

# Annual Report 2022-23



Inauguration of Indoor Sports Complex



Pariksha pe Charcha - 2023



MoU between IIT Indore & RRCAT Indore



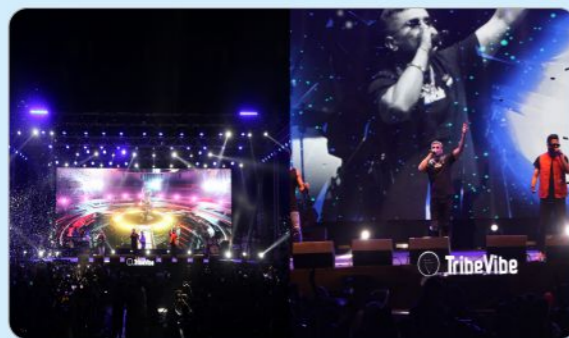
Statue unveiling of Devi Ahilya Bai Holkar at Girl's Hostel by Director IIT Indore



International Yoga Day Celebration



Technical Competitions



Cultural Celebration



Independence Day Celebration



भारतीय प्रौद्योगिकी संस्थान इन्दौर  
Indian Institute of Technology Indore

Khandwa Road, Simrol, Indore-453552, Madhya Pradesh, India  
Website: [www.iiti.ac.in](http://www.iiti.ac.in)



भारत 2023 INDIA



भारतीय प्रौद्योगिकी संस्थान इन्दौर  
Indian Institute of Technology Indore



भारत 2023 INDIA





Welcome to IIT Indore

Date of Visit

Name K SANTANU MURTHY

Address SECRETARY HIGHER EDUCATION, GOI

E-mail ID \_\_\_\_\_ Mobile \_\_\_\_\_

Comments It was with great satisfaction that one felt seeing the rise of the Institution in a short span of time. The foundation laid by all the faculty and administration would leave a sound base for the next phase of development of the Institution, which I wish them the very best. The ideas shared today I am sure will play a significant role in making this.

Date 3/5/22 Signature of Visitor [Signature]

Thank you for your visit. Your feedback, comments are valuable to us



Welcome to IIT Indore

Date of Visit 8/8/2022

Name DR VK SARASWAT

Address Member NITI Aayog.

E-mail ID Vksaraswat1949@gmail.com Mobile 9599622992

Comments IIT (Indore) has come of age in the last five years. It was heartening to listen to the outstanding research work being done at IIT. It has the right ecosystem to be the hub of MP in Electronics system Design and Manufacturing. We need to involve industry in this mission.

I wish the faculty and students all the best in future endeavours.

Date \_\_\_\_\_ Signature of Visitor [Signature]

Thank you for your visit. Your feedback, comments are valuable to us



Welcome to IIT Indore

Date of Visit 03/05/2022

Name Dharmendra Pradhan

Address \_\_\_\_\_

E-mail ID \_\_\_\_\_ Mobile \_\_\_\_\_

Comments I wish best future of this institution. This IIT should be a research center for central India.

Date \_\_\_\_\_ Signature of Visitor [Signature]

Thank you for your visit.



Welcome to IIT Indore

Date of Visit 23/10/23

Name Sanjay Dubey

Address P.S. Energy & Renewable Energy

E-mail ID sanrachna@hotmail.com Mobile 8889150333

Comments Loved interacting with faculty & student. Excellent facilities for interaction and studies. Loved being here particularly because I was involved since the inception of the institute.

Date \_\_\_\_\_ Signature of Visitor [Signature]

Thank you for your visit. Your feedback, comments are valuable to us



Welcome to IIT Indore

Date of Visit 17.7.2023

Name Prof. Dr. Volker Epping

Address Leibniz University Hannover  
Welfengarten 1, 30167 Hannover

E-mail ID epping@juo.uni-hannover.de Mobile 0163 762 8248

Comments It was very impressive visit. I look forward to a growing fruitful cooperation. Thank you very much for your invitation and your great hospitality.

Date 17.7.2023 Signature of Visitor [Signature]

Thank you for your visit. Your feedback, comments are valuable to us



Welcome to IIT Indore

Date of Visit \_\_\_\_\_

Name JAIVEER SINGH BHADORA

Address E-1, DIG BUNGLOW CAMPUS, AN ROAD INDORE

E-mail ID Jaiveer5619@gmail.com Mobile 94251-22318

Comments It's an eye opening learning session in IIT Indore. Thank

Date 4/11/23 Signature of Visitor [Signature]

Thank you for your visit. Your feedback, comments are valuable to us



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	• IITI Drishti CPS Foundation (Section 8 Company)	
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	• Jaya Prakash Narayan National Centre of Excellence	



## About Us

In keeping with India's vision to become a world leader in Science and Technology and to usher in a new revolution, resulting in unprecedented economic growth, the Government of India reassessed the need for technical manpower and decided to set up eight new IITs. Six of them started functioning back in the academic year 2008-09. These were established at Hyderabad, Gandhinagar, Rajasthan, Ropar, Patna, and Bhubaneswar. IIT Indore and IIT Mandi started functioning in July 2009.

Indian Institute of Technology Indore, located in Madhya Pradesh, known as IIT Indore or IITI, is an Institute of National Importance established by the Government of India in 2009. It is one of the eight new IITs started by the Ministry of Human Resource Development (India), Government of India. The Institution started functioning from 2009-10 on a temporary campus at the Institute of Engineering and Technology of Devi Ahilyabai University under the mentorship of IIT Bombay. Shri Arjun Singh, the Union HRD Minister, laid the foundation of the permanent campus, spread over an area of around 501.42-acre (2.1 km<sup>2</sup>), on 17th February 2009 at Simrol, a location on Khandwa Road about 25 km from the city of Indore. Since February 2016, IIT Indore has started functioning from its permanent campus.

Infrastructure of the Institute: Total area 501 acres. Total Constructed area: 2,21,000 sq. mtr. which includes 5 hostels, Academic PoD Buildings, Learning Resource Center (Central Library, Administrative Building, Lecture Hall Complex with Seminar Hall and Auditorium, Community Health Center, Central Dining Facility, 3 Residencial Units, Sports Complex (Indoor), Kendriya Vidyalaya Building and Allied Services).

### Departments/Streams:

- Astronomy, Astrophysics and Space Engineering
- Biosciences and Biomedical Engineering
- Computer Science and Engineering
- Electrical Engineering
- Mechanical Engineering
- Metallurgical Engineering and Materials Science
- Civil Engineering
- Humanities and Social Sciences
- Physics
- Chemistry
- Mathematics

### Courses available:

- BTech
- MSc, MSc+PhD dual degree
- MS (Research), MS (Research)+PhD dual degree
- MS Degree in Data Science and management (MS-DSM)
- BTech + MTech Dual degree
- MTech, MTech+PhD dual degree
- Student Exchange Program (SEP)
- PhD

### Office of the Registrar Meetings of the Authorities held during the F.Y: 2022-2023

Board of Governors	:	Five meetings held on 29.04.2022, 11.08.2022, 14.12.2022, 23.01.2023 and 16.02.2023
Finance Committee	:	Five meetings held on 29.04.2022, 11.08.2022, 14.12.2022, 23.01.2023 and 16.02.2023
Building and Works Committee	:	Three meetings held on 11.04.2022, 13.06.2022 and 31.10.2022
Senate	:	Four meetings held on 06.04.2022, 21.07.2022, 11.11.2022 and 20.03.2023





## Mission

The driving force behind the 21st Century is the development of knowledge-intensive societies. It has led to the establishment of new Institutes of higher learning in India. Indian Institute of Technology Indore, established in 2009, is part of the initiative that envisages India as a global knowledge and technology leader. Continuing with the tradition of the older IITs, IIT Indore aims to play an active role in propelling India on her growth trajectory by focusing on research-based education and innovation-driven research and entrepreneurship. IIT Indore aims to achieve this mission with humanistic concerns.



## Vision

### Academics

- To inculcate and promote an academic community with independence of thought and free expression of research and innovation ideas.
- To provide a balance of continuously updated knowledge with extensive hands-on training on sophisticated facilities.
- To start new academic programs in futuristic areas such as data science, electric vehicles, intelligent transport system, space engineering, Indian scientific knowledge, etc.
- To increase the internationalization of the Institute by selecting an increasing number of international students and engaging distinguished international faculty in teaching and research.
- To increase candidates from Industries, Defense forces, and Engineering Institutions in different PG and PhD programs.
- To increase the involvement of adjunct faculty from Industries for teaching, research, and innovation.
- To involve experts from reputed industries and Foreign Universities in curricula design.

### Research, Development, and Entrepreneurship

- Promote interdisciplinary research in science, engineering, humanities and social sciences.
- Conduct disruptive and socially impacting research on some chosen areas such as sustainable development, climate change, and food and water security.
- Promote industry-oriented research leading to new products, processes, and technologies.
- Focus on the convergence of life sciences, medical sciences, and agricultural sciences with engineering.
- Promote the culture of start-ups and entrepreneurship by establishing of Industrial Research Park, which will be a focal point in Central India.
- Aggressive patenting and protection of IPR.



## Objectives

- Enhancement of academic, technological, and social outreach of the Institute through societal research, education, healthcare, sanitation, and rural development.
- Development of world-class research and learning facilities for industries, teaching, and research institutions.
- Skill development and scaling up the research and innovation towards the national requirements.
- To contribute to the development of world-class technological innovation in Engineering and Biomedical instrumentation, Defense, E-vehicles, alternate energy resources, etc.





## Director's Message

Indian Institute of Technology Indore (IIT Indore) has expanded its research, academic, and outreach activities exponentially since its establishment in July 2009. Now the Institute is amongst the top-ranking institutions in the country and has also made its debutant entry in the most recognized QS World Ranking as well. The Institute has more than 2400 students on its roll and 180 faculty members from a diverse range of disciplines and research expertise.

With our well-recognized BTech programs in the disciplines of Civil Engg, Mechanical Engg, Computer Science and Engg, Electrical Engg, and Metallurgical Engg, we are now commencing **4 New BTech Programmes** in Space Science and Engg, Chemical Engg, Mathematics and Computing and Engineering Physics. From Academic Year 2023-24, we are also expanding our **MTech Programmes in 6 new specializations** besides successfully running the MTech programmes in 9 disciplines. I take pride in sharing that amongst these, **2 new MTech programmes are designed specifically for Automobile Industry and for Defence Technology**. Further, to enrich our Undergraduate students' interaction with the industry professionals, we are creating the **Academic Bank of Credit System** which will open opportunities for the industry personnel to register for BTech Programmes. As per the objectives of the **New Education Policy (NEP)**, the BTech programmes will be open to qualified and experienced industry professionals and there will be flexibility in undertaking courses and the duration of completion of the programme. Besides reaching out to industry through these academic programmes we have also created **opportunities for students and teachers of Govt. Engineering Colleges of Madhya Pradesh (MPGECs)**. Second year students of MPGECs can apply for a two-week interactive programme at IIT Indore campus, and 50 meritorious students will get this opportunity. Similarly, **50 meritorious Final Year BTech/BE students of MPGECs will get a chance to undertake BTech Project and courses of the 8th Semester and stay on IIT Indore campus for one semester**. IIT Indore is also opening admissions to **PhD programme under College Teachers category for the young faculty members of MPGECs**. We also offer a joint MS degree in Data Science and Management with Indian Institute of Management Indore, which is an online program and is becoming very popular. We offer PhD degrees in 19 disciplines of Technology, Sciences and Humanities and Social Sciences, and currently we have more than 580 PhD Scholars enrolled.

Besides creating academic interaction avenues for industry, teachers, and students from all over the country, particularly Madhya Pradesh, we are also **enhancing students' learning experiences through fascinating initiatives**. The establishment of the **Centre for Entrepreneurship Education and Development (CEED)** offers entrepreneurship courses for BTech students, and recently it organized

Boot Camps for training on Entrepreneurial Skills and a Faculty Development Programme successfully with huge response from students and teachers. To facilitate entrepreneurial activities a **Section 8 Company Advanced Centre for Entrepreneurship (ACE) Foundation** is also registered. To encourage our students and faculty members to translate their excellent research ideas into viable products or technologies, the **Centre for Translational Research (CTR)** has been established. The centre is undertaking collaborative projects with industries. These projects are the outcome of the Industry Academia Conclave organized by the Institute last year. To provide advisory support to all the activities intersecting academia and industry through research, an **Industrial Advisory Board** is also established at the Institute.

Research has been IIT Indore's forte since its inception in the year 2009. To **accelerate the research in fundamental, experimental, and translational research for the benefit of society and the industry**, the Institute has launched various schemes for its students and faculty members. The **BTP Projects with potential tech solutions may receive a funding of Rs. 5 Lakhs**; PhD students can compete for "**Advanced Lab Project**" scheme for visit of 1-3 months to their area's advanced laboratory anywhere in the world. The young faculty members can apply for a **Seed Grant** of Rs. 10 Lakhs and additionally under the "**Dream Lab Collab Scheme**" seek additional funding of Rs. 5 lakhs for international visits to support research proposals with excellent possibilities. We are also announcing **15 Postdoctoral** Fellowships for passing out PhD Scholars whose doctoral research can be translated into a product or patent. To appreciate the recognizable contributions of the senior faculty members in research and teaching, **11 Institute Chair Professors'** positions will be awarded. The Institute also received **BIS Chair Professorships** signifying the dedicated research being conducted by our faculty members. The increasing levels of excellence in teaching, research, and technology development, including patents, is evident through our rising competition among faculty members and is recognized every year through several Institute awards as well. The Institute also received notable research projects funding including the **DRISHTI Cyber Physical System project**, where translational research and technology development activities in the domain of Cyber Physical Systems are being carried out. The total outlay of the project is about Rs. 100 crores which is supported by the Department of Science and Technology, Government of India. The Institute established the **Jai Prakash Narayan National Centre of Excellence in the Humanities (JPN Centre)** with a total funding of Rs. 9.68 crores from the Ministry of Education. This will be a national centre undertaking research, training, and academic activities in the areas of environmental and digital humanities. The Institute also has several **Centers of Excellence supported under the DST-FIST** programme with a total funding outlay of Rs. 22 crores.

IIT Indore is also exceeding in making the campus a truly **smart, lean, and green campus** keeping with our aim to be environmentally friendly. We **rejuvenated 6 natural water bodies** on the campus which will significantly contribute to groundwater recharge. With gratitude to the Honorable Minister of Education's grant we are also making "**Amrit Sarovar**" which will be a human made large water body. Additionally, **8 check dams** in the natural catchments on the campus for soil and water conservation are also being made. **Forest Area conservation and development** is also in progress with the construction of Forest Beat Guards' Office and accommodation and plans for conservation of forest plants and animal species. **Plantation Drive** in every monsoon is becoming a culture at IIT Indore with an ambition to plant 700 Peepal Saplings (Sacred Fig), 1000 Neem Saplings and other fruit, flowering, and avenue trees along a trench of 9 kms on the campus. Programmes are being designed, new courses are being formulated to make education holistic in nature and innovative methods of teaching and learning are being introduced.



Life for young students with their academic ambitions can be challenging at times, but at IIT Indore, the efforts are incessantly made to enrich life through various steps. Two major programmes in this line include “LIVE” for living a self-created balance emotionally and academically. The second initiative is “The Genesis” which is an induction programme of two-week duration for the new entrants to assimilate the information and acclimatize themselves to the exciting and challenging life.

With immense pride and pleasure, we are organizing the **Eleventh Convocation of the Institute on July 15, 2023**. **Professor Dr. Volker Epping, President of Leibniz University at Hannover and Vice President of TU9 Universities Alliance**, will grace the occasion as the Chief Guest. The Institute is also honoured to have **Mr. Senapathy ‘Kris’ Gopalakrishnan former CEO and Managing Director Infosys** as our Guest of Honour. It is my great delight to share that this year we have 554 students graduating from the Institute. All the students have made their best efforts in achieving excellence in their academics, co-curricular and sports activities and won accolades. The distinction in academic performance is recognized through the award of various medals. The proud medalists include the recipients of the President of India Gold Medal, Institute Silver Medals, Best BTech Project Award, Buti Foundation Gold Medal for the best woman student securing the highest CPI among all graduating students of Masters Programmes; and VPP Menon Gold Medal for Best PhD Thesis by a Graduating Woman candidate. We also appreciate the graduating batch who have notably worked hard to acquire all the laboratory skills during their reduced stay of two years on campus. I wish all the graduating students a very bright future and all the success in their career and life.

