System: Modelling and Control, CRC Press, 2022.
18. Shreyas Maitreya, Sameer Soni and Priyanka Paliwal, "Analysis of Electromagnetic Aircraft Launching System for Naval Aircraft", In: P. K. Chaurasiya, A. Singh, T. N. Verma and U. Rajak (eds.), Technology Innovation in Mechanical Engineering, Springer, Singapor, 2022
19. Sumeet K. Wankhede, Priyanka Paliwal and Mukesh K. Kirar, "Smart Grid Initiatives towards Sustainable Development: Indian and Worldwide Scenario", In: Prashant V. Baredar (eds.), Advances in Clean Energy Technologies, Springer, 2021.
20. Vikas Khare, C. J. Khare and S. Nema, "Assessment of plugin Hybrid Electric Vehicle(HEVs) through Big Data Analysis", In: Pawan Kumar, SreteNikolovski and Z. Y. Dong (eds.), Internet of Energy Handbook, CRC Press, 2021.
21. Vikas Khare, S. Nema and Prashant Baredar, "Assessment and decision-making of biomass energy conversion system by big data and game theory technique", In: Ahmad Taher Azar and Nashwa Ahmad Kamal (eds.), Design, Analysis and Applications of Renewable Energy Systems, Academic Press, 2021.

Publication in International Journals

1. Anil Gupta and Manisha Dubey, "State of Art & Comprehensive Study in The Area of Three Phase Self Excited Induction Generator", Design Engineering Journal, Volume 2021(7), pp. 13264-13277.
2. Deepak Verma, Savita Nema and Rakeshwri Agrawal, "A Different Approach for Maximum Power Point Tracking (MPPT) Using Impedance Matching through Non-Isolated DC-DC Converters in Solar Photovoltaic Systems", Electronics, Volume 11(7), pp. 1-19, 2022.
3. Dhananjay Kumar, R. K. Nema and Sushma Gupta, "A Fault Tolerant Sensor Less Approach in Five Level Packed U Cell (PUC5) Multilevel Inverter", International Journal on Power & Energy System (ACTA Press), Volume 42(10), 2022.
4. Dhananjay Kumar, R. K. Nema and Sushma Gupta, "A Novel Multilevel Inverter Topology For Symmetric and Asymmetric Source Conguration with Reduced Device Count", International Journal of Power and Energy Systems, Volume 42(10), 2022.
5. Dhananjay Kumar, R. K. Nema and Sushma Gupta, "Development of a Novel Fault-Tolerant Reduced Device Count T-type Multilevel Inverter topology", International Journal of Electrical Power and Energy Systems, Volume 132, 2021.
6. Dhananjay Kumar, R. K. Nema and Sushma Gupta, "Development of Fault-Tolerant Reduced Device Version with Switched-Capacitor Based Multilevel Inverter Topologies", International Transaction on Electrical Energy System, 2021.
7. DulichandJaraniya and Shailendra Kumar, "Renewable Energy Based Charging Station with Power Quality Features for Multi EV Spots using Maximum Correntropy Sub-band Adaptive Technique", Energy Sources, Part A: Recovery, Utilization, and Environmental Effects.
8. DulichandJaraniya, Urvashi Gupta and Shailendra Kumar, "Multifunctional Bidirectional Charging System for EVs and the Grid with Improved Power Quality Using Sparse Proportionate-NLMF Based Method", IEEE CSEE Journal of Power and Energy Systems.
9. GiribabuDyanamina and Sanjay Kumar Kakodia, "Adaptive neuro fuzzy inference system based decoupled control for neutral point clamped multilevel inverter fed induction motor drive", Chinese Journal of Electrical Engineering, pp. 70-82, 2021.
10. Harish K. Sharma, S. Nema and R. K. Nema, "Improving Dielectric Dissipation Factor of 420 Kv Class Oil-Sf6 Rip Bushings at Site", International Journal of Power and Energy Systems, Volume 41(1), pp. 17-23, 2021.
11. Harish K. Sharma, S. Nema and R. K. Nema, "Normograms Preparation and Interpretation for 400/800kV Class of Converter Transformers", Reactors with and without Oil using Sweep Frequency Response Analysis (SFRA)", International Transactions on Electrical Energy, Volume 31(4), pp. 1-18, 2021.
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13. Harsh Goud, Prakash Chandra Sharma and Kashif Nisar, "PSO Based Multi-Objective Approach for Controlling PID Controller", Computers, Materials & Continua, Volume 71(3), pp. 4403-4423, 2022.
14. Jatin Sharma, Sameer Soni and Priyanka Paliwal, "A novel long term solar photovoltaic power forecasting approach using LSTM with Nadam optimizer: a case study of India", Energy Sci Eng, pp. 1-21, 2022.
15. M. Rezkallah, H. Brahim, F. Dubuisson, Chandra, Sanjeev Singh, Bhim Singh, Issa M, "Hardware Implementation of Composite Control Strategy for Wind-PV-Battery Hybrid Off-Grid Power Generation System", Clean Technologies, Volume 3, pp. 821-843, 2021.
16. Mukesh Kirar, "IoT Based Remote Monitoring, Control, and Protection of Irrigation Water Pumping System", Journal of Operation and Automation in Power Engineering, Volume 11, pp. 69-75, 2022.
17. Nikhil Bhati, Ujjwal K. Kalla and B. Singh, "An Intelligent Control Scheme for Optimum Efficiency and Reduced Emission Operation of Marine Transportation System", IEEE Transactions on Intelligent Transportation Systems, 2022.
18. Nikhil Kumar, Tushar Kumar and Savita Nema, "A comprehensive planning framework for electric vehicles fast charging station assisted by solar and battery based on Queueing theory and non-dominated sorting genetic algorithm-II in a co-ordinated transportation and power network", Journal of Energy Storage, Volume 49, pp. 1-32, 2022.
19. Nikhil Kumar, Tushar Kumar and Savita Nema, "A multiobjective planning framework for EV charging stations assisted by solar photovoltaic and battery energy storage system in coupled power and transportation network", International journal of Energy Research, Volume 46, pp. 4462-4493, 2022.
20. Nisha Prasad, Shailendra Jain and Sushma Gupta, "A Comparative Analysis of Linear Switched Reluctance Motor using Finite Element Method", International Journal of Power and Energy Systems (ACTA Press), Volume 41, 2021.
21. Nishant Thakkar and Priyanka Paliwal, "Hydrogen storage based micro-grid: A comprehensive review on technology, energy management and planning techniques", International Journal of Green Energy, 2022.
22. Pragya Gawhade and Amit Ojha, "Recent advances in synchronization techniques for grid-tied PV system: A review", Energy Reports, Elsevier, Volume 7, pp. 6581-6599, 2021.
23. Prateek Mundra, Anoop Arya and Suresh Kumar Gawre, "A Multi-Objective Optimization Based Optimal Reactive Power Reward for Voltage Stability Improvement in Uncertain Power System", Journal of Electrical Engineering & Technology, pp. 1-8, 2021.
24. Prateek Mundra, Anoop Arya and Suresh Kumar Gawre, "An Efficient Model for Forecasting Renewable Energy using Ensemble LSTM based Hybrid Chaotic Atom Search Optimization", Neural processing letters, springer, 2022.
25. Prateek Mundra, Anoop Arya and Suresh Kumar Gawre, "Taylor series based protection starting element for STATCOM compensated transmission line", Electric Power Systems Research, Volume 204, 107700, 2022.

26. Praveen Kumar, Ujjwal Kumar Kalla and Nikhil Bhati, "Performance Investigation of Synchronized Three-Phase AC Chopper-Based Controller for Small Hydrogeneration Systems", IEEE Transactions on Industry Applications, Volume 58(2), pp. 2217-2228, 2022.
27. Preeti Gupta and Pankaj Swarnkar, "Adaptive power sharing in Flexible frequency, Flexible voltage Hybrid power system", International Journal of Power Electronics, Volume 14, pp. 470-500, 2021.
28. Priyanka Paliwal, "A Technical Review on Reliability and Economic Assessment Framework of Hybrid Power System with Solar and Wind Based Distributed Generators", International journal of integrated engineering, Volume 13, pp. 233-252, 2021.
29. Priyanka Paliwal, "Bi-stage planning framework for a solar-battery based micro-grid using techno-socio-economic evaluation", Energy Sources, Part B: Economics, Planning, and Policy, 2022.
30. Priyanka Paliwal, "Multi-Stage Framework for Analyzing Penetration of Stochastic Distributed Energy Resources and Storage", Iranian Journal of Electrical and Electronic Engineering, Volume 18, pp. 2258, 2022.
31. Priyanka Paliwal, "Securing Reliability Constrained Technology Combination for Isolated Micro-Grid Using Multi-Agent Based Optimiza", Iranian Journal of Electrical and Electronic Engineering, Volume 18, pp. 2180, 2022.
32. Priyanka Paliwal, J. L. Webber and A. Mehbodniya, "Multi-agent-based approach for generation expansion planning in isolated micro-grid with renewable energy sources and battery storage", Journal of supercomputing, 2022.
33. S. K. Sahoo, Shailendra Kumar and Bhim Singh, "Wiener Variable Step Size with Variance Smoothening Based Adaptive Neurons Technique for Utility Integrated PV-DSTATCOM System", IEEE Transactions on Industrial Electronics.
34. S. Pranith, Shailendra Kumar and Bhim Singh, "Improved Gaussian Filter based Solar PV-BES Microgrid with PLL based Islanding detection and Seamless Transfer Control", IEEE Transactions on Industrial Electronics.
35. S. Pranith, Shailendra Kumar and Bhim Singh, "MAF-DCGI Based Single-Phase Uninterrupted PV-Battery System under Unintentional Islanding", IEEE Trans. Energy Conversion.
36. S. Verma, A. Arya and S. Mehroliya, "Optimal Placement of Distributed Generators in Power System Using Sensitivity Analysis", Advances in Energy Technology, Lecture Notes in Electrical Engineering, Springer, Singapore, Volume 766, pp. 749-759.
37. Sanjiv Kumar Jain, N. P. Patidar and Yogendra Kumar, "Real-time voltage security assessment using adaptive fuzzified decision tree algorithm", International Journal of Engineering Systems Modelling and Simulation, Volume 13, pp. 85-95, 2022.
38. Shailendra Kumar, Bhim Singh and Ahmed Al Durra, "ℓp-Norm Proportionate Based Approach with Mode Transition Between Grid Interactive and Standalone of Solar- BES Three Phase Four Wire Microgrid", IEEE Transactions on Industry Applications.
39. Shailendra Kumar, Bhim Singh and DulichandJaraniya, "Multimode Features of CIPNLMS-MFX Controlled Single-Phase PV System with Finite State Machine Based Islanding/Synchronization under Grid Outage", IEEE Transactions on Industry Applications.
40. Sudeshna Ghosh, Harsh Goud and Pankaj Swarnkar, "Design of an optimized adaptive PID controller for induction motor drive", Mechatronic Systems and Control, Volume 49, 2021.
41. Sumeet Wankhede, Priyanka Paliwal and Mukesh Kirar, "Bi-Level Multi-Objective Planning Model of Solar PV-Battery Storage-Based DERs in Smart Grid Distribution System", IEEE Access, Volume 10, pp. 14897-14913, 2022.
42. Tushar Kumar, Nikhil Kumar and Tripta Thakur, "Charge scheduling framework with multiaggregator collaboration for direct charging and battery swapping station in a coupled distribution-transportation network", International Journal of Energy Research, Volume 46(8), pp. 1-24, 2022.
43. V. Shirish Murty, Shailendra Jain and Amit Ojha, "Advancements in Converter Topology and Control Strategies for Switched Reluctance Motors: Recent Contributions", Mechatron. Syst. Control., Volume 26, pp. 1-31, 2021.
44. V. Shirish Murty, Shailendra Jain and Amit Ojha, "Suitability of Linear Switched Reluctance Motor for Advanced Electric Traction System", Mechatron. Syst. Control., Volume 49(2), 2021.
45. Vidhya Fulmali, Manisha Dubey and Gaurav Gupta, "Deep Belief Network-Based Investigation of A New Fast MPPT Technique for PV Systems under Non-Uniform Irradiation Conditions", Webology, Volume18, Number 5, pp. 544-553.
46. Vikas Khare, C. J. Khare and S. Nema, "Current status of electric vehicles in India: an overview", Int. J. Electric and Hybrid Vehicles, Volume 13, pp. 240-255, 2021.
47. Vikas Khare, C. J. Khare and S. Nema, "Modeling, cost optimization and management of grid connected solar powered charging station for electric vehicle", Internationl Journal of Emerg. Electr. Power System, Volume 1, pp. 1-17, 2021.
48. Vinay Kumar, Sanjeev Singh and Shailendra Jain, "A Reduced Switch Count Symmetric T-type Multilevel Inverter with Single and Multiple Switch Open Circuit Fault Tolerant Capabilities", IETE Journal of Research, pp. 1-6, 2021.

Publications in International Conference

1. A. Chandrakar, P. Paliwal and A. Arya, "Employing Demand Response in Energy Management of Microgrid using Q learning", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
2. A. Ramprasad, GiribabuDyanamina and Sanjay K. Kakodia, "Performance Analysis of Three-level NPC Inverter Fed PMSM Drives", IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), Bhopal, India, 19 Feb 2022.
3. A. Sharma, N. Singh and S. K. Gawre, "Operational Losses of a Solar Power Plant: a Case Study", 2021 IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT Bhopal, 2021.

4. Aftab Ahmed Ansari and GiribabuDyanamina, "MATLAB Simulation of FRT Techniques for DFIG-based Wind Farms", International Conference on Control, Automation, Power and Signal Processing (CAPS), Jabalpur, India, 12 Oct 2021.
5. AmoghNarwaria, Pankaj Swarnkar and Sushma Gupta, "A Review on multi-input dc-dc converter and its controlling for hybrid power system", Intelligent Computing Techniques for Smart Energy Systems-2021, Jaipur, 01-03 Sep 2021.
6. Ankit Yadav and Pankaj Swarnkar, "Analysis of Kinematics of Robotic Arm used for Robotic Assisted Surgery", 2nd IEEE international conference on Smart Technologies for Power, Energy and Control (STPEC 2021), 2021.
7. BanothuSomanna and Sushma Gupta, "Review of optimized FSFCL effects on the transient recovery voltage of a circuit braker at 550 KV", 2nd IEEE International Conference on Electrical Power and Energy Systems, ICEPES 2021, MANIT Bhopal, 10-11 Dec. 2021.
8. BanothuSomanna, Sushma Gupta and Dhananjay Kumar, "Modified Grid Connected Winds Photovoltaic Cogeneration using Back to Back System", 2nd International Conference on Innovation in Energy Management and Renewable Resources, Institute of Engineering & Management, Kolkata, 25-27 Feb 2022.
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12. Dilip K. Patel, PreetiPateriya and Savita 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 Shilongpp, 29 Apr.-01 May 2022.
13. H. H. Sharma, Savita Nema and R. K. Nema, "On-site Health Assessment of 765kVBushing Insulation using VFTD", IEEE 2ndInternational Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
14. H. K. Sharma, S. Nema and R. K. Nema, "On-Site Health Assessment of 765kV Bushing Insulation using VFT", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
15. HimaniDangi, S. Maitreya and P. Paliwal, "Cooperative Control of Regenerative and Anti-lock Braking Systems in Electric Vehicles using Fuzzy Logic", 4th International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE), 2021.
16. K. S. Malviya, S. Nema and S. K. Gawre, "Simulation and Analysis of Solar Based Water Pump System using Separately Excited DC Motor with Different Converter Topologie", 9th IEEE International Conference on Power Systems (ICPS), IIT, Kharagpur, India, 16-18 Dec 2021.
17. M. K. A. Ansari and S. Nema, "Direct Power Control Scheme with Voltage Modulation Control Technique for a Weak Grid Connected Voltage Source converters through Band Pass Filter", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
18. M. S. Ghole, P. Paliwal and N. Thakkar, "Application of an Appliance Scheduling Algorithm for Demand Response Program", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
19. Mahesh Pawar, N. P. Patidar and Kashif 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 Xplore Tuticorin, India, 16-18 Mar 2022.
20. N. K. Dewangan, D. Kumar, R. K. Nema and K. K. Gupta, "A Bipolar Multilevel Structure for DC/AC Conversion with Reduced Device Count", IEEE 2ndInternational Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
21. N. P. Gupta, Preeti Gupta and P. Paliwal, "Real Time Implementation of Droop Controlled Wind DFIG System", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
22. N. Thakkar and P. Paliwal, "Application of Satin Bowerbird Algorithm for Optimal Sizing of a Solar-Biomass based Microgrid", 13th IEEE PES Asia Pacific Power & Energy Engineering Conference (APPEEC), 2021.
23. N. Thakkar, P. Paliwal and M. S. Ghole, "Selection of Power Generation Technology using a Combination of CRITIC and TOPSI", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
24. Nikhil Bhati and Ujjwal K. Kalla, "A Single Phase-Single Stage Improved Power Quality EV Charger for Small and Medium Power Application", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
25. Nikhil Bhati and Ujjwal K. Kalla, "All-Electric Marine Power System Along with the Propulsion Regeneration Control", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
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27. Nisha Prasad, Shailendra Jain and Sushma Gupta, "FEM based analysis and design of linear switched reluctance motor topologies for high speed transit application", 2nd IEEE International Conference on Electrical Power and Energy Systems (ICEPES 2021), MANIT Bhopal, 10-11 Dec. 2021.

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29. Pankaj Swarnkar and Harsh Goud, "A Recursive PID Tuning Approach for the Inherently Unstable System", Planning of Hybrid Renewable Energy Systems, Electric Vehicles and Microgrid (Book) Springer, Singapore, 2022.
30. Pankaj Swarnkar, Suresh K. Gawre and GagneshAkodiya, "Comparative Analysis of Conventional and Sliding Mode Control Techniques for DC-DC Boost Converter for PV System under Transient Conditions", 2nd Electric Power and Renewable Energy Conference (EPREC-2021), National Institute of Technology Jamshedpur, India, 2021.
31. Paramjeet Singh Jamwal, Sanjeev Singh and Shailendra Jain, "Indirect Current Vector Controlled Three-Level Inverter for Induction Motor Driven Electric Vehicle", EPREC 21 NIT Jamshedpur, 28-30 May 2021.
32. Praveen Kumar and Ujjwal K. Kalla, "A Scheme for Voltage Regulation and Power Balance in Single Phase Asynchronous Generator based Wind Energy Systems", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
33. Praveen Kumar and Ujjwal K. Kalla, "Digital controller for reactive power compensation and harmonic current mitigation in single phase Self Excited Asynchronous Generator", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
34. Priyank K. Gautam, Anoop Arya, Surendra Kumar, Uliya Mitra, Shweta Mehroliya and Sushma Gupta, "Modelling and Simulating Performance of Hybrid Electric Vehicle using Advisor 2.0", IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON), University of Malaya, Kuala Lumpur, Malaysia, 24-26 Sep 2021.
35. R. Ahirwal, P. Paliwal and T. Thakur, "A Technical Review on Artificial Intelligence Optimization Techniques used for Micro Grid Planning", 2021 International Conference in Advances in Power, Signal and Information Technology (APSIT), 2021.
36. R. Ahirwal, P. Paliwal and T. Thakur, "Analysis of Differential Evolution Variants for Optimal Sizing of Autonomous Microgrid", 4th International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE), 2021.
37. R. Jain and S. K. Gawre, "Monitoring and Control of COVID Vaccine Storage Temperature using IoT and Machine Learning", IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT, Bhopal, 2022.
38. R. Verma, S. K. Gawre and N. P. Patidar, "An Extensive Study on Optimization and Control Techniques for Power Quality Improvement", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), Bhopal.
39. Reena Singh, Suresh K. Gawre and GiribabuDyanamina, "Review and Analysis of DC-DC Power Converter Performance for Fast Charging of EVs", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), Bhopal, India, 11 Oct 2021.
40. Ritu Varma, S. Gawre and N. P. Patidar, "Techniques for Power Quality Improvement", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), Bhopal, India, 10-11 Dec 2021.
41. S. K. Gautam, S. Nema and R. K. Nema, "Model Order Reduction of Interval Systems using Routh Approximation with Mid-Point Concept and Stability Equation Method", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
42. S. Maitreya, HimaniDangi, N. S. Naruka and P. Paliwal, "Analysis of Solar Powered Electric Vehicles", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
43. S. Mehroliya, A. Arya, U. Mitra and P. Paliwal, "Comparative Analysis of Conventional Technologies and Emerging Trends in Wind Turbine Generator", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), MANIT, Bhopal, 10-11 Dec 2021.
44. S. S. Parveen, S. Gupta and S. Nema, "Fuzzy based Solar MPPT for Electric Vehicle Application", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
45. Sandeep K. Patel, Manisha Dubey and N. P. Patidar, "Voltage Control of a Standalone PV Power System", IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS) Bhopal, India, 19-20 Feb 2022.
46. Sanjay K. Kakodia and GiribabuDyanamina, "Matlab/Simulation of Solar PV Array Powered Speed Control of IM Drive for Water Pumping", International Conference on Control, Automation, Power and Signal Processing (CAPS), Jabalpur, India, 12 Oct 2021.
47. Sanjay K. Kakodia, GiribabuDyanamina and Raj Kiran Ravula, "Torque Ripple Minimization using an Artificial Neural Network based Speed Sensor less control of SVM-DTC fed PMSM Drive", IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 28 Feb 2022.
48. Shahida Parveen Shaik, Sushma Gupta and Savita Nema, "Fuzzy based solar MPPT for Electrical Vehicle Application", 2nd IEEE International Conference on Electrical Power and Energy Systems (ICEPES 2021), MANIT Bhopal, 10-11 Dec 2021.
49. Shailu Sachan, Harsh Goud and Pankaj Swarnkar, "Performance and Stability Analysis of Industrial Robot Manipulator", Intelligent Computing Techniques for Smart Energy Systems (Book), Springer, Singapore, 2022.
50. Shreyas Maitreya, H. S. Dangi and Himani Jain, "Analysis and Review of Algorithms for Scalable Robotic Swarm Systems", International Conference on "Latest Trends in Civil, Mechanical and Electrical Engineering (LTCMEE-2021)", MANIT, Bhopal, 2021.
51. Siddhant Gudhe and Sanjeev Singh, "Stage Multiple Source Bidirectional Converter for Electric Vehicles", EPREC 21 NIT Jamshedpur, 28-30 May 2021.

52. Somiya Pant, R. K. Nema and Sushma Gupta, "Detecting Faults in Power Transformers using Wavelet Transform", IEEE 2ndInternational Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
53. Sunil K. Gautam, Savita Nema and R. K. Nema, "Model Order Reduction of Interval Systems using Routh Approximation with Mid- Point Concept and Stability Equation Method", IEEE 2ndInternational Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.
54. Tanmay Shukla and Ujjwal K. Kalla, "A Modified Non-bridged Cuk Converter based Electric Vehicle Charger with Reduced Components Count", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
55. Tanmay Shukla and Ujjwal K. Kalla, "A Single-Stage positive Cuk Converter based Charging System for Light Electric Vehicle Applications", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
56. Ujjwal K. Kalla and Kusum Agarwal, "Performance Assessment of SiC Switch based DC-DC Boost Converters for Solar PV Applications", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
57. Ujjwal K. Kalla, SangharhMesram and GiribabuDyanamina, "A Filterless DC Chopper Fed PFC PMBLDCM Drive System", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
58. Ujjwal K. Kalla, Sangharsh Meshram and GiribabuDyanamina, "An HG-SEPIC Converter Fed PMBLDC Motor Drive System", IEEE 2nd International Conference on Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
59. Ujjwal K. Kalla, Shiv Pratap Singh Rajawat and Sanjeev Singh, "A High-Gain Single-Switch DC-DC Converter Based Speed Control of PMBLDCM Drive for EV Applications", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
60. Ujjwal K. Kalla, Shiv Pratap Singh Rajawat and Sanjeev Singh, "An Approach for Electric Vehicle Range Enhancement using Solar PV and Regenerative Braking Operation", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
61. Ujjwal K. Kalla, Shiv Pratap Singh Rajawat and Sanjeev Singh, "Solar PV fed Battery Powered PMBLDCM driven Water Pumping System using Cuk Converter", Smart Technologies for Power, Energy and Control (STPEC), Bilaspur, Chhattisgarh, India, 19-22 Dec 2021.
62. Uliya Mitra, Anoop Arya, Sushma Gupta and Shweta Mehroliy, "A Comprehensive Review on Fuel Cell Technologies and its Application in Microgrids", 2nd IEEE International Conference on Electrical Power and Energy Systems (ICEPES-2021), MANIT Bhopal, 10-11 Dec 2021.
63. Umesh Chand Rathore and Sanjeev Singh, "Simulated Performance Evaluation of Electronic Load Controller used in Micro Hydro Power Plant using Synchronous Generator Feeding Isolated Load in Remote Mountainous Region of Himalayas", ICAET-2021, Sangrur Punjab, Jun 2021.
64. V. Kumar, D. Kumar, R. K. Nema and S. Nema, "DSP-Based PWM AC-DC Converter for DC voltage Regulation with Linear control Characteristics", IEEE 2nd International Conference on Electrical Power and Energy Systems (ICEPES), 10-11 Dec 2021.

Publications in National Conference

1. Anand K. Pandey, Nikita Parashar, Deepanshu Saxena, KhushaliBillare and Priyanka Paliwal, "Review on Recent Advancement in Battery Charging Infrastructure of Electric Vehicles and its Impact on Power Grid", Proceedings of Advancements in Mechanical, Electronics and Electrical Engineering, MANIT, Bhopal, 15-16 April 2021.
2. Ayush Agarwal, Ketan Gupta, AnshalNamdev and Priyanka Paliwal, "A Review on the Methods to Improve the Efficiency of Electric Vehicles", Proceedings of Advancements in Mechanical, Electronics and Electrical Engineering, MANIT, Bhopal, 15-16 Apr. 2021.

Research Projects

1. Shailendra Kumar, Sanjeev Singh and Sushma Gupta, "Development of Fast Bidirectional Battery Chargers for Electric Vehicles Considering Power Quality Aspects", sponsored by MPCST Bhopal.
2. Priyanka Paliwal and Tripta Thakur, "Implementation and Prototyping of IoT module for demand side management and improved efficiency", sponsored by MPCST.
3. GiribabuDyanamina, "Design and Development of Intelligent Controller Based Dual Configured Wind Energy Conversion System for Enhanced LVRT operation", sponsored by SERB, DST Government of India.
4. Vilas Varudkar, Anoop Arya and Narendra Gajbhaiya, "Development of Miniaturized Pressure Regulators (Non-moving type) for low flow rate application", sponsored by ISRO, Department of Space, GoI.
5. Anoop Arya, "Young Faculty Research Fellowship (YFRF) under Visvesvaraya PhD Scheme", sponsored by Ministry of Electronics & IY, GoI.

Consultancy

1. M. Kulshrestha and P. Paliwal, "Technological innovations and Capacity Building for Hand Hygiene for All in Madhya Pradesh", sponsored by UNICEF, Madhya Pradesh.
2. Manisha Dubey and Mukesh Kirar, "Consultancy work of Checking of Electrical Design & Drawings of Sewage Treatment plants of Bhopal City (Shahpura, Bhojwet&kolar)", sponsored by Ankita Construction, 103, Maruti Titanium Ring Road Nikol, Ahmedabad.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 51 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
Pankaj Swarnkar	IOT based automated sliding mechanism to prevent infant fall from bed.	Published
Priyanka Paliwal,Tripta Thakur, Anoop Arya, Warudkar, Manoj Arya, and Amit Bhagat	Artificial Intelligence Based Smart Electric Vehicle Battery Management System	Granted
Ujjwal Kumar Kalla	A System and Method for Non Destructive Testing and Detection of High Voltage Flashovers using System Power Quality Parameters	Granted

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Giribabu Dyanamina	STTP	Applications of Soft Computing Techniques For Electro-Mechanical Systems (ASTEMS)	75	26-Apr-2021	30-Apr-2021
N. P. Patidar	Conference	Latest Trends in Civil, Mechanical & Electrical Engineering (LTCMEE-2021)	115	12-Apr-2021	13-Apr-2021
P. Paliwal	Conference	National conference on advancements in Mechanical, Electronics and Electrical Engineering	47	15-Apr-2021	16-Apr-2021
P. Paliwal	Conference	AMEEE-2021	102	10-Dec-2021	11-Dec-2021
Savita Nema	International Conference	IEEE 2nd International Conference On Electrical Power and Energy Systems (ICEPES), 2021	120	10-Dec-2021	12-Dec-2021
Sushma Gupta	FDP	Promising trends in Electrical Grid Modernization	30	23-Aug-2021	28-Aug-2021

Labs

Name of Lab	Facilities/Equipments	Research Carried
IoT Applications to Smart Grid Lab		
Power System Simulation lab		
Microgrid and Integrated Systems Research Laboratory	For carrying out the research in the area Microgrid and Integrated Systems, Renewable energy, Electrical vehicles, power electronics and electrical drives	Implemented renewable energy microgrid, Electrical vehicle drive and charging systems, Small hydro power generation systems
Advanced Power Electronics Lab	For carrying out the research in the area Power Electronics. Latest equipments and machines are available	Many M.Tech. & Ph.D. thesis are carried out

Summary

Particulars	Total Numbers
Faculty Members	21
Phd Scholars	50
Book Publications	04
Chapter Publications	21
Publication in International Journal Publication	48

Particulars	Total Numbers
Publication in International Conference Publication	64
Publication in National Conference Publication	02
Faculty Outreach	51
Patents	03
Research Projects	05
Consultancy Projects	02
Workshops/Seminar Organized	06
Lab Facilities Developed	04

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Electronics and Communication Engineering

The future ambition and vision of the department is 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.

Mission of ECE Department

1. To design, develop and implement curricula of various programs using dynamic & responsive processes, in tune with the needs of the global industry and economy.
2. To ensure an environment where students, faculty and staff are encouraged to enhance their intellectual curiosity and improve their technical and professional skills through Continuous Development programs.
3. To promote reforms in the assessment/ evaluation processes, ensuring reliable, valid, transparent assessment and certification of abilities of learners.

Faculty and Programmes

Professor	
Dr. Aditya Goel	Dr. Kavita Khare
Dr. Ajay Somkuwar	Dr. Madhu Shandilya
Dr. Arvind Rajawat	Dr. R. K. Baghel
Dr. Jyoti Singhai	Dr. R. N. Yadav
Dr. J. S. Yadav	
Associate Professor	
Dr. Dheeraj K. Agrawal	Dr. Lalita Gupta
Assistant Professor	
Dr.Alpana Pandey	Dr. O. P. Meena
Dr. A. Subba Rao	Dr. R. K. Chaurasiya
Dr. Bhavana Prakash Shrivastava	Dr. Sangeeta Nakhate
Dr. D. K. Raghuiwanshi	Dr. SukeshniTirkey
Dr. Laxmi Kumre	Dr. Tarun Kumar Gupta
Dr. Manish Kashyap	Dr. Vijayshri Chaurisia

UG Programme	
Bachelor of Technology (B.Tech.)	Electronics Communication & Engineering

PG Programme	**Specialization**
Master of Technology (M. Tech.)	1. Digital Communication
	2. VLSI & Embedded System

PhD Scholar

Name	**Title/Area of Research**
Abhay Pratap Singh	Not decided yet
Abhishek Panchal	Not decided yet
Ajay Sharma	Image Super Resolution using Deep Learning
Alok Kumar	Junctionless gate all around mosfet
Amit Tomar	Not decided yet
Amol Boke	Efficient Design and Implementation of Cryptographic Algorithms using PUFKey Generators to Secure IoT Devices
Anagh Shankar Das	Not decided yet
Asha Verma	RF absorbers
Ashish Kumar Parashar	Not decided yet
Deepak Parashar	Improved classification of glucoma in retinal fundus images using image decomposition techniques
Divya Gautam	Design and Implementation of Efficient Digital
Ebtasam Ahmad Siddiqui	Not decided yet
Hardika Khandelwal	NOMA Technique
Jetya Banothu	Not decided yet
Mamta Patankar	Not decided yet
Manish Trivedi	Multi Band Antenna
Mohit Choubey	Machine Learning

Name	Title/Area of Research
Monika Dixit	Image Processing
Narendra Kumar Patel	Design and Implementation of MIMO Antennas for 5GApplications
Neha Rathore	Beehive cell detection with automated image analysis
Prakash Namdev	Not decided yet
Praveen Kumar Tyagi	Detection of sleep apnea from heart Rate Variability and ECGderived respiration Signal
Priti S. Lokhande	Not decided yet
Priya Choudhary	Not decided yet
Priyanka Chouksey	Image processing
Rahul Prasad	Not decided yet
Rahul Singh	Classification and Evaluation of Brain
Rajneesh K. Patel	Not decided yet
Rakesh K.Gumasta	Not decided yet
Ravikant Lodhi	RF energy harvesting
RiniSmita Thakur	Image Processing
Sanjay K. Pawar	Not decided yet
Shivnarayan Ahirwar	Not decided yet
Sunil Patidar	Not decided yet
Swati Gautam	Not decided yet
Swati Soni	Not decided yet
Umashankar Singh	Not decided yet
Vivek	Not decided yet
Vivek K. Yadav	Not decided yet
Yashasvi Rai	Design and Analysis of Efficient SRAM Memory Image Processing
Yogesh K. Gupta	Free Space Optical Comm
Zainab Aizaz	Area And Energy Efficient Truncated ApproximateCarry-Based Booth Multipliers For Error Resilient Applications

Book Publications

1. Afreen Khursheed and Kavita Khare, "Nano Interconnects: Device Physics, Modeling and Simulation", Taylor & Francis Group, London, 2021.
2. Rahul K.Chaurasiya, Dheeraj K. Agrawal and Ram Bilas Pachori, "AI-Enabled Smart Healthcare Using Biomedical Signals", IGI Global, USA, 2022.

Chapter Publications

1. Afreen Khursheed and Kavita Khare, "GNRFET based Ternary Repeaters - Prospects and Potential Implementation for efficient GNR interconnects", In: Ashish Raman, Deep Shekhar and Naveen Kumar (eds.), Sub-Micron Semiconductor Devices and Applications by CRC Press, Taylor & Francis 2022.
2. Anurag S. D. Rai, Reeta Pawar and Alpana Pandey, "Smart Artificial Intelligent-Based Controller for Hydroponic: New Technique for Soilless Plantation", In: Anurag S. D. Rai, Reeta Pawar, Alpana Pandey, C. S. Rajeshwari, Ashok Kumar Gwal (eds.), Machine Learning for Predictive Analysis, Publisher: Springer, Singapore, 2021.
3. Gaurav Makwana, R. N. Yadav, Lalita Gupta, "A Comparative Analysis of Image Enhancement Techniques for Detection of Microcalcification in Screening Mammogram", In: Barun Bajaj et al. (eds.), High Performance Computing for Intelligent Medical System.
4. Gaurav Makwana, R. N. Yadav and Lalita Gupta, "Histopathological Image Analysis and Classification Techniques for Breast Cancer Detection", In: Barun Bajaj et al. (eds.), Analysis of Medical Modalities for Improved Diagnosis in Modern Healthcare.
5. Kavita Khare, Ajay Dadoria and Afreen Khursheed, "Novel Subthreshold Modelling of FinFET based energy-effective circuit designs", In: Balwinder Raj and Ashish Raman (eds.), Nanoscale Semiconductor: Materials, Devices and Circuits to be published by CRC Press, Taylor & Francis, 2022.
6. Yashwant Kurmi, Neelkamal Kapoor and Aditya Goel, "Tuberculosis Bacteria Segmentation in Acid Fast Stained Images", In: Vijay Nath and J. K. Mandal (eds.), Lecture Notes in Electrical Engg, Springer, 2021.
7. Zainab Aizaz, Kavita Khare and A. Tirmizi, "Efficient Approximate Multipliers for Neural Network Applications", In: J. Nayak, H. Behera, B. Naik, S. Vimal and D. Pelusi (eds.), Computational Intelligence in Data Mining. Smart Innovation, Systems and Technologies, Singapore, 2022,
8. Zainab Aizaz and Kavita Khare, "Energy Efficient Approximate Multipliers for ML Based Disease Detection Systems", In: Balwinder Raj, B. B. Gupta and Jeetendra Singh (eds.), Advanced Circuits and Systems for Healthcare and Security Applications, CRC Press, Taylor & Francis, 2022.
9. Zainab Aizaz and Kavita Khare, "Human-centered Artificial Intelligence", In: Surbhi Bhatia, SuyelNamasudra, and Swati Chandna (eds.), Innovations in Artificial Intelligence and Human Computer Interaction in the Digital Era. Series: Intelligent Data-Centric Systems, Elsevier, 2022.

Publication in International Journals

1. Aashish Parihar and Sangeeta Nakhate, "Low latency high throughput Montgomery modular multiplier for RSA cryptosystem", Engineering Science and Technology, Elesevier, Volume 30, pp. 1-8, 2021"
2. Abhishek Tripathi and Arvind Rajawat, "Early Area and Power Estimation Model For Rapid System Level Design and Design Space Exploration", Advances in Electrical and Electronic Engineering, Volume 20(1), pp. 66-72, 2022.
3. Ajay Sharma and Bhavana Prakash Shrivastava, "Medical image super-resolution using correlation filter interleaved progressive convolution network (CFIPC)", Electronics Letters, Volume 58(9), pp. 360-362, 2022.
4. Bhupendra Singh Kirar, G. Ravi Shankar Reddy and Dheeraj Agrawal, "Glaucoma Detection using SS-QB-VMD Based Fine Sub Band Images from Fundus Images", IETE Journal of Research.
5. Deepak Parashar and Dheeraj Agrawal, "2-D Compact Variational Mode Decomposition-Based Automatic Classification of Glaucoma Stages from Fundus Images", IEEE Transactions on Instrumentation and Measurement Volume 70, pp. 1-10, 2021.
6. Dharmendra Sadhwani and R. N. Yadav, "Novel MGF Expressions of F Composite Fading Channels with Applications", International Journal of Electronics and Communications, Volume 138, pp. 153889, 2021.
7. Divya Gautam, Kavita Khare and Bhavana Prakash Shrivastava, "A Novel Approach for Optimal Design of Sample Rate Conversion Filter Using Linear Optimization Technique", IEEE Access Volume 9, pp. 44436-44441, 2021.
8. Hemant Choubey and Alpana Pandey, "A combination of statistical parameters for the detection of epilepsy and EEG classification using ANN and KNN classifier", Signal, Image and Video Processing, Volume 15, pp. 475-483, 2021.
9. Jitendra Saxena and Aditya Goel, "Diferentiated services infault tolerant", Optical and Quantum Electronics Volume 53, pp. 162, 2021.
10. M. I. Khan, B. Acharya and R. K. Chaurasiya, "iHearken: Chewing sound signal analysis based food intake recognition system using Bi-LSTM softmax network", Computer Methods and Programs in Biomedicine, Volume 221(1), pp. 106843, 2022.
11. M. I. Khan, B. Acharya and R. K. Chaurasiya, "Automatic Prediction of Glycemic Index Category from Food Images Using Machine Learning Approaches", Arabian Journal for Science and Engineering, Volume 2022(1) pp. 1-24, 2022.
12. P. Singh, B. Acharya and R. K. Chaurasiya, "Low-area and high-speed hardware architectures of L Block cipher for Internet of Things image encryption", Journal of Electronic Imaging, Volume 31(3), pp. 33012, 2022.
13. P. Singh, B. Acharya and R. K. Chaurasiya, "Efficient hardware architectures of Lilliput lightweight algorithm for image encryption", International Journal of Ad Hoc and Ubiquitous Computing, 2022.
14. P. Singh, B. Acharya and R. K. Chaurasiya, "Modeling and Optimization of High-speed KLEIN Architectures on FPGA and ASIC Platforms for IoT Applications", International Journal of Ad Hoc and Ubiquitous Computing, 2022.
15. Priya Choudhary, Jyoti Singhai and J. S. Yadav, "Curvelet and fast marching method-based technique for efficient artifact detection and removal in dermoscopic images", International Journal of Imaging System Technology, pp. 2334-2345, 2021.
16. Rahul Singh and Aditya Goel, "Binary Glioma Grading Framework, Imaging systems and technology", Volume 31(4), pp. 2047-2059, 2021.
17. Rajneesh 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, Volume 42(3), pp. 829-841, 2022.
18. Rini S. Thakur, Shubhojeet Chatterjee, R. N. Yadav and L. Gupta, "Image De-noising with Machine Learning: A Review", IEEE Access, Volume 9, pp. 93338-93363, 2021.
19. Sumit Gupta and Aditya Goel, "Design and analysis of bipolar OCDMA", Optical and Quantum Electronics, Volume 54, pp. 186, 2022.
20. Trapti Sharma and Laxmi Kumre, "Design of unbalanced ternary counters using shifting literals-based D-Flip-Flops in carbon nanotube technology", Computers and Electrical Engineering (Elsevier), Volume 93, pp. 107249, 2021.
21. U. Garg and R. K. Chaurasiya, "Efficient Traffic Sign Recognition using CLAHE-based Image Enhancement and ResNet CNN Architectures", International Journal of Cognitive Informatics and Natural Intelligence, Volume 14(4), pp. 1-19, 2021.
22. Vijay K. Magraiya, Tarun K. Gupta and Bharat Garg, "Design of CNTFET based Domino Wide OR Gates using Dual Chirality for Reducing Subthreshold Leakage Current", Silicon.
23. Yashwant Kurmi, VijayshriChaurasia and Aditya Goel, "Leaf images classification for the crop disease, Multimedia Tools and Applications".
24. Yashwant Kurmi, SuchiGangwar and Dheeraj Agrawal, "Leaf image analysis-based crop diseases classification", Signal, Image and Video Processing, Volume 15(3) pp. 589-597, 2021.
25. Yogesh Shrivastava and Tarun K. Gupta, "Designing of Low-Power High-Speed Noise Immune CNTFET 1- Trit Unbalanced Ternary Subtractor", Journal of circuits systems and computers, Volume 31 pp. 1-16.
26. Zainab Aizaz and Kavita Khare, "Energy efficient approximate booth multipliers using compact error compensation circuit for mitigation of truncation error, International Journal of Circuit Theory and Applications, pp. 1-19, 2022.
27. Zainab Aizaz and Kavita Khare, "Area and Power efficient Truncated Booth Multipliers using Approximate Carry based Error compensation", IEEE Transactions on Circuits and Systems-II: Express Briefs, 2022.

Publications in International Conference

1. Abhijeet Bisht and Bhavana Prakash Shrivastava, "Design of Multi Floor Multi-Elevator Controller by RISC-V CPU using Verilog-HDL", International Conference in virtual mode on "Advances in Electric Vehicle Technology", 03 0ct 2021.

2. Afreen Khursheed, Kavita Khare and Fozia Z. Haque, "Automation of Optimal Metal Density Filling for deep submicron technology designs", International conference on advances in material science, communication and microelectronics, ICAMCM, 2021.
3. Afreen Khursheed and Kavita Khare, "Optimized buffer insertion using PSO technique for efficient interconnect designs", International Conference on Applied Mechanics, Machine Learning and Advanced Computation, AMMLAC-202, 16-17 Mar 2022.
4. Afreen Khursheed and Kavita Khare, "Ultra energy efficient and Robust XOR gate realization by DWM Spintronics", International Symposium on Devices, Circuits and Systems, ISDCS-2022, 30-31 Mar 2022.
5. Afreen Khursheed and Kavita Khare, "Investigations on transition metal edge passivated graphene Nanoribbons (Ac-GNR) for DCM interconnects applications", Materials of the future: Smart Applications in Science and Engineering, Qatar University, 09-31 Mar.
6. Ajeet Kumar, Bhavana Prakash Shrivastava and Dheeraj K. Agarwal, "A Review of Tunable Active RC Filter of Low Power for Bluetooth Application", International Conference in virtual mode on "Advances in Electric Vehicle Technology", 03 0ct 2021.
7. Deepak Parashar and Dheeraj K. Agrawal, "Computer-Aided Diagnosis of Glaucoma at Early-Stage using Retinal Fundus Images", IEEE 10th International Conference on Internet of Everything, Microwave Engineering, Communication and Networks (IEMECON), Jaipur, India, 01 Dec 2021.
8. Devyani Nandanwar, Debanjan Paul, Akkala Subbarao and Laxmi Kumre, "Simulation of Digital Lock System with GSM", 9th International Conference on Innovations in Electronics & Communication Engineering (ICIECE- 2021) Springer, Guru Nanak Institutions Ibrahim Patnam, Hyderabad, Telangana State.
9. M. I. Khan, B. Acharya and R. K. Chaurasiya, "iHearken: A hybrid CNN-BiLSTM model for automatic detection of food ingestion using wearable sensor-based system", Int. Conf. on Robotics, Automation and Communication Engineering for Industry 4.0, Faridabad, India, 04 Feb 2022.
10. N. Nithyusha, R. K. Chaurasiya and O. P. Meena, "Identifying Forged Digital Image using Adaptive Over-Segmentation and Feature Point", Springer International Conference on Advances in Data Computing, Communication and Security, 01 Sep 2021.
11. P. Purini and R. K. Chaurasiya, "Real Time Facial Expression Recognition using CNN", GCAIA-2021 conference to be organized by UEM, Jaipur, 01 Sep 2021.
12. Priya Choudhary, Jyoti Singhai and J.S. Yadav, "A survey on: detection of skin cancer lesions using segmentation through dermoscopic images", IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT Bhopal, 27 Feb 2022.
13. S. Jain, R. Rathi and R. K. Chaurasiya, "Indian Vehicle Number-Plate Recognition using Single Shot Detection and OCR", IEEE INDISCON 21, NIT Nagpur, 27 Aug 2021.
14. S. Patel, Kavita Khare and J. S. Yadav, "High Performance Robust FIR Filter Design Using Radix-8 Based Improved Booth Multiplier For Signal Processing Application", 8th International Conference on Signal Processing and Integrated Networks (SPIN), Noida, 26-27 Aug 2021.
15. Shreyasi Ghosh Dastidar and Sangeeta Nakhate, "Effect of thermal incorporation in IR-Drop analysis of multilayered network and its reduction technique", IEEE Students Conference on Electrical, Electronics and Computer Science, 19-20 Feb 2022.
16. Srishty Dwivedi, R. N. Yadav and Lalita Gupta, "Restoration of Image using Discrete Wavelet Transform with Filtering Technique", 12th International Conference on Computing Communication and Networking Technologies, 06-08 July 2021.
17. Swastik K. Sahu and R. N. Yadav, "Performance Analysis of ResNet in Facial Emotion Recognition", 4th International Conference on Machine Intelligence and Signal Processing, 12-14 Mar 2022.
18. Swastik K. Sahu and R. N. Yadav, "Key Facial Points Recognition using ResNet", International Conference on Advancements in Nanoelectronics and Communication Technologies, 24-26 Feb 2022.
19. Swati Gautam and Jyoti Singhai, "Fast and Accurate Water Region Classification from Remote Sensing Images Using Enhanced Convolutional Neural Network Classifier", IEEE International Students Conference on Electrical, Electronics and Computer Science (SCEECS), MANIT Bhopal, 27 Feb 2022.
20. V. Chandana, G. Tejaswini, L. Gupta and R. N. Yadav, "Algorithm Development Analysis: Searching and Sorting", IEEE International Students Conference on Electrical, Electronics and Computer Science, 19-20 Feb 2022.
21. V. R. Gandla, D. V. Mallela and R. K. Chaurasiya, "Heart Failure Prediction using Machine Learning Techniques", Int. Conf. on Applied Computational Intelligence and Analytics (ACIA-2022) at Raipur India, 26 Feb 2022.
22. Z. Aizaz and Kavita Khare, "State-of-Art Analysis of Multiplier designs for Image processing and Convolutional Neural Network Applications", International Conference for Advancement in Technology (ICONAT), Jan 2022.
23. Zainab Aizaz, Kavita Khare and Aizaz Tirmizi, "Approximate computing based unsigned multipliers for image processing applications", 2nd International Conference on advances in VLSI and embedded systems, AVES, 18-19 Dec 2021.

Publications in National Conference

1. Ajay Sharma, Ayushi Priya and Bhavana P. Shrivastava, "Quantum Block chain: A Persuasive Approach for Future Security", IETE National Conference on "VLSI, Communication and Signal Processing" (NCVCS-2021), 27-28 Nov 2021.
2. Ayushi Choukikar and Laxmi Kumre, "A Semi Serial IMPLY-Logic Based Memristor Multiplier", IETE National Conference on "VLSI, Communication and Signal Processing" (NCVCS 2021), 27-28 Nov 2021.

3. Devarsh Bhanu, Bharat Mishra, Chitra Kataria and Laxmi Kumre, "Design and A Prototype Development of Hand Rehabilitation Device for A Spinal Cord Injured Patient", National Conference on "Communication and Signal Processing Systems (NCCSS-2021)", R.M.K. College of Engineering and Technology, Puduvoyal, TN, India, 08-09 Oct 2021.
4. Devarsh Bhanu, Bharat Mishra, Chitra Katariya and Laxmi Kumre, "Wireless Robotic Hand Glove", IETE National Conference on "VLSI, Communication and Signal Processing" (NCVCS 2021), 27-28 Nov 2021.
5. Narisetti Mary Sravanthi and Sangeeta Nakhate, "Design of 12 bit digital to analog convertor in 40nm CMOS Technology", IETE National conference on Emerging Technologies for Intelligent Electronic system Design, 18-19 Sep 2021.
6. Nidhi Singh, Bhavana P. Shrivastava and Laxmi Kumre, "Development of Verification Environment of I3C (Improved Inter Integrated Circuit) Slave Using System Verilog (UVM Methodology)", IETE National Conference on "VLSI, Communication and Signal Processing" (NCVCS-2021) MANIT, 27-28 Nov 2021.
7. P. K. Tyagi and D. Agrawal, "A Review of Sleep Apnea Feature Extraction and Detection", National Conference on Advancements in Mechanical, Electronics and Electrical Engineering (AMEEE), MANIT Bhopal, 15 Apr. 2021.
8. P. K. Tyagi and D. Agrawal, "A Review of Arrhythmia Feature Extraction and Classification on ECG signal", National Conference on Advancements in Mechanical, Electronics and Electrical Engineering (AMEEE),MANIT Bhopal, 15 Apr. 2021.
9. PritiLokhande and Sangeeta Nakhate, "A Review- Physical unclonable functions", IETE National conference on Emerging Technologies for Intelligent Electronic system Design, 18-19 Sep 2021.
10. S. Vishnu Swaroop, Y. Akesh, A. Nikhil, K. Tarun, G. Sai Prakash Reddy and O. P. Meena, "Smart Plant Pathologist: Android application for plant disease detection using Deep Learning and Image Processing", National Conference on emerging technologies for intelligent electronic system design, Bhopal, 18-19 Sep 2021.
11. Swati Chaturvedi and Sangeeta Nakhate, "Design of static low power flipflops using logic structure minimisation techniques", IETE National conference on Emerging Technologies for Intelligent Electronic system Design, 18-19 Sep 2021.
12. TappetaParimala and O. P. Meena, "A bandwidth enhanced metasurface fractal patch antenna", National Conference on emerging technologies for intelligent electronic system design, Bhopal, 18-19 Sep 2021.
13. Umashankar Singh and Laxmi Kumre, "Design and Implementation of Linear Feedback Shift Register", IETE National Conference on "VLSI, Communication and Signal Processing" (NCVCS 2021), 27-28 Nov 2021.