**Professor Suhas S Joshi**

Director IIT Indore

## Board of Governors, IIT Indore

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### Chairman

**Professor Deepak B. Phatak**  
Indian Institute of Technology Indore

### Members

**Professor Suhas S. Joshi**  
Director,  
Indian Institute of Technology Indore

**Shri Rakesh Ranjan**  
Additional Secretary (TE), Govt. of India,  
Ministry of Education, New Delhi

**Shri Manu Shrivastava**  
Principal Secretary  
Department of Technical Education & Skill Development,  
Govt. of Madhya Pradesh

**Professor Yogesh M. Joshi**  
Department of Chemical Engineering, IIT Kanpur

**Professor Dhananjay V. Bhatt**  
Professor (Retd.), Department of Mechanical Engineering  
S. V. National Institute of Technology, Ichchhanath, Surat

**Shri Manoj Kohli**  
Executive Chairman, SB Energy (Soft Bank Group) New Delhi

**Prof. Preeti A. Bhoje (Senate Nominee)**  
Department of Physics  
Indian Institute of Technology Indore

**Prof. Prabhat Kumar Upadhyay (Senate Nominee)**  
Department of Electrical Engineering  
Indian Institute of Technology Indore

**Mr. S. P. Hota**  
Registrar and Secretary to BoG  
Indian Institute of Technology Indore



## Institute Functionaries



**Director  
IIT Indore**  
Prof. Suhas S. Joshi



**Dean, Academic Affairs**  
Prof. Devendra Deshmukh  
(w.e.f. Jan 1, 2020)



**Dean, Academic Affairs**  
Prof. Vipul Singh  
(w.e.f. June 2, 2023)



**Dean, Administration**  
Prof. Pritee Sharma  
(w.e.f. Jan 1, 2020)



**Dean, Administration**  
Prof. Sandeep Chaudhary  
(w.e.f. February 23, 2023)



**Dean, Faculty Affairs**  
Prof. Abhishek Srivastava



**Dean, Student Affairs**  
Prof. Srivathsan Vasudevan



**Dean, Infrastructure Development**  
Prof. Manish Kumar Goyal



**Dean, Research &  
Development**  
Prof. I.A. Palani



**Dean, International Affairs &  
Outreach**  
Prof. Avinash Sonawane



**Dean, Resources Generation**  
Prof. Anand Parey



**Registrar, IIT Indore**  
Mr. S. P. Hota

## Associate Deans

Academics (PG & Ph.D. Programs)	:	Dr. Eswara Prasad Korimilli
Academics (Infrastructure)	:	Dr. Antony Vijesh
Academics (UG Programs)	:	Prof. Ram Bilas Pachori
Faculty Affairs	:	Prof. Amod C. Umarikar (since Nov 2022)
Research and Development- I	:	Prof. Aruna Tiwari
Research and Development- II	:	Dr. Bodhisatwa Mazumdar
Administration	:	Dr. Santosh Hosmani
Infrastructure Development-I	:	Dr. Guru Prakash
Student Affairs	:	Dr. Sanjeev Singh
International Relations-I	:	Prof. Raghunath Sahoo
International Relations-II	:	Prof. Sanjay Kumar Singh

## Heads of Departments

Humanities and Social Sciences	:	Prof. Nirmala Menon (From January 3, 2020 to March 31, 2023) Prof. Ruchi Sharma (w.e.f. April 1, 2023)
Computer Science & Engineering	:	Dr. Somnath Dey
Electrical Engineering	:	Prof. Vipul Singh (From August 9, 2019 to August 23, 2022) Prof. Vivek Kanhangad (w.e.f August 24, 2022)
Mechanical Engineering	:	Prof. Santosh Kumar Sahu (From February 11, 2020 to March 31, 2023) Prof. Shanmugam Dhinakaran (w.e.f. April 1, 2023)
Chemistry	:	Prof. Biswarup Pathak (From January 8, 2020 to March 31, 2023) Prof. Tushar Kanti Mukherjee (w.e.f April 1, 2023)
Mathematics	:	Dr. Niraj Kumar Shukla
Physics	:	Prof. Pankaj R. Sagdeo
Astronomy, Astrophysics and Space Engineering	:	Prof. Abhirup Datta
Biosciences and Biomedical Engineering	:	Prof. Amit Kumar
Metallurgical Engineering and Materials Science	:	Dr. Vinod Kumar (From January 13, 2020 to March 29, 2023) Dr. Ajay Kumar Kushwaha (w.e.f March 30, 2023)
Civil Engineering	:	Dr. Abhishek Rajput

## Professor In-charge of Centres

Centre of Advanced Electronics	:	Prof. Mukesh Kumar
Computer and Information Technology Centre	:	Dr. Neminath Hubballi
Centre of Futuristic Defense and Space Technology	:	Dr. Indrasen Singh
Centre for Entrepreneurship Education and Development	:	Dr. Swaminathan R.
Centre for Rural Development and Technology	:	Dr. Debayan Sarkar
DST-FIST Centre of Excellence in Gear Engineering	:	Prof. Neelesh Kumar Jain
Sophisticated Instrument Centre (SIC)	:	Prof. Apurba K. Das
Centre for Indian Scientific Knowledge Systems	:	Prof. G. S. Murthy
Centre for Electric Vehicle and Intelligent Transport Systems	:	Prof. Amod C. Umarikar
Counselling Services	:	Prof. Aruna Tiwari
Training & Placement	:	Dr. Pavan Kumar Kankar
Central Workshop	:	Dr. Dan Sathiaraj



## Members of Senate of IIT Indore

### Chairman

**Professor Suhas S. Joshi**  
Director, IIT Indore

### External Experts

<b>Professor Himanshu Rai</b>	Director, IIM Indore
<b>Shri Shankar V. Nakhe</b>	Director, RRCAT
<b>Mr. B Anil Baliga</b>	Executive Vice President, VE Commercial Vehicles Ltd.
<b>Professor Abhiram G. Ranade</b>	Professor, IIT Bombay
<b>Professor Ajay Kumar Jain</b>	Professor, MDI, Gurgaon

### Deans

<b>Professor Vipul Singh</b>	Dean, Academic Affairs
<b>Professor Sandeep Chaudhary</b>	Dean, Administration
<b>Professor Avinash Sonawane</b>	Dean, International Relations
<b>Professor Manish Kumar Goyal</b>	Dean of Infrastructure Development
<b>Professor I.A. Palani</b>	Dean, Research and Development
<b>Professor Srivathsan Vasudevan</b>	Dean, Student Affairs
<b>Professor Anand Parey</b>	Dean, Alumni and Corporate Relations
<b>Professor Abhishek Srivastava</b>	Dean, Faculty Affairs
<b>Professor Devendra L. Deshmukh</b>	Dean, Educational Outreach

### Head of Departments

<b>Dr. Abhishek Rajput</b>	HOD, Civil Engineering
<b>Dr. Somnath Dey</b>	HOD, Computer Science and Engineering
<b>Professor Vivek Kanhangad</b>	HOD, Electrical Engineering
<b>Professor Shanmugam Dhinakaran</b>	HOD, Mechanical Engineering
<b>Dr. Ajay Kumar Kushwaha</b>	HOD, Metallurgy Engineering and Materials Science
<b>Professor Amit Kumar</b>	HOD, Biosciences and Biomedical Engineering
<b>Professor Abhirup Datta</b>	HOD, Astronomy, Astrophysics and Space Engineering
<b>Professor Tushar Kanti Mukherjee</b>	HOD, Chemistry
<b>Dr. Niraj Kumar Shukla</b>	HOD, Mathematics
<b>Prof. Pankaj R. Sagdeo</b>	HOD, Physics
<b>Professor Ruchi Sharma</b>	HOD, Humanities and Social Sciences

## Professors

Professor Narendra S. Choudhary	Computer Science and Engineering
Professor Neelesh Kumar Jain	Mechanical Engineering
Professor Anand Parey	Mechanical Engineering
Professor Ram Bilas Pachori	Electrical Engineering
Professor Abhinav Kranti	Electrical Engineering
Professor Vimal Bhatia	Electrical Engineering
Professor Rajneesh Misra	Chemistry
Professor Suman Mukhopadhyay	Chemistry
Professor Subhendu Rakshit	Physics
Professor Krushna R. Mavani	Physics
Professor Sarika Jalan	Physics
Professor Sandeep Chaudhary	Civil Engineering
Professor Avinash Sonawane	Biosciences and Biomedical Engineering
Professor G. S. Murthy	Biosciences and Biomedical Engineering
Professor Santosh Kumar Vishvakarma	Electrical Engineering
Professor Shaibal Mukherjee	Electrical Engineering
Professor Vipul Singh	Electrical Engineering
Professor Prabhat Kumar Upadhyay	Electrical Engineering
Professor Trapti Jain	Electrical Engineering
Professor Mukesh Kumar	Electrical Engineering
Professor Manish Kumar Goyal	Civil Engineering
Professor Neelima Devarakonda Satyam	Civil Engineering
Professor I. A. Palani	Mechanical Engineering
Professor Bhupesh Kumar Lad	Mechanical Engineering
Professor Santosh Kumar Sahu	Mechanical Engineering
Professor Ritunesh Kumar	Mechanical Engineering
Professor Dhinakaran Shanmugam	Mechanical Engineering
Professor Aruna Tiwari	Computer Science and Engineering
Professor Abhishek Srivastava	Computer Science and Engineering
Professor Kapil Ahuja	Computer Science and Engineering
Professor Abhirup Datta	Astronomy, Astrophysics and Space Engineering
Professor Amit Kumar	Biosciences and Biomedical Engineering
Professor Prashant Kodgire	Biosciences and Biomedical Engineering
Professor Sk. Safique Ahmad	Mathematics
Professor Apurba Kumar Das	Chemistry
Professor Sampak Samanta	Chemistry
Professor Sanjay Kumar Singh	Chemistry
Professor Biswarup Pathak	Chemistry
Professor Nirmala Menon	Humanities and Social Sciences
Professor Pritee Sharma	Humanities and Social Sciences
Professor Ruchi Sharma	Humanities and Social Sciences
Professor Preeti Anand Bhoje	Physics
Professor Rajesh Kumar	Physics
Professor Sudeshna Chattopadhyay	Physics
Professor Parasharam M. Shirage	Metallurgy Engineering and Materials Science
Professor Swadesh K. Sahoo	Mathematics



<b>Professor Raghunath Sahoo</b>	Physics
<b>Professor Amod C. Umarikar</b>	Electrical Engineering
<b>Professor Vivek Kanhangad</b>	Electrical Engineering
<b>Professor Srivathsan Vasudevan</b>	Electrical Engineering
<b>Professor Devendra L. Deshmukh</b>	Mechanical Engineering
<b>Prof. Pankaj Ramesh Sagdeo</b>	Physics
<b>Prof. Somaditya Sen</b>	Physics
<b>Prof. Ankhi Roy</b>	Physics
<b>Prof. Mobin Shaikh</b>	Chemistry
<b>Prof. Anjan Chakraborty</b>	Chemistry
<b>Prof. Tushar Kanti Mukherjee</b>	Chemistry

### Other Authorities

<b>Dr. Jayaprakash Murugesan</b>	Chief Warden
<b>Dr. Sharad Gupta</b>	Convener, Health Center Advisor Committee
<b>Dr. Anand Petare</b>	Workshop Superintendent, Central Workshop

### Student Representatives (for non-evaluation item only)

<b>General Secretary, Student Gymkhana</b>	Ex-officio
<b>Academic Secretary, Student Gymkhana</b>	Ex-officio

### Secretary

<b>Mr. S. P. Hota</b>	Registrar, IIT Indore
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## Academic Affairs

Academic Affairs of the institute oversees strategic plans to conduct all academic activities of the students enrolled under each academic program. This office is functioning according to a planned Academic Calendar prepared every semester to cover up the academic curriculum of BTech, MTech, MSc, MS (Research) and PhD including dual degree programs as per the guidelines, rules and policies framed and approved by the Institute Senate.

### Main highlights of Academic Affairs

- Dedicated well equipped newly constructed Takshashila Lecture Hall Complex, Vikarmshila Seminar Hall (consisting of 4 Seminar halls) and Nalanda Auditorium with State-of-the-Art Audio Video facilities.
- The Institute have 27 students who have awarded with this prestigious Prime Minister Research Fellowship (PMRF) scholarship award during 1 April 2022 to 31 March 2023.
- To encourage the girls students towards the higher studies IIT Indore introduced new scholarship for all the girls UG students in the year 2022.
- Introduced 3-Days: Life Skill Development workshop for the newly joined B.Tech students for the physical, mental and social well-being of the students.
- First student from B.Tech Program selected and undergone for Student Exchange Programs in IMT Atlantique under Charpak Exchange Scholarship.
- As per the directions of the MoE, IIT Indore has successfully registered to participate in Academic Bank of Credit.
- The institute started following new academic programs in the year 2022-23:
- M.Tech. in Thermal Energy Systems (TES)
- The institute Senate approved to offer 13 new academic programs in various departments from the academic year 2023-24. The programs are as follows:
- B.Tech. in Space Science and Engineering
- B.Tech. in Chemical Engineering
- B. Tech. in Mathematics and Computing
- B.Tech. in Engineering Physics
- M.Tech. in Computer Science and Engineering (CSE)
- M.Tech. in Water, Climate and Sustainability (WCS)
- MTech in Biomedical Engineering (BME)
- M.Tech. in Applied Optics and Laser Technology (AOLT)
- M.Tech. in Structural Engineering (SE)
- M.Tech. in Defence Technology (DT)
- Ph.D. program offered by the Centre for Rural Development and Technology (CRDT)
- Ph.D. program offered by the Center for Electric Vehicle and Intelligent Transport Systems (CEVITS)
- Ph.D. program offered by the Center of Futuristic Defense and Space Technology (CFDST)
- With the motto of "Gyanam Sarvjan Hitaay" IIT Indore signed MOU with many national and international institutions to foster student exchange programs, research and developments, quality improvement programs and workshops.
- Institute started VPP MENON GOLD MEDAL from the year 2022 for the best Ph.D. dissertation of all graduating girls students at IIT Indore.
- Introduced guidelines to provide financial support upto Rs.1.20 lakh to students for attending and

## Academic Affairs

presenting research papers in the national and international conferences.

- In March 2023, Senate approved the In-bound Program for meritorious students UG (BE/ B.Tech.) from Government Engineering Colleges of Madhya Pradesh during 7th and 8th Semester. Students will be mentored by IIT Indore faculty during this period in the project and course work.
- The Senate approved in March 2023 the Part Time Ph.D. program for College Teacher of Govt. Engineering Colleges of M.P. They can take admission for Ph.D. Programme (part time) at IIT Indore in College Teacher category. The faculties will be able to pursue their PhD at IIT Indore while fulfilling their teaching duties at their parent institutions.
- Academic Office started giving degree on Block Chain Technology as well from the convocation 2022. A digitally secured and authenticated educational document record of graduated students.