Research Project

1. R. K. Chaurasiya, "Thought-based Home Appliance Control System using Brain-Computer Interaction", sponsored by MANIT.
2. A. Subba Rao, "Gain Enhancement of Metamaterial loaded Planar Antennas with Defective Ground Structure for Wideband Applications", sponsored by MANIT, Bhopal.
3. Shivam Verma, Laxmi Kumre and Sushant Mittal, "Development of Graphene/CNT FET based sensors for space applications", sponsored by ISRO.
4. Arvind Rajawat and Ajay Somkuwar, "SMDP-C2SD", sponsored by MEITY.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 38 which includes all type of Activities.

MoU

Name of Department	Name of Coordinator	Name of the agency with which MOU signed
Electronics and Communication Engineering	Jyoti Singhai	L&T (Defence) Mumbai

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
Aditya Goel	Optimised dispersion compensating Fiber based on LP_{01} mode for WDM optical transmission	Granted
Dheeraj K. Agrawal	System for Maintenance and Monitoring of Fire Extinguisher for Refilling using Internet of Things (IoT) Sensors and Image Processing Tools	Granted
Jyoti Singhai	Planar And Fictional Curve Structured Patch Antenna With Symmetrically Swastika Slotted Ground Plane	Granted
Kavita Khare	Food Warmer, Patent number: 345147-001	Granted

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
Kavita Khare	A method for Prediction of COVID-19 Based On machine Learning Algorithm	Granted
Rahul Kumar Chaurasiya	Wearable Sensor System for Food Chew Sound Detection and Food Classification	Published

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Akkala Subbarao	STTP	Trends in Signal Processing and Machine Learning using Python and MATLAB	45	05-Jul-2021	09-Jul-2021
Laxmi Kumre, Bhavana P. Shrivastava,Vijayshri Chaurasia	National Conference	IETE National Conference on "VLSI, communication and signal processing"	30	27-Nov-2021	28-Nov-2021
Sangeeta Nakhate	National Conference	IETE National conference on Emerging Technologies for Intelligent Electronic system Design	45	18-Sep-2021	19-Sep-2021

Summary

Particulars	Total Numbers
Faculty Members	23
PhD Scholars	42
Book Publications	02
Chapter Publications	09
International Journal Publication	27
International Conference Publication	23
National Conference Publication	13
Faculty Outreach	38
MoU's	01
Patents	06
Research Projects	04
Workshops/Seminar Organized	03

DEPARTMENT OF HUMANITIES

Humanities

The department is home to a multi-disciplinary faculty members specialized in intellectual property rights, technical communication skills, public policy, public administration, cognitive and social psychology, community and mental health, and economics. The department has been continuously academically perfoming well by providing guidance to several research scholars in the domains of humanities and social sciences, delivered expert lectures, and organized workshops during the year 2021-22.

Also, the department has been actively engaged in conducting research on COVID-19 approved by NIT Council, India and having major research project funded by Indian Council of Social Science Research, New Delhi, India and seed money projects during the same. Areas of research invloves existing laws and correcting measures for girl child sexual abuse in Madhya Pradesh, decision-making processes, and mental health.

Apart from these, the department is leading the Unnat Bharat Abhiyaan program at the Institutional level.

The future plan includes motivating faculty members towards engagement in rigorous research activities funded by national and interntional research agencies. Also, looking forward to collaborate through MOUs with prestigious institutes. Department plans to conduct international conferences, workshops, and many other courses such as GIAN in the multi-disciplinary field.

An effort has also been made to begin a multi-disciplinary post graduate program at the department, which will further help in strengthening the research activitiy at the department.

The HSS department at MANIT aims to break down disciplinary barriers across diverse IT and social science fields and establish a cross-disciplinary research and teaching agenda that is progressive and cutting-edge in technology education.

Faculty and Programmes

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

UG Programme	
NIL	

PG Programme	Specialization
NIL	

PhD Scholars

Name	Title/Area of Research
Ajayan T. S.	Assessment of PMUY
Anshita Sachan	Environmental degradation among BRICS nations
Dharmveer Singh Yadav	Indentured Labour
Dileep Yadav	Constittuional Directions and Impact of Reservation on People
Jasleen Kaur	Memory studies
Lulu Farshana M.	Voting Behaviour
Nawal K. Srivastava	Impact of Infrastructure Investment on Indian Railways Fright Traffic-Past Trends and Future Perspectives
Sandeep Tripathi	Poverty Alleviation Act MNREGA and Its Dimensions
Saurabh Bharne	Farmers Insurance and PMFBY
Shivani Tiwari	Girl Child Empowerment Scheme: Laxmi LadliYojna
Udit Kumar Sahu	Energy Intensity Analysis
Vani K.	English Teaching

Chapter Publications

1. Deepak Kumar, "Grammar in Context", In: Ganga Mahto (eds.), Diploma Course in the Teaching of English.
2. Deepak Kumar, "Constructivist Approach to Language Teaching", In: Ganga Mahto (eds.), Diploma Course in the Teaching of English.

Publication in International Journals

1. Anjali Dhengle, "Work from home during the COVID-19 pandemic; exploration of perceived stress and social support", Turkish Online Journal of Qualitative Inquiry, Volume 12(8), pp. 4251-4259, 2021.
2. Anjali Dhengle, "Designing Organizational Structures for Sustainable Development through the Lens of Psychological Well-Being: In the Times of the Covid 19 Pandemic", Design Engineering, Volume 2021(6), pp. 6021-6042, 2021.
3. Anjali Dhengle and T. S. Ajayan, "Women Empowerment and Envrionment Protection through Pradhan MantruUjjwala Yojana", Vidyabharati International Interdisciplinary Research Journal (Special Issue), Special Issues Oct 2021, pp. 806-813, 2021.
4. Ashis Kumar Pradhan, Sandhyarani Rout and Imran Ahmed Khan, "Does market concentration affect wholesale electricity prices? An analysis of the Indian electricity sector in the COVID-19 pandemic context", Utilities Policy, Volume 73, pp. 1-8, 2021.
5. Ashis Kumar Pradhan, AnshitaSachan, Udit Kumar Sahu and Vinita Mohindra, "Do foreign direct investment inflows affect environmental degradation in BRICS nations?", Enviromental Science and Pollution research, Volume 29(1), pp. 690-701, 2022.
6. Ashis Kumar Pradhan and Gourishankar S. Hiremath, "Nexus between external commercial borrowings and foreign exchange reserves in India: mercantilism or moral hazard?", Transnational Corporations Review, 2022.
7. Chinmaya Ranjan Kumar, Chittaranjan Nayak and Ashis Kumar Pradhan, "What determines crop diversification in North-East zone of India?", Journal of Public Affairs, Volume 22(2), pp. 1-10, 2022.
8. Hemant Kumar and Namrata, "Socio-economic environment and motivation to innovate: exploring grassroots innovations process in India", Technology Analysis & Strategic Management, pp. 1-14, 2022.
9. NenavathSreenu and Ashis Kumar Pradhan, "The effect of COVID-19 on Indian stock market volatility: can economic package control the uncertainty?", Journal of Facilities Management, 2022.
10. Pushpender Yadav, "Child Trafficking in India: A Theoretical View", International Journal of Current Research, pp. 17461-17468, 2021.

Publication in National Journals

1. Dipti Lunawat, Ashis Kumar Pradhan and Ajay Lunawat, "Women in the board room: A mandate- Intent and compliance by companies", SCMS Journal of Indian Management, Volume 18(3), pp. 16-27, 2022.
2. Ashis Kumar Pradhan, Minimol MC and Sandhyarani Rout, "Do International Reserves Holdings induce the Corporates to Borrow in Foreign Currency?", Indian Journal of Economics and Business, Volume 22(1), pp. 495-515, 2022.
3. Pushpender Yadav and Divya Srivastava, "Child Sexual Abuse: Causes and Consequences", Indian Journal of Humanities & Social Sciences, Volume 09(1), pp. 13-24, 2021.
4. Pushpender Yadav and Divya Srivastava, "Girl Child Sexual Abuse in India and Role of Parents", Indian Journal of Social Research, Volume 62, pp. 87-100, 2021.
5. Hemant Kumar and Namrata, "Indian Science and Technology during the Freedom Struggle: A 'Science Diplomacy' Perspective", Journal of Scientific Temper, Volume 10(1-2), pp. 79-96, 2022.

Publications in International Conference

1. Pushpender Yadav, "Child Abuses: It's Impact on Mental Health in India", International Conference on Women in Learning and Leadership (IcWILL 2022) NIT Warangal, 08-09 Mar 2022.
2. Pushpender Yadav, "Swach Bharat Abhiyan and Role of Water in Its Success", International E-Conferenceon Sustainable Livelihoods: Water Climate Change & Geo-Spatial Development, 07-08 Oct 2021.
3. Pushpender Yadav, "Violance against women in India an Assessment with Theoretical View", Youth Global Submit: An International Conference, Rajiv Gandhi National Institute of Youth Development, 15-17 Mar 2022.
4. Pushpender Yadav and Sandeep Tripathi, "How is COVID-19 Restructuring the Global Democratic Structure and Governance", 2nd PAN NIT HSS International Conference on Resiliance and Transformation for Global Restructuring, MNIT Jaipur, 07-09 Jan 2022.
5. Pushpender Yadav and Saurabh Bharne, "Stabilising farmer's income through Pradhan Mantri FasalBimaYojna:An Overview", 2nd PAN NIT HSS International Conference on Resiliance and Transformation for Global Restructuring, MNIT Jaipur, 07-09 Jan 2022.

Publications in National Conference

1. Pushpender Yadav, "Violance Against in India: A Theoretical View", Practical Aspects of Gender Equity (PAGE 2021), 01 Apr. 2021.
2. Pushpender Yadav, "Role of Village Panchayats and Swachh Bharat Abhiyan in Tribal Villages: A study of Barwani district in Madhya Pradesh", 29-30 Nov 2021.
3. Pushpender Yadav and Saurabh Bharne, "Multicultural Decentralisation in India: An Experience with Asymmetric and Multilevel Federalism for integrating northeast tribal groups", 29-30 Nov 2021.

4. Pushpender Yadav and Sandeep Tiwari, “How PESA had failed in ensuring "Mava Nate Mava Raj" (Our Village Our Rule)”, 29-30 Nov 2021.
5. Pushpender Yadav and Shivani Tiwari, “Land Acquisation in India: Unfurling Panchayats (extension to schedule areas) Act,1996: As a saviour of scheduled Area”, 29-30 Nov 2021.

Reseach Projects

1. Pushpender Yadav, “Girl Child Sexual Abuse in Madhya Pradesh”, sponsored by ICSSR, New Delhi.
2. Anjali Dhengle, Vinita Mohindra, Siddharth Rokade and Varsha Rokade, “Exploration of Psychological Benefits to Indian Rural Women due to Pradhan Mantri Gram Sadak Yojana”, sponsored by NRIDA, MoRD.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 15 which includes all type of Activities.

Summary

Particulars	Total Numbers
Faculty Members	07
PhD Scholars	12
Chapter Publications	02
Publication in International Journal Publication	10
Publication in National Journal Publication	05
Publication in International Conference Publication	05
Publication in National Conference Publication	05
Faculty Outreach	15
Research Projects	02

DEPARTMENT MANAGEMENT STUDIES

Management Studies

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 three 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

MBA Programme

The MBA program has been developed after extensive research and interaction with the various stakeholders. The curriculum facilitate students in understanding of managerial concepts and creating the skills required for emerging problem solving competency in students matching their requirement with their skills and predispositions.

The objective of the program is to impart management education in state of art technology so as enable the students to optimally equip with the changing requirements of the corporate and society.

Eminent and experienced faculty enables the students to acquire a combination of various technical skills and value focused decision making ability. The program places heavy emphasis on practical experience for which extensive interaction with the industry is built into the curriculum.

Highlight of the Program

In today's global competitive environment, competency based management is widely viewed as a major source of competitive advantage. To succeed in this environment, organization needs people with skills, knowledge and leadership to manage business effectively and to make corporations competitive.

The institute recognizes core strength in dynamic and volatile business environment. MBA program focuses on the determinants of real value for business, by emphasizing, business leadership and technology. MBA program provides with a valuable combination of management concepts and skill development that set it apart from other B-schools. It offers dual specialization in Human Resource, Marketing, Finance, & Systems. The two year full time degree program includes basic core courses, electives and industry oriented summer internship. The aim is reflected in the compressed time frame, reliance on group work and also focus on creativity and entrepreneurship development. The MBA program follows a semester pattern and imparts in-depth knowledge in the crosscuts of all academic areas and pools together resources from every functional area, thus driving home the importance of seeing the big picture in business. The student represents a good mix of fresh graduates from various disciplines and experienced professionals.

The program is build up on the functional knowledge of the students, permitting them to explore their interests to a greater depth of corporate problems. It emphasizes more on application of management principles and techniques with continuous industrial interactions. The industry oriented projects and assignments form the integral part of the curriculum that helps in individual betterment with due emphasis on team work.

Faculty and Programmes

Professor	
Dr. Amit Banerji	Dr. (Mrs.) Shuchi Srivastava
Assistant Professor	
Dr. Bikrant Kesari	Dr. Nenavath Sreenu
Dr. Gyaneshwar Singh Kushwaha	Dr. Priyanka Verma
Dr. Hergovind Singh	Dr. Varsha Rokade

UG Programme	
NIL	

PG Programme	**Specialization**
Master of Business Administration (MBA)	

PhD Scholar

Name	Title/Area of Research
Afaque Siddiqui	A Study of the Impact of COVID-19 Pandemic on Small Entrepreneurs of Central India
Nirbhay Nahor	Not decided yet
Ritika Dongrey	A Study on Impact of Employees Perceived Diversityon Employee Performance
Shswath Mishra	Finance
Shweta Dasgupta	Not decided yet
Som Sekhar	Finance
Vadithe Rakesh Naik	Human Resource Management
Vivek Nagar	Not decided yet

Chapter Publication

1. Hergovind Singh, "Exploring the dark side of Gig economy, markets, and jobs", In: Ashish Gupta (eds.), Sustainability in the Gig Economy - Perspectives, Challenges and Opportunities in Industry 4.0, Springer Nature, 2022.
2. NenavathSreenu, "The linear and nonlinear relationship between Infrastructure and FDI in India", In: Orhan Özçatalbaş (eds.), Sustainable Rural Development, IntechopenPublsiher, 2022.
3. Varsha Rokade, "The Integrated Framework of Environmental Internet of Things Based Recruitment Process and the Impact Created by IoT in Inventory Management", In: Sanjay Yadav, Abeed Haleem, P K Arora and Harish Kumar (eds.), Smart innovations,System and Technologies, Springer, 2022.

Publication in International Journals

1. Amit Banerji, "A study of selective macroeconomic determinants affecting remittances to India from the USA and GCC countries", International Journal of Business and Globalisation, Volume 29(4), pp. 530-555, 2021.
2. BikrantKesari, "Evaluating the Connection of Behavioral Biases and Investment Decisions of Equity Market Investors Using SEM Approach", Tobacco Regulatory Science, Volume 7(5), pp. 2766-2776, 2021.
3. Bikrant Kesari, "Impact of Behavioral Biases in Financial Risk Tolerance Ability of Mutual Fund Investors", Tobacco Regulatory Science, Volume 7(5), pp. 2748-2765, 2021.
4. NenavathSreenu, "Does Transportation Infrastructure Impact Economic Growth in India", Journal of Facilities Management, Volume 19, pp. 65-77, 2022.
5. Nenavath Sreenu, "Dynamic Relations between Foreign Exchange Rate and Indian Stock Market: A Variance Decomposition Analysis with Var Method", Academy of Accounting and Financial Studies Journal, Volume 25, pp. 1-11, 2022.
6. Nenavath Sreenu, "Effects of Exchange and Inflation rate on Stock Market Returns Volatility in India", Academy of Marketing Studies, Volume 26, pp. 1-9, 2022.
7. Nenavath Sreenu, "Investor sentiment and stock return volatility: Evidence from National stock exchange", Asia-Pacific Journal of Business Administration, Volume 13, pp. 1-11, 2022.
8. Nenavath Sreenu, "The macroeconomic variables impact on commodity futures volatility: A study on Indian markets", Cogent Business & Management, Volume 8, pp. 1-18, 2022.
9. Varsha Rokade, "A framework to assess the impact of employee perceived equality on contextual performance and mediating role of affective commitment to enhance and sustain positive work behaviour", Discrete Dynamics in Nature and Society, Volume 5407947, pp. 1-14, 2022.
10. Varsha Rokade, "Assessing the effect of perceived diversity practices and psychological safety on contextual performance for sustainable workplace", Sustainability, Volume 13(21), pp. 1-14, 2021.

Publications in International Conference

1. Nenavath Sreenu, "Asymmetric Impacts of Crude Oil Price Uncertainty on Stock Market Returns in India: Evidence from Crude Oil Price Volatility Index (COPVI)", 3rdRajagiri Conference on Economics and Finance (RCEF 2021), Rajagiri Business School and Rajagiri College of Social Sciences (Autonomous) in Association with The Indian Econometric Society (TIES) and Waikato Management School, University of Waikato, New Zealand, 19-20 Nov 2021.
2. Nenavath Sreenu, "How Does Capital Conservation Buffer Effect on Risk-Taking for the Indian banking System-Applying Quantile Regression", 8 International Conference on Business Analytics and Intelligence (8 ICBAI), IIM Bengaluru and IISC Bengaluru, 20-22 Dec 2021.
3. NenavathSreenu, "Impact of Accounting conservatism on IPO Under-pricing: Evidence from India", International Conference on Business and Finance 2021, University of Economics Ho Chi Minh City (Institute of Business Research and CFVG), 27-28 Sep 2021.
4. Nenavath Sreenu, "Revenue Diversification and Performance of Indian Banks in a Deregulation Era: An Empirical Analysis", The International conference on Finance, Law and Technology (ICFLT 2021), University of Salamanca-Spain, 6-7 May 2021.
5. NenavathSreenu, "Symmetric and Asymmetric Effects of FDI Inflow, Crude Oil Price and Economic Development on CO2 Emission: Evidence from India", International Society for Data Sciences and Innovation-Global (ISDSI-Global) Conference leading business in a FLUID World, IIM Nagpur, 27-30 Dec 2021.

6. NenavathSreenu, "The Impact of Green Finance and Fintech on Environmental Safety: Empirical Evidence from India Based on a Semi-Parametric Difference-in-Differences Model", 8 PAN IIM world Management Conference-Responsible business for sustainable development, IIM Kozhikode, 16-18 Dec 2021.
7. NenavathSreenu, "The linear and nonlinear relationship between Infrastructure and FDI in India: Using a global infrastructure index (GII- 2020)", International Conference on Advances in Management and Technological Innovations Impacting industries-III (ICAMT-III 2021), IEEE and MMNIT Allahabad, 20-22 Apr. 2021.
8. NenavathSreenu, The Impact of Covid-19 on Stock Market Returns in India", International conference Post-COVID Strategies: Recovery, Resilience and Adaptation, IIM Bodhgaya, 23-24 Apr. 2021.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 03 which includes all type of Activities.

Summary

Particulars	Total Numbers
Faculty Members	08
PhD Scholars	08
Chapter Publications	03
International Journal Publication	10
International Conference Publication	08
Faculty Outreach	03

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

Materials and Metallurgical Engineering

The department has 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 vision of the department is to 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.

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, heta treatment lab, material characterization lab, and materials processing 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 the 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 and Programmes

Professor	
Dr. Sanjay Srivastva	
Assistant Professor	
Dr. C. Sasikumar	Dr. Mangesh Lodhe
Dr. Jayashree Baral	Dr. Ramesh Kumar Nayak
Dr. Kali CharanSabat	Dr. Ramkishor Anant

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

PG Programme	**Specialization**
Master of Technology (M. Tech.)	Material Science & Technology

PhD Scholars

Name	**Title/Area of Research**
Amit Bhargav	Not decided yet
Ansari Mohd Farhan Mohd Saleem	Metal Surface Modification by TIG Arcing
Dheerendra Singh Patel	Metal Casting
Lavkush	Not decided yet
LokendraKatiyar	Not decided yet
Mohd. Sarim Khan	Not decided yet
Pavan Meena	Dissimilar P-GMA Welding of P92 steel to Austenitic Stainless steel
Rahul Sharma	Mg alloy and its composite

Book Publications

1. Ramesh Kumar Nayak, Mohan Kumar Pradhan and Ashok Kumar Sahoo, “Machining of nanocomposites”, CRC press, Boca Raton, 2022.

Chapter Publications

1. 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.
2. B. P. Agrawal and Ramkishor Anant, “Hot Corrosion Study on Dissimilar Weld Joints of Austenitic Stainless Steel and High Strength Low Alloy Steel”, In: Rakesh Kumar, K. Mathiyazhagan, Ravinder Kumar and J. Paulo Davim (eds.), Advances in Industrial and Production Engineering, Springer, Singapore, 2022.
3. Deepika Tawar, Kamlesh Goyre and Kali CharanSabat, “Synthesis and Morphological Study of Ethylene Diamine based Nickel Oxide Flower-like Nanostructure”, In: Deepika Tawar, Kamlesh Goyre, Diksha Choudhary, Kali CharanSabat and Archana Singh (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, pp 493–501,Springer, 2022.

4. Guruprakash, Ramkishor Anant and Rahul Gupta, "Microwave Welding as an Alternative Nonconventional Welding Technique", In: Amit Bansal and Hitesh Vasudev (eds.), Advances in Microwave Processing for Engineering Materials, Taylor & Francis Group, 2022.
5. JatinSadarang, Ramesh K. Nayak and IshamPanigrahi, "Assessment of Local River Sand Mould Property at Different Curing Temperatures", In: JatinSadarang, Ramesh Kumar Nayak and IshamPanigrahi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, pp 311-317, Springer, 2022.
6. JatinSadarang, Ramesh K. Nayak and IshamPanigrahi, "Effect of Fe-Cr Mold Temperature on Mold Hardness, Compressive and Shear Strength", In: JatinSadarang, Ramesh K. Nayak and IshamPanigrahi (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, pp 339–346, Springer, 2022.
7. Kali CharanSabat, Archana Singh and Satyabrata Das, "Plasma Processing of Carbon Dioxide", In: Kali CharanSabat, Archana Singh and Satyabrata Das (eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, pp 475-484, Springer, 2022.
8. Kamlesh, Deepika Tawar and Kali CharanSabat, "Metal-inorganic Nickel Complexes Derived Nanostructured Nickel Oxide as an Efficient Water Oxidation Catalyst", In: Kamlesh, Deepika Tawar, Kali CharanSabat and Archana Singh(eds.), Advancement in Materials, Manufacturing and Energy Engineering, Volume I, pp 485-492,Springer,2022.

Publication in International Journals

1. Deepak Sharma, Mohammed Kamran, Ramkishor Anant and Nilesh Paraye, "Insights into the wear behaviour of electron beam melted Ti–6Al–4V alloy in the as-built and the heat-treated conditions", Journal of Manufacturing Processes, Volume 71, pp. 669-678, 2021.
2. Sadarang Jain, Ramesh K. Nayak and Ishim Panigrahi, "Challenges and Future Prospective of Alternative Materials to Silica Sand for Green Sand Mould Casting: A Review", Transactions of the Indian Institute of Metals, Volume 74, pp. 2939–2952, 2021.
3. Sadarang Jain and Ramesh K. Nayak, "Utilization of fly ash as an alternative to silica sand for green sand mould casting process", Journal of Manufacturing Processes, Volume 68, pp. 1553-1561, 2021.
4. L. K. Katiyar, C. Sasikumar and Mohd Farhan Ansari, "Stress-induced modifications on microstructure and mechanical properties of dual-phase steel sheets by repetitive corrugation and straightening", Sādhanā, Volume 47 (3), pp. 1-14, 2022.
5. N. Anoop, Suresh Sundaramurthy, Jay Mant Jha and C. Sasikumar, "Plasma catalysis: a feasible solution for carbon dioxide valorization?", Clean Technologies and Environmental Policy, Volume 671, pp. 2789-2811, 2021.
6. P. K. Mandal, Ramkishor Anant and Nikhil Kumar, "Effect of Scandium Addition on Mechanical Properties and Microstructural Evolution in Al-Zn-Mg Alloys Processed through the Friction Stir Processing", Metallography, Microstructure and Analysis, Volume 11(1), pp. 158-167, 2022.
7. Ramesh K. Nayak and JatinSadarang, "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, Volume 75, pp. 1169–1179, 2022.
8. Ramesh K. Nayak and JatinSadarang, "Feasibility Study of Stone-Dust as an Alternative Material to Silica Sand for Al–Si (A356) Alloy Casting", International Journal of Metalcasting, Volume 16, pp. 1388–1396, 2022.
9. Subhrajyoti Saroj and Ramesh K. Nayak, "Improvement of Mechanical and Wear Resistance of Natural Fiber Reinforced Polymer Composites Through Synthetic Fiber (Glass/Carbon) Hybridization", Transactions of the Indian Institute of Metals, Volume 74, pp. 2651–2658, 2021.
10. Sudhir Kumar, Nikki Barla and Ramkishor Anant, "A study on shrinkage residual stresses, microstructure and mechanical properties of ASS thick pipe welded by GMAW process", Materials Research Express, Volume 8(11), pp. 116504(2)-116504(14), 2021.
11. K.C.Sabat, "Physics and chemistry of solid state direct reduction of iron ore by hydrogen plasma", Physics and Chemistry of Solid State, Volume 22(2), pp. 292-300, 2021.
12. K.C.Sabat, "Production of Nickel by Cold Hydrogen Plasma", Plasma Chemistry and Plasma Processing, Volume 41(5), pp. 1329-1345, 2021.
13. K.C.Sabat, "Production of Nickel by Cold Hydrogen Plasma: Role of Active Oxygen", Plasma Chemistry and Plasma Processing, Volume 42(4), pp. 833-853, 2021.
14. K.C.Sabat, "Hematite reduction by hydrogen plasma: Where are we now?", International Journal of Minerals, Metallurgy and Material, Volume 29(10), pp. 1932-1945, 2022.

Research Projects

1. Bharat Kumar Modhera and C.Sasikumar, "Design and Development of Ultrasonic Transducer", sponsored by ISRO.

Consultancy Projects

1. C. Sasikumar and Sanjay Srivastava, "Investigation of Turbine Blade Failure of Bharat Oman Refineries Limited (BORL)", sponsored by Bina, Madhya Pradesh, India.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 04 which includes all type of Activities.

Workshops and Programmes Organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
C. Sasikumar, Piyush K. Patel, Jyoti Rani	Workshop	Online Short-Term Training Course on X-ray Diffraction: Theory, Methods and Workflow (XRD 2021)	160	06-Sep-2021	15-Sep-2021

Labs

Name Of Lab	Facilities/Equipments	Research Carried	Output
SMAT Lab	Shot Peening Facility	Surface Nanocrystallization of Metallic Materials	M.Tech. and Ph.D. thesis work, Publications
Lightweight Material processing lab	Mg melting furncae	Synthesis and analysis of Mg based alloy and its composites	B. Tech, M.Tech. and Ph.D. thesis work, Publications
Welding and joining lab	Advanced pulsed GMA/GTA welding machine and spot welding machine	surface hardening of metal and thick section welding	B.Tech, M.Tech and Ph.D thesis work and publication

Summary

Particulars	Total Numbers
Faculty Members	07
PhD Scholars	08
Book Publications	01
Chapter Publications	08
Publication in International Journal Publication	14
Faculty Outreach	04
Research Projects	01
Consultancy Projects	01
Workshops/Seminar Organized	01
Lab Facilities Developed	03

DEPARTMENT OF MATHEMATICS,
BIOINFORMATICS AND COMPUTER APPLICATIONS

Mathematics, Bioinformatics and Computer Applications

The department offers Five year Dual Degree Program B.Tech. and M.Tech. in Mathematics and Data Science, three year Masters program in Computer Applications(MCA), M.Tech. course in Bioinformatics, M. Tech in Computational system Biology. The department accentuates value based quality education through dedicated well qualified highly technocratic faculty members involved in latest areas of research such as cloud computing, computer networking, information retrieval and data mining. The department facilitates well-equipped laboratory empowering students to become intellectual explorer and assist them to get high placements in various organizations of national and international repute.

VISION & MISSION of the department is as follows:

To develop the department in such a way that it is looked as major software technology center of Madhya Pradesh.

To create an educational environment in which students are continuously prepared to adopt them to the changing scenario in the technical world & face the challenges of a modern Industrial Society.

Faculty and Programmes

Professor	
Dr. K. R. Pardasani	Dr. Sanjay Sharma
Dr. Madhavi Shakya	Dr. Sujoy Das
Dr. Namita Srivastava	
Associate Professor	
Dr. C. K. Verma	Dr. Usha Chouhan
Assistant Professor	
Dr. Amit Bhagat	Dr. Manoj Jha
Dr. Dheerendra Mishra	Dr. Pushpendra Kumar
Dr. G. S. Thakur	Dr. R. Vishnu Priya

UG Programme	
NIL	

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

PhD Scholars

Name	**Title/Area of Research**
Abhishek Shukla	Improving Query Expansion Techniques for Information Retrieval Models
Akanksha Saxena	Numerical Analysis
Akanksha Sharma	Financial Mathematics
Anand Pawar	Computational Biology
Bhavana Singh	Computer Vision
Chandrapal Singh Dangi	Intelligent Service Deployment Strategies for Edge networks
Deepak Kumar Khare	Deep Learning
Dharmendra Dangi	Efficient Fake News Detection using Machine Learning from News Data
Dheeraj Kumar Dixit	Design and Development of Efficient Machine Learning Approach for Sentiment Analysis of Social Media Data
Jagdish Kumar Pahade	Portfolio Optimization Models under Fuzzy Environment
Komal Pursharthi	Post Quantum Cryptography
Manoj Verma	Coverage Hole Detection and Restoration in Wireless Sensor Network
Moh. Sultan Khan	Immunoinformatics
Monika Tiwari	Optimization of Water Reservoir Operations
Muzammil Khan	Novel algorithms for optical flow estimation and Its Applications
Navneet gupta	Artificial intelligence
Niharika Das	Efficient segmentation of cardiac MR images using deep learning

Name	Title/Area of Research
Pragya Verma	High Throughput RNA Sequencing Analysis for Gene Expression Profiling in Major Depressive Disorder
PrashantNag	Design of efficient Artificial intelligent Deep learning Models for Human Emotion detection
Priya Singh	Hybrid Approach for Asset Selection and Optimal Portfolio Construction using Intelligent Techniques
PurvaRewal	Authentication and Key Agreement
Rajat Jaiswal	Portfolio Optimization
Rani Sahu	Multipath Energy Consuming Routing Protocol For Wireless Ad-Hoc Network
Sanjay Mishra	IOT and Its application
Shefali Batt	Bioinformatics
SonalTelang	Lifetime Prolongation and Network cost optimization of WSN using Deployment Strategies
SonuKurmi	Mathematical Biology
Sudhanshu Kumar	Data Mining
Vikas Pal Veelon	Applications of AI and ML in Bioinformatics
Vikash Kumar Pal	Bioinformtics

Chapter Publications

1. Suvarna Sharma, PuneetaRosmin and Amit Bhagat, "Blockchain Technology: Limitations and Future Possibilities", In: Harshita Patel and Ghanshyam Singh Thakur (eds.), Blockchain Applications in IoT Security, IGI Global, 2021.

Publication in International Journals

1. Abhishek K. Shukla and Sujoy Das, "Deep Neural Network and Pseudo Relevance Feedback based Query Expansion", CMC-Computers Materials and Continua, Volume 71(2), pp. 358-370, 2021.
2. Anand Pawar and Kamal Raj Pardasani, "Effect of disturbances in neuronal calcium and IP3 dynamics on b-amyloid production and degradation", Cognitive Neurodynamics, Volume (V) (0123456789(), 2022.
3. 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, Volume 137:543, 2022.
4. Dharmendra Dangi, Amit Bhagat and Dheeraj K. 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, Volume 34(3), pp. 1532-626, 2021.
5. Dharmendra Dangi, Amit Bhagat and Dheeraj K Dixit, "Sentiment Analysis on Social Media Using Genetic Algorithm with CNN", CMC-Computers Materials & Continua, Volume 70(3), pp. 5399-5419, 2022.
6. DharminderDharminder, Nivedita Kundu and Dheerendra Mishra, "Construction of a Chaotic Map-Based Authentication Protocol for TMIS", Journal of Medical Systems, Volume 45, 2021.
7. Dheeraj K. Dixit, Amit Bhagat and Dharmendra Dangi, "Fake News Classification using a Fuzzy Convolutional Recurrent Neural Network", CMC-Computers Materials & Continua, Volume 71(1), pp. 5733-5750, 2022.
8. Dheerendra Mishra and Saurabh Rana, "A provably secure content distribution framework for portable DRM systems", Journal of Information Security and Applications, Volume 61, pp. 102928, 2021.
9. Jagdish K. Pahade and Manoj Jha, "Credibilistic variance and skeness of trapeziodal fuzzy variance and mean-variance-skewness model for Portfolio Selection", Results in Applied Mathematics (ELSEVIER), Volume 11, 2021.
10. Jagdish K. Pahade and Manoj Jha, "A Hybrid Fuzzy-SCOOT Algorithm to Optimize Possibilistic Mean Semi-absolute Deviation Model for Optimal Portfolio Selection", International Journal of Fuzzy Sets (Springer), Volume 24, pp. 1958-1973, 2022.
11. Muzammil Khan and Pushpendra Kumar, "A nonlinear modeling of fractional order based variational model in optical flow estimation", Optik-International Journal for Light and Electron Optics, Volume 261, pp. 169136, 2022.
12. Pragya Verma and Madhvi Shakya, "Machine learning model for predicting Major Depressive Disorder using RNA-Seq data: optimization of classification approach", Cognitive Neurodynamics, Volume 16(2), pp. 443-453, 2021.
13. Pragya Verma and Madhvi Shakya, "Transcriptomics and sequencing analysis of gene expression profiling for major depressive disorder", Indian J. Psychiatry, Volume 63(6), pp. 549-553, 2021.
14. Pushpendra Kumar and Muzammil Khan, "Charbonnier-Marchaud Based Fractional Variational Model for Motion Estimation in Multispectral Vision System", Journal of Physics: Conference Series, Accepted.
15. Rajit Nair and Amit Bhagat, "Genes expression classification through histone modification using temporal neural network", Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), Volume 14(5), pp. 1488-1496, 2021.
16. Saurabh Rana, Dheerendra Mishra and Sourav Mukhopadhyay, "Blockchain-based multimedia content distribution with the assured system update mechanism", Multimed Tools Appl, Volume 80, pp. 29423-29436, 2021.
17. Saurabh Rana, Mohammad S. Obaidat, Dheerendra Mishra, Ankita Mishra and Y. Sreenivasa Rao, "Efficient design of an authenticated key agreement protocol for dew-assisted IoT systems", The Journal of Supercomputing, Volume 78, pp. 3696-3714, 2021.
18. Saurabh Rana and Dheerendra Mishra, "An authenticated access control framework for digital right management system", Multimed Tools Appl, Volume 80, 2021.
19. SonuKurmi and Usha Chouhan, "A multicompartment mathematical model to study the dynamic behaviour of COVID-19 using vaccination as control parameter", Nonlinear Dynamics, Volume 109, pp. 2185-2201, 2022.

Publication in National Journals

1. Suvarna Sharma and Amit Bhagat, "Blockchain: An Analysis of Different Consensus Mechanisms as Solution for the Byzantine Generals Problem", Design Engineering, pp. 12269-12281, 2021.

Publications in International Conferences

1. Abhishek Kumar Shukla and Sujoy Das, "A Hybrid model of Query Expansion using Word2Vec", IEEE International Conference on Technology, Research and Innovation for Betterment of Society (TRIBES), 17-12-2021.
2. Abhishek Kumar Shukla, Sujoy Das and Pushpendra Kumar, "WordNet based Hybrid model for Query Expansion", IEEE International Conference on Technology, Research and Innovation for Betterment of Society (TRIBES), 17-12-2021.
3. Dharmendra Dangi and Amit Bhagat, "Sentiment Analysis Using Machine Learning Approaches on Social Media Data", 1st International Conference of Machine Intelligence and System Sciences (MISS-2021).TCEA, Agartala, Tripura, 01-11-2021.
4. Dharmendra Dangi, Amit Bhagat and Brijesh Bakariya, "Efficient Framework for Sentiment and Pattern Analysis on Movie Data", 2021 IEEE International Conference on Technology, Research, and Innovation for Betterment of Society (TRIBES), IIIT – Naya Raipur at Raipur, Chhattisgarh, India, 17-12-2021.
5. Dharmendra Dangi, Dheeraj Kumar Dixit and Amit Bhagat, "Analyzing the Sentiments by Classifying the Tweets Based on COVID-19 Using Machine Learning Classifiers", 2021 IEEE International Conference on Technology, Research, and Innovation for Betterment of Society (TRIBES), IIIT – Naya Raipur at Raipur, Chhattisgarh, India, 17-12-2021.
6. Dheeraj K. Dixit and Amit Bhagat, "Classification of Fake News by FDNN: A Fuzzy Deep Convolutional Neural Networks", 1st International Conference of Machine Intelligence and System Sciences (MISS-2021).TCEA, Agartala, Tripura, 01-11-2021.
7. Dheerendra Mishra, Abhijit Kasi and Mohammad S. Obaidat, "Construction of Lightweight Content key Distribution Framework for DRM systems", 2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA), Arad, Romania, 10-01-2022.
8. Dheerendra Mishra, Mohammad S. Obaidat and Ankita Mishra, "Privacy Preserving Location-based Content Distribution Framework for Digital Rights Management Systems", 27-10-2021.
9. Muzammil Khan and Pushpendra Kumar, "A Vision Based Fractional Order TV-Model for Underwater Motion Estimation", IEEE Bombay Section Signature Conference (IBSSC-2021), ABV-IIITM, Gwalior, India, November 18-20, 2021.
10. Muzammil Khan and Pushpendra Kumar, "Discontinuity Preserving Optical Flow Based on Anisotropic Operator", 13th International Conference on Information & Communication Technology and System (ICTS2021), InstitutTeknologiSepuluhNopember (ITS), Surabaya, Indonesia, October 20-21, 2021.
11. Pushpendra Kumar and Muzammil Khan, "Early Prediction of COVID-19 Suspects Based on Fractional Order Optical Flow", 11th International Conferenceon Information Systems & Computer Networks (ISCON-2021),GLA University, Mathura, India, October 22-23,2021.
12. Pushpendra Kumar, Muzammil Khan and Shreya Gupta, "Development of an IR Video Surveillance System Based on Fractional Order TV-Model", IEEE International Conference on Control, Automation, Power and Signal Processing (CAPS-2021), IIITDM Jabalpur, India, December 10-12, 2021.

Reseach Projects

1. Chandan Verma, "Scaffold hopping, Pharmacophore modeling, Virtual screening and molecular simulation for the identification of novel and selective inhiitors of Candida albicans N-Myristoyltransferase towards antifungal drug discovery using computational drug repurposing", sponsored by ICMR (Indian Council of Medical Research).
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.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 18 which includes all type of Activities.

Workshops and Programmes organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Namita Srivastava	Virtual Symposium	Women's Education in India: A Situational Analysis (WEI-2022)	108	07-Jan-2022	08-Jan-2022

Labs

Name of Lab	Facilities/Equipments	Research Carried	Output
MCA Laboratory	MCA laboratory is well equipped lab for the use of MCA students.	To perform practical and to develop projects that is part of MCA course.	Research work
Advance Computing Lab	This is a specialized lab for research in the field of computer networks. It has software like EXATA, NS/2, NS/3 etc.	It is used for carrying out research in the field of Computer Networks.	Research work
Data Mining Lab	This is a specialized lab for research in the field of Data Mining. It has like SAS and SPSS software	It is used for carrying out research in the field of Data Mining.	Research work and publication

Summary

Particulars	Total Numbers
Faculty Members	13
PhD Scholars	30
Chapter Publications	01
International Journal Publication	19
National Journal Publication	01
International Conference Publication	12
Faculty Outreach	18
Research Projects	03
Workshops/Seminar Organized	01
Lab Facilities Developed	03

DEPARTMENT OF MECHANICAL ENGINEERING

Mechanical Engineering

Mechanical Engineering Department is the one of the oldest department of the institute. It is also a biggest department with more than one thousand sudents and fourty faculty members. The department is committed to inculcate technical knowledge along with their all round development. The Department of Mechanical Engineering has a well-established tradition of producing excellent engineers and outstanding human beings. This task is accomplished by highly qualified team of faculty members who are equally competent in teaching and research.

The department offers one undergraduate and five postgraduate programs. Over the years, the Department becomes a centre of excellence by providing in-depth technical knowledge and opportunities for innovation and research. Innovative teaching methods, Industrial collaborations, state-of-the-art infrastructural facilities are the strength of the Department. The Department has a strong research interest in diverse areas of Mechanical and Industrial Engineering and offers PhD Program as well. The focussed research areas of the Department are Materials, Design, Thermal, Manufacturing and Industrial Engineering.

The Department offers Minor Specialization in "IC Engine and Manufacturing Process" to Undergraduate students of B.Tech Mechanical Engineering.

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”.

Mission: -

“To impart quality education in the field of mechanical engineering by inculcating values in students which will sensitize them to serve the needs of the industry and society by aiding in its overall progress and development by keeping dynamic equilibrium with its social, ecological and economic environment”.

Faculty and Programmes

Professor	
Dr. C. M. Krishna	Dr. Rajesh Gupta
Dr. G. Dixit	Dr. Rajesh Purohit
Dr. J. L. Bhagoria	Dr. R. K. Dwivedi
Dr. K. R. Aharwal	Dr. S. P. S. Rajput
Dr. R. K. Mandloi	Dr. Siraj Ahmed
Dr. R. M. Sarviya	
Associate Professor	
Dr. Akhilesh Barve	Dr. Sanjay Soni
Dr. Atul Lanjewar	Dr. V. K. Soni
Dr. Manoj Arya	Dr. Vilas Warudkar
Dr. R. S. Rana	
Assistant Professor	
Dr. Abhinav Varshney	Dr.Mohd. Taufik
Dr. Ajay Pandey	Dr. Narendra Gajbhiye
Dr. Ajay Verma	Dr. P. K. Soni
Dr. Akhilesh Soni	Dr. Pushyamitra Mishra
Dr. Alok Singh	Dr. Ravi Kumar Mandava
Dr. Amit Suhane	Dr. Sudhanshu Kumar
Dr. Amit Telang	Dr.Tikendra Nath Verma
Dr. Arvind Kumar	Dr. Vijay Panchore
Dr. Deepak Kumar	Dr. Vikash Kumar
Dr. M. K. Pradhan	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

PG Programme	Specialization
	3. Maintenance Engineering
	4. Stress & Vibration Analysis
	5. Thermal Engineering

PhD Scholars

Name	Title/Area of Research
Abhishek Patel	Experimental Investigation on Material development for fabrication of prosthetics parts using fused filament.
Achman Maheshwari	Thermal Engineering
Adarsh Chaurasiya	Composite materials
Ahmed Raza	Investigation of Burnishing Process Parameters on Surface Characteristics of Steel Material
Akshay Kumar	Synthesis and Optimization of Mechanical Properties of Aluminium Composite Reinforced with High Entropy Alloy.
Akshay Kumar	Modelling and Optimization Studies on Barriers of Industry 4.0 Technologies in Manufacturing Industry
AmbujPateriya	Investigation of Dynamics of Rotor Bearing System and Analysis of rotor Bearing Parameter to Reduce Oil whirl Instabilities.
Amit Kumar	Modeling and Experimental Investigation of Machining Performance in Rotary Tool Electrical Discharge Machining
Amod Kumar	Synthesis, Mechanical and Corrosive Behaviour of AA6082-SiCp-TiO2p Hybrid Composite.
Anil Chourasiya	Optimization techniques of process parameter for machining
Ankit Kesharwani	Heat transfer
Ankit Kumar	Optimization of R600a Vapour Compression Refrigeration System using hybrid Nano lubricant based PAG And Mineral oil.
Anoop Pratap Singh	Investigation of tribological behavior of nano particle based lulre oil and prediction of performance attributes
Anurag Namdev	Development and Characterization of Carbon Fibre and Graphene Nanoplatelets Reinforced Hybrid Polymer Compositer.
Arun Shrivastava	Solar air heater
Ashish Jain	Deformation Induced transformation of austenite in steels.
Ashish Kumar	Develpment and Characterization of Nana Silicon Nitride reinforced AA7068 Compositor for Automotive Application
Ashish Kumar Singh	Synthesis, Mechanical and Tribological Behaviour of Aluminium Alloy Composite Dispersed with (ZrO2)P and (Gr)P.
Atul Gautam	Development of Novel Machine Learning Technique for Improvisation of Offshore Wind Resource Assessment
Avinash Selot	Additive manifacturing
Bhagwan Singh Lovevanshi	Material and Design
Bhrant Kumar Dandoutiya	Heat Transfer and Pressure Droop Performance of Zno-Water nano fluid in Double Pipe Heat Exchanger with Twisted Tape Insert
Bipin Kumar	Synthesis and Characterization of Basalt Based Hybrid Fiber Reinforced Polymer Composite.
Brajesh Kumar Ahirwar	Thermal engineering
Chandrabhushan Tiwari	Thermal engineering
Deepa Ahirwar	Composite
Deepak Kumar Pathak	Performance Measurement and Analysis of Green Supply Chain Management Practices.
DevkantVarde	Performance analysis of falling file tower with plastic surface in liquid desiccat systems.
Dharam Singh	Solar air heater
Dharmendra Kumar	Electro Discharge Boring Process
Dharnendra Rajpoot	Perform and Emission Analysis of Turpentine and Peppermint biofuel in Disel Engine
Gourav Singh	Implant Design
Harshad Raghuwanshi	Expertmental and Numerical Investigation of Cold Room Performance Using Modified Air Circulation Arrangements.
Jailal Prabhakar Patel	Solar Energy
Jitendra Singh	Investigation of solar air heater artificially roughened with discrete arc integrated with staggered elements

Name	Title/Area of Research
Kapil Chaudhri	Thermal Performance analysis of solar air heater with Artificial roughness on the absorber plate.
Kartik Rohit	Industrial Engineering
Kashish Kumar	Experimental Investigation on Performance of Hybrid desiccant Dehumidification Air conditioning system
Kaustubh Singh	Thermal Engineering
Krishnanand	Additive Manufacturing
Madhusudan Baghel	Composites and Investigation of their Deformation Behavior and Machining Characteristics
Mahesh Kumar Meravi	Vibration analysis of rotating beam
Manish Kumar Mohit	Study of Thermo-Hydraulic Performance of Miniature Heat Sinks with Tins.
Manohar Kumar	Experimental Investigation for Performance Assessment of Thermo Mechanical Behavior of Green Composites.
Manoj Biswas	Solar Air Heater
Manoj K.Diwaker	Investigation of Theramal hydraulic performance of double pipe heat exchange with insests and Ceo2 water nano fluid
Md Jamil Akhtar	Not decided yet
Md Waheed	Composite Material
Moh Shahid Khan	Robotics
Mohan Khandagre	Solar air heater
Neelam Dubey	Thermal Engineering
Nilesh Tipan	Material Synthesis and Design Optimization of Biodegradable Orthopaedic Implant.
Patel Bhavik Vasudevbhai	Experimental and Numerical Investigations of Heat Transfer Enhancement in Heat Exchanger Tube with Inserts using Nanofluid.
Pradip Kumar Verma	Composite Material
Prashant Kumar	Investigations on heat transfer and pressure drop charactenstics for flow through pipes using twisted tape and nanofluid
Prashant Paraye	Heat Exchanger
Priya Tiwari	Study of thermal stability of retained austenite in steels
Priyank Dixit	Experimental Investigation of Mechanical and Tribological Behaviour of Aluminium Matrix Composite Reinforced with Agriculture Waste.
Rachit Trivedi	Industrial Engineering
Rahul Shrivastava	Development and Performance Investigation of Improved Natural Fiber Reinforced Composite
Rakesh Kumar Patel	Modeling and Experimental Investigation of powder mixed dieleotric properties and its effect on EDM process Performance.
Rupesh Baroniya	MHD flow in sudden expansion
S. Kartik Shubham	Nano composite
Sakshi Naga	Thermal
Sanjay Sain	Manufacturing
Sankalp Gour	Mechanics of soft materials
Saurabh Jain	EDM process
Shalu Patel	Advance Composite Material
Shashank Mishra	Material Design
Shasikanta Sahoo	Optimization of Process Parameters in Friction Stir Welding of Dissimilar Aluminium Alloys for Enhancement of Mechanical Properties
Shrikant Kol	Liquid desiccant
Shubham Jain	Experimental Investigation of EDM parameters for applied Bio Medical Material Using Nature Inspired Metaheuristic optimization Algorithm
Shubham Sachan	Local to Global Supply Chain Evolution: Tackling Indigenous: Technological Hesitancy
Sonali Shrivastava	Wind Energy
SrinivasuluVardhineni	Robotics
Subodh Kumar	Composite materials
Sudhir Kumar	Experimental and Numerical Investigation of Ground Coupled Heat Exchanger.
Surendra Singh Dewada	Development and Characterization of Hdpe Nanocomposite Filament for Fused Deposition Modeling
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