### Student Enrolment in last10 years

Academic Programs	Academic Year									
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
PhD (Including Dual Degree)	93	120	83	116	89	189	106	159	200	115
MTech	24	30	31	34	62	41	78	74	62	152
MSc	20	24	47	56	69	80	102	116	100	110
MS (Research)	-	-	-	-	7	21	24	32	28	25
BTech	117	111	258	249	265	283	351	355	358	470
Preparatory Course	-	-	-	-	-	4	-	10		
MS–Data Science Management (With IIM Indore)	-	-	-	-	-	-	-	39	51	81
<b>TOTAL</b>	<b>254</b>	<b>285</b>	<b>419</b>	<b>455</b>	<b>492</b>	<b>618</b>	<b>670</b>	<b>785</b>	<b>799</b>	<b>953</b>

### Degree Awarded in last 10 years

Academic Programs	Awarding Year										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PhD(Including	-	6	23	24	38	67	83	58	109	61	82
MTech	-	-	5	22	25	26	29	57	41	65	62
MSc	-	-	14	20	22	41	55	58	83	88	101
MS(Research)	-	-	-	-	-	-	-	6	19	7	12
BTech	101	117	114	108	118	112	108	233	246	269	297
<b>TOTAL</b>	<b>101</b>	<b>123</b>	<b>156</b>	<b>174</b>	<b>203</b>	<b>246</b>	<b>275</b>	<b>412</b>	<b>498</b>	<b>490</b>	<b>554</b>



## Medal Winners and Graduating Students

### Indian Institute of Technology Indore

#### 11<sup>th</sup> Convocation 2023: Recipients of Medals and Awards

#### THE PRESIDENT OF INDIA GOLD MEDAL

For the best academic performance among all the UG graduating students



**Mr. Purnadip Chakrabarti**

BTech (CSE)

Roll No. 190002048

#### INSTITUTE SILVER MEDAL

For the best academic performance among all the graduating UG students of particular Department



**Mr. Krishanu Saini**

BTech (CSE)

Roll No. 190001029



**Mr. Satyam Vatsa**

BTech (CE)

Roll No. 190004031



**Mr. Aryan Rastogi**

BTech (EE)

Roll No. 190002007



**Ms. Ishika Budhiraja**

BTech (ME)

Roll No. 190003030



**Ms. Rama Sandeep Edlabadkar**

BTech (MEMS)

Roll No. 190005033

## INSTITUTE SILVER MEDAL

For the best overall performance among all the graduating PG students (MTech. and MSc. Programs)



**Ms. Samriddhi Saxena**

M.Tech (MEMS)  
Roll No. 2102105005



**Mr. Sayeed Kazim Hussain Nasir**

MSc (AASE)  
Roll No. 2103121007

## BEST B.TECH. PROJECT (BTP) AWARD

Amongst all the graduating UG students



**Mr. Prasheel Kumar Tiwari**

BTech (CSE)  
Roll No.190004025



**Ms. Jyotishna Baishya**

BTech (CSE)  
Roll No. 190001021

Project Title: *"Intra-Sensor Fingerprint Presentation Attack Detection"*

## BUTI FOUNDATION GOLD MEDAL

For the best academic performance among all the graduating female PG students



**Ms. Srijita Pal**

MSc (Chemistry)  
Roll No. 2103131026

## INSTITUTE SILVER MEDAL

For the best all-round performance among all the graduating students



**Ms. Niyati Totala**

B.Tech (CE)

Roll No. 190004023

## VPP MENON GOLD MEDAL

For the best PhD Dissertation work by a female student



**Ms. Jaspreet Kaur**

PhD (Biosciences and Biomedical Engineering)

Roll No. 1701171017

Thesis Title: *"Nano/Hybrid Carriers: Synthesis and Evaluation for Therapeutic Applications"*



## Rankings

In yet another matter of great pride to Indore, IIT Indore has been ranked 454th in the QS World University Rankings 2024. It is 11th amongst the Indian Universities and is ranked the highest amongst the second generation IITs. The universities are judged across 08 key ranking indicators including academics, research, citations, international outlook, sustainability and employment outcomes to provide the most comprehensive and balanced comparisons available. This year’s QS World University Rankings included almost 1,500 institutions from around the world including universities from diverse locations across Europe, Asia and North America.

In the recently released “India Rankings 2023 by NIRF, Ministry of Education”, IIT Indore has attained a significant improvement in NIRF ranking across multiple categories. IIT Indore is positioned 14th among engineering institutions of the country. In this category, institutions are judged across 05 key ranking parameters that includes academics, research, graduation outcome, outreach & inclusivity, and perception. Also, IIT Indore is positioned at 28th in Overall and 21st in Research category respectively.



Category	Ranking	
	NIRF-2022	NIRF-2023
Engineering	16	14
Overall	31	28
Research	26	21

Prof. Suhas Joshi, Director, congratulated the IIT Indore community and urged them to pursue their research and academic activities with diligence, which essentially will contribute to growth of the Institute and pave the way for more global recognitions in future.

## Faculty Affairs

Faculty Affairs Office deals with all administrative matters related to the faculty members. It maintains administrative records from recruitment to relieving of the faculty members. The office is headed by Professor Abhishek Srivastava, Dean of Faculty Affairs, assisted by Prof. Amod C. Umarikar -Associate Dean, Cdr. Sunil Kumar (Retd.) - Joint Registrar, Mr. Sunil Sawle – Junior Superintendent, and Mr. Amit Mishra – Junior Superintendent (Technical).

This office enables the following tasks:

- Conduct of recruitment drive and appointment of permanent/contractual/visiting/emeritus faculty members in various departments.
- Joining formalities of newly joined faculty members.
- Maintenance of Service Records and Personal File of faculty members.
- Processing of all service matters, including pay, promotion, leave, LTC, dependent list, deputation, annual increment, extension of tenure for contractual appointments, confirmation, etc.
- Regular updation of service details.
- Providing responses to MHRD/RTI Queries and Lok Sabha/Rajya Sabha questionnaires.

Some of the major works undertaken during the year 2022-23 are as follows:

- Conduct of Special Recruitment Drive for Reserved category candidates.
- Development of Faculty Application Portal for New Recruitment.
- Formulation of various policies for standardization of rules and procedures.
- Streamlining the joining formalities to ensure minimal movement and faster adaptation of the newly joined member to the new environment.
- Provision of Welcome Kit to the newly joined faculty members.
- Reduced paperwork and approval through emails.
- Timely provision of LTC to faculty members.

Faculty positions filled as on March 31, 2023

Designation	Strength
Professor	57
Associate Professor	45
Assistant Professor Grade-I	63
Assistant Professor Grade-II	15
<b>Total</b>	<b>180</b>

The number of faculty members joined service at IIT Indore during the year 2022-23 is 12 and details are as follows:

Designation	Strength
Assistant Professor Grade I	07
Assistant Professor Grade II	05
<b>Total</b>	<b>12</b>

### Total 05 Professor and 13 Associate Professor were appointed.

- Prof. Ganti S Murthy, Professor, Department of Biosciences & Biomedical Engineering, relieved for full-time attachment for two years as National Coordinator at Indian Knowledge System (IKS) division of MoE, w.e.f. July 22, 2022(FN).
- Prof. Narendra S. Chaudhari, Professor, Department of Computer Science and Engineering was relieved on September 8, 2022 (A/N) to Join as Vice-Chancellor, Assam Science & Technology University, Guwahati, Assam on deputation.

3. Dr. Prashanta Garain, Assistant Professor Grade I, Department of Mathematics, relieved on February 24, 2023 (AN), to join as Assistant Professor Grade I at the Indian Institute of Science Education and Research Berhampur.
4. Dr. Saikat Sarkar, Assistant Professor Grade I, Department of Civil Engineering, relieved on May 11, 2023 (AN), to join as Assistant Professor Grade I at the Indian Institute of Technology Delhi.

## Recognition and Awards

### Best Technology Development Award 2023

The details of the technology and the inventors are as follows:

Technology Details	Inventors
Novel ASPAR-B drug for the treatment of blood cancer: Currently under phase I/II clinical trials	Prof. Avinash Sonawane, Mainak Biswas, Soumika Sengupta and Vikram Gota
A method of maintenance for high-performance machineries employing axial pump and multiple cylinders	R. Gupta, Dr. P.K. Kankar, Dr. A. Miglani
Design Space Exploration of Optimal k-Cycle Transient Fault Tolerant Datapath Based on Multi-Objective Power-Performance Tradeoff	Dr. Anirban Sengupta
Si-ITO Semiconductor Heterojunction Technology for Tunable Photonic Devices	Swati Rajput, Vishal Kaushik, Prem Babu, Suresh K. Pandey and Prof. Mukesh Kumar
IoT Enabled Real-Time Monitoring NO <sub>2</sub> Gas Sensor	Chandrabhan Patel, Sumit Chaudhary, Mayank Dubey and Prof. Shaibal Mukherjee

### Best Research Paper Award 2023

The details are as follows:

Title of the Research Paper	Author(s)
"Gigaelectronvolt emission from a compact binary merger"	Alessio Mei, Biswajit Banerjee, Gor Oganessian, Om Sharan Salafia, Stefano Giarratana, Marica Branchesi, Paolo D'Avanzo, Sergio Campana, Giancarlo Ghirlanda, Samuele Ronchini, Amit Shukla, Pawan Tiwari
"Small Molecule Screening Discovers Compounds that Reduce FMRpolyG Protein Aggregates and Splicing Defect Toxicity in Fragile X-Associated Tremor/Ataxia Syndrome"	Arun Kumar Verma, Eshan Khan, Subodh Kumar Mishra, Amit Kumar
"Machine Learning Aided Interpretable Approach for Single Nucleotide-Based DNA Sequencing using a Model Nanopore"	Milan Kumar Jena, Diptendu Roy, Biswarup Pathak
"Micro and macro-structural properties of waste tyre rubber fibre-reinforced bacterial self-healing mortar"	Akshay Anil Thakare, Trilok Gupta, Roshni Deewan, Sandeep Chaudhary
"Adaptation of Pair-Polar Structures to Compute a Secure and Alignment-Free Fingerprint Template"	Vivek Singh Baghel, Syed Sadaf Ali, Surya Prakash



“Real-Time Event Detection Based on Weibull Distribution Using Synchrophasor Measurements for Enhanced Situational Awareness”	Adnan Iqbal, Trapti Jain
“Intuitionistic Fuzzy Weighted Least Squares TwinSVMs”	M. Tanveer, M. A. Ganaie, A. Bhattacharjee, C. T. Lin.
“Topological defects embedded large-sized single-walled carbon nanotubes for hydrogen storage: A molecular dynamics study”	Saurabh Mishra, S.I. Kundalwal
“Theory abide experimental investigations on morphology driven enhancement of electrochemical energy storage performance for manganese titanate perovskites electrodes”	Narasimharao Kitchamsetti, Manopriya Samtham, Pravin N. Didwal, Dharendra Kumar, Diwakar Singh, Santosh Bimli, Parameshwar R Chikate, Dr. Dudekula Althaf Basha, Sunil Kumar, Chan-Jin Park, Sudip Chakraborty, Rupesh S. Devan
“Phonon-mode-specific lattice dynamical coupling of carriers in semiconductors using Raman and optical spectroscopic techniques”	Omkar V. Rambadey, Minal Gupta, P. R. Sagdeo

## Best Teacher Award 2022-2023

Category (Student Strength)	Name of the Faculty Member and Department
Less than 30 students' strength	Dr. Sunil Kumar, Department of Metallurgical Engineering and Materials Science
Between 31 to 120 students' strength	Dr. Abhishek Rajput, Department of Civil Engineering
Greater than 120 students' strength	Dr. Ananya Ghoshal, School of Humanities and Social Sciences



## Administration

The Administration Section deals with general administration and all HR matters related to the Staff members. It maintains administrative records from recruitment to relieving of staff members. The administration office functions under the overall guidance of the Dean of Administration, Associate Dean of Administration and the Registrar and the administrative/HR functions are executed by the Deputy Registrar (Administration) and a team of five staff members.

This office enables the following tasks:

- Conduct of recruitment drive and appointment of permanent/contractual/ Outsourced staff members.
- Joining formalities of newly joined staff members.
- Maintenance of Service Records and Personal Files of staff members.
- Processing of all service matters, including pay, promotion, leave, LTC, dependent list, deputation, annual increment, extension of tenure for contractual appointments, confirmation, etc.
- Regular updation of service details.
- Providing responses to MHRD/ RTI Queries and Lok Sabha/Rajya Sabha questionnaires.
- Monitoring and redressal of grievances received on CPGRAMS and at the Institute Grievance Cell.
- Coordination for the functioning of KV IIT Indore and the Institute Creche Facility.

### Non-Teaching Staff positions as on March 31, 2023:

Group 'A' Officers	23
Technical Staff Members	45
Administrative Staff Members	63
Total	131

### Number of non-teaching staff members appointed during the year is as under:

Non-teaching staff	23
--------------------	----

### Details of Training Programs (In-house) attended by all Non-Teaching Staff

Topics of Training	Trainer/Instructor	Designation	Date
Allowances (TA/LTC/CEAS)	Mr. Pradeep Agarwal	Joint Registrar (F&A)	1-Apr-22
English and Effective Communication for Professionals: Strategies, Discourse, and Practical Application	Dr. Ananya Ghoshal	Assistant Professor	8-Apr-22
An overview of RTI Act 2005	Mr. Suresh Chandra Thakur	Assistant Registrar (Admin)	3-Jun-22
Transport Allowance for Central Government Employees	Mr. Tanmay Harsh Vaishnav	Section Officer (F&A)	10-Jun-22
Disaster Management and Overview	Mr. Ramakant Kaushik	Chief Security Officer (Grade-II)	17-Jun-22
Management of Departmental Library	Mr. Rajesh Kumar	Assistant Librarian (Grade-I)	24-Jun-22
Abilene Paradox: Management of Agreements	Mr. Saroj Kumar Mallick	Executive Engineer (Electrical)	01-Jul-22
Expert Talk cum Motivational Session	Commodore (Dr) Manohar Nambiar	Registrar, IIT Hyderabad	15-Jul-22
Written English Communication Skills	Dr. Ananya Ghoshal	Assistant Professor	9-Sep-22
Interview Techniques	Mr. S. P. Hota	Registrar	23-Sep-22
Highlights of Union Budget 2023-24	Mr. Pradeep Agarwal	Joint Registrar	10-Feb-23

### Recognition and Awards

S. No.	Institute Awards 2023 (for Non Teaching, Technical and Supporting Staff Members)	Name of the Non-Teaching Staff
1	Outstanding Performance by Senior Non-Teaching Staff Member (Group A)	1. Mr. Suresh Chandra Thakur, Assistant Registrar (Then)
2	Outstanding Performance by Junior Non-Teaching Staff Member (Group B and C)	1. Ms. Bindu Suresh, Junior Superintendent 2. Mr. Dinesh Chouhan, Junior Assistant 3. Mr. Ankit Tiwari, Junior Assistant
3	Outstanding Performance by Technical Staff Member	1. Mr. Praveen Kaushal, Audio Visual Technician 2. Mr. Amit Jadhav, Junior Lab Assistant
4	Outstanding Performance by Supporting Staff Member	1. Mr. Ved Prakash Thakur, Attendant 2. Mr. Anil Sanwle, Attendant





## Achievements



**Dr. Nitin Upadhyay**

Senior Lab Assistant

Awarded PhD Degree in Physics by Devi Ahilya Vishwavidyalaya (DAVV), Indore vide DAVV Notification No. PhD Cell/ 2023/711 dated April 28, 2023.

Research Title: "Structural Study of Transition Metal Complexes Based on X-Ray Spectroscopy Techniques".



**Mr. Brajesh Dwivedi**

Senior Assistant

Conferred "Satna Gaurav Award" by Shri Shivraj Singh Chouhan, Hon'ble Chief Minister of Madhya Pradesh, on 25<sup>th</sup> January 2023, organized by Municipal Corporation, Satna. The award was conferred upon Mr. Dwivedi for his participation in International Cricket Series/ tournaments as a leading Dibyang Cricketer and also for promoting differently abled (dibyang) cricketers in the state of Madhya Pradesh since the year 2017.



**Ms. Riyanka Sharma**

Junior Assistant

Qualified in the Fastest Fingers First Round of 109th Episode of "Kaun Banega Crorepati (KBC)", season 14 and reached on the Hot Seat hosted by the Legendary Actor and Star of the Millenium , Shri Amitabh Bachchan on Sony TV on December 30, 2022.

## Finance & Accounts (F&A)

The year 2022-23 is characterized with the following Income and Expenditure:

S. No.	Particulars	(₹ in crores)
		2022-2023 Current Year
<b>1</b>	<b><u>INCOME</u></b>	
1.1.	<b>Grants</b>	136.23
1.2.	Academic Receipts	33.33
1.3.	Income from Investment	0.00
1.4.	Interest Earned	10.90
1.5.	Other Income	2.31
1.6.	<b>Total of 1</b>	<b>182.78</b>
<b>2</b>	<b>EXPENDITURE</b>	
2.1.	Staff Payments & Benefits	72.33
2.2.	Academic Expenses	22.77
2.3.	Administrative & General Expenses	24.11
2.4.	Transportation Expenses	0.58
2.5.	Repairs and Maintenance	8.41
2.6.	Depreciation	43.63
2.7.	Other Expenses	13.58
<b>2.8.</b>	<b>Total of 2</b>	<b>185.41</b>
<b>3</b>	<b>Balance being excess of Income over Expenditure</b>	<b>-2.63</b>

**The position relating to creation of capital assets is as under:**

(₹in crores)

S. No.	Particulars	2022-2023		
		HEFA	Other Purpose	Total
2.1	Opening Balance of Grant-in-Aid Plan	25.74	10.37	36.11
2.2	Grant received during the year	61.87	156.49	218.36
2.3	Deficit under OH-31/OH-36 being added from IRG	0.00	3.18	3.18
2.4	<b>Total funds available at the disposal of the Institute</b>	<b>87.61</b>	<b>170.04</b>	<b>257.65</b>
2.5	Grant utilized for Revenue Expenditure	0.00	123.72	<b>123.72</b>
2.5.1	Interest on Term Loan for HEFA	12.52	0.00	<b>12.52</b>
2.5.2	Repayment of HEFA Loan (75%)	49.35	0.00	<b>49.35</b>
2.6	<b>Plan Grant after adjusting utilization for Income &amp; Expenditure</b>	<b>25.74</b>	<b>46.32</b>	<b>72.06</b>
2.7	Utilized for developing infrastructure, Buildings & Works & for Equipment's, and other Assets	0.00	42.99	42.99
2.8	<b>Unspent balance as on 31.03.2023</b>	<b>25.74</b>	<b>3.33</b>	<b>29.07</b>

**Funds availability and status of utilization thereof:**

During financial year 2022-23, against sanction of Revised Detailed Project Report (DPR) of ₹1,911.12 crores, a sum of ₹ 218.36 crores (For Recurring & non-recurring Purpose ₹ 156.49 crores + For HEFA Purpose ₹ 61.87 crores) were released by Ministry of Education and Deficit under OH-31 /OH-36 are being added from IRG credited to Grant-in-Aid ₹ 3.18 crores. The Internal income of the Institute reckoned during the year was ₹ 26.92 crores, after adjusting payment of 25% HEFA principal loan from IRG (Institute share) ₹ 16.45 crores and after considering the unspent balance as on 01.04.23 of ₹ 29.07 crores, the total funds available at the disposal of the Institute was of the order of ₹ 267.06 crores.

A sum of ₹42.99 crores have been utilized for the creation of Capital assets and a sum of ₹ 185.59 crores (For Recurring purpose Rs. 123.72 crores + For HEFA purpose ₹ 65.74 crores) (which excludes Depreciation of ₹ 41.85 crores) was incurred on recurring expenditure out of the grant at the disposal with the Institute. Further Internal Revenue Generation for the year amounting to ₹26.92 crores transferred to Corpus Fund after adjusting repayment of HEFA loan principal amount (25% institute share) and deficit under OH-36/OH-31.

**Reforms, measures and initiatives undertaken during the year include:**

During the year under review the following reforms, measures Initiatives were initiated from Finance & Accounts :

Public Finance Management System (PFMS) is a platform for all DBT payments.

Institute has developed payment gateway on IIT Indore website with State Bank of India and HDFC Bank Ltd as channel partner bank for the facility.

### Education assistance for children :

During the financial year 2022-2023, the Institute reimbursed a sum of ₹ 62,90,731/- to 162 faculty and staff members against for education assistance according to Government of India norms.

### Transport facilities for staff members :

Transport facilities to students/ faculty members/ staff members have been provided for the benefit of movement of staff from institute campus to Indore city at subsidized rates as the IITI Campus is located far away from Indore city.

### Advances :

During the reporting year, a total sum of ₹ 96.52 lakhs was sanctioned as personal advances for the following.

Sl. No.	Nature of Advance	No. of Beneficiaries	Amount Sanctioned	Amount outstanding as on 31.03.2023
			(in ₹)	(in ₹)
1	House Building Advance	01	13,56,600	91,60,669
2	Car Advance	-	-	65,000
3	Personal computer advance	-	-	3,87,312
	<b>Total</b>		<b>13,56,600</b>	<b>96,12,981</b>

### Insurance :

Group Medical Insurance cover of ₹ 2.50 lakhs is provided for In-Patient treatment and Group Personal Accident cover of ₹ 5.00 lakhs is provided to all Students of the Institute. Expenses towards insurance is ₹ 19,64,220/- during financial year 2022-23. Care of Out-patient treatment is taken care mainly by the Health Center internally.

### Fellowships/scholarships :



**To Research Students**

During financial year 2022-23, Institute has disbursed Fellowships for following category of Students:

S. No.	Category of Students	No. of Student	Fellowship (Per Month)
01.	Institute Funded through MOE grant-PHD	203	JRF- ₹ 31,000/- SRF- ₹ 35,000/-
02.	DST Funded (PHD)	46	
03.	CSIR Funded (PHD)	64	
04.	UGC Funded (PHD)	152	
05.	Institute Funded through MOE grant - M. Tech.	104	₹ 12,400/-
06.	Institute Funded through MOE grant - M. S. Research	47	₹ 12,400/-
07.	DBT - NCCS Pune	3	₹35,000/-

**Merit cum Means Scholarship:**

Institute has disbursed ₹ 45,90,164/- as Merit cum Means Scholarships to B. Tech & MSc. Students who are meeting the eligibility criteria set by Institute under various categories.

**Remission of Tuition Fees to Depraved Class of Students:**

Institute has Remitted/dispensed ₹ 5,99,80,965/- as Remission of Tuition fees of Under Graduate Students of Depraved Class admitted in Academic Session 2022-23 as per Ministry of Education letter F. No. 24-2/2016 TS 1 dated April 04, 2016.

## Summary of the Balance Sheet and Income &amp; Expenditure is as under:

A. BALANCE SHEET AS AT 31<sup>ST</sup> MARCH'2023

(Amount in ₹)

SOURCES OF FUNDS	SCHEDULE	AS AT 31-03-2023	AS AT 31-03-2022
-			
Corpus/Capital Fund	1	10,19,57,70,859	9,29,09,26,320
Designated/Earmarked/Endowment Funds	2	18,32,01,188	15,43,59,784
Current Liabilities & Provisions	3	3,56,78,30,404	3,66,96,85,770
-			
<b>TOTAL</b>		<b>13,94,68,02,450</b>	<b>13,11,49,71,874</b>
<b>APPLICATION OF FUNDS</b>			
<b><u>FIXED ASSETS</u></b>	4		
A. Tangible Assets		9,98,97,54,150	9,39,51,66,561
B. Intangible Assets		4,93,61,789	3,76,96,022
C. Capital Work-In-Progress		15,69,10,733	47,37,67,960
<b><u>INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS</u></b>	5		
Long Term			
Short Term		5,00,000	5,75,571
<b><u>INVESTMENTS - OTHERS</u></b>	6	1,00,000	-
<b><u>CURRENT ASSETS</u></b>	7	3,13,11,90,305	2,86,97,99,126
-			
<b><u>LOANS, ADVANCES &amp; DEPOSITS</u></b>	8	61,89,85,474	33,79,66,633
<b>TOTAL</b>		<b>13,94,68,02,450</b>	<b>13,11,49,71,874</b>

B. INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31<sup>ST</sup> MARCH'2023

				(Amount in ₹)	
PARTICULARS	SCHEDULE	2022-2023	2021-2022		
<b>(A) INCOME</b>					
Academic Receipts	9	33,33,16,444	25,29,76,202		
<b>Grants &amp; Subsidies:</b>					
i. Grant Utilised for payment of Interest on Term Loan from HEFA	10	1,36,23,48,647	1,14,92,35,713		
ii. Grant Utilised for Revenue Expenditure		12,52,40,504			
iii. IRG Utilised for Revenue Expenditure		1,20,53,00,377			
		3,18,07,766			
Income from Investments	11	-	-		
<b>Interest Earned:</b>					
- On Corpus/IRG	12	10,90,36,106	8,54,36,386		
Other Income	13	1,89,66,371	31,65,98,982		
Prior Period Income	14	41,61,577	1,34,75,118		
<b>TOTAL (A)</b>		<b>1,82,78,29,146</b>	<b>1,81,77,22,400</b>		
<b>(B) EXPENDITURE</b>					
Staff Payments & Benefits (Establishment Exp.)	15	72,33,32,819	65,45,98,650		
Academic Expenses	16	22,77,13,257	18,91,20,212		
Administrative and General Expenses	17	24,10,85,925	15,97,92,762		
Transportation Expenses	18	58,36,035	31,48,192		
Repairs and Maintenance	19	8,40,64,478	7,72,14,242		
Finance Costs	20	12,53,37,645	15,35,68,757		
Depreciation	4	43,63,05,208	41,85,13,266		
Other Expenses	21	7,50,641	22,65,823		
Prior Period Expenses	22	97,10,591	75,91,103		
<b>TOTAL (B)</b>		<b>1,85,41,36,598</b>	<b>1,66,58,13,007</b>		
<b>Balance being excess of Income over Expenditure (A-B)</b>		<b>-2,63,07,453</b>	<b>15,19,09,393</b>		
Less:(i) Deficit under OH-36 being Utilized from IRG		-1,29,49,699	-		
(ii) Deficit under OH-31 being Utilized from IRG		-1,88,58,067	-5,18,97,669		
(iii) Payment of 25% HEFA Principal Loan from IRG (Institute Share)		-16,44,95,000	-16,79,79,343		
(iv) Transfer to Corpus fund towards Internal Revenue Generation of 2022-2023 (2021-22) (See Significant Accounting Policies - point no. 8.1)		-26,91,77,732	-44,86,09,675		
<b>Total</b>		<b>-49,17,87,951</b>	<b>-51,65,77,294</b>		
Add: Amount transfer from Capital Fund					
- Depreciation		3,63,05,208	-		
- Leave Encashment liability		3,97,02,253	-		
- Gratuity Liability		1,57,80,490	-		
<b>Balance being Surplus (Deficit) Carried to Capital Fund</b>		<b>-49,17,87,951</b>	<b>-51,65,77,294</b>		

## Material Management Section (MMS)

Statement of activities of Material Management Section for the Financial Year 2022 -2023 II  
March 31, 2023

Sl. No.	Details	2022-23	Value (₹)
1.	Total Indent created	Total indents- 2018	Non-Project-1453 Project- 565
2.	Total Purchase Order Issued	Total Nos. 2864  <u>Detailed bifurcation:</u> <ul style="list-style-type: none"> <li>• Purchase order (LPC/CPPP) – 1241 nos.</li> <li>• Total GeM Order – 837 nos.</li> <li>• GeM Direct Order – 786 nos.</li> </ul> <p><i>79% of Orders were placed through GeM</i></p>	Total Po Value ₹ 71,07,79,732/-  <u>Detailed bifurcation:</u> <ul style="list-style-type: none"> <li>• Purchase order (LPC/CPPP) ₹ 25,07,90,220/- (Non GeM)</li> <li>• e-Procurement on GeM ₹ 45,09,52,144/-</li> <li>• Direct Purchase through GeM ₹ 90,37,368/-</li> <li>• Total procurement on GeM ₹ 45,99,89,512/-</li> </ul> <p><i>65% of total order value placed on GeM</i></p>
3.	Total Indigenous Orders	2830 nos.	₹ 67,57,03,075.00
4.	Total Import Orders	34 nos.	₹ 2,91,46,283.00
5.	Prebid Meeting	89	Pre-bid meetings have been arranged within multiple tender processes to address the scope of supply, technical specifications, evaluation criteria, and queries from potential bidders.
<b>Central Stores</b>			
6	Total stock entry (Consumable)	3939 Nos.	Rs. 8,41,13,641/-
7	Total Stock Entry (Non-Consumable/ Assets)	Rs. 56,50,24,881/-	2842 Nos.
8	Buy Back Material	Rs. 1,42,907/-	38 Nos.
9	Total Scrap Sale (revenue generated from selling scrap materials or items that are no longer useful or needed)	No. of Sale order- 06	Rs. 16,50,443/-
10	Total item refurbished from scrap (repairing, cleaning, and upgrading of item for use)	Shed from scrap, Signage from Scrap, repair of Chair, Table from scrap etc.	Rs. 3,24,500/-




11	Total Loading/ Unloading charges recovered from the firm towards unloading	22 Nos.	Rs. 20,800/-
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### **# Record Time High Value Tenders through GeM portal:**


Project Name	Order Value	Time to complete all the process
Supply, Installa on and Commissioning of Astronomy Tinkering Lab at Govt. Schools	₹ 15,32,09,406/-	All the process of tender completed, and PO issued within <b>35 Days</b> from the date of Indent.
Design, Supply, Installa on, Tes ng and Commissioning of Makerspace Lab Equipment (Turn-Key Project)	₹ 3,63,15,155/-	All the process of tender completed, and PO issued within <b>40 Days</b> from the date of Indent.
Supply, Installa on and Commissioning of Computa onal Server in CSE Department	₹ 1,89,74,350/-	All the process of tender completed, and PO issued within <b>30 Days</b> from the date of Indent.

#### **Best Prac ses:**

Sl. No.	Details	Remarks
1.	Prebid Meeting	The prebid meeting promotes transparency, fairness, and competition in the bidding process. They provide a platform for prospective bidders to seek clarification on project requirements, ensuring a level playing field for all participants. This transparency and open communication not only lead to well-informed, competitive bids but also facilitate cost savings, risk mitigation, and the efficient allocation of public resources, ultimately serving the public interest.
2.	Representation Opportunity to the disqualified bidders	Offering representation opportunities to disqualified bidders provides an avenue for fairness and transparency in the procurement process. It allows disqualified bidders to present their cases, clarify any misunderstandings, and potentially rectify errors, ensuring that qualified bidders are not unfairly excluded. This approach upholds the principles of due process and equity, ultimately leading to better-informed decisions and stronger confidence in the procurement system.
3.	Procurement within the deadline for project procurement	Meeting the procurement deadlines for a project is of paramount importance, as it ensures the timely availability of essential materials, services, and equipment needed for project execution. Accordingly, we have initiated the timebound procurement process for project requirements to formulate the customized procurement cycle to meet the requirement of the project procurement.