Name	Title/Area of Research
Tarique Anwar Qureshi	Wind Energy
Utpal Nath	Modeling of Laser Bending Process with Inverse Estimation
Vipul Deshmukh	Performance improvement in tubular heatexchanger by vortex generator and swirl flow devices inserts
Yashwant Kumar Yadav	Development and Characterization of High Performance Hybrid Polymer Composite Material From Waste Pet Using Chemical Recycling
Yasir Baig	Wind Energy
Yogendra Rathore	Experimental Study of heat transfer enhancement due to staggered arrangement of inclined ribs with a gap in a rectangle duct of solar heater

Book Publications

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7. Anoop Pratap Singh, Ravi Kumar Dwivedi and Amit Suhane, "Impact of Nanoparticles in Lube Oil Performance", In: Amar Patnaik, Malay Kumar Banerjee, Ernst Kozeschnik, Albano Cavaleiro, J. Paulo Davim and Vikas Kukshal (eds.), Advanced Materials and Manufacturing Processes, CRC PRESS, 2021.
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40. Ramakrishna Balijepalli, Upendra Rajak, Abhishek Dasore, Siva Kumar Reddy Y. and Tikendra Nath Verma, "Design and optimisation of annulus combustion chamber of gas turbine engine: An analytical and numerical approach", International Conference on Advancement in Materials, Manufacturing and Energy Engineering (ICAMME 2021) Maulana Azad National Institute of Technology Bhopal, 18-20th Feb 2021.
41. Richa Khatod and Akhilesh Soni, "Design and Structural Analysis of Heavy Weight Carrying Drones A Review",Mechancial Engineering and Managerial Application, MANIT, Bhoplal, 15-16 Sep 2022.
42. Roopesh Kumar, Santosh Sharma and Rajesh Purohit, "Bamboo-Fibre Based Polymer Hybrid Nano Composites-A Review", International Conference on Mechanical Engineering and Managerial Applications for Productivity Enhancement and Marketability (MMPM 2021), MANIT Bhopal, 15-16 Sep 2021.
43. Rupendra K. Verma, Rajesh Purohit and Anurag Namdev, "Effect on Mechanical and Physical properties with Graphene Functionalized on Curauafiber or Nano SiO2 Hybrid Composite", International Conference on Nanotechnology for SustainableLiving&Environment, BITS, Pilani, 14-16 Apr. 2022.
44. S. Kartik Shubham, Ajay Pandey and Rajesh Purohit, "Biodegradable Polymer Materials in Food Packaging Industries", International Conference on Mechanical Engineering and Managerial Applications for Productivity Enhancement and Marketability (MMPM-2021), Bhopal.
45. S. Nand, M. Singh and C. M. Krishna, "Optimization of Machining Parameters on Vertical Milling Machine for Al-CNT Composites using Taguchi Design of Experiments", Lecture Notes in Mechanical Engineering, Oct 2021.
46. S. P. Kodali, Ravi Kumar Mandava and B. N. Rao, "Development of an Optimal PID Controller for the 4-DOF Manipulator using Genetic Algorithm", International Conference on Evolution in Manufacturing ICEM-2020, 02 Nov 2021.
47. S. R. Rao, Ravi Kumar Mandava and V. R. K. Rao, "Multi-objective optimization in turning of Al 7075-SiC composites using desirability analysis", First International Conference on Advances in Mechanical Engineering and Material Science, 30 Nov 2021.
48. Sankalp Gour, Deepak Kumar and Vinod Yadav, "Charge-controlled electromechanical instability modeling of a dielectric plate actuator", IEEE Madras Section Conference (MASCON), Chennai, 01 Aug 2021.
49. Shivendra Sign and Akhilesh Soni, "A review on structural strength of Hawt Blade Made of Composite Material", Mechancial Engineering and Managerial Application, MANIT, Bhoplal, 15-16 Sep 2021.
50. Shubham Mohanya, Praneet Pandey and Mohammad Taufik, "Evaluation of Mathematical Models For Surface Roughness Prediction of Digital Light Processing 3D Printer using Literature Survey", International Conference on Materials for Emerging Technologies-2021 (ICMET-21), Lovely Professional University, Phagwara, Punjab, India, 19 Feb 2022.
51. Sonali Shrivastava, Siraj Ahmed and Vilas Warudkar, "Aerodynamic Design of Rotor of 1 Kw Horizontal Axis Wind Turbine", 2nd International Conference on Electrical Power and Energy Systems, MANIT, 10 Dec 2021.
52. Sudhanshu Kumar and Dilip Sen, "Effect of tool movement in electro discharge machining process: A review", 2nd International Conference on Recent Advances in Manufacturing (RAM-2021), SVNIT Surat, 10 Jun 2021.
53. Sudhir Kumar, Narendra Gajbhiye and Harshad Raghuwnashi, "Thermal Performance of square, circular and rectangular earth-tube air heat exchanger-A numerical study", Proceedings of the 26th National and 4th International ISHMT-ASTFE Heat and Mass Transfer Conference IIT Madras, 17 Dec 2021.
54. Sujeet Choudhary, Manish Vishwakarma and Sandeep Kumar Dwivedi, "Evaluation and Prevention of Hydrogen Embrittlement by NDT Methods: A Review", Corrosion and Materials Degradation Web Conference, 17-18 May 2021.
55. Sunil Dodkey and Narendra Gajbhiye, "Effect of pitch and tube arrangement on thermal performance of earth-air heat exchanger", Proceedings of the 26th National and 4th International ISHMT-ASTFE Heat and Mass Transfer Conference IIT Madras, 17 Dec 2021.
56. Yogendra Rathore and K. R. Aharwal, "Experimental analysis on performance of solar air heater combined with staggered element in inclined rib using liquid crystal thermography technique", 26th National and 4th International ISHMT-ASTFE Heat and Mass Transfer Conference IIT Madras, IHMTC 2021.

Research Projects

1. Abhinav Varshney and G. Dixit, "Design and Development of an instrument for real time assessment of ferromagnetic phase fraction in ferrous alloys", sponsored by Department of Science and Technology.
2. Akhilesh Barve, Ravi Kumar Mandava and Deepak Kumar, "Programmable Automated Filed Deployable High Frequency Rainwater Sampler", sponsored by ISRO.
3. Jyoti Singhai, Narendra Gajbhye and Praveen Kausik, "Development of Ballast Control Algorithm for Floating Docks", sponsored by Larsen & Toubro.
4. Mohammad Taufik, "Development of a Pellet and Filament Form Integrated Multi-Material Co-Extruder System for Improved Additive Manufacturing Process", sponsored by SERB-DST.
5. 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).

6. Vilas Warudkar, Narendra Gajbhiye, Anoop Arya and Pragati Agarwal, "Development of Miniaturized Pressure Regulators (Non-moving type) for low flow rate application", sponsored by Indian Space Research Organisation (ISRO).

Consultancy

1. Alok Singh and A. K. Soni, "Design approval of water tanker for privete", sponsored by -----.
2. Gajendra Dixit and Ravi Kumar Dwivedi, "Assessment of 1500 mm diameter old water pipes", sponsored by Municipal Corporation, Bhopal.
3. Gajendra Dixit and Ravi Kumar Dwivedi, "Consultancy work regarding Integrated Referral Transport System", sponsored by National Health Mission (MP).
4. K. R. Aharwal, "To providing consultancy services for the implementation of technical standards of cold storage", sponsored by National Horticulture Board Ministry of Agriculture and Farmer welfare Govt of India.
5. Manish Vishwakarma and Manoj Arya, "Consultancy for the inspection of technical specifications for furniture and other items", sponsored by MP Jan Abhiyan Parishad, Shyamla Hills, Bhopal (M.P.).
6. Manish Vishwakarma and Rajesh Purohit, "Consultancy for the inspection of technical specifications for the furniture & other items", sponsored by MP Jan Abhiyan Parishad, Bhopal. MP.
7. Manoj Arya and Manish Vishwakarma, "HVAC consultancy work", sponsored by Gwalior Smart City Development Project Corporation Ltd., Gwalior (M.P.).
8. P. M. Mishra, "Approval of Trailer (trolley) Drawing", sponsored by Maithail Welding workshop Shobhapur Road PipariyaHoshangabad M.P.
9. P. M. Mishra, "Certification and approval of design of water tanker with fire fighter", sponsored by Kavita Fabrication, Industrial Area, Rajeev Colony, Mandla.
10. R. K. Dwivedi, G. Dixit, V. Panchore and Ravi Kumar Mandava, "Consultancy work of BCLL 20 AC low-floor (TATA LPO 1624 400mm height) buses", sponsored by Nagar Nigam Bhopal.
11. R. K. Dwivedi, P. M. Mishra, Akhilesh Soni, "Verification and testing of trailer (Trolley) design for further registration", sponsored by M/s Maithil Welding Workshop, Shobhapur Road, Hatwash, Pipariya, Distt-Hoshangabad, M.P.
12. Ravi Kumar Dwivedi and Gajendra Dixit, "Inspection of refurbishment work for 55 City buses operated by BCLL Bhopal", sponsored by Nagar Nigam Bhopal.
13. Ravi Kumar Dwivedi and Gajendra Dixit, "Price assessment of unusable electrical articles of Nagar Palik Ujjain", sponsored by Municipal Corporation, Ujjain.
14. Ravi Kumar Dwivedi and Gajendra Dixit, "Valuation of old condemn machines belongs to Govt. Press Bhopal", sponsored by Govt. Press Bhopal.
15. S. P. S. Rajput, Manish Vishwakarma and Manoj Arya, "Consultancy work for the HVAC work at museum and planetarium", sponsored by Gwalior Smart City Development project Corporation Ltd., GWL (M.P.).

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 33 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted)
Priyanka Paliwal, Tripta Thakur; Anoop Arya; Vilas Warudkar; Manoj Arya and Amit Bhagat	Artificial Intelligence Based Smart Electric Vehicle Battery Management System	Granted, 2021101964 Australian Patent Application
Mohammad Taufik	Filament and Pellet Integrated Co-Extruder for Additive Manufacturing	Filed

Workshops and Programmes organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Alok Singh, P. M. Mishra	National Conference	Advancement in Mechanical, Electronics and Electrical Engineering Electronics Engg.	35	15-Apr-2021	16-Apr-2021
D. Giribabu, More Raju, Ravi Kumar Mandava	FDP	Applications of Soft Computing Techniques for ElectroMechanical Systems	62	26-Apr-2021	30-Apr-2021
Manoj Arya	STTP	Women Entrepreneurship Development Programme	25	24-Jan-2022	21-Jan-2022

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
P. M. Mishra	Conference	Latest Trends In Civil, Mechanical And Electrical Engineering (LTCMEE-2021)	75	12-Apr-2021	13-Apr-2021
P. M. Mishra	STTP	System Engineering	72	21-Jun-2021	25-Jun-2021
Rajesh Purohit, R. S.Rana and Priyanka Verma	Conference	International Conference on Mechanical Engineering and Managerial Applications for Productivity Enhancement and Marketability (MMPM-2021)	150	15-Sep-2021	16-Sep-2021
Rupinder Singh,Swadesh K. Singh, Rajesh Purohit, R. S. Rana	Conference	12th Online International Conference on Materials Processing and Characterization jointly with NITTTR Chandigarh and GRIET, Hyderabad.	500	06-Oct-2021	09-Oct-2021
Sudhanshu Kumar	STTP	Computation And Experimental Methods In Manufacturing (CEMM-2022)	61	07-Mar-2022	11-Mar-2022

Lab

Name of Lab	Facilities/Equipments	Research Carried	Output
Nano Composite Lab.	Rockwell cum Brinell Hardness Testing Machine	Using various machines and equipements in Nano Composite Lab. We have developed Metal and Polymer matrix Nanocomposites for different automotive applications like Clutch plate, Piston, Connecting Rods, Cam shaft, Gears etc. with light weight and high strength and stiffness and wear resistance.	Award of Several PhD and M. Tech. Thesis using Nanocomposite Lab. facility Publication of several Research papers in International Journal and conferences of Repute.
	Heat Diflection Tester		
	Horizontal Ball Mill		
	Programmable controlled atmosphere Tube Furnace		
	Programmable Heat treatment Furnace		
	Manual Superficial Hardness Testing Machine		
	Electronic Balance		
	Muffle Furnace		
	Abrasive Cutting Machine		
	Extruder		
	Belt Grinder		
	Microwave Oven		
	Digital Magnetic Stirrer with Hot Plate		
	Compression Mouldinng Machine		
	Ultrasonic Bath		
Material Characterization Lab	Nikon Microscope, Tube Furnace, Salt bath Furnace, Gas Purging system		
Ref. & AC Lab	Ice Plant test rig	For UG students	ME 412, ME 2704
	Cold Storage Plant		
	Computerized refrigeration cycle test rig.		
	Computerized air conditioning cycle test rig.		
	Automobile air conditioning cycle test rig.		
	Evaporative cooler		
	Refrigeration Gas Charging Kit		
Renewable Energy Lab	Solar Air Heater Set-up	Ph.D and PG level	03 SCI Papers
Additive Manufacturing Lab	3D Printer:03, Melt Flow Tester:01, Surface Roughness Tester: 01, Wire Making Machine: 01, Desktop: 02	Sponsored Projects: SERB-DST: 01, MANIT: 03	3D Printer, Wire Making Machine

Summary

Particulars	Total Numbers
Faculty Members	40
PhD Scholars	85
Book Publications	05
Chapter Publications	50
International Journal Publication	110
International Conference Publication	56
Faculty Outreach	33
Patents	02
Research Projects	06
Consultancy Projects	15
Workshops/Seminar Organized	08
Lab Facilities Developed	05

DEPARTMENT OF PHYSICS

Physics

The department has expert faculties in multi-dimensional research areas along with various distinguished research projects. Many research articles, book, book chapters, patents and conference papers have been published in reputed journals by the faculty of the Department of Physics.Multiple workshops, conferences, and expert lectures have been conducted in the department.The mission of the Department is to develop and sustain educational resources in Fundamental Physics for the application in emerging technologies, Engineering and allied sciences. The faculty, PhD and PDF members of the depaertment of Physics are working hard to achieve the mission and recently the depaertment has great achievemnet as a PG course M.Tech. in Nanotechnology run by the department is acrdiated by the National Board of Accrediation in June 2022. Another big achievement of the department is the start of another PG course, M.Sc. in Physics from the academic year 2021-22 with an intake of 18 students. The labs of the M.Sc. Physics course are developed in the same year.

Faculty and Programmes

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 (Started in 2021)	

PhD Scholars

Name	**Title/Area of Research**
Akash Gupta	Elecronic and optical properties of Transition Metal dopedTungsten Oxide (WO3) Nanostructures
Aravind Kumar	Photovoltaic Solar Cell
Kajol Taiwade	Perovskites Materials for Solar cell
Krishna K. Patel	Piezoelectric Energy Harvesting
Naveen Kumar	Lead-free Ferroelectric/Magnetic multiferroic composites
Vivek Chandel	UV Shielding nano materials

Book Publications

1. Rajnish Kurchania and Oroosa Subohi, “Aurivillius Phase Materials: Exploring Lead Free Ferroelectrics”, Institute of Physics IOPscience Bristol U.K., 2021.

Chapter Publications

1. Archana Nigrawal, Arun Kumar Sharma and Fozia Z. Haque, “Sisal Fibre Based Polymeric Composites”, In: Martin Alberto Masuelli (eds.), Fiber-Reinforced Plastics, Intech Open, 2022.
2. Ayushi Katariya and Jyoti Rani, “Innovation in Materials and Design for Flexible Energy Devices”, In: Ram K. Gupta and Tuan Anh Nguyen (eds.), Smart and Flexible Energy Devices, Taylor & Francis Group (CRC Press), 2022.
3. EndreshSoni, Ayushi Katariya and Jyoti Rani, “Characterization Techniques of Flexible Energy Devices”, In: Ram K. Gupta and Tuan Anh Nguyen (eds.), Smart and Flexible Energy Devices, Taylor & Francis Group (CRC Press), 2022.
4. Jyoti Bamne, Nitu Singh, Arvind Mittal, Kajol Taiwade, P.K. Sharma and Fozia Z. Haque, “Effect of Rare Earth Y3+ Doping on the Formation of Anatase Phase of TiO2 Nanoparticles”, In: Merin Sara Thomas, Jozef T. Haponiuk, Sabu Thomas and Anne George (eds.), Advanced Microscopy A Strong Analytical Tool in Materials Science, Taylor & Francis Group, 2022.
5. Mohammad Ramzan Parra, Hafsa Siddiqui, Padmini Pandey, Jyoti Bamne and Fozia Z. Haque, “Assessment of ZnO Thin Films for Its Suitability as a Transparent Conducting Layer in DSSC Fabrication”, In: Merin Sara Thomas, Jozef T. Haponiuk, Sabu Thomas and Anne George (eds.), Advanced Microscopy A Strong Analytical Tool in Materials Science, Taylor & Francis Group, 2022.
6. Nitu Singh, Neha Singh, Jyoti Bamne, K.M. Mishra, Vivek Chandel and Fozia Z. Haque, “Gas Sensing Through Photoluminescence Method Using Cr2O3 Nanostructures for NH3”, In: Merin Sara Thomas, Jozef T. Haponiuk, Sabu Thomas and Anne George (eds.), Advanced Microscopy A Strong Analytical Tool in Materials Science, Taylor & Francis Group, 2022.

7. Piyush Patel and Vidya, "Study on CNT Based Nano-Composites: An Introduction, Mechanism and Finite Element Analysis", In: Jiji Abraham, Sabu Thomas and NandkumarKalarikkal (eds.), Handbook on Carbon Nanotube, Elsevier, 2021.

Publication in International Journals

1. A. Giampiccolo, D. M. Tobaldi, E. Jones, J. A Labrincha, R. Kurchania, M. P Ansell and R. J. Ball, "UV/visible sol gel W–TiO2 photocatalytic coatings for interior building surfaces", Building and Environment, Volume 205, pp. 108203, 2021.
2. A. Jain, D. Shrivastava and R. Kurchania, "Structural, electronic, elastic, phonon and thermoelectric properties of Heusler-structured intermetallic HfCu2In: using density functional theory", Physica B: Condensed Matter, Volume 629, pp. 413633, 2022.
3. Akash Gupta, Shweta Rajawat and M. M. Malik, "Study of UV-sensitive Ag doped WO3 prepared using ultra-sonification", Optik, Volume 242 (167266), pp. 1-10, 2021.
4. Amit Kumar, Piyush Patel and K. L. Yadav, "Enhanced magnetoelectric coupling response in hot pressed BiFeO3 and polymer composite films: Effect of magnetic field on grain boundary and grain resistance", Materials Research Bulletin, Volume 145, pp. 111527, 2022.
5. Ayushi Katariya, Brahmadutta Mahapatra, Piyush Patel and Jyoti Rani, "Optimization of ETM and HTM layer on NFA based BHJ-organic solar cell for high efficiency performance", Optik, Volume 245 pp. 167717, 2021.
6. Brahmadutta Mahapatra, Rangam Krishna and Piyush Patel, "Design and Optimization of CuSCN/CH3NH3PbI3/TiO2 Perovskite Solar Cell for Efficient Performance", Optics Communications, Volume 504, pp. 127496, 2022.
7. H. Vaishnav, K. Navin, R. Kurchania and R. J. Ball, "Synthesis of ZrO2 Based Nanofluids for Cooling and Insulation of Transformers", IEEE Transactions on Dielectrics and Electrical Insulation, Volume 29, pp. 199-205, 2022.
8. Jyoti Rani, Varun Kushwaha and Piyush Patel, "Exploring Magnetoelectric Coupling in Trilayer [Ba(Zr0.2Ti0.8)O3 0.5(Ba0.7Ca0.3)TiO3]/ CoFe2O4/ [Ba(Zr0.2Ti0.8)O3- 0.5(Ba0.7Ca0.3)TiO3] Thin Film", Journal of Alloys and Compounds, Volume 863, pp. 157702, 2021.
9. K. Navin, O.Subohi, R. J. Ball and R. Kurchania, "Role of Fe (x= 0–0.15) Substitution on Structural, Magnetic, and Transport Properties of the La0. 7Sr0. 3FexMn1– xO3 System", ECS Journal of Solid State Science and Technology, Volume 10, pp. 71009, 2021.
10. K. Navin and R. Kurchania, "The effect of shell layer on magnetic, transport, and electrochemical properties of La0.7Sr0.3MnO3 nanoparticles", Ceramic International, Volume 47(11), pp. 15859-15867, 2021.
11. M. Khan, M. Kumari, H. Pawar, U. K. Dwivedi, R. KurchaniaandD. Rathore, "Effect of concentration on sensing properties of CoFe2O4/BaTiO3 nanocomposites towards LPG", Applied Physics A, Volume 127(9), pp. 1-8, 2021.
12. Naveen Kumar, Jyoti Rani and Rajnish Kurchania, "Advancement in CsPbBr3 inorganic perovskite solar cells: Fabrication, efficiency and stability", Solar Energy, Volume 221, pp. 197-205, 2021.
13. Piyush Patel, Jyoti Rani and K. L. Yadav, "Effective Strategies for Reduced Dielectric Loss in Ceramic/ Polymer Nanocomposite Film", Ceramic International, Volume 47, pp. 10096-10103, 2021.
14. Piyush Patel, Hemant Singh and K. L. Yadav, "Enhancement of Dielectric Performance in BaZr0.02 (Fe0.5Nb0.5)0.98O3 Ceramics Influenced by Sintering Temperatures", Physica B: Physics of Condensed Matter, Volume 617, pp. 413114-413418, 2021.
15. Pramod Kumar Patel, M. M. Malik and Tarun K. Gupta, "An ultra-low-power and high-performance SRAM cell design based on GNRFETs", International Journal of Electronics Letters, Volume 9(4), pp. 494-504, 2021.
16. R. Kurchania, R. Sahu, K. Navin and O. Subohi, "Room-temperature Ferroelectricity and Ferromagnetism in Double Perovskite Bi2CoMnO6 Ceramics Synthesized using Sol–Gel Combustion Technique", Journal of Superconductivity and Novel Magnetism, Volume 34, pp. 2667-2672, 2021.
17. R. Vyas, K. Navin, G. K. Tripathi and R. Kurchania, "Structural, magnetic, photocatalytic, and electrochemical studies of the mesoporous Nickel oxide (NiO) nanostructures", Optik, Volume 231, pp. 166433, 2021.
18. Rajesh Kumar Chopde, Nitu Singh, K. M. Mishra, Jyoti Bamne and Fozia Z. Haque, "High Ionic Conductivity and UV Blocking in nanosized Li3(1-x)Na3xVO4 Superionic Conductors", Emerging Materials Research, Volume 10(4), pp. 387-397, 2021.
19. Rashmi Yadav, Vilas Shelke and M. M. Malik, "Influence of Y substitution on structural, magneto-transportand magnetic properties of La2-xYx CoMnO6 ($0 \leq x \geq 0.3$) double perovskites", Journal of Magnetism and Magnetic Materials, Volume 554 (169311), pp. 1-9, 2022.
20. Ruchi Nandanwar, Jyoti Bamne, Nitu Singh, Kajol Taiwade, Vivek Chandel, P.K. Sharma, Purnima Singh, Ahmad Umar and Fozia Z. Haque, "Synthesis of Titania-Silica Nanocomposite for Enhanced Photodegradation of Methylene Blue and Methyl Orange Dyes under UV and Mercury Lights", ES Materials and Manufacturing, Volume 16, pp. 78-88, 2022.
21. S. T. Busra,I. Ceren, C. H. Juliana, R. Kurchania and R. J. Ball, "Use of brick waste for mortar-substrate optimisation of mortar-masonry systems", Construction and Building Materials, Volume 301 pp. 124256, 2021.

Publications in International Conference

1. Abhinav Bhargav, Vivek Chandel, Fozia Z. Haque and Sankar P. Sanyal, "Comparative Study on Electrical-Transport Behaviour of Mn-site substituted Nd0.67Sr0.33Mn0.9TM0.1O3 (where TM= Co, Ni) Manganites", PANE 2021 and Tripura University, 15-17 Dec 2021.