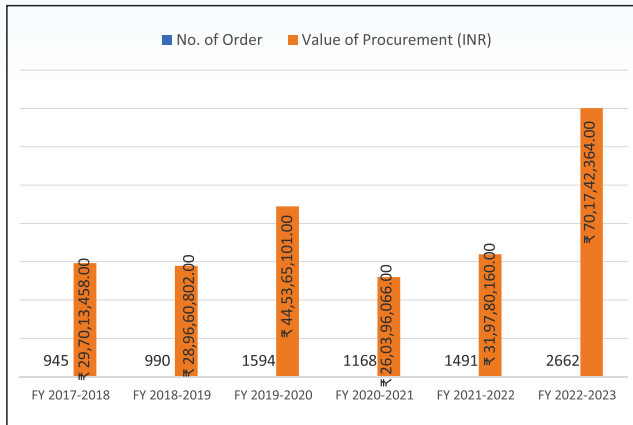
4.	Capacity Building	<ol style="list-style-type: none"> <li>1. <b>Customs Visit-</b> On Friday, September 2, 2022, at 1200 hours, all staff members of MMS &amp; CSS had the opportunity to visit the International Air Cargo Terminal in Indore. This visit proved to be highly informative, shedding light on the intricate customs processes, clearance procedures, and the significance of clearance documents. The experience underscored the vital role of document-based clearance, emphasizing that meticulous document preparation is pivotal to the swift and seamless clearance of shipments.</li> <li>2. <b>Training / Handholding</b> - A concise training and orientation session on the purchase procedure has been scheduled for IITI DRISHTI CPS Foundation on June 15, 2022 (Wednesday) at 10:30 AM.</li> <li>3. <b>Procurement Conclave-</b> Assistant Registrar MM and Assistant Registrar Administration had the opportunity to participate in the Procurement Conclave hosted at IIT Bombay on November 18-19, 2022. This conclave proved to be highly informative as it featured the presence of GeM (Government e-Marketplace) officials and representatives from the Procurement Policy Division. They addressed queries and provided updates on the latest procurement guidelines. Furthermore, the event facilitated discussions on best practices from older IITs, enriching the understanding of effective procurement strategies within the IIT community.</li> <li>4. <b>Handholding sessions on Government e-Marketplace (GeM)-</b> Handholding sessions are being extended to all stakeholders- indents, dealing assistant and office staff. These sessions aim to provide guidance and support to ensure effective navigation and utilization of the GeM platform for procurement and related activities.</li> </ol>
5	Set up of Hazmet-Chem Store	<p>This dedicated storage facility is equipped to handle hazardous materials and chemicals, adhering to all necessary safety protocols and regulations. The setup of this Hazmat-Chem Store not only ensures the secure storage of such materials but also promotes environmental responsibility and the well-being of our staff and the community. It stands as a testament to our commitment to safety and sustainability.</p> <p>Reference Image-</p>
		

<p>6</p>	<p>Wooden furniture - from dead tree wood</p>	<p>The utilization of dead wood trees to make furniture is a sustainable and eco-friendly practice that holds several benefits.</p> <p><b>Reference image 1</b></p>  <p><b>Reference Image 2</b></p> 
<p>7</p>	<p>Refurbishing of unserviceable/scrap items</p>	<p>The refurbishing of unserviceable or scrap items is a responsible and eco-friendly approach that aligns with the principles of reduce, reuse, and recycle. It not only conserves resource and reduces waste but also offers economic and environmental benefits to organizations.</p> <p>The total of 17 items worth of Rs. 3,24,500/-were refurbished.</p>
		<p>Reference Image 1</p> 

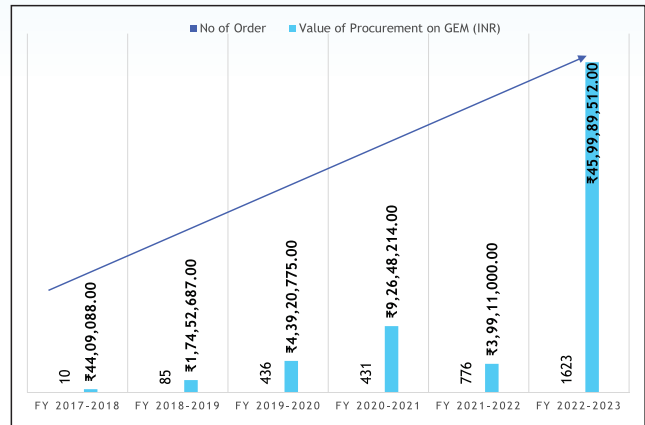
	<p>QR Coding of Assets</p>	<p>QR coding of assets is a systematic approach that plays a vital role in enhancing asset management and tracking. In compliance with GFR Rule-213, the annual physical verification of assets is initiated by the Central Stores Section, following a phased approach. The incorporation of QR codes into this process brings numerous advantages, including improved accuracy, efficiency, and transparency.</p> <p>QR codes enable quick and precise identification of assets, simplifying the verification process and reducing the risk of errors. This modernized approach aligns with best practices in asset management, ensuring that valuable resources are effectively monitored and maintained.</p> <p>Reference Image:</p> 
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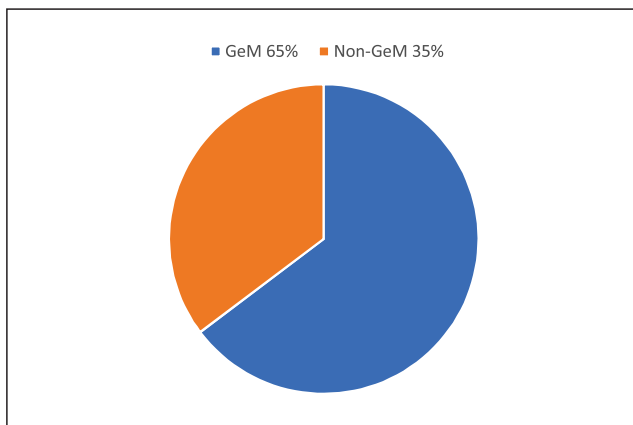
## Yearly Statistical Report of Procurement



## Yearly Statistical Report of GeM



## TOTAL ORDERS PLACED ON GEM & NON-GEM



## TOTAL ORDERS PLACED ON INDIGENOUS ORDERS & IMPORT ORDERS



## Research and Development (R&D)



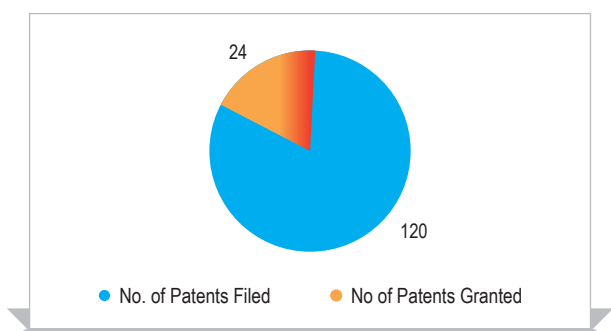
IIT Indore envisages promoting inter-disciplinary research focusing on basic and applied research, technology development, and innovation. This vision has helped the Institute to excel in all spheres of science, engineering, humanities and social sciences. A key competence of IIT Indore is in research driven academic programs as it forms a core component of undergraduate and postgraduate teaching. IIT Indore has consciously promulgated the idea of involving undergraduate students in forefront research projects. This has led to the initiation of a formal undergraduate research scheme, Promotion of Research, and Innovation for Undergraduate Students (PRIUS). Research at IIT Indore has been recognized at both international and national levels. Faculty members and scientists are actively involved in several key international projects and joint collaborations with research organizations in Japan, South Korea, Russian Federation, Portugal, France, Germany, UK, USA and many other countries.

### Key Achievement of Research & Development at IIT Indore

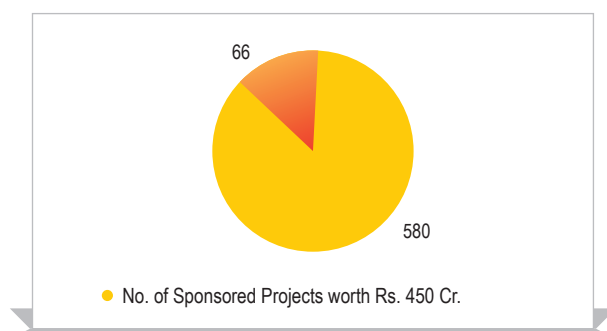
- 580 R&D projects worth Rs. 450 cr. from different funding agencies.
- 311 consulting projects worth Rs. 14 cr. till date.
- Over 6154 reputed publications.
- A high impact project worth Rs. 100 Cr under the DST National Mission on Cyber physical system for developing technologies and training manpower in the field of cyber physical systems.
- A National Research Centre of Excellence in the Humanities has been established in the Institute as J P Narayan Centre of Excellence in the Humanities to serve as a premier Research Centre with projects in interdisciplinary areas of the Humanities in collaboration with Sciences and Engineering.
- Drone and related Technology project funded by MeitY is executed by the Institute with a key objective to leverage collaborative activities in human resource development through capacity building in education and training in the area of Unmanned Aircraft Systems (UAS).
- 8 DST-FIST from Centers of Excellence (CoEs) established with funding worth Rs. 17 Cr.
- Filed over 120 patents; 24 have been already granted.
- Translation Research Centre was established to formalise the translation research ecosystem and extend the commercialisation of technology from the research to the product stage.

- 16 YFRSG (Young Faculty Research Seed Grant) was provided to young faculties of IIT Indore worth Rs. 1.6 Cr as a bridge funding by the Institute before the first regular grant from the external funding agencies.
- 4 YFRCG (Young Faculty Research Catalysing Grant) provided to young faculties of IIT Indore worth Rs. 1.33 Cr by the institute to inculcate an interdisciplinary research ecosystem in the cutting-edge areas of national and international needs.
- 25 IDF applications are granted under SIPPT (Scheme for Intellectual Property Protection and Technology Translation) by the Institute to support the faculty members by providing partial financial support for each patent upto 25,000/- INR for Indian Patent Filing.
- 10-15 positions for TRL level 05 and beyond with an annual ceiling of Rs. 01 Crore is sanctioned by the Institute for Translation Research Fellowship.
- IPR Awareness Programme (Under National Intellectual Property Awareness Mission) conducted by the Institute in the association of NIPAM.
- 5 Best Technology & 10 Best Research Paper Award provided by the institute to the students and faculty members with a contingency amount of Rs. 2 Lakh for each award.
- R&D MMS cell created to catalyze smooth project execution.
- The Institute signed an MOU with the Bureau of Indian Standards to develop collaborative activities in the field of Standardization and Conformity Assessment on the basis of equality and reciprocity.

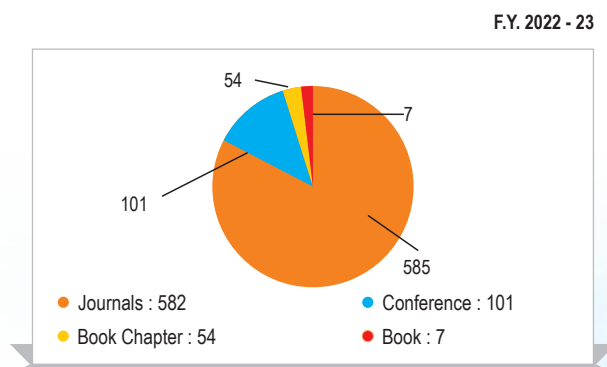
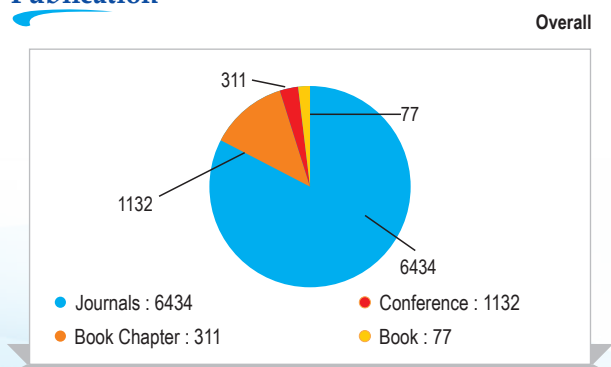
### Patents



### Projects

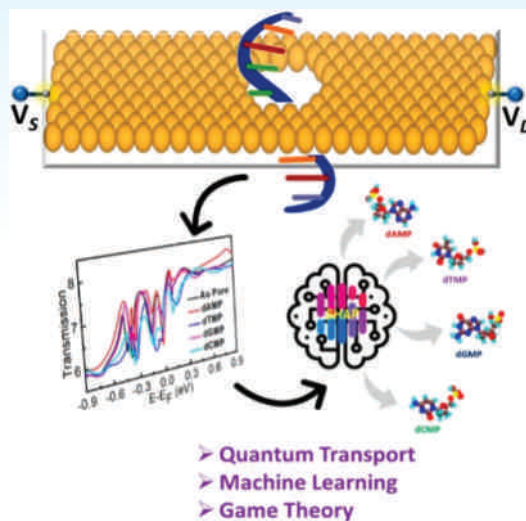


### Publication



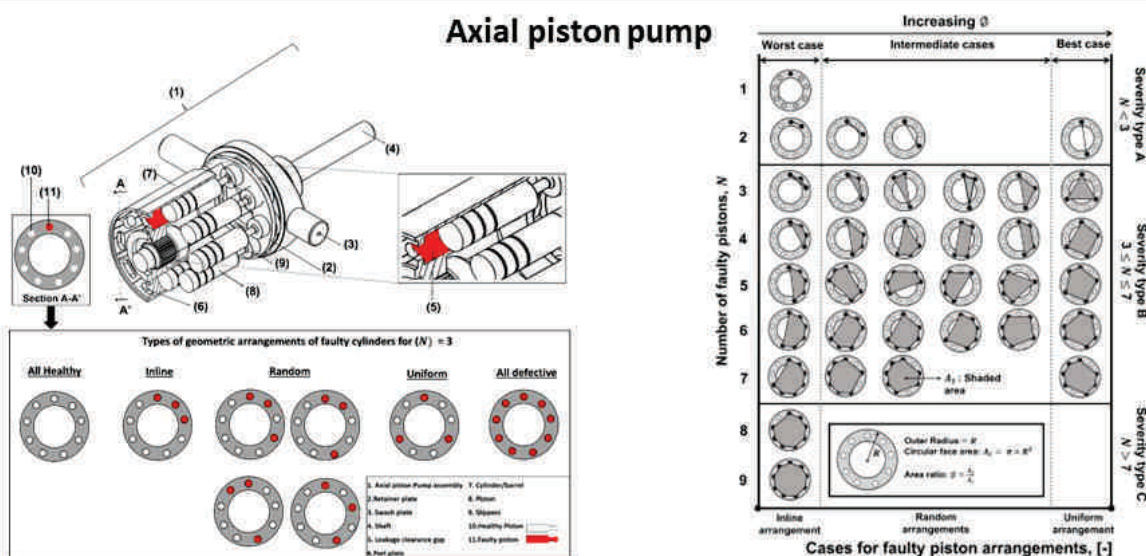
**Research Work:**

- Small Molecule Screening Discovers Compounds that Reduce FMRpolyG Protein Aggregates and Splicing Defect Toxicity in Fragile X-Associated Tremor/Ataxia Syndrome.
- Micro and macro-structural properties of waste tyre rubber fibre-reinforced bacterial self-healing mortar.
- Adaptation of Pair-Polar Structures to Compute a Secure and Alignment-Free Fingerprint Template.
- Real-Time Event Detection Based on Weibull Distribution Using Synchrophasor Measurements for Enhanced Situational Awareness.
- Intuitionistic Fuzzy Weighted Least Squares Twin SVMs.
- Topological defects embedded large-sized single-walled carbon nanotubes for hydrogen storage: A molecular dynamics study.
- Theory abide experimental investigations on morphology driven enhancement of electrochemical energy storage performance for manganese titanate perovskites electrodes.
- Phonon-mode-specific lattice dynamical coupling of carriers in semiconductors using Raman and optical spectroscopic techniques.
- Si-ITO Semiconductor Heterojunction Technology for Tunable Photonic Devices.
- Design Space Exploration of Optimal k-Cycle Transient Fault Tolerant Datapath Based on Multi-Objective Power-Performance Tradeoff.
- Machine Learning Aided Interpretable Approach for Single Nucleotide-Based DNA Sequencing using a Model Nanopore.



**Technologies Developed**

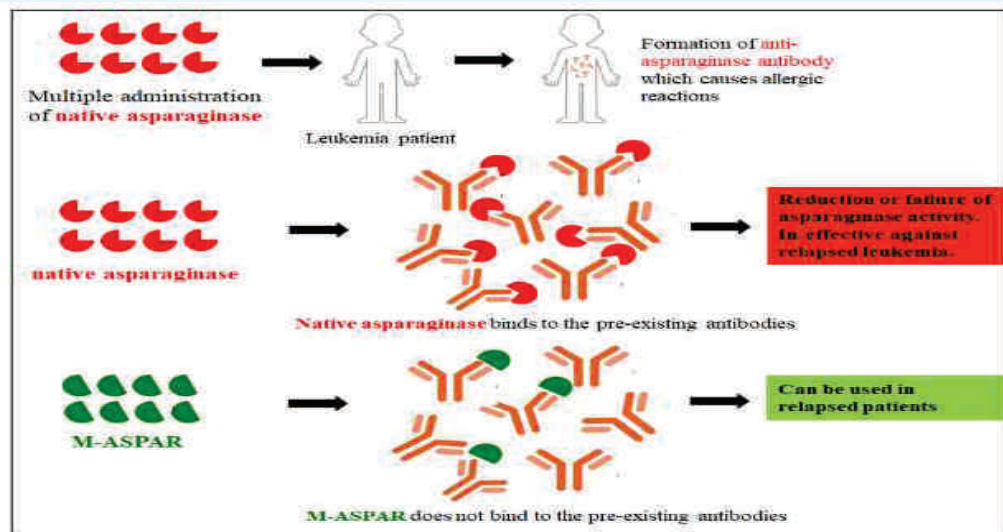
**A method of maintenance for high-performance machineries employing axial pump and multiple cylinders**



**Granted Patent:** R. Gupta, A. Miglani, P.K. Kankar. A method of maintenance for high-performance machineries employing axial pump and multiple cylinders. Indian Patent no. 412148. Application no. 202121045659.

*A method of maintenance for high-performance machineries employing axial pump*

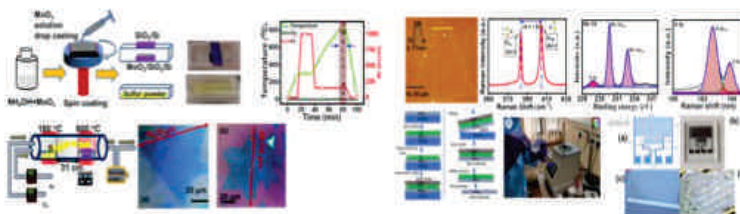




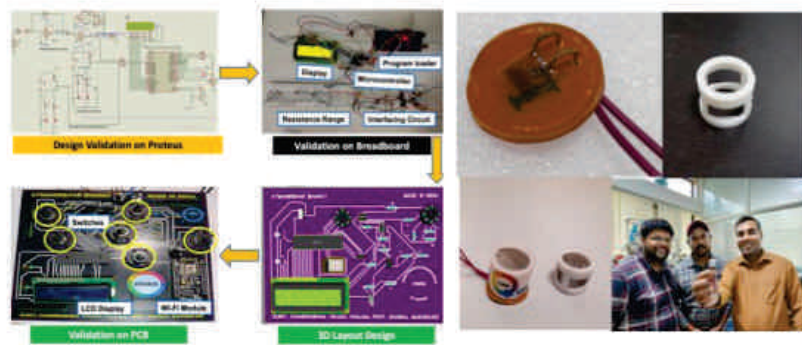
**M-ASPAR does not bind to the pre-existing antibodies present in leukemia patients undergoing asparaginase therapy.**

*Novel ASPAR-B drug for the treatment of blood cancer Currently under phase III clinical trials*

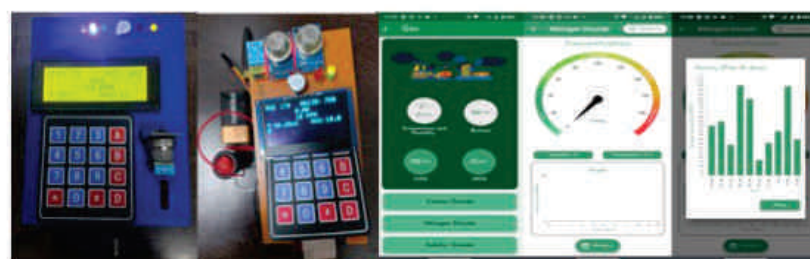
**Consolidated Photographs/figures projecting key results about the technology/research:**



**Fig. 1: Solution-assisted CVD process for the development of wafer-scale, electronic-grade, and uniform MoS<sub>2</sub> monolayers and films and experimental validation and surface-energy assisted transfer process of MoS<sub>2</sub>.**

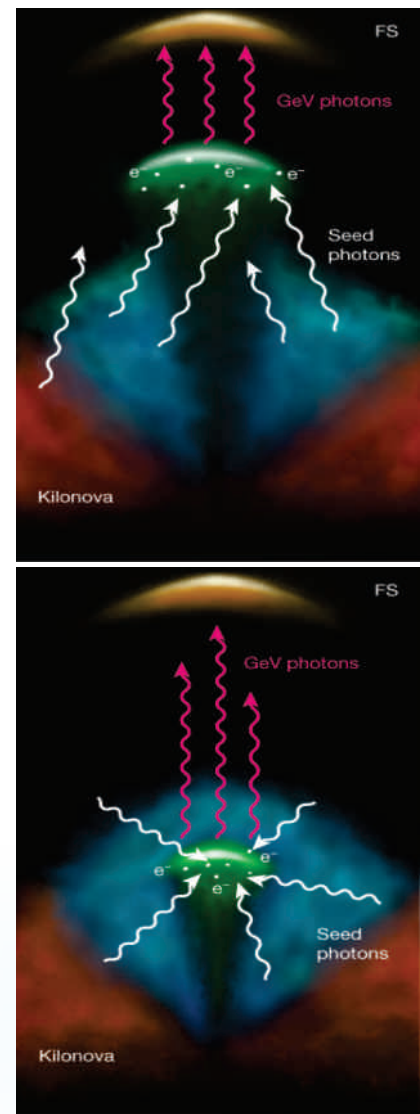


**Fig. 2: Fabrication of URRC for wide resistance range measurement and packaged 2D MoS<sub>2</sub> monolayer sensor on interdigitated electrodes (IDEs).**



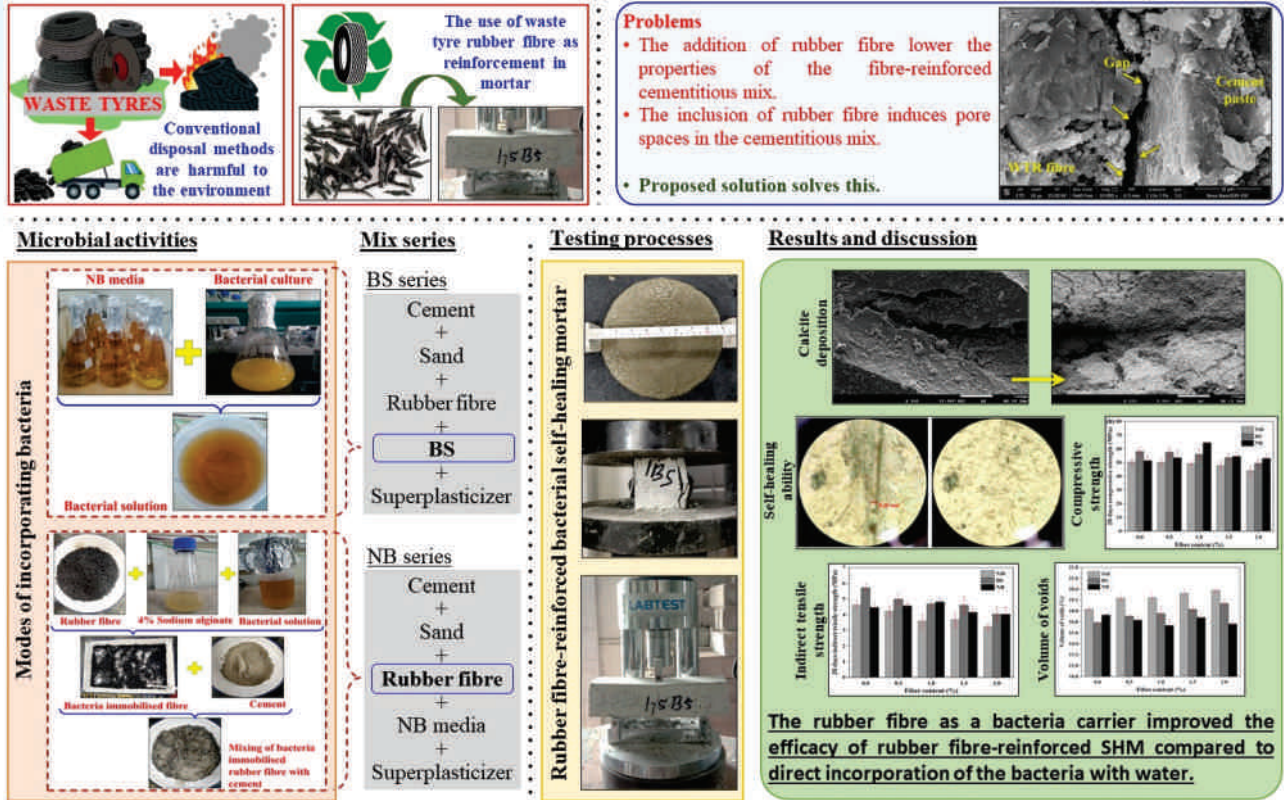
**Fig. 3: Indigenously packaged sensor system housing Quantum Sensor and development of android mobile application for real-time monitoring.**

*IoT Enabled Real-Time Monitoring NO<sub>2</sub> Gas Sensor and multiple cylinders*

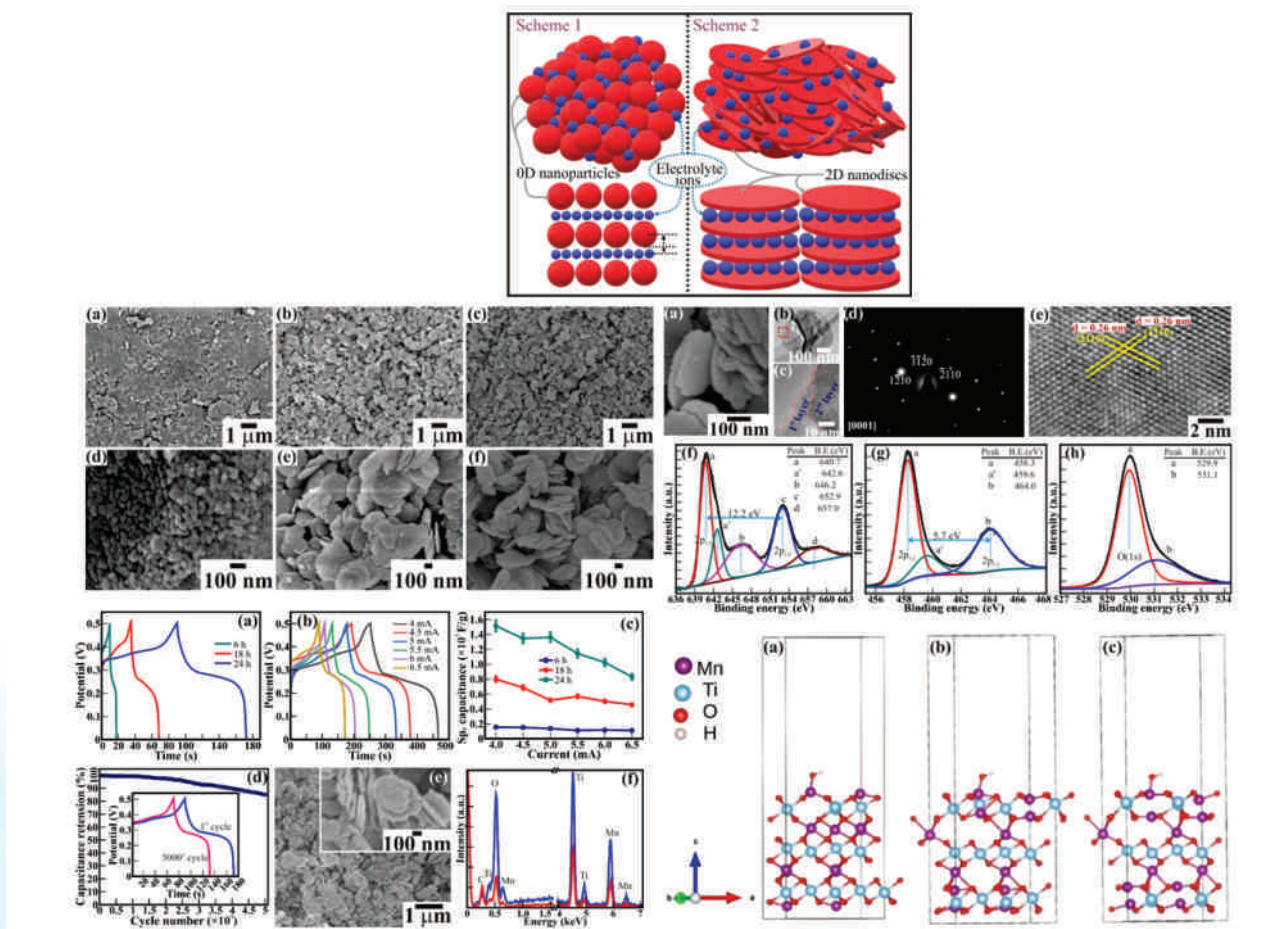


*Gigaelectronvolt emission from a compact binary merger*





Micro and macro-structural properties of waste tyre Rubber Fibre-Reinforced Bacterial self-healing mortar



Theory abide experimental investigations on morphology driven enhancement of electrochemical energy storage performance for manganese titanate perovskites electrodes

## International Relations



*A talk on “Transmission Dynamics of COVID-19 in Nepal: Mathematical Models for Effective Control” by Mr. Khagendra Adhikari, Tribhuvan University, Amrit Campus, NEPAL*



*A talk on “Modeling Malaria Transmission in Nepal: Impact of Imported Cases through Cross-Border Mobility” by Mr. Ramesh Gautam, Tribhuvan University, Ratna Rajya Laxmi Campus, NEPAL*

### **IITI Faculty members as visiting/adjunct faculty abroad:**

1. Prof. Kapil Ahuja: Visiting Professor at Institut Mines-Télécom Atlantique, France for AY 2023.
2. Dr. Rupesh S. Devan: Adjunct Professor at Multidisciplinary Academic Research Center, National Dong Hwa University, Hualien, Taiwan (Since 7th March 2023).
3. Dr. Guru Prakash: Was a visiting faculty at University of Waterloo from 1st December 2022 till 31st December 2022.



### MoUs with Foreign Universities:

We have 80+ active international MoUs, the most recent ones are mentioned below:

<p>National Ilan University, Taiwan                  National Taipei University of Technology, Taiwan                  Julius-Maximilians-University Wurzburg (JMUW)                  Kwansai Gakuin University, Japan                  University of Zilina in Zilina                  The University of Bordeaux, France                  University West Sweden, Sweden                  Université de lille, France                  University of Agder, Norway                  Széchenyi István University Győr, Hungary                  University of Luxembourg                  Leibniz University Hannover, Hannover, Germany                  University of Rostock, Germany                  The University of Kansas, US</p>	<p>National Taipei University of Technology, Taiwan                  Swinburne University of Technology, Australia                  Wigner Research Center for Physics, Hungarian Academy of Sciences, Budapest, Hungary                  Aristotle University of Thessaloniki, Greece                  University of Gothenburg, Sweden                  Università degli studi Di Udine, Italy                  Forschungszentrum Borstel - Leibniz Lung Center, Germany                  Dipartimento di Scienze Biomediche dell' Università di Sassari (UNISS); Sassari, Italy                  University of Johannesburg, South Africa                  Tec De Monterrey, Mexico                  University of Purdue, USA</p>
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### Virtual Meetings



Meeting with Prof. Herwany, Education and Culture Attaché for the Embassy of the Republic of Indonesia in New Delhi, India.



Meeting with National Ilan University, Taiwan.

### In-person Meetings:



32 International students from 11 different countries including USA, UK, Germany, Brazil, Belgium, Mexico, Egypt, Trinidad & Tobago, Azerbaijan, and South Africa, visited IIT Indore on 4<sup>th</sup> August 2022 under Global BP STEM Academic program in association with American Field Service (AFS), India. The visit was coordinated by Emerald Heights International School, Indore which is an active member of AFS since 2012 under the Indore chapter (MP) India.





*Prof. Pascal Maussion from  
Toulouse INP visited IIT Indore*



*Consul-General of Singapore Embassy,  
Mr. Cheong Ming Foong visited IIT Indore*



*Prof. Poching Johnny Wu, the President of the National Ilan University Taiwan along with  
five delegations visited IIT Indore, later IITI signed an MoU with NIU*



*Ms. Sweny Rokani, who oversees the Indian continent for the Academic Programme Business Unit at  
the National University of Singapore (NUS), paid a visit to IIT Indore*

**Student Exchange Program lists with their awardees of the last year**

Program Name	Beneficiaries	Awardees
Short-term Research Fellowship Program (1-3 months)	International PhD students	1. Halima Benali (Morocco) 2. Brigita De Vega (UK) 3. Dibyashree Poudyal (Nepal) 4. Raghu Nath Prajapati (Nepal)
Short-term Research Fellowship Program (1-3 months)	IITI PhD students	1. Sushmita Agarwal (Italy) 2. Rahul Kumar Yadav (France) 3. Mayank Dubey (Japan) 4. Lekhnath Sharma (US) 5. Kunal Gupta (Italy)
Semester Exchange Program (1-6 months)	IITI UG/PG students	1. Jenish Shah (France) 2. Nagilla Pranay Reddy (Japan)

**International Awards and Grants received by IITI faculty members.**

Dr Ajay Kumar Kushwaha's research paper entitled 'Electrodeposition of Ni-Co Alloy films for Hydrogen Evolution' received BEST ORAL PRESENTATION AWARD at the 11th Asia Conference on Mechanical and Materials Engineering (ACMME-2023) which was held during 8th to 11th June 2023 at Sapporo Japan.

Dr M. Tanveer received the 2022 APNNS Young Researcher Award. He is the only Indian to receive this award in the history of APNNS.