2. Aman Pandey, Vivek Chandel, Kajol Taiwade, Jyoti Bamne and Fozia Z. Haque, "Review Paper on Piezoelectric Nanogenerator of ZnSnO3 Nanostructures", 10thVirtual Nanotechnology Poster Conference and Budapest, Hungary, 19 Apr. 2021.
3. Anubhab Ray, Vivek Chandel, Kajol Taiwade, Jyoti Bamne, Abhinav Bhargav and Fozia Z. Haque, "Design and Analysis of CMUT Device using COMSOL for Radio Frequency Applications", PANE 2021 and Tripura University, 15-17 Dec 2021.
4. Anubhab Ray, Vivek Chandel, Kajol Taiwade, Jyoti Bamne, Soumendu Sinha and Fozia Z. Haque, "Pull-in Voltage Analysis of CMUT Device", FARAON-2022, 2-4 Feb 2022.
5. Archana Nigrawal, Arun Kumar Sharma and Fozia Z. Haque, "Influence of Surface Modification Technique on the properties of Jute-Sisal Fibre Filled Epoxy Composites", PANE 2021 and Tripura University, 15-17 Dec 2021.
6. Ayushi Kataria and Jyoti Rani, "Review on Two-Dimensional Organic Semiconductors for Thin Film Transistor Application", International conference on multifunctional Nanomaterials, Manipal university, Jaipur Rajasthan, 2021.
7. Bapanpalle Chandra Obulesu, Kajol Taiwade, Vivek Chandel, Jyoti Bamne and Fozia Z. Haque, "Synthesis and Characterization of Flavonoid doped CA/PVP/TiO2 thin film for UV Shielding Application", 10thVirtual Nanotechnology Poster Conference and Budapest, Hungary, 19 Apr. 2021.
8. Kajol Taiwade, Vivek Chandel, Rishi Dhar Gandhi, Jyoti Bamne, Archana Nigrawal and Fozia Z. Haque, "Basic Review of Perovskite Solar Cells", FARAON-2022, 2-4 Feb 2022.
9. Meenakshi Rajpurohit, Jyoti Bamne, Rajesh Purohit and Fozia Z. Haque, "Comparative Study of BCNO-CNT and BCNO-Mesoporous Silicon dioxide", 10thVirtual Nanotechnology Poster Conference and Budapest, Hungary, 19 Apr. 2021.
10. Nitu Singh, Jyoti Bamne, ChandiCharan Jana, Aarti Malhosia, Kajol Taiwade, Vivek Chandel and Fozia Z. Haque, "Photoluminescence Based Humidity Sensing Characteristics of Potassium Doped Magnesium Ferrite Nanoparticles", PANE 2021 and Tripura University, 15-17 Dec 2021.
11. Rishi Dhar Gandhi, Vivek Chandel, Kajol Taiwade, Jyoti Bamne, Archana Nigrawal, Anubhab Ray and Fozia Z. Haque, "Synthesis and Characterization of ZnSnO3/PMMA Composite for UV Shielding Applications", PANE 2021 and Tripura University, 15-17 Dec 2021.
12. Rishi Dhar Gandhi, Kajol Taiwade, Vivek Chandel, Jyoti Bamne, Archana Nigrawal and Fozia Z. Haque, "Synthesis and Characterization of Nano-perovskite ZnSnO3 for the Application of UV Shielding", FARAON-2022, 2-4 Feb 2022.
13. Samya Chaudhary, Jitendra Soni and Fozia Z. Haque, "BVD and Mason's Modelling of Piezoelectric Bulk Acoustic Resonators for High Frequency Applications", PANE 2021 and Tripura University, 15-17 Dec 2021.
14. Samya Chaudhary, Jitendra Soni, Abhinav Bhargav and Fozia Z. Haque, "Design of Piezoelectric Bulk Acoustic Resonators for GHz Resonant Frequencies", FARAON-2022, 2-4 Feb 2022.

Publications in National Conference

1. Krishna Patel, Piyush Patel and M. M. Malik, "A Review of Nanotechnology Based Highly Sensitive IoT Capable Sensing Device", 5thNational e-Conference on Advanced Materials and Radiation Physics (AMRP-2020)", Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab, 9-11 Nov 2021.
2. Nikita Mohanta, Prashant Yadav and Jyoti Rani, "Design of energy efficient logic gates using CNTFET", 5thNational e-Conference on Advanced Materials and Radiation Physics (AMRP-2020)", Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab, 2021.
3. Rangam Krishna, Laxmi and Piyush Patel, "Device Simulation of CH3NH3PbI3 Perovskite Solar Cell with High Efficiency", 5thNational e-Conference on Advanced Materials and Radiation Physics (AMRP-2020)", Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab, 9-11 Nov 2021.

Research Project

1. Archana Nigrawal and Fozia Z. Haque, "Utilization of Waste Soyabean Husk and Sisal Fibre for Sustaniable Building Material", sponsored by DST.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 11 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
Fozia Z. Haque	Sample Holder for Optial Gas Sensing, Indian Patent	Granted
Pragya Ojha, M. Manzar Malik andShums Qureshi	Type E Orientation Pattern using XRD, Australian Government Innovation Patent No. 2021107079.	Granted

Workshops and Programmes organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Fozia Z. Haque	Webinar	National Education Policy 2020	235	09-Aug-2021	10-Aug-2021
Fozia Z. Haque	Virtual Symposium	Women's Education in India: A situational Analysis (WEI-2022)	45	07-Jan-2022	08-Jan-2022
Jyoti Rani, Piyush Patel	STTP	Online Short-Term Training Course on X-ray Diffraction: Theory, Methods and Workflow (XRD 2021)	160	06-Sep-2021	15-Sep-2021

Expert Lecture Organised

Name of the Faculty Coordinator	Name of the Expert with affiliation	Title of lecture	Date conducted
Fozia Z. Haque	Arpit Jain, Examiner of Patents and Designs & NIPAM Officer, Patent Office Mumbai	Intellectual Property Rights	24-Feb-2022
Fozia Z. Haque	Dr.Hashima Hasan, NASA	James Webb Space Telescope	28-Feb-2022

The department has excellent research facilties in various research lab. Apart from the research lab, the Deaprtment of Physics has one B.Tech. I year Physics UG lab many PG Labs for M.Tech. Nanotechnology and M.Sc. Physics courses. New facility SETFOS Simulation Software for Organic and Perovskite Solar Cells and LEDs is procured in the dpeartment. The software is useful for Designing organic semiconductors, perovskites, and quantum-dots based LEDs & solar cells with high efficiency.

The equipment available in the various laboratories of the Department are, more details are available at http://www.manit.ac.in/content/physics-department

- Atomic Force Microscope (NT-MDT Solver Next)
- BET surface area analysis; Model Autosorb (iQ)e
- Vacuum Coating Unit (Hind-High Vac BC-300)
- Spectro-Fluoro Meter (Hitachi F7000)
- Impedance Analyser-LCZ Meter (Wayne-Kerr 6500B)
- Electrochemical Workstation (CH Instruments 604D)
- Electrometer current source and DMM (Keithley 6517BE)
- Nanovoltmeter (Keithley 2182A)
- Six and half digit Multimeter (Keithley 2100)
- P-E Loop Tracer (Marine India Pvt Ltd)
- Spin Coater (Holmarc-HO-TH-05)
- Dip Coating Unit (Holmarc-HO-TH-02)
- Spray Pyrolysis (Holmarc-HO-TH-04)
- B.O.D. (Bacteriological) Incubator and shaker (Metrex)
- Analytical Electronic Balance (Contech)
- Hydraulic press (Metrex 10 Tonnes)
- Ultrasonic Cleaner (PCI- Analytics-12L)
- Centrifuge(Eltek TC 4100 F)
- Rota evaoparator ESC-224 (Elite)
- Vaccum oven 300C
- Muffle furnace 1200C (Ants)
- Programmable Muffle furnace 1500C (Metrex)
- Fourier Transform Infrared Spectroscopy (IRAffinity-1 SHIMADZU)
- UV-Vis spectrometer (Ultra 3660- Regole)
- He-Ne lasers
- Digital Multimetres (FLUKE8846A)
- Electron Spin Resonance (SES-ESR-105)
- B-H Curve (SES-HLT-101)
- Magnetoresistance (SES-DSL-01)
- Dielectric constant (SES-DSL-01)
- Polymer press: PF-M-15 (Technosearch)

- Spincoater: EZspinA1 (Apex Instruments)
- Hall effect Experiment setup (SES-HEX-Research)
- Four probe setup for bandgap (SES DFP-RM-200)
- Nuclear Magnetic Resonance Experiment (SES-NMR-01)
- SETFOS Simulation Software for Organic and Perovskite Solar Cells and LEDs

Summary

Particulars	Total Numbers
Faculty Members	05
Phd Scholars	06
Book Publications	01
Chapter Publications	07
Publication in International Journal Publication	21
Publication in International Conference Publication	14
Publication in National Conference Publication	03
Faculty Outreach	11
Patents	02
Research Projects	01
Workshops/Seminar Organized	03
Expert Lectures Organised	02
Lab Facilities Developed	03

ENERGY CENTRE

Energy Centre

Energy centre, MANIT Bhopal was chosen as the nodal centre for energy theme under Indo-UK RECs project in 1994 by Government of India and the Centre started on 12 July 1997. Energy Centre premises have a built up area of about 3000 sq m. Many associated faculty members have received extensive training in specialised fields of energy in different British Universities and industries under indo- UK RECs project. The centre has developed nine laboratories in various specialised area like energy conservation, energy audit solar thermal and PV technology, wind energy, heat transfer systems etc.

In 2004, Department of Energy was created for Post-graduate and PhD program and in 2007 it became the pioneer in India to start Under-graduate program in Energy Engineering, with intake of 40 students. Many research and development projects and consultancy projects were taken up and completed by the energy centre. The centre is currently running Two PG program; M.Tech in Renewable Energy and M.Tech in Energy System Management. The Ministry of New and Renewable Energy, MNRE Govt of India, has recognised the Energy Centre for award of Post-graduate Fellowships for M.Tech as well as Ph.D. program.

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.

Faculty and Programmes

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	

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

PhD Scholars

Name	**Title/Area of Research**
Aditya Sirsa	Renewable Energy System
Akash Patel	Solar Energy System
Arun Dwivedi	Energy Modelling and Efficiency
Bharat Girdhani	Data Analysis in Renewable Energy System
Harsh Patidar	Wind Energy System
Lokesh Udhwani	Active daylight System
Lovebrat Saxena	Concentrated Solar Power
MalleLingamaiah	Renewable Energy System

Name	Title/Area of Research
Mukesh K. Rathore	Pitch Angle control In VAWT
Pushpendu Dwivedi	Cooling methods of Solar PV system
Raj K. Malviya	Solar Thermal Absorber
Sujeet Kesharvani	Renewable Energy System
Vikas Shende	Wind Energy System

Book Publications

1. Binu K. Varghis, Rituraj Jain and Meena Agrawal, "Programming in Python", IIP publishers, INSC international publishers Karnataka, 2022.

Chapter Publications

1. Vivek Kumar, Archana Soni and Markapuram Srinivasa Rao, "Comparison Analysis of Maximum Power Point Tracking Techniques for a Solar Photovoltaic System", In: Prashant V. Baredar; Srinivas Tangellapalli and Chetan S Solanki (eds.), Advances in Clean Energy Technologies, Springer, 2021.
2. Pooja Rawat and Archana Soni, "Effect on Solar PV Panel Performance Due to Varying Latitude in Northern Hemisphere", In: Prashant V. Baredar, Srinivas Tangellapalli and Chetan S Solanki (eds.), Advances in Clean Energy Technologies, Springer, 2021.
3. Priyanka Rai, Archana Soni and RushikeshKamble, "Simulation and Analysis of Building Integrated Photovoltaic System for Different Climate Zones in India", In: Prashant V. Baredar, Srinivas Tangellapalli and Chetan S Solanki (eds.), Advances in Clean Energy Technologies, Springer, 2021.
4. Rahul Rajawat, Anuj Kumar and Gaurav Dwivedi, "Clean Energy Using Hydroelectric Generation from Rivers", In: Dan Bahadur Pal and Jay Mant Jha (eds.), Sustainable and Clean Energy Production Technologies.

Publication in International Journals

1. Ambar Gaur, Gaurav Dwivedi and Prashant Baredar, "Influence of blending additives in biodiesel on physiochemical properties", Fuel, Volume 321, pp.1-13, 2021.
2. Asim Ahmad, Om Prakash and Gaurav Dwivedi, "Dynamic analysis of daylight factor, thermal comfort and energy", Materials Science for Energy Technologies, Volume 5, pp. 52-65, 2021.
3. Gaurav Dwivedi, Siddharth Jain and Anoop K. Shukla, "Impact analysis of biodiesel production parameters", Environment, Development and Sustainability, 2021.
4. Harsh Patidar, Prashant Baredar and Archana Soni, "Comparative study of offshore wind energy potential assessment using different Weibull parameters estimation methods", Environmental Science and Pollution Research, Volume 29, pp. 46341- 46356, 2022.
5. Meena Agrawal and Mukesh Rathore, "Priority based strategic modes of operation and control for renewable energy sources micro-grid", Journal Materials Today: Proceedings, 2021.
6. Meetu Singh, Neerja Sharma and Gaurav Dwivedi, "Influence of irradiation and addition of", International Journal of Ambient Energy, 2021.
7. Mukesh Rathore, Meena Agrawal and Prashant Baredar, "Pitch control mechanism in various types of vertical axis wind turbines: A review", Journal of vibration engineering and technologies, Springer Link, Volume 09, pp 2133-2149, 2021.
8. Nishant K., Kamal Upreti and Meena Agrawal, "Blockchain integrated flexible vaccine supply chain architecture excavate the determinants of adoption", Wiley periodicals, pp. 1106-1117, 2021.
9. S. Charan Kumar, Amit K. Thakur and Gaurav Dwivedi, "Comprehensive Review on Effects of Exhaust", International Journal of Ambient Energy, 2021.
10. Subhankar Chowdhury, Ambar Gaur and Gaurav Dwivedi, "Environmental pollution analysis during the", Energy Sources, Part A: Recovery, Utilization, 2021.
11. Upendra Rajak, PreranaNashine and Gaurav Dwivedi, "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, 2021.

Publications in International Conference

1. Vivek Kumar, Archana Soni and Markapuram Srinivasa Rao, "Comparison Analysis of Maximum Power Point Tracking Techniques for a Solar Photovoltaic System", International Conference on Innovations in Clean Energy Technologies (ICET 2020), MANIT Bhopal, 2021.
2. Pooja Rawat and Archana Soni, "Effect on Solar PV Panel Performance Due to Varying Latitude in Northern Hemisphere", International Conference on Innovations in Clean Energy Technologies (ICET 2020), MANIT Bhopal, 2021.
3. Priyanka Rai, Archana Soni and RushikeshKamble, "Simulation and Analysis of Building Integrated Photovoltaic System for Different Climate Zones in India", International Conference on Innovations in Clean Energy Technologies (ICET 2020), MANIT Bhopal, 2021.
4. Subhankar Chowdhury, Subhashree Mohapatra and Archana Soni, "Study of various properties of geopolymer concrete–A review", International Conference on Innovations in Clean Energy Technologies (ICET 2020), MANIT Bhopal, 2021.

5. Lokesh Udhwani and Archana Soni, "Evaluation of daylighting performance in an office building: A case study", International Conference on Innovations in Clean Energy Technologies (ICET 2020), MANIT Bhopal, 2021.
6. Shrey Verma, Archana Soni and Puneet Verma, "Solar PV powered water pumping system–A review", Solar PV powered water pumping system–A review, 2021.
7. Gaurav Dwivedi, "Impact of cultivation conditions on microalgae biomass productivity and lipid content".
8. Gaurav Dwivedi, "Review of various types of renewable-powered desalination technologies with economic analysis".
9. Gaurav Dwivedi, "A Study on the Design and Fabrication of Dry Cell Electrolysis Setup for Hydrogen Generation Advancement in Materials", Manufacturing and Energy Engineering, Volume II, pp 459-470.
10. Gaurav Dwivedi, "Analysis of Solar Photovoltaic-Based Water Pumping System in Sehore, India, Advancement in Materials", Manufacturing and Energy Engineering, Volume II, pp 591-602.
11. Gaurav Dwivedi, "Energy Analysis of R1234yf/R134a as Replacement of R134a in a Domestic Refrigerator Advancement in Materials", Manufacturing and Energy Engineering, Volume II, pp 495-502.
12. Gaurav Dwivedi, "Life cycle assessment of greenhouse gas emissions of electric and combustion vehicles", 2022.
13. Gaurav Dwivedi, "Solar Thermal Receivers-A Review", Advancement in Materials, Manufacturing and Energy Engineering, Volume II, pp 311-325.

Outreach Activity

Faculties are engaged in various Outreach activities like Expert lectures, Member of National and International committees, Observer, Examiner etc. Total number of Outreach Activities this year is 07 which includes all type of Activities.

Patents

Name of Faculty Member(s)	Name of Patent	Status (Filed, Published and Granted
Arvind Mittal, Amit Ojha	A Micro Multilevel Inverter	Certificate of Grant, Dated 10th Nov 2021
Meena Agrawal, Kamal Upreti	Conceptual Framework of Artificial Intelligence In Human Resource Management;	Certificate of Grant, Dated 30th June 2021
Meena Agrawal, Rajiv Dharaskar	Animal tracking strap using RFID and IOT	Certificate of Registration of Design, Dated 23rd Feb 2022

Workshops and Programmes organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Gaurav Dwivedi	FDP	Sustainable Transport Sources for future Mobility Application	90	22-Nov-2021	26-Nov-2021
Meena Agrawal	WS	Vigilance Awareness Week 2021	32	26-Oct-2021	01-Nov-2021
Meena Agrawal	Seminar	Education Day	30	11-Nov-2021	
Meena Agrawal	Seminar	Constitution Day	25	26-Nov-2021	
Meena Agrawal	Training Programme	Orientation Week 2021	1200	06-Dec-2021	10-Dec-2021

Summary

Particulars	Total Numbers
Faculty Members	06
PhD Scholars	13
Book Publications	01
Chapter Publications	04
Publication in International Journal Publication	11
Publication in International Conference Publication	13
Faculty Outreach	07
Patents	03
Workshops/Seminar Organized	05

Centre of Excellence in Water Management

The centre is providing quality education and research focused to water resource engineering& management,since 2021, the centre offers Post Graduate program on "Water Resources Engineering and Management" to facilitate the culture of developing unique ideas in water resource management. Following are the objectives of the Centre.

- To impart both conventional and state-of-the-art knowledge for the analysis and design of systems related to water resources.
- 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.
- Infrastructure Facilities
- Well equipped laboratory of Water Resources Engineering and another Weather Science lab is being developed.

Faculty and Programmes

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

- Post Graduate Programme in Water Resources Engineering and Management (Sanctioned seats 21)

Research Project

1. Vishnu Prasad, M.K.Choudhary and Ruchi Khare, "Impact of Climate Change on Water Resources of Tapi Basin", sponsored by Ministry of WRD, Govt. of India.

Consultancy Project

1. Vishnu Prasad, Jyoti Sarup and Ruchi Khare,"Hydrological Survey Work at Raja Bhoj Airport, Bhopal", sponsored by M/s Airport Authority of India.
2. Vishnu Prasad, M.K.Choudhary "Clarification on back water and afflux at railway bridge due to Talwara Barrage at Ratlam", sponsored by MP WRDA.

MoUs

Name of Department	Name of Coordinator	Name of the agency with which MOU signed
Centre of Excellence in Water Management	H. L.Tiwari	National Institute of Hydrology (in process)

Workshops and Programmes organised

Name of Faculty	Programme	Title of Programme	Number of Participants	Duration	
				From	To
Kamal Singh, Rakesh Kumar, Rutuja M. Chavan	International Conference	Water and Environment	100	22-Mar-2021	23-Mar-2021
Jyoti Sarup, M. K. Choudhary, Rutuja M. Chavan	Training Programme	Dam Break Flood Modelling Using Hec-ras	25	15-Mar-2021	19-Mar-2021

Summary

Particulars	Total Numbers
Faculty Members	07
Research Projects	01
Consultancy Projects	02
MoUs	01
Workshops/Seminar Organized	02

Central Computing Facility

MANIT Bhopal Central Computing Facility (CCF) provide 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 (VM ware) and GPU Cluster (NVIDIA DGX). Recently established computer labs are having 10 performance grade workstations and 2000 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 etc. on the same facility.

Year 2021-22, Institute's Central Computing Facility (CCF) is now equipped with two more facilities,

a) NVIDIA DGX:

- A universal system for AI/ML i.e. **NVIIDIA DGX A100** which can handle any type of AI workloads from analytics to training to inference.
- Compute density of packing **5 petaflops** of AI performance or **10 petaOPS INT8** into a **6U form factor**.
- GPUs: **8x NVIDIA A100 Tensor Core GPUs**.
- GPU Memory: 40 GB x 8 i.e. **320 GB** in total.
- System Memory: **1TB**.
- System Storage: **OS: 2x 1.92TB** M.2 NVME drives Internal Storage: **15TB** (4x 3.84TB) U.2 NVME drives.

b) 10 Performance Grade Workstations:

Performance grade dedicated Dell Precision 7820 Tower workstations in LAB TA 216 for applications which does require high memory and CPU.

Hardware Configuration:

- Intel Xeon 4214 R
- 32 GB RAM
- 8 TB HDD
- NVIDIA Quadro RTX 6000

Areas of Utilization

a) Industrial Design Engineering:
   - Development of Miniaturized Pressure Regulators (Non-moving Type) for low flow rate application. (Ansys Student Version)
   - Industrial mould design improvement.
   - CFD Simulations

b) Civil Engineering:
   - Soil Structure Interaction (Ansys 14)

c) Mechanical Engineering:
   - Stress and Vibration Analysis (Ansys Student Version)
   - Numerical Simulation of Large size domains.
   - Numerical investigation of MHD Flow in 3D channels.

d) Electronics and Communications:
   - ImageProcessing (Python)

ROLTA INCUBATION CENTRE

The incubation centre in Maulana Azad National Institute of Technology (MANIT) was inaugurated on 4th September 2014 by Mr. Kamal K. Singh, chairman, Rolta Group of Industries and Alumni of MANIT (MACT). He financed the building and other infrastructure required to start the incubation centre.'

Objectives

- To develop awareness among the students about Entrepreneurship.
- To build an entrepreneurship ecosystem in the campus.
- To inculcate a culture of innovation driven entrepreneurship in and around the MANIT.
- To promote new technology/ knowledge/ innovation based startups.
- To encourage conversion of student's project to commercial startups.
- To provide a handholding support to new entrepreneurs.
- To mentor the young minds in conversion of their idea into prototype/ commercial products and services.
- To establish a network between academia, industries and financial institutions.

Events and Activities

Technical Workshops | Date of event: December 2021

Aiming at the hard and soft skills necessary for entrepreneurship and successfully managing it, E-Cell MANIT hosted a series of 4 workshops on technical skills in collaboration with its E-Summit 22 sponsor, Skill-Lync.

Non-Technical Workshops | Date of event: December 2021

Speakers: Mr. Nishank Bhatia, Mr. Abhishek Rana, Mr. Mudit Vijay Dudhoria, Mr. Bhavpreet Singh soni

4 workshops were organised for the young entrepreneurs on the 101 - Guide to build a startup from scratch and the legalities to establish a startup.

Captain Pitcher | Date of event: January 16, 2021

Judges: Akhilesh Barve, Ayush Dubey, Ankur Goyal, and Deepak Nagpal.

The contest was based on presenting an idea for a startup in front of a panel of experts and convincing them to invest in your startup, simulating the meetings with VCs and Angel Investors.

Bull's Eye | Date of event: January 2022

Speakers: Mr. ShivamChunneja, Mr. Abhilash Misra- CEO of NSE Academy

Stock Simulation was a risk free learning experience in stock investment. The Simulation game provided a risk-free environment to try and learn relevant skills needed for Stock Trading before they trade in real life, with cash rewards for the top traders.

Crypto Mania | Date of event: January 2022

Speakers: Mr. Neel Kukreti, Mr. Raoul Pal and Mr. Nipun

Crypto Simulation consists of a seminar on the basics of digital currencies and a simulation game with the replica of numerous cryptocurrencies. Similar to Stock Trading, the fad for crypto trading is immense in the financial world.

Creati Verse (Content Conclave) | Date of event: January 2022

Speakers: Prerna and Harsh, Mrs. ShagunMalhotr, Mrs. Dimple Arora, Mr. Anurag Dobhal, David Masson

Content Conclave was a fun event comprising several sub-tasks focused on the promotion of brands and products in creative ways. We aimed to give a stage to students to give wings to the creative marketing manager in them. This contest aims to bring exposure to social media marketing tools and strategists to students.

Hack-A-Web | Date of event: February 2022

Hackathon was a 48 hours long event for all the hacking enthusiasts to solve real world problems by developing a prototype. It was targeted for the tech-inclined people to utilize their coding skills and grab exciting prizes, while solving major business problems.

Stark Expo | Date of event: February 2022

Speaker: Mr. Shivraj Singh Chouhan

Through Startup Expo, we aimed to provide an effective platform to the most innovative and disruptive startups trying to solve some technological and societal challenges and transforming millions of lives by bringing them under a roof to unveil the trailblazing innovations. We had also brought C-Level executives from top corporations, government agencies, incubators, investors, VC funds.

IPL: Bid the Thunder | Date of event: February 2022

Most successful event of E-summit'21, focused on financial optimization, price bidding, and teamwork. It challenged judgmental skills, budget management and strategizing to form the best possible team.

Guest Lectures | Date of event: 26 February 2022

Speakers: Mr. Greg S. Reid, Mr. Zev Siegl, Mr. Mateo Rizzi

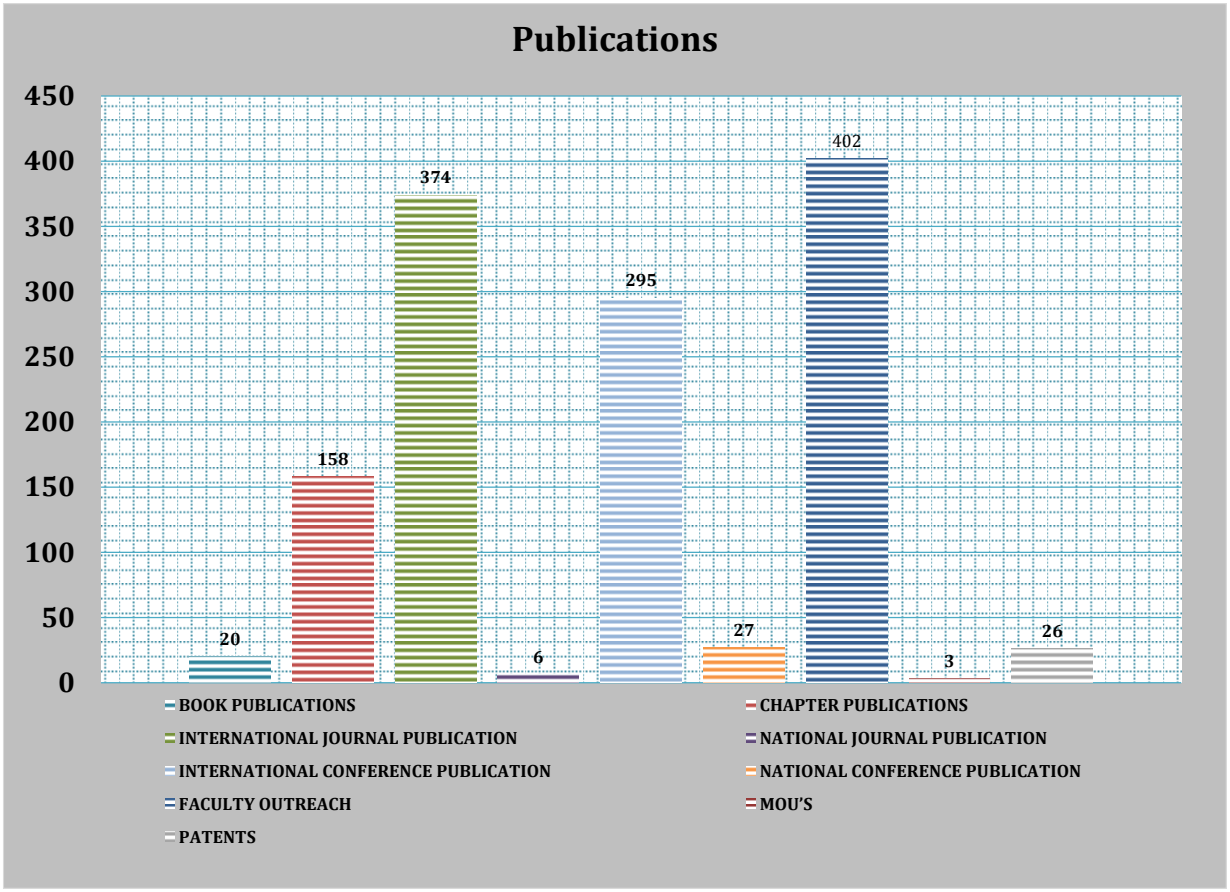
Guest sessions of 2022 featured renowned International speakers from different domains. The Notable speakers who have their name engraved in the history of Entrepreneurs are invited to share their knowledge and expertise along with some trickling stories of their journey from zero.

Comedic Pitstop | Date of event: 27 February 2022

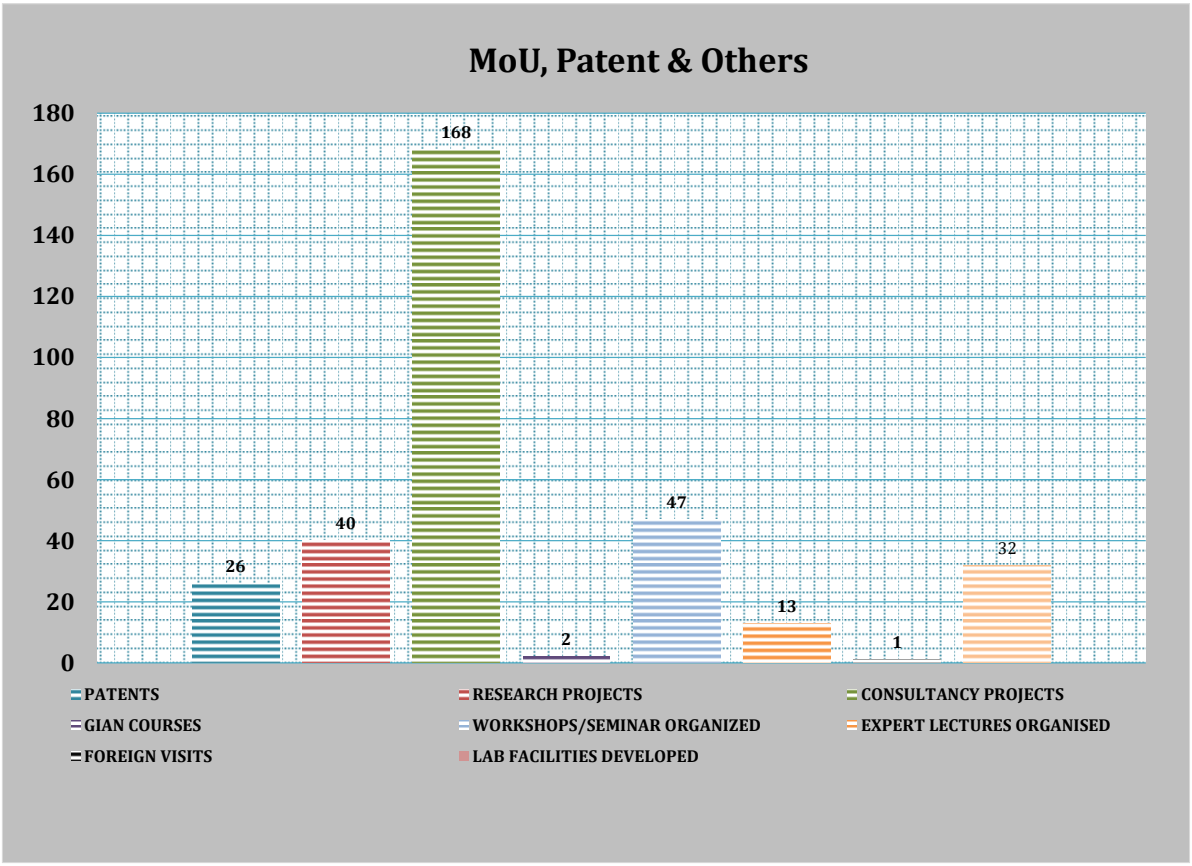
The Comedic Pitstop was the real fuel for everyone's laughter muscles. This laughter riot brought respite for all the hard-working entrepreneurs. E-Summit'22 will feature the live renowned standup comedian, Mr. Abhishek Upmanyu.

Summary of Departments and Centres

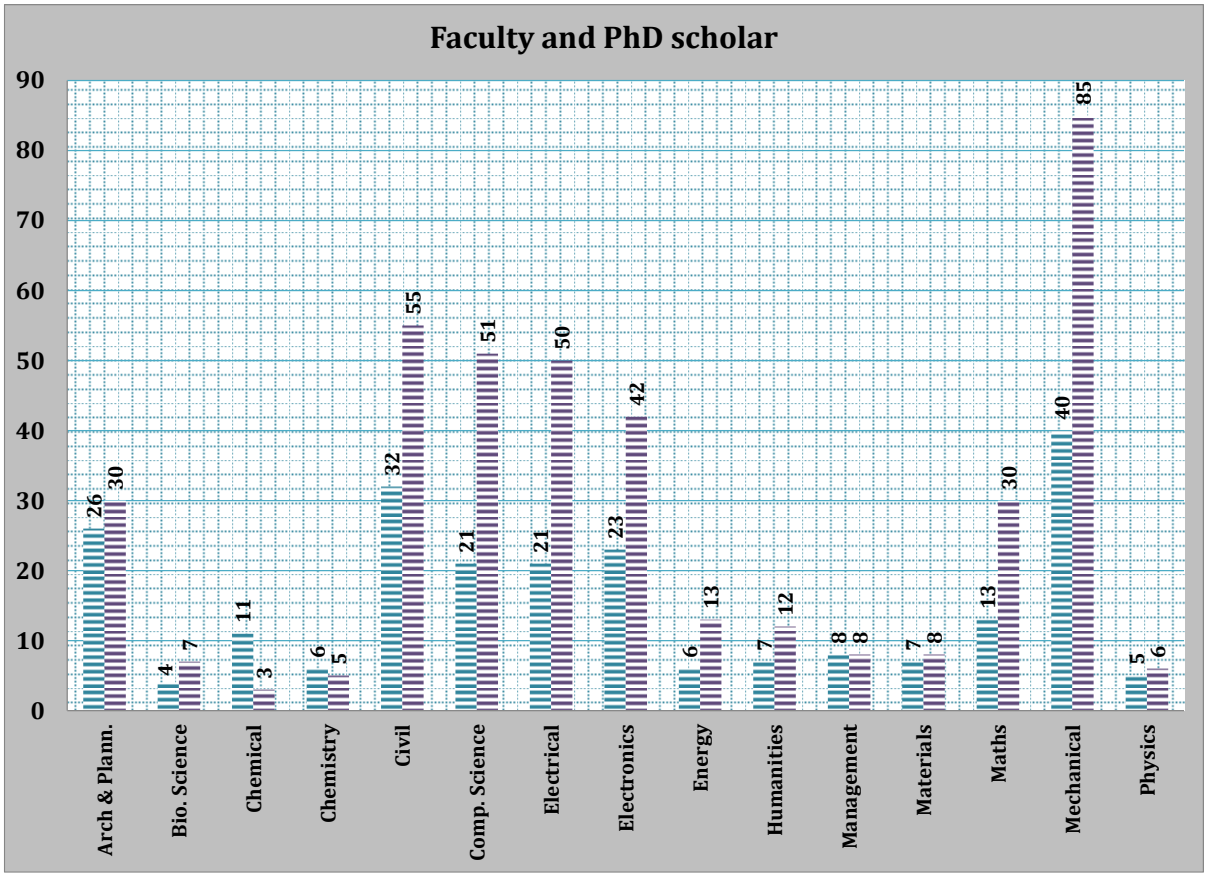
Publications/ Outreach/ Research and Consultancy



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	4452	1858	1200	647	331	279	137	264
2	PG	1717	1228	527	353	189	54	103	2	489
3	Ph.D.	616	339	150	101	57	14	13	4	277
	Total	**7049**	**6019**	**2535**	**1654**	**893**	**399**	**395**	**143**	**1030**

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	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**

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	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**

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	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**

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	13	23	7	4	2	2	14	10	0	0	75
Planning	8	8	4	2	2	2	7	5	0	0	38
Chemical Engineering	23	7	6	2	2	2	14	2	0	0	58
Civil Engineering	36	6	12	2	6	2	24	4	0	0	92
Computer Science & Engineering	92	21	25	3	11	3	43	8	0	0	206
Electrical Engineering	45	7	12	4	6	2	27	3	0	0	106
Electronics & Communication Engineering	61	14	16	5	7	2	35	4	0	0	144
Materials & Metallurgical Engineering	20	4	8	2	4	2	14	2	0	0	56
Mechanical Engineering	71	15	23	3	10	2	45	8	0	0	177

Total	**369**	**105**	**113**	**27**	**50**	**19**	**223**	**46**	**00**	**00**	**952**

Fifth Year B. Arch.

Branch	**General**		**SC**		**ST**		**OBC**		**EWS**		**Total**
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	
Architecture	17	17	10	2	6	0	12	11	0	0	75
Total	**17**	**17**	**10**	**02**	**06**	**00**	**12**	**11**	**00**	**00**	**75**

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	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 Process Design	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	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	**65**	**26**	**27**	**09**	**06**	**03**	**44**	**10**	**12**	**04**	**364**

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	4	3	0	2	0	0	6	1	1	0	17
Advanced Material Tribology	4	1	2	1	0	1	2	0	2	0	13
Artificial Intelligence	7	1	2	1	1	0	6	1	2	0	21
Bio-informatics	3	2	1	0	1	0	0	2	0	0	09
Biotechnology	2	6	0	0	0	0	1	0	0	0	09
Chemical Process Design	0	0	1	0	0	0	0	1	0	0	02
Computation & System Biology	3	1	2	2	0	0	1	0	0	0	09
Computer Networking	6	3	2	1	0	0	4	1	2	1	20
Digital Communication	4	3	2	1	1	0	5	2	2	0	20
Electrical Drives	5	4	1	2	0	1	4	2	2	0	21
Energy System Management	11	1	3	0	0	0	1	0	1	0	17
Environmental Engineering	5	2	3	1	0	0	4	1	2	0	18
Geoinformatics	7	1	2	1	0	0	4	3	1	0	19
Geotechnical Engineering	6	2	2	1	1	0	7	0	1	1	21
Housing	2	5	3	0	0	0	2	2	2	0	16
Hydro Power Engineering	7	1	2	1	2	0	4	1	0	0	18
Industrial Design	7	1	2	1	0	0	5	1	2	1	20
Information Security	7	0	2	1	1	0	4	3	1	0	19
Maintenance Engineering	3	1	3	0	1	0	2	0	0	0	10

Materials Science & Technology	5	1	2	1	0	0	4	0	0	0	13
Nanotechnology	6	4	1	2	0	0	5	0	0	0	18
Power System Engineering	5	1	0	3	1	0	7	1	3	0	21
Renewable Energy	5	1	2	1	1	1	6	1	1	1	20
Stress & Vibration Analysis	7	1	1	1	0	0	2	3	0	0	15
Structural Engineering	8	0	3	0	1	0	7	0	1	0	20
Thermal Engineering	5	2	5	0	0	1	5	0	3	0	21
Transportation Engineering	9	0	3	0	1	0	6	0	2	0	21
Urban Planning	2	3	2	1	0	1	5	3	2	0	19
VLSI & Embedded Systems	3	3	1	1	0	1	5	2	2	0	18
Water Resources Engineering	5	3	1	2	0	1	4	2	1	1	20
Total	**86**	**27**	**33**	**15**	**08**	**05**	**73**	**19**	**20**	**03**	**505**

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	10	0	1	0	0	0	2	1	0	22
Total	**8**	**10**	**00**	**01**	**00**	**00**	**00**	**02**	**01**	**00**	**22**
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	12	7	4	1	0	0	6	1	2	1	34
Total	**12**	**07**	**04**	**01**	**00**	**00**	**06**	**01**	**02**	**01**	**34**

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	29	11	7	4	6	2	23	7	11	4	104
Total	**29**	**11**	**7**	**04**	**06**	**02**	**23**	**07**	**11**	**04**	**104**
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	30	9	11	4	7	2	23	9	7	3	105
Total	**30**	**9**	**11**	**04**	**07**	**02**	**23**	**09**	**07**	**03**	**105**
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	22	14	11	2	6	1	27	7	4	0	94
Total	**22**	**14**	**11**	**02**	**06**	**01**	**27**	**07**	**04**	**00**	**94**

Dual Deegre 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	0	0	0	0	0	0	0	0	0	0	00
Total	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**
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	5	2	1	1	0	0	1	5	1	0	16
Physics	2	5	2	0	0	0	3	2	0	1	15
Total	**7**	**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	3	5	0	0	0	1	3	0	0	0	16
Bioinformatics	0	0	0	0	0	0	0	0	0	0	02
Biological Science & Engineering	0	1	0	0	0	0	0	0	0	0	03
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	03
Chemistry	0	0	0	1	0	0	0	0	0	0	01
Civil Engineerings	6	2	0	1	0	0	1	2	1	0	18
Computer Application	0	0	0	0	0	0	0	0	0	0	04
Computer Science & Engineering	1	2	1	0	0	0	0	0	0	0	18
Electrical Engineering	3	0	1	0	0	0	2	0	0	0	16
Electronics & Communication Engineering	2	0	0	0	0	0	1	1	0	0	14
Energy	1	0	0	0	0	0	0	0	0	0	07
Humanities	0	2	1	0	0	0	1	0	0	1	06
Management Studies	3	1	0	0	1	0	1	1	0	0	01
Materials & Metallurgical Engineering	0	0	0	0	0	0	1	0	0	0	05
Mathematics	2	1	1	0	0	0	1	0	0	2	02
Mechanical Engineering	5	2	2	1	0	0	4	1	2	0	27
Physics	0	0	0	0	0	0	1	0	0	0	02
Total	**24**	**16**	**21**	**09**	**11**	**00**	**49**	**06**	**09**	**00**	**145**

Second 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	06
Bioinformatics	0	1	0	0	0		1	0	0	0	00
Biological Science & Engineering	0	1	0	0	0	0	2	0	0	0	02
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	00
Chemistry	0	0	0	0	0	0	1	0	0	0	01
Civil Engineering	2	1	4	1	0	0	8	0	2	0	15
Computer Application	2	0	0	0	0	0	2	0	0	0	01
Computer Science & Engineering	4	3	1	2	1	0	3	3	1	0	15
Electrical Engineering	3	1	2	3	2	0	4	0	1	0	11
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	02
Humanities	1	2	1	0	0	0	1	0	1	0	00
Management Studies	0	0	1	0	0	0	0	0	0	0	02
Materials & Metallurgical Engineering	1	0	0	0	1	0	2	0	1	0	01
Mathematics	0	1	0	1	0	0	0	0	0	0	04
Mechanical Engineering	6	1	4	1	2	0	11	0	2	0	25
Nano Science & Engineering	0	0	0	1	0	0	1	0	0	0	03
Total	**46**	**07**	**14**	**05**	**00**	**01**	**20**	**09**	**00**	**00**	**102**

Third 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	07
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	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	1	0	0	01
Civil Engineering	10	0	2	0	0	0	0	3	0	0	06
Computer Application	0	0	1	0	0	0	0	0	0	0	00
Computer Science & Engineering	5	2	2	0	0	1	4	1	0	0	01
Electrical Engineering	5	0	3	0	0	0	1	2	0	0	01
Electronics & Communication Engineering	6	2	0	2	0	0	3	1	0	0	03
Energy	1	0	1	0	0	0	0	0	0	0	00
Humanities	0	0	0	0	0	0	0	0	0	0	00
Management Studies	2	0	0	0	0	0	0	0	0	0	00

Materials & Metallurgical Engineering	0	0	0	0	0	0	1	0	0	0	00
Mathematics	1	1	0	0	0	0	2	0	0	0	01
Mechanical Engineering	13	0	3	1	0	0	8	0	0	0	10
Nano Science & Engineering	1	0	1	0	0	0	1	0	0	0	00
Total	**14**	**06**	**04**	**01**	**00**	**00**	**05**	**00**	**00**	**00**	**30**

Fourth Year

Branch	**General**		**SC**		**ST**		**OBC**		**EWS**		**Total**
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	
Architecture & Planning	2	2	1	0	0	0	2	0	0	0	01
Bioinformatics	0	0	0	0	0	0	0	0	0	0	01
Biological Science & Engineering	0	0	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	01
Chemical Engineering	0	0	0	0	0	0	0	0	0	0	01
Chemistry	0	1	0	0	0	0	0	0	0	0	01
Civil Engineering	2	1	1	1	0	0	1	0	0	0	12
Computer Application	0	0	0	0	0	0	0	0	0	0	02
Computer Science & Engineering	1	0	0	0	0	0	0	0	0	0	09
Electrical Engineering	1	0	0	0	0	0	0	0	0	0	06
Electronics & Communication Engineering	1	1	1	0	0	0	0	0	0	0	10
Energy	0	0	0	0	0	0	0	0	0	0	01
Humanities	0	0	0	0	0	0	0	0	0	0	00
Management Studies	0	0	0	0	0	0	0	0	0	0	02
Materials & Metallurgical Engineering	0	0	0	0	0	0	0	0	0	0	01
Mathematics	0	1	0	0	0	0	0	0	0	0	03
Mechanical Engineering	7	0	1	0	0	0	2	0	0	0	16
Nano Science & Engineering	0	0	0	0	0	0	0	0	0	0	01
Total	**25**	**11**	**09**	**02**	**00**	**01**	**18**	**03**	**00**	**00**	**69**

18 CONVOCATION DAY

18th Convocation held on 23rd October, 2021

Total Number of Degree Recipients

S. No.	Course-Branch	No. of Degrees
1.	B.Tech. Civil Engineering	86
2.	B.Tech. Mechanical Engineering	165
3.	B.Tech. Electrical Engineering	109
4.	B.Tech. Electronics and Communication Engineering	146
5.	B.Tech. Computer Science & Engineering	201
6.	B.Tech. Chemical Engineering	61
7.	B.Tech. Materials and Metallurgical Engineering	50
8.	Bachelor of Architecture	71
9.	Bachelor of Planning	31
10.	Master of Computer Applications	87
11.	Master of Business Administration	14
12.	Master of Technology	313
13.	Master of Planning	24
14.	Ph.D.	89
	Total	1447

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

Scholar No	Name	Department
133210005	Shashi Saxena	Architecture and Planning
143210008	Richa Ankush Pathe	Architecture and Planning
143209001	Harsimran Chadha	Architecture and Planning
123110001	Ajay Krishna Gedam	Architecture and Planning
143217001	Samatha Singh	Chemical Engineering
143102001	Savita Verma	Chemistry
143211012	Sharad Kumar Soni	Civil Engineering
143211002	Daya Shankar Pandey	Civil Engineering
113211103	Rajeev Singh Parihar	Civil Engineering
133211005	Prabhat Kumar Soni	Civil Engineering
163111001	Ankit Balvanshi	Civil Engineering
143225001	Vimal Shukla	Civil Engineering
143111002	Ravi Gupta	Civil Engineering
163111003	Nyathikala Sai Amulya	Civil Engineering
133211001	Nagendra Prasad Singh	Civil Engineering
143225003	Rajendra Kumar Patel	Civil Engineering
143225004	Harshlata Vishwakarma	Civil Engineering
143211003	Sabyasachi S. Roy	Civil Engineering
143125001	Arpita Baronia	Civil Engineering
133220003	Gagan Vishwakarma	Computer Applications
123206104	Sanjeev Kumar Sharma	Computer Applications
143120002	Saurabh Dhyani	Computer Applications
133220002	Ruchi Garg	Computer Applications
163120003	Pushpendra Kumar	Computer Applications
143220010	YatendraSahu	Computer Applications
143212007	Rizwan Ur Rahman	Computer Science and Engineering
143212001	Neeraj Shrivastava	Computer Science and Engineering
143212005	Shweta Saxena	Computer Science and Engineering
143212002	Anjna Jayant Deen	Computer Science and Engineering
133112005	Sonika Shrivastava	Computer Science and Engineering
133212003	Pranita Jain	Computer Science and Engineering
123212101	Harish Baraithiya	Computer Science and Engineering
163112006	Kanu Geete	Computer Science and Engineering
133212008	Anupama Jain	Computer Science and Engineering
123213104	Vaishali Sohoni	Electrical Engineering
113213110	Sanjiv Kumar Jain	Electrical Engineering

Scholar No	Name	Department
133213003	Sudeshna Ghosh	Electrical Engineering
143213008	Jaydeep Lakwal	Electrical Engineering
143213002	Priyamvada Chandel	Electrical Engineering
133213001	Manju Gupta	Electrical Engineering
113213103	Alka Nimbhorkar	Electrical Engineering
143213001	Narayan Prasad Gupta	Electrical Engineering
143213009	Harish Kumar Sharma	Electrical Engineering
163113001	Nisha Prasad	Electrical Engineering
143213015	Shiwani Rai	Electrical Engineering
163113002	Arun Rathore	Electrical Engineering
143114004	Yashwant Kurmi	Electronics and Communication Engineering
133214010	Jaya Koshta	Electronics and Communication Engineering
123214105	Manish Bansal	Electronics and Communication Engineering
123214106	Aashish Parihar	Electronics and Communication Engineering
143214009	Abhishek Sharma	Electronics and Communication Engineering
163114001	Trapti Sharma	Electronics and Communication Engineering
133214007	Tahir Khan	Electronics and Communication Engineering
143114002	Ramji Gupta	Electronics and Communication Engineering
143214007	Vivek Tiwari	Electronics and Communication Engineering
143214013	Gaurav Makwana	Electronics and Communication Engineering
143214004	Jitendra Pratap Singh Mathur	Electronics and Communication Engineering
133214008	Barun Kumar	Electronics and Communication Engineering
133214004	Prashant Purohit	Electronics and Communication Engineering
133218002	Arun Kumar Sharma	Energy Centre
143218007	Alok Kumar Sahu	Energy Centre
133218001	Anand Jain	Energy Centre
163118004	Kavali Janardhan	Energy Centre
143218001	Shiv Kumar Sonkar	Energy Centre
143203001	DamarajuSubba Rao	Humanities and Social Sciences
143221001	Abhishek Parsai	Management Studies
143221002	Sachin Sharma	Management Studies
143221005	Rahul Gajbhiye	Management Studies
143121002	Poonam Likhitkar	Management Studies
143204001	Payal Shrivastava	Mathematics
133204004	Shraddha Harode	Mathematics
143204003	Anuja Gupta	Mathematics
173104002	Neha Gupta	Mathematics
143104001	Kaillash Yadav	Mathematics
133216004	Sanjeev Kumar Yadav	Mechanical Engineering
133216015	Akhilesh Soni	Mechanical Engineering
163116003	Sumer Singh Patel	Mechanical Engineering
133201001	Amitabh Shrivastava	Mechanical Engineering
153216001	Pankaj Dubey	Mechanical Engineering
143216021	Bikramjit Singh	Mechanical Engineering
163116009	Krishan Kumar Patel	Mechanical Engineering
163116002	Shashank Ranjan Chaurasia	Mechanical Engineering
133201003	Kirti Chaware	Mechanical Engineering
133216009	Sanjay Kumar Singh	Mechanical Engineering
163116007	Arvind Kumar Patel	Mechanical Engineering
163116004	Rajan Kumar	Mechanical Engineering
133201002	Pankaj Singh	Mechanical Engineering
133105005	Niraj Kumar Singh	Nano Science and Engineering Center
133205001	Rajesh Kumar Chopde	Physics