Dr Anirban Sengupta received various international awards:

- Distinguished Visitor Medal by IEEE Computer Society, USA in 2023 for outstanding scientific contributions.
- Ranked in Stanford University's Top 2% Scientists worldwide across all domains and in Top 0.3 % Scientists worldwide in IT/Networking/Architecture domain.
- His authored book was published by IET in 2023 catalogued/showcased in British Library.
- He got reappointed in the Editorial Board, as Associate Editor, of IEEE Transactions on VLSI Systems (only Professor and Scientist from India on the board).

Prof. Neelima Satyam received JSPS BRIDGE Fellowship award.

One of the Dr. Saptarshi Ghosh's research articles, entitled "Broadband Polarization-Insensitive Tunable Frequency Selective Surface for Wideband Shielding," published in IEEE Transactions on Electromagnetic Compatibility, vol. 60, no. 1, pp. 166-172, 2018, has received the prestigious Motohisa Kanda Award in 2022 for receiving the highest citations among all the papers published in the last 5 years (2017-2021) in IEEE Transactions on Electromagnetic Compatibility.

Dr Shomik Dasgupta has been elected FRHistS, Fellow of the Royal Historical Society of Great Britain in December 2022, in recognition of his contribution to historical scholarship. The Royal Historical Society is the most prestigious and globally recognised fellowship of historians in academia.

Dr Suman Majumdar received a SPARC grant of 65 lakh INR on 10th June 2023 as the Indian PI in collaboration with faculties of the University of Sussex, UK, for the project titled, "Galaxies through the ages: using synergistic multi-wavelength observations".

On June 23 Prof. Avinash Sonawane, Dean IR was elected as a Steering and Executive Committee member of Heritage Network hosted by Universidad Politecnica de Madrid (Spain) for a duration of four years.

Dr Ananya Ghoshal's project on inclusive education and learning in the 21st century, "Only Connect: Empowering Schools for the Disabled in Indore to Engage in a Participatory and Inclusive Online Public Sphere," was funded by the Embassy of the United States of America in April 2022 as one of the winning entries in the prestigious Alumni Micro Grants Project Competition. The project was completed in September 2022 and is now hosted online at [www.onlyconnectindore.org](http://www.onlyconnectindore.org).

Prof. Nirmala Menon received Indo-Swiss Bilateral Project on "Digital Twins: negotiating identity and translocated heritage in the global age".

Prof. Abhinav Kranti has been awarded with the ASEM-DUO Belgium-Wallonia-Brussels fellowship award, which aims to support technology development of PrFET for high-speed and analog/RF applications.

Prof. Avinash Sonawane, Dean, International Relations, IIT Indore has been appointed as 'DAAD Research Ambassador' for a three-year period between 2022-25.

Indo-German Science & Technology Centre (IGSTC) Awarded "Small Immediate Need Grants (SING)" to Dr. Hem Chandra Jha, Indian Institute of Technology, Indore to undertake research on "Unrevealing the role of peroxisome in Epstein Barr virus-mediated infections".

Prof. Sandeep Chaudhary to lead a team of researchers at NPI, Russia as one of the 30 winners of the ninth mega grant competition of the Government of the Russian Federation.

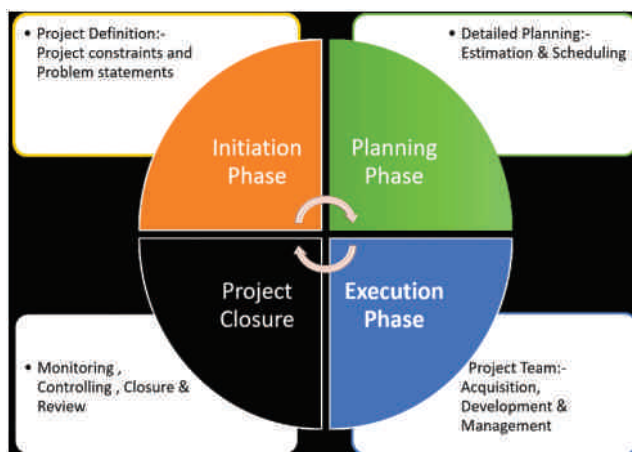
### International Scholarships received by IITI Students

Name of the Scholarship/Fellowship	Awardee's Name	Department	Program
Overseas Visiting Doctoral Fellowship	Vivek Saxsena	ME	PhD
IEEE MTT-S Undergraduate Scholarship (2023)	Aryan Rastogi	EE	BTech
Mitacs Globalink Research Internship 2023	Ujjwal Hendwe	EE	BTech
	Aditya Guhagarkar	EE	BTech
	Kshitij Bhat	ME	BTech
	Parth Dwivedi	CE	BTech
	Dhruv Parasrampur	EE	BTech
	Soham Ghewari	ME	BTech
	Amit Dhavale	ME	BTech
	Chinmayi Adoni	EE	BTech
	Shruti Modi	CSE	BTech
	Nischit Hosamani	CSE	BTech
	Sejal Kotian	MEMS	BTech
	Jitin Kumar	MEMS	BTech
DAAD Fellowship	Priya Ghosh	BSBE	PhD
Charpak lab Scholarship	Puneet Gupta	ME	BTech
SING Funds (Indo-German Science & Technology Centre)	Kanchan Samadhiya	BSBE	PhD
Charpak Exchange Scholarship 2023 (Spring Session)	Jenish Shah	EE	BTech
Humboldt Fellowship for Postdocs	Minu Treesa Abraham	CE	PhD



## Campus Infrastructure Development

IIT Indore was allotted 501.42 acres of land, including 200 acres of forest area. Infrastructure Development Office of IIT Indore is one of the most important service units which plays a vital role in providing the requisite infrastructure facilities such as buildings, electricity, water supply, roads and pathways, parks and gardens and all other amenities required in the campus, along with its maintenance. Institute has completed a mandate of 2.21 Lakhs Square meter area (36 structures) of construction.



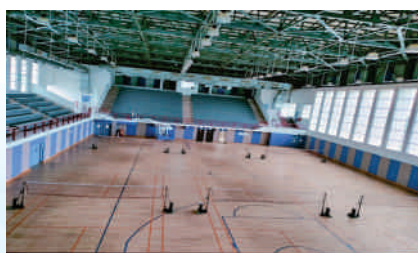
In last one year, following developments were carried out in the campus:

1. Sports Complex
2. Development of Amrit Sarovar
3. Construction of Forest Beat Office
4. Construction of Rainwater Harvesting ponds
5. Single Lane Forest Road
6. Development of Sports Arena
7. Horticulture work around POD
8. Annual Maintenance Contracts for electrical, civil, HVAC. utility services

**1. Sports Complex:** It has all facilities of indoor & outdoor games, dedicated by the Honorable Minister of Education, Govt. of India in 2022:

Salient Features of Sports Complex are as follows:

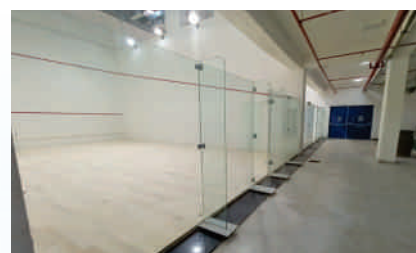
- 1) Indoor Badminton Court (06 numbers)
- 2) Indoor Basketball Court - (02 numbers)
- 3) Gym
- 4) Squash Court (03 numbers)
- 5) Swimming pool
- 6) Outdoor Volleyball Court
- 7) Outdoor Basketball Court



Indoor Badminton Court /  
Indoor Basketball Court



Gym



Squash Court





Swimming Pool



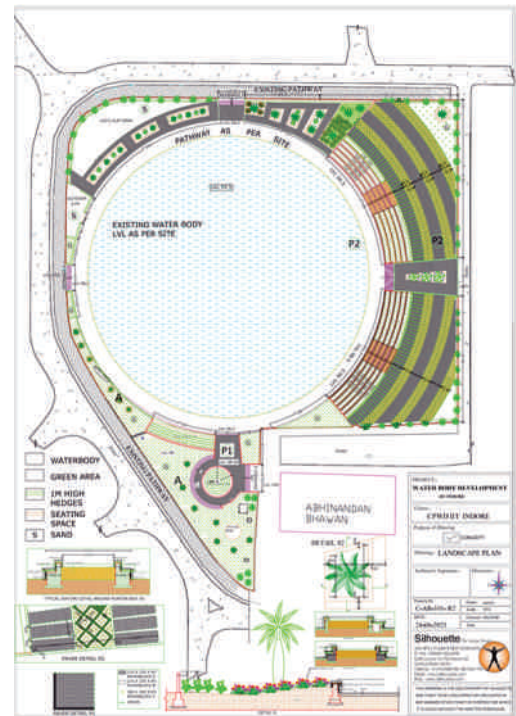
Outdoor Volleyball Court



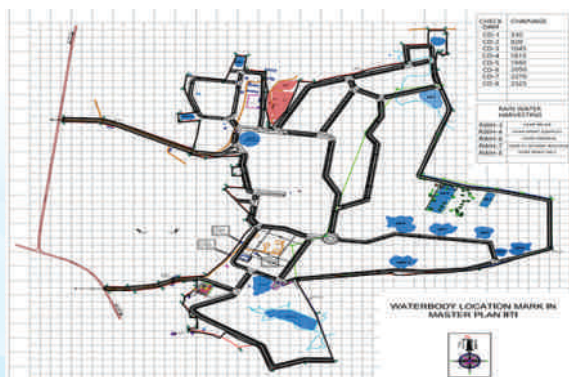
Outdoor Basketball Court

**2. Development of Amrit Sarovar at IIT Indore:** The work of “Amrit Sarovar” was awarded to Rural Engineering services (RES), Government of Madhya Pradesh and an amount of Rs. 1 Crore was granted by the Hon’ble Minister Shri Dharmendra Pradhan. Accordingly, work has been started and excavation work is completed by the Institute along with railing and walking track. The Diameter of Sarovar is 98 Meter having more than 10,000 Cum water capacity.

Amrit Sarovar has the following major features: Walking track 6 m wide, Amphitheater, Fountain, Childrens play area, Open gym.



**3. Construction of Forest Beat Office:** Forest beat office is constructed in the forest area of IIT Indore campus as a compliance of diversion of forest land. The forest beat office will provide the office, residential & nursery space to the state forest department. It will be helpful for afforestation, restocking and maintenance of the forest area around the IIT Indore campus.



**4. Construction of Rainwater Harvesting ponds:** IIT Indore is developing 8 number rainwater harvesting ponds of total capacity approximate 22.32 Crore Liters in the campus for water conservation.

**5. Single Lane Road in Forest Area:** Single Lane road of 2.8 Km along with 9 culverts in forest area is being developed to access the forest area in case of forest fire & surveillance.



**6. Development of Sports Arena:** Work of development of sports arena is under tendering process and works will be started by January 2023.

Salient features of sports arena are as follows:

- 1) Football ground
- 2) Synthetic athletic track
- 3) Hockey ground
- 4) Lawn tennis courts – 2 Nos.
- 5) Volleyball courts – 2 Nos
- 6) Various sports facilities such as Discus & hammer base, Javelin throw, High Jump, Short put, Steeplechase, Polo vault, triple jump and long jump including warm up area.



**7. Landscape / Horticulture work around POD buildings:** Development of horticulture work is completed by CPWD Horticulture Wing near POD-3 cluster. The total development includes development of lawn of 3,400 Square Meter, plantation of 261 nos. trees, 1860 nos. shrubs, hedge/ edge / ground cover 9077 Nos.



**8. Annual Maintenance Contracts for Electrical, Civil, HVAC. Utility services:** To control and account for all maintenance costs on a long-term, fixed basis, AMC works are initiated for Electrical, Civil, HVAC & Utility services.



**9. Massive plantation drive on campus:** The Institute has encouraged its community members to plantation and organised many plantation drives. Around 3,000 plants have been planted last year, and land development was completed for the plantation of around 5,000 plants in the monsoon season of 2023.



**10. J.P. Narayan Center of Excellence in Humanities:** J.P. Narayan Center of Excellence is developed at the Institute. The building has a G+2 story with RCC framed structure. The total area of the building is 846 Square Meters. The cost of the construction of the building is Rs. 177 lacs. The cost of furnishing the J.P. Narayan Center of Excellence is Rs. 48.23 lacs.



**11. Development of bird watch towers in forest area:**

Two bird watch towers have been created in the Forest Area with bamboo. This will facilitate students to be closer to nature in a safe environment.



## Student Affairs

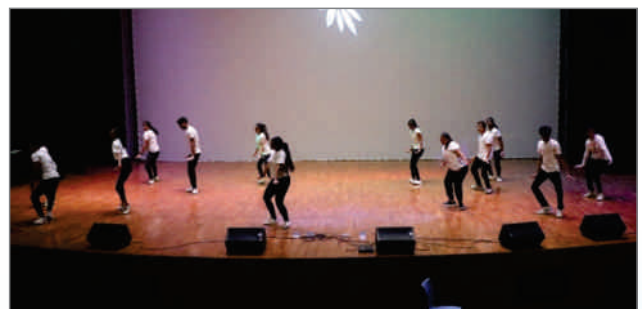
Student Affairs Office operates as an administrative interface to the students at IITI for the conduction of various events through Student Gymkhana through a team headed by Professor Srivathsan Vasudevan, Dean of Student Affairs (DoSA), assisted by Dr. Sanjeev Singh, Associate Dean of Student Affairs (ADoSA), Cdr. Sunil Kumar (Retd.), Joint Registrar Student Affairs, Mr. Tanmay H. Vaishnav, Section Officer and Mr. Digant Karve, PA to DoSA.

Student life at IIT Indore comprises a judicious balance between different academic and extra-curricular activities, including BTech project work as part of other courses, industrial visits, etc., that go a long way in bolstering the students' knowledge, experience, and personality. Students' extra-curricular activities are driven by a systematic structure of clubs within the Institute that channel the activities. Some clubs worth mentioning include the Programming Club, Drama Club, Gaming Club, etc. Various student-run cells, such as the Entrepreneurship Cell and Students International Activity Cell, help expose the students to industry and academia and help develop their skills. This, coupled with the fact that IIT Indore has a very healthy student-to-faculty ratio, plays a definitive role in providing the students with the best environment possible for learning and overall development.

### Cultural Council

Throughout the year, the student community was enriched by a diverse array of events organized by various Cultural Clubs. The Cultural Council engaged people through Tamasha, a unique arts celebration. Various clubs came together to showcase student talent on stage for Independence Day and Teacher's Day; and represented Indian traditions at the Apna Culture event.

The campus also hosted the competitive T-vs-M event and organized festive gatherings like Garba Night. The standout event of the year was Fluxus 10.0, which was a resounding success.





### Science & Technical Council

IIT Indore has a fast-developing technical network. The IIT Indore contingent stood at the overall 11th position and two teams won bronze and gold medals respectively at the Inter-IIT Tech Meet. The eBAJA was conducted where IIT Indore bagged 20th rank in the CAE and SALES events. IITI SoC and Winter of CP were also conducted by the Programming Club. Other Tech Clubs conducted various workshops and events throughout the year.

### Sports Council

The Sports Council at IIT Indore organized various sports events in which the events were a part of significant flagship events. The sports council introduced new tournaments like JOSH, SHAURYA, and The General Championship in which most of the sports events were conducted.

JOSH was conducted mostly for the freshers so that they could get familiarized with the sports culture of the Institute. SHAURYA was an Inter Hostel Tournament in which the hostels competed as contingents. The General Championship was a major flagship event conducted over six months in which the contingents were formed batch-wise.





## Academic Council

The Academic Council, under the Students' Gymkhana of the Indian Institute of Technology Indore, conducted the Research Conclave to nurture young minds toward research, innovation and entrepreneurship. Further, the Career Guidance Series 2.0 was organized to reflect students' passions, interests and abilities. Later, the "Industry connects talks" was introduced as an initiative to enlighten the ideas and establish a deeper understanding of the industrial world. To set the stage high for the new students, Departmental Orientations for all the branches were held. On the occasion of International Women's Day 2022, an event was conducted in collaboration with the Women Cell IITI to celebrate the role of women in our society and to spread awareness about the same.