Awards and Medals

President of India Gold Medal Session 2020-2021

Institute Topper (UG) Gold Medal Session 2021-2022

Course-Branch	Scholar No.	Name	GGPA
B.Tech. Computer Science & Engineering	171112063	Akshay Kumar Mishra	9.68

Gold Medal Recipients Session 2020-21

S. No.	Course-Branch	Sch. No.	Name	GGPA	Position
1.	B.Tech. Civil Engineering	171111061	Shivani Ojha	9.38	1st
2.	B.Tech. Mechanical Engineering	171116252	Naveen Agrawal	9.19	1st
3.	B.Tech. Electrical Engineering	171113080	Ankit Gupta	9.40	1st
4.	B.Tech. Electronics and Communication Engineering	171114150	Shreya Sood	9.53	1st
5.	B.Tech. Computer Science and Engineering	171112063	Akshay Kumar Mishra	9.68	1st
6.	B.Tech. Chemical Engineering	171117059	Anshumali Jaiswal	9.00	1st
7.	B.Tech. Material Science and Metallurgical Engineering	171119050	Rajneesh Pandey	9.38	1st
8.	B. Planning	171109008	Aditi Jain	9.07	1st
9.	B. Architecture	161110224	Pranjal Kulkarni	8.82	1st
10.	Master of Computer Applications	182120089	Diksha Gupta	9.73	1st
11.	Master of Business Administration	192121006	Mohit Saxena	9.96	1st

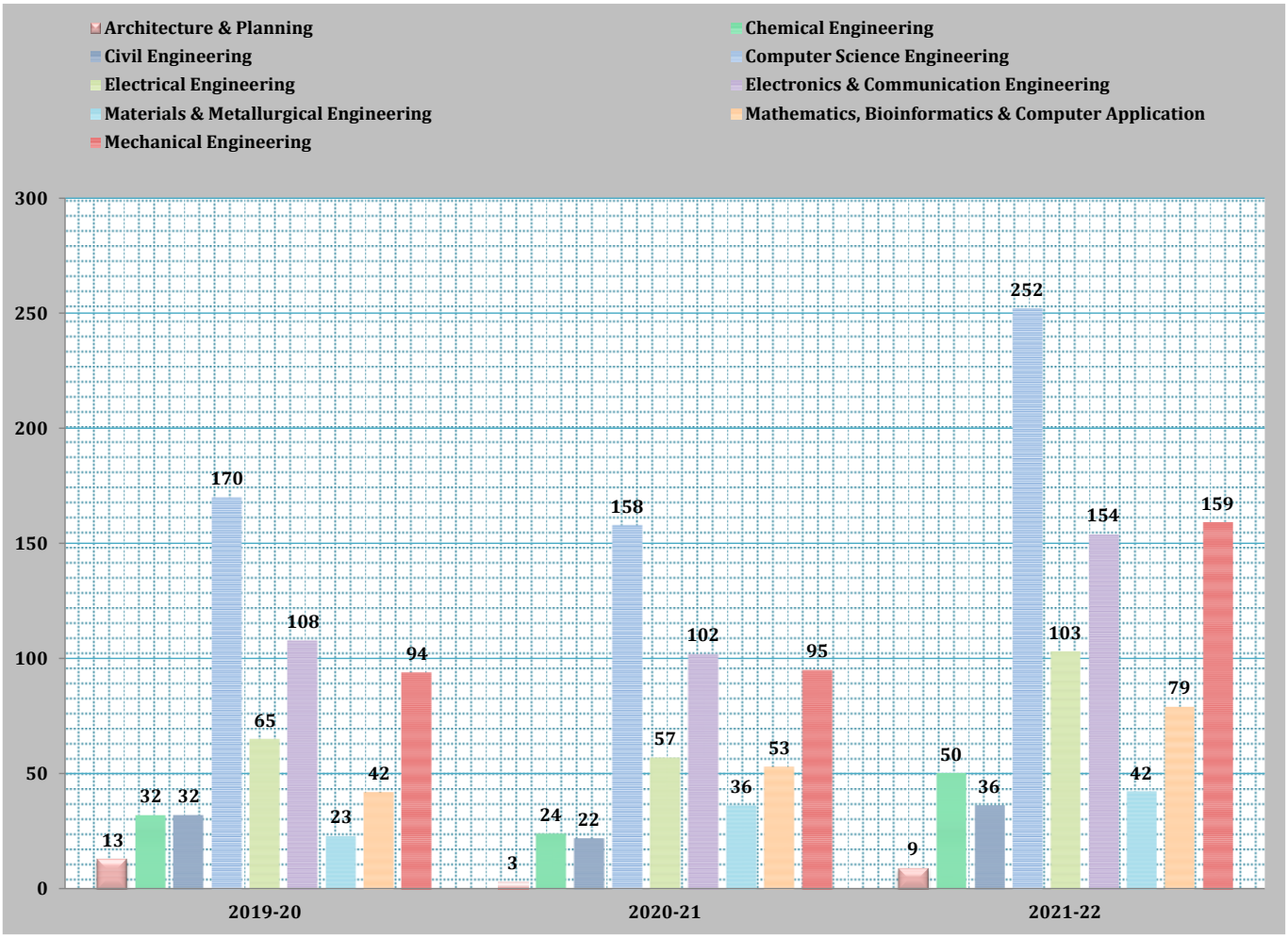
Silver Medal Recipients Session 2020-21

S.No.	Courses	Sch. No.	Name	GGPA	Position
1.	B.Tech. Civil Engineering	171111026	Deepesh Soni	9.17	2nd
2.	B.Tech. Mechanical Engineering	171116275	Varun Singh Bhadauria	9.10	2nd
3.	B.Tech. Electrical Engineering	171113112	Shivani Chhajed	9.34	2nd
4.	B.Tech. Electronics and Communication Engineering	171114028	Praful Likhitkar	9.11	2nd
5.	B.Tech. Computer Science and Engineering	171112305	Vivek Jain	9.52	2nd
6.	B.Tech. Chemical Engineering	171117010	Vipin Rathore	8.99	2nd
7.	B.Tech. Material Science and Metallurgical Engineering	171119067	Astha Dixit	8.92	2nd
8.	B. Planning	171109001	GauranganaBhadauria	8.78	2nd
9.	B. Architecture	161110209	Nikita Bhatia	8.81	2nd
10.	Master of Computer Applications	182120047	Abhishek Kesharwani	9.50	2nd
11.	Master of Business Administration	192121002	Abhinesh Vijayan Nair	8.86	2nd

Sponsored (Gold Medals) Recipients Session 2020-21

S.No.	Sponsored by	Category	Sch. No.	Name	Course/Branch	GGPA
1.	Dr.H.B.Khurasia Gold Medal	Overall meritorious girl student	171114150	Shreya Sood	B.Tech in Electronics and Communication Engineering	9.53
2.	Arpit Goyal Memorial Gold Medal	Topper in Computer Sc. Engg.	171112063	Akshay Kumar Mishra	B.Tech. in Computer Science and Engineering	9.68
3.	Aanya Jain (D/o Anekant and Neetu, USA)	Topper in First Year Girl Student	171117021	Amreen Abbas	B.Tech in Chemical Engineering	**CGPA**: 9.55
4.	Shaivi Jain (D/o Syadwad and Ekta, USA)	Topper in Second Year Girl Student	171111087	Niharika Patel	B.Tech in Civil Engineering	**CGPA**: 9.60

Training and Placement



S. No.	Name of Branch	No of Students Selected	Package Offered (highest) in Lakhs
1	Computer Science and Engineering	192	53.60
2	Electronics and Communication Engineering	119	40
3	Electrical Engineering	88	45.64
4	Chemical Engineering	48	13.32
5	Mechanical Engineering	135	16.50
6	Civil Engineering	35	13
7	Materials and Metallurgical Engineering	37	20

Major Employers of the year 2021-22

S. No.	Name of the firms/ organizations who have visited the campus	Branches	No of offers
1	Aarti Industries	Civil, Elec, Mech, Chem	25
2	Accenture	Civil, Elec, Mech, ECE, CSE, MME, Chem	18
3	Airtel Africa	CSE, M.Tech	12
4	Amazon	Elec, ECE, CSE, MCA, M.Tech	1
5	AU Bank	Elec, ECE, CSE	19
6	Bharti Airtel	ECE, CSE	10
7	Byjus (Faculty)	Civil, Elec, Mech, ECE, CSE, MME, Chem, M.Tech	20
8	Cairn Oil	Civil, Elec, Mech, ECE, MME, Chem, M.Tech	11
9	Cognizant Base +	Civil, Elec, Mech, ECE, CSE, MME, Chem, M.Tech	11
10	Deloitte	Elec, ECE, CSE	10
11	Deutsche Bank	ECE, CSE, MCA	16
12	Evosys	Mech, MME, Chem, MBA, MCA, M.Tech	21

13	EXL	Civil, Elec, Mech, ECE, CSE, MME, Chem, MCA	19
14	Flipkart	CSE	8
15	Genpact	Civil, Elec, Mech, ECE, CSE, MME, Chem, MCA	10
16	Goldman Sachs	Civil, Elec, Mech, ECE, CSE, MME, Chem, Arch, B.Plan, MBA, M.Tech	8
17	Google	CSE, MCA, M.Tech	3
18	HDFC	Civil, Elec, Mech, ECE, CSE, MME, Chem	12
19	Infosys(DSE)	Elec, ECE, CSE, MCA, M.Tech	9
20	Jio	ECE, CSE	10
21	JPMC	Elec, ECE, CSE, MCA	21
22	L&T	Civil, Elec, Mech, ECE, CSE, MME, Chem, Arch, M.Tech	35
23	Mathworks	Elec, Mech, ECE, CSE, M.Tech	1
24	Microsoft	CSE	3
25	MSCI	ECE, CSE, M.Tech	18
26	Ola Electric (SDE)	CSE	10
27	Optum	Elec, ECE, CSE, MCA, M.Tech	30
28	Oracle	Elec, ECE, ECE, M.Tech	17
29	PayTM	Elec, ECE, CSE,	15
30	PlanetSpark	Mech, MBA, MCA	19
31	Reliance	Elec, Mech, Chem	33
32	Samsung R&D Delhi	Elec, ECE, CSE	15
33	ServiceNow	Elec, ECE, CSE	4
34	Tekion	CSE	4
35	Vedanta	Elec, Mech	18
36	Wipro	Civil, Elec, Mech, ECE, CSE, MME, Chem	30
37	Zenser	Civil, Elec, Mech, ECE, CSE, MME, Chem	11
38	ZS Associates	Elec, ECE, CSE	14

INSTITUTE ACTIVITIES

STUDENT ACTIVITY

Student Associations: Not formed due to Pandemic COVID-19.

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

1. **NATIONAL SPORTS DAY WAS CONDUCTEDON 29th AUGUST 2021.**
2. **Online one day "SURYA NAMASKAR"** programmed has been conducted on 14th January 2022 for the staff, faculty and students of the MANIT.
3. **Conduction of Yoga Workshop:**
4. **Meditation Seminar:**
5. **Yoga Competition areconducted:**
   Yoga competition has been organized for the students of MANIT to encourage their for Yoga practices. It is proposed on 10th June 2021.
6. **Yoga March for the students are also been organized on 17TH June 2021.**
7. **Slogan writing competition for students are also been organized on 17th June2021.**
8. **Natioan Education Day**
9. **Constitution Day**
10. **Water Awareness campaign**, Jal Shakti Abhiyan, March 2022.

S. No.	Activity	Dates
1.	Vigilance Awareness Week 2021	26th Oct to 1st Nov 2021
2.	Education Day event activities	11th Nov 2021
3.	Constitution Day event activities	26th Nov 2021
4.	Orientation Week 2021	6th to 10th Dec 2021
5.	REGREEN Club, Energy Centre, MANIT Bhopal organized floral plantation activity in the centre premises	30th Mar 2022
6.	Energy Students conducted a Save Water Awareness campaign, JAL SHAKTI ABHIYAN at near by places.	30th Mar 2022

STUDENT ACTIVITY

Infrastructure Facilities

The Institute had witnessed noteworthy development in the infrastructural facilities during the period from April 2021 to March 2022. One such work was the construction of new 600 bedded Girls Hostel to accommodate the girl students in the institute campus.

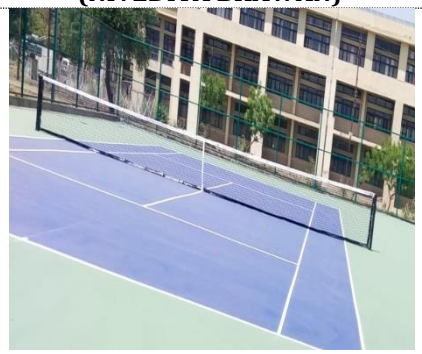
The hostel has quality amenities like spacious rooms, dining facilities, lifts, networking facilities, open spaces etc. Further the institute Guest House was extended with capacity augmentation of 12 rooms, meeting hall, lifts, open spaces etc.

The work of renovation of Sports Complex of the Institute was also completed with state-of-art facilities like Multipurpose Sports Hall, Tennis Court and other sports related facilites.

EXTENSION OF GUEST HOUSE

NEW 600 BEDDED GIRLS' HOSTEL (NIVEDITA BHAWAN)

NEW 600 BEDDED GIRLS' HOSTEL (NIVEDITA BHAWAN)



Sports Complex Facilities

Further the developmental works of internal painting in few academic buildings of the Institute and Construction of Open Drain and Cement Concrete Road near Hostel No. 3 & 4 was also completed, to create efficient workable environment in the institute. Such quality infrastructural development works in the Institute will facilitate the overall development of the inmates (especially students)of the MANIT Bhopal campus.

Central Library

Introduction: The Central library is divided into six distinct divisions, namely: Acquisition, Binding, 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 In-charge Librarian 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 (I/c 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: Post Vacant
Assistant Librarian: Pankaj Kumar Sharma (Working as In-charge Librarian since 31st March 2010-Till Date)
Information Analyst: N.A.
Retired Staff: 02 (Shri V.K. Pandey & Shri H.S. Dhakad)

Print Collection Added during 2021-2022

General Books: 219
Text Books: 229
Print Journals: Nil
Ph.D. Theses: 136
Total Collection of Central Library: 1, 53,744
Total Collection of SC/ ST Book Bank: 21,598 Total Collection of General Book Bank: 7,074

List of online Resources Available for 2021-2022 (Through E-Shodhsindhu)

S. No.	Name of Online Resource	Name of Publisher
1.	ACM Digital Library	ACM
2.	ASCE Journals	ASCE
3.	ASME Journals	ASME
4.	ISID Database	ISID
5.	URKUND Plagiarism Detection Software	ShodhShuddhi Access
6.	World e- Book Library	NDL Resource
7.	South Asia Archive	NDL Resource

List of online Resources Available for the year 2021-2022 (Subscribed by MANIT)

S. No.	Name of Online Resource	Name of Publisher / Service Provider
1.	Emerald ESS Special Package of Online Journals	Emerald Publishing
2.	CMIE Database	CMIE
3.	Springer Nature Online Journals	Springer Nature
4.	Mc Graw Hill (Express Library E-Books Package) for Mechanical Engineering, Civil, CSE, EE, Humanities, BSE, Management, Mechanical Engineering, Chemistry and ECE	McGraw Hill Education
5.	AIP E-Books Package	AIP Publishing
6.	Taylor and Francis's e-Books Package for Civil Engineering, CSE, EE, MME and Mechanical Engineering	Taylor and Francis
7.	PressReader (More than 8000 Newspapers and Magazines)	PressReader
8.	Springer Nature E-Books Package for CSE, Energy and EE	Springer Nature
9.	Taylor and Francis's e-Journals Package	Taylor and Francis

10.	De Gruyter E-Books Package for Management Studies & Chemistry	De Gruyter
11.	CUP Online Journals Package and Journal of Fluid Mechanics	CUP
12.	CUP E-Books Package for Energy Center, CSE, BSE, Management and Mechanical Engineering	CUP
13.	Wiley E-Books Package for CSE, Energy, Chemistry, Physics and Mechanical Engineering	John Wiley
14.	SAGE E-Books Package for Humanities and Management	SAGE
15.	Bloomsbury E-Books Package for Management Studies, Architecture & Planning	Bloomsbury
16.	Word Technologies e-Books Package for EE, Civil and Mechanical Engineering	Word Technologies
17.	World Scientific E-Books Package for Energy, Mechanical Engineering, BSE and Management Studies	World Scientific
18.	Elsevier E-Books Package for CSE and Energy Centre, Physics, Civil Engg. and Architecture & Planning	Elsevier
19.	IOP ESSScience Online Journals	IOP Publishing
20.	Taylor and Francis's e-Books Package for Electrical Engineering, Maths and Management Studies	Taylor and Francis's
21.	Taylor and Francis's e-Journals Package for Business Management & EconomicsJournals	Taylor and Francis's
22.	INFORMS Online Journals	INFORMS
23.	IOP E-Books Package for Concise Physics	IOP Publishing
24.	Taylor and Francis's e-Books Package for Civil Engineering, Electrical Engineering, MSME, Chemical Engineering and Physics, BSE, Mechanical, Architecture Energy & English Literature, Chemistry, ECE	Taylor and Francis
25.	RIBA e-Books Package	RIBA
26.	Emerald e-Books Series	Emerald
27.	Cleantech. NetBase	CRC Press
28.	TMH E-books Package for Humanities/ Management/ Business & General Reference	TMH
29.	CRC Physics & Chemistry NetBase	CRC Press
30.	Pearson E-book Package for Business & Trade, Business & Economics, and Humanities & Social Science	Pearson
31.	CRC Mechanical Engineering Netbase	CRC Press
32.	CRC Computer Science & Engineering Netbase	CRC Press
33.	CUP E-books Package	CUP
34.	CRC Business & Management NetBase	CRC Press
35.	CRC Industrial Engineering NetBase	CRC Press
36.	Cambridge University Press (CUP) E-books Package (Management Collection)	CUP
37.	Lecture Notes in Computer Science (LNCS) Series	Springer
38.	ScienceDirect (09 Subject collection)	Elsevier
39.	IEL Level-II	IEEE Inc.

The URL of above online resources is available on MANIT website

http://www.manit.ac.in/content/online-resources

E-Books Database:

1. World Scientific E-Books Package for Department of BSE, Management Studies, Mechanical Engineering & Energy, **Link available on Institute Website**
2. Elsevier's e-Books Package for Department of CSE & Energy, **Link available on Institute Website**
3. E-Books Package of SAGE Publication for Department of Humanities and Management Studies,**Link available on Institute Website**
4. Bloomsbury e-Books Package for Department of Management Studies,**Link available on Institute Website**
5. WT E-Books Package for Department of Electrical, Mechanical & Civil Engineering, Link **available on Institute Website**
6. CUP E-Books Package for Department of CSE, BSE, Energy & Mechanical Engineering, **Link available on Institute Website**

7. Springer-Nature e-Books Package for Department of CSE, EE 7 Energy Center, **Link available on Institute Website**
8. Taylor and Francis's e-Books Package for Department of Electrical, Civil, CSE, MME &Mechanical Engineering, **Link available on Institute Website**
9. AIP E-Books Package for Department of Physics, **Link available on Institute Website**
10. Wiley E-Books Packagefor Department of Physics, Chemistry, CSE, Mathematics & Energy Center, **Link available on Institute Website**
11. De Gruyter e-Books Package for Management Studies and Chemistry, **Link available on Institute Website**
12. McGraw Hill E-Books Package for Department of BSE, CSE, Civil, Mechanical, Electrical, Humanities & Management Studies, **Link available on Institute Website**
13. CMIE Database for Department of Management Studies, **Link available on Institute Website**
14. E-Books Package (Express Library) of McGraw Hill Education for Department of Mechanical Engineering, **Link available on Institute Website**
15. Elsevier's e-Books Package for Department of Physics, **Link available on Institute Website**
16. Taylor and Francis's e-Books Package for Department of Electrical Engineering, Mathematics Management Studies, **Link available on Institute Website**
17. Elsevier's e-Books Package for Department of Energy, **Link available on Institute Website**
18. Bloomsbury's e-Books Package for Department of Architecture & Planning, **Link available on Institute Website**
19. E-Books Package (Express Library) of McGraw Hill Education for Department of Chemistry and ECE, **Link available on Institute Website**
20. Elsevier's e-Books Package for Department of Chemistry, **Link available on Institute Website**
21. Taylor and Francis's e-Books Package for Civil Engineering, BSE, Mechanical Engineering, Architecture & Planning and Energy Centre, **Link available on Institute Website**
22. Taylor and Francis's e-Books Package for Department of English Language and Linguistic (08 Titles), **Link available on Institute Website**
23. Taylor and Francis's e-Books Package for Department of Chemistry, **Link available on Institute Website**
24. Taylor and Francis's e-Books Package for ECE, **Link available on Institute Website**
25. RIBA eBooks http://portal.igpublish.com/iglibrary/
26. EMERALD BME eBooks Series http://www.emeraldinsight.com/products/ebookseries/index.htm
27. Cleantech NetBasewww.crcnetbase.com
28. TMH Ebooks Package for Humanities / Management/ Business & General Reference http://lib.myilibrary.com
29. CRC Physics & Chemistry NetBasewww.crcnetbase.com
30. Pearson E-book Package for Business & Trade, Business & Economics, and Humanities & Social Science http://lib.myilibrary.com
31. CRC Mechanical Engineering Netbasewww.crcnetbase.com
32. CRC Computer Science & Engineering Netbasewww.crcnetbase.com
33. CUP E-books Package http://ebooks.cambridge.org/
34. CRC Business & Management Netbasewww.crcnetbase.com
35. CRC Industrial Engineering NetBasewww.crcnetbase.com
36. Cambridge University Press (CUP) E-books Package (Management Collection) http://ebooks.cambridge.org/
37. T& F e-Books Package for Civil Engineering, Electrical Engineering, MSME, Chemical Engineering and Physics www.taylorfrancis.com
38. Lecture Notes in Computer Science (LNCS) Series: www.springerlink.com http://www.springerlink.com/content/105633/?p=68c781cb75094cc8b0701bf87df45af3&pi=0
39. IOP E-books Package Concise Physics release-3 http://iopscience.iop.org/bookList/10/1?orderBy=date&orderDir=descending&collection=IOP+Concise+Physics&year=2017&submit=Go

Digital Library:

The details of online resources are available on institute website
Thesis and Dissertation: 1520

Online / Offline Database and Software: Library Management Software, KOHA
Turnitin and Anti plagiarism Checking Services
Total Number of Computer Available: 40

Facilities Created for Library Users

1. Circulation of Books
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:

- Developed a separate reading room for students.
- 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 O_2 facility is available.

Medical in charge of the dispensary

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

Medical Staff

Dr. Aditya Singh (MBBS), Mr. Santosh Choudhary (Pharmacist), Mrs. Laxmi (Nurse) and Mr. DevdattSahare (Jr. Assitant)

Visiting Consultant

Dr.Apoorv Jain (MBBS, MD Derma,) Skin Specialist, Dr. Bharti Soni (MBBS, MD Ophthalmology), Opthamologist 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

TEQIP-III

Technical Education Quality Improvement Program (TEQIP) phase-3 project started in April 2017 for a duration of three years with participation 191 technical institutions across the country including IITs, IITs, CFTs, state Government institutes and autonomous universities. Phase- project was specifically focused on improving on quality of technical education with the help good performing institutes by forming a pair of mentor and mentee institute. MANIT, Bhopal was selected a mentor institute for BTKIT, Dwarahat (Govt of Uttarakhand Institute).

Initially, MANIT Bhopal has received an allocation of Rs. 7.0 Cr. Later, Rs. 70,00,0000.00 were allocated on account exceptional performance. Further, additional fund of 2.0 Cr was allocated to develop Centre of Excellence at Civil Engineering Department, MANIT. The fund was utilized to purchase various in various heads. Equipments were purchased like networking equipments, research equipments for PG and Ph. D. lab. Some minor work was also constructed at Institute premise.Fellowship for research scholars was also given from TEQIP-III. Faculty development programs like training/workshop/Conference were funded to attend.The expenditures were done in different heads as per following table.

Sr. No.	Head	Fund utilized, Rs.
Procurement of goods		
1.	Equipments	3,75,57,533.00
2.	Minor civil works	21,55,319.00
Academic Processes		
3.	Improve students' Learning	12,00,979.00
4.	Industry-Institute Interaction	3,13,832.00
5.	Ph. D. Assistantships	344,65,162.00
6.	Faculty/staff development and motivation	26,90,766.00
7.	Research and Development	4,83,251.00
8.	Mentoring/Twinning system	11,29,876.00
9.	Reforms and Governance	12,85,995.00
10.	Operation & maintenance of equipments	22,68,681.00