## TEDx IIT Indore

The highlight of the year was the fourth edition of TEDx IIT Indore, created in the spirit of TED's overall mission to research and discover "ideas worth spreading". The theme 'Atomic to Cosmic' represented the pursuit of excellence is a path that has obstacles and hardships along the way. One must shed blood and sweat alike to conquer these challenges. The rise to the top is the inspiration behind "Atomic to Cosmic", which signifies all the atomic efforts made day in and day out to shine like stars amongst the ordinary. It featured thought-provoking talks from Ms. Richa Singh, Dr. Varun Kapoor, Mr. Ashu Ghai and Mr. Rahul Bhargava. The event was a grand success and added another feather to our cap.





## Placement Cell

The Training and Placement Cell is the Central point of contact for Campus Placements of students at the Institute. The Placement session at IIT Indore was a hybrid event this season, which started in October 2022 and concluded in May 2023 (for full-time hirings). For the Internship, the process started in August 2022 and lasted until September 2022.

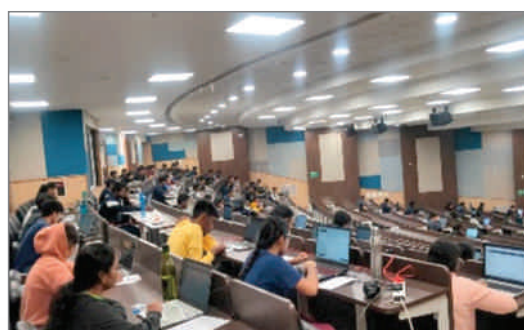
- The market crisis impacted the hiring of many renowned companies, which resulted in lesser companies for the on-campus placements for the 2022-23 session. However, we were successful in increasing the number of offers from last year, and 80+ companies and two PSUs participated in this year's Placement Drive.
- The placement was conducted in two phases. Phase I started in October 2022, while the second phase began in January 2023. Considering the increasing number of courses on offer and the corresponding specializations, the Placement cell has continuously strived towards achieving maximum participation of students from across all programs.

### Placement Drive Highlights for 2022-23:

Key Metrics	Details
Total No. of Companies	80+
Total No. of Offers	244
Total No. of PPO Offered	54
International Job Offers	30
Highest Domestic CTC	68 LPA (INR)
Average Domestic CTC	24.5 LPA (INR)
Highest International CTC	45 LPA (INR)
Average International CTC	41.50 LPA (INR)
Total PSU Offers	8 Offers (GAIL & BEL)

### Student Pre-Placement Preparation:

One of the primary functions of the Placement Office is to prepare students for their campus placement and internships by making them adept at the various techniques of practicing Online Coding Challenges and working on Online Software while appearing for Online Assessments as part of the Campus Placement Process. The Placement Cell facilitates a variety of hackathons by premier recruiters to impart hands-on experience for various domains viz, engineering, coding, consultancy, finance, analytics, etc.

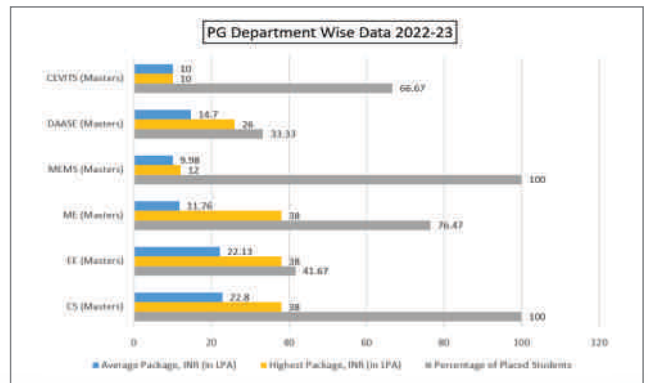
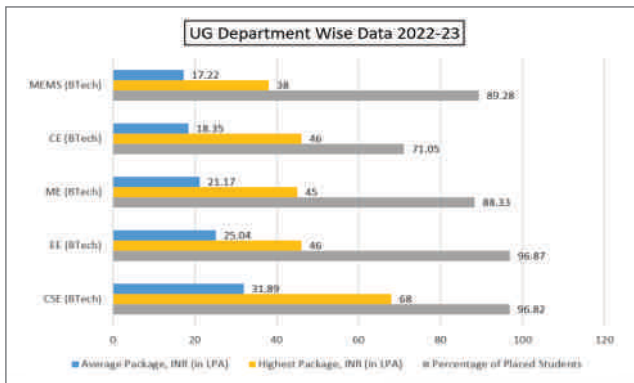
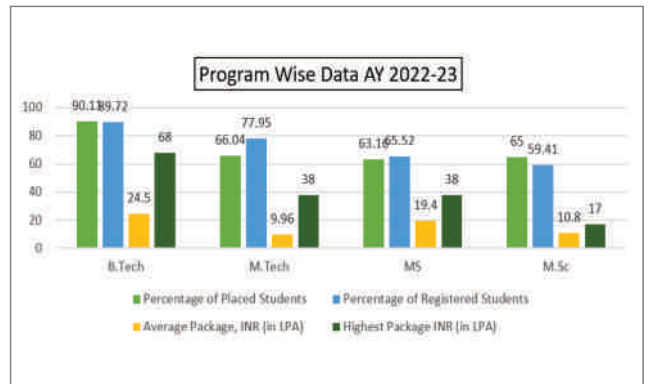
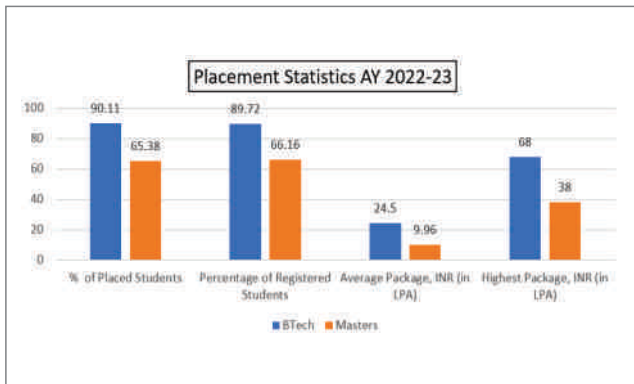


The Placement Office acts as a connecting link between the recruiter and students, facilitating career progression through due planning and preparation. The Placement Cell works in tandem with the student placement managers to ensure that the best of the industry recruiters visit the campus for placements. The student team at the Institute takes the necessary inputs for identifying and mapping the student's skill sets by systematic industry groundwork. Placement activity begins through rigorous analysis of Market trends with an aim to invite the most prominent recruiters offering lucrative compensation. Efforts were made to understand the virtual process, including career planning, and help was extended to discover opportunities based on the student's background, qualifications, and previous experiences.



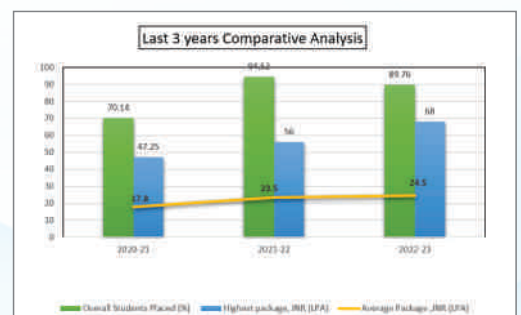
**Recruiters Profile:**

IIT Indore has seen remarkable growth in terms of both the number of companies visiting the campus and the compensation being offered. The initial part of the season was dominated by companies offering Software Development, Research Engineer, AI/ML, and Data Science Analyst roles. Most of these firms are world leaders in their respective domains. The world’s best consulting firms, banks, and software companies take part in placements, and over the years, IIT Indore has tried to fetch the best of the recruiters to hire the finest pool of students. Some non-core roles have grabbed attention over the previous years due to multiple factors such as hefty compensation, career growth prospects, work culture, ethical guidelines, etc. This year, a new “Jewelry” segment also entered to take our talent for their smooth operations.



**Last three years Placement Statistics Comparison**

Last Three Years comparison (2020-21, 2021-22 & 2022-23)			
Program	2019-20	2020-21	2021-22
Overall Students Placed (%)	70.14	94.52	89.76
Highest package, INR (LPA)	47.25	56	68
Average Package, INR (LPA)	17.8	23.5	24.5



### Internships Report:

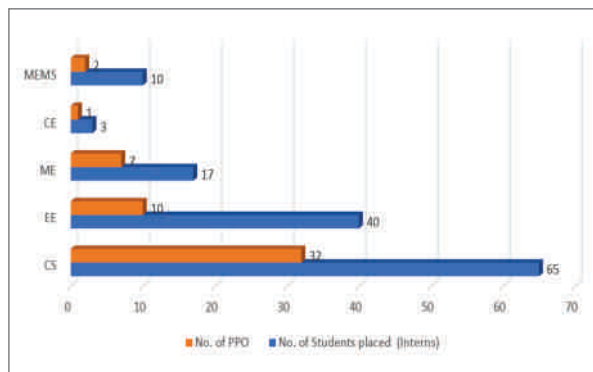
Industrial exposure is a prerequisite to enter the corporate world. Students at IIT Indore pursue Internships, usually as part of BTP Projects. Students from their third year of B.Tech appear for the Campus Internship Process. Taking into consideration students and the roles offered, the Placement Office strives to provide students with the best opportunities in their areas of interest. The Placement Office also encourages research by providing students the research internship opportunities at esteemed universities. The Internship season 2022-23 started in August 2022 and continued until September 2022. There was a total of 135 students who got selected for the internships. Prominent recruiters included Goldman Sachs, D.E Shaw, Google, Flipkart, Arcesium, Samsung, etc.

### Internship Highlights:

- Tremendous growth was witnessed in terms of Internship Opportunities for the Academic Year 2022-23. The number of students who received internship offers increased drastically from 68 to 135 this year.
- The highest stipend for the Internship Session 2022-23 was INR 1,50,000.



### Department-wise Internship Graph (AY 2022-23):



The placement drive at IIT Indore has witnessed a tremendous increase in placement statistics over the years. For the AY 2022-23, the campus placement process started in August 2021 and concluded in May 2022. The placement was successfully concluded in two phases. The placement process for phase I was conducted from October-December 2022, which witnessed the participation of top-notch companies recognized globally, including Pre-Placement Offers (PPO), while phase II was conducted from January 2023-

May 2023. 383 students registered for the placements (both UG and Masters).

The entire placement process was conducted in hybrid mode. PSUs like GAIL & BEL were also part of our Placement Drive 2022-23. Some registered students also preferred to go for higher Studies in institutes of National/International repute. Our excellent placement record over the years speaks about our value proposition which is showcased in subsequent years.





## Halls of Residence (Hostel)

A.P.J. Abdul Kalam Hostel is the first Hostel at IIT Indore's permanent campus and was inaugurated in 2016. Subsequently, Homi Jehangir Bhabha (HJB) Hostel was inaugurated in 2019, and Devi Ahilya, Vikram Sarabhai (VSB), & C.V. Raman (CVR) Hostels in 2020. Each Hostel has 99 units that accommodate a total of 574 students. Each unit has six bedrooms with single occupancy for each room. It also has a furnished living area, a common kitchen, two toilets, and two washrooms. IIT Indore ensures that students from different states, languages, and different departments are allotted a unit to promote an interdisciplinary approach to study and research and national bonding among them. All the hostels are also equipped with solar hot water facilities, and APJ Hostel is centrally air-conditioned.



The Hostel Department is headed by Dr. Jayaprakash Murugesan, Chief Warden, who is assisted by Mr. Digant Karve, Senior Assistant, and Mr. Surendra Singh Sulya, Junior Assistant at the Chief Warden Office. A Warden heads each Hostel with the assistance of a Supervisor and Attendant. The details of the Hostels are as follows: -

Hostel No.	Hostel Name	Hostel Type (Girls/Boys)	Warden/Warden In-charge	Associate Warden
01	APJ Hostel (Avul Pakir Jainulabdeen Abdul Kalam)	Boys	Dr. Harekrishna Yadav	--
02	CVR Hostel (Chandrasekhara Venkata Raman)	Boys	Dr. Saptarshi Ghosh	--
03	HJB Homi Jehangir Bhabha	Boys	Dr. Jayaprakash Murugesan	--
04	Devi Ahilya Hostel	Girls	Dr. Charitha Cherugondi	Dr. Ananya Ghoshal
05	Vikram Sarabhai Hostel	Boys	Dr. Ram Sajeewan Maurya	--
06	J C Bose Hall of Residence	Married Research Scholars'	Dr. Saikat Sarkar	

### Guest Rooms/Units in Hostel

The Hostel also has guest house facilities to cater to 85 guests. The guest rooms provide facilities like smart LED TV, Sofa Set, Center Table, Cooler, Microwave, Electric Kettle, Mattress, Blanket, Bedsheet, Pillow, Towels, and Cloth Stand, etc.

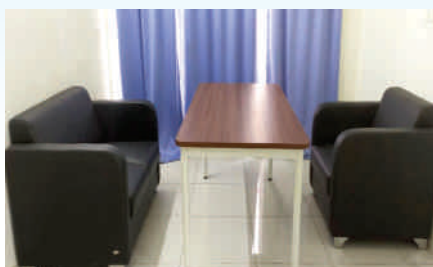




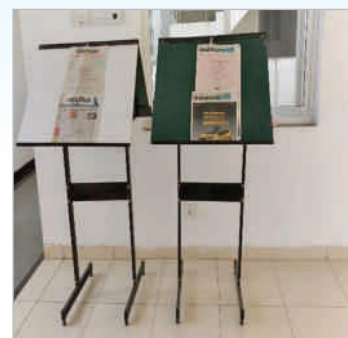
## Basic Facilities in Hostel



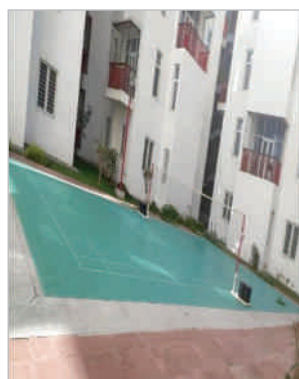
Basic Room



Common Hall



News Paper Stand



Badminton Court



Table Tennis



Soccer Table



Magazine Stand

## Central Dining Facility

The Institute has a Central Dining Facility (Carbon building) wherein around 5000 people can have their meals at one point. Students of different hostels can have meals together in the dining hall. Separate sections have been developed for dining for students, Institute staff, and guests. The dining hall comprises 03 big-sized and 04 small-sized kitchens, 02 common washrooms, and an elevator facility as well. An Executive Dining Hall has also been equipped in the Central Dining Facility for Hospitality & Dining services to the Institute's invited/VIP guests.



Students are served healthy and nutritious meals wherein the student body decides the menu on a weekly basis, and a dining committee monitors the overall functions. The quality of food is maintained by taking frequent feedback and immediate addressal of complaints. The payments are made to the caterer on a monthly meal plan basis. The payment is made through Smart Card Facility and is cashless. The entire central dining facility follows COVID-appropriate behavior. Besides regular dining services, the Carbon Building also houses several kiosks serving delicacies and other services around the clock.

The functioning of the central dining section is supervised by a team of dining staff, student body, and student volunteers and administered by a dining committee headed by Dr. Pravarthana Dhanpal, Dining Warden.

## Counselling Cell

Counselling Cell has been integral to IIT Indore since its inception in December 2011. The function of this cell is to offer a supportive and conducive environment for students wherein he/she can discuss personal concerns or academic challenges and seek professional help from the counselling cell team members.

With a vision to enhance positive well-being and facilitate the overall development of the IIT Indore student community, the Cell's services are equally accessible to all the students (B.Tech, M.Tech/ M.Sc, Ph.D and any other courses which are added over the years) of IIT Indore. Focusing on the prevention of mental health issues- prevention of suicide and chronic mental health problems, the counselling cell works for early identification and early intervention for various mental health issues in students.



**Professor Aruna Tiwari**  
Head, Counselling Services

### Faculty Counselling Coordinators

Faculty members from each department are nominated as faculty counselling coordinators yearly.



**Professor Trapti Jain**  
Electrical Engineering



**Dr. S Janakiraman**  
Mechanical Engineering



**Dr. Chandresh Kumar Maurya**  
Computer Science and Engineering



**Dr. Mayur Shirish Jain**  
Civil Engineering



**Dr. Mrigendra Dubey**  
Metallurgy Engineering and Material Science



**Dr. Narendra Nath Patra**  
Astronomy, Astrophysics & Space Engineering



**Dr. Sharad Gupta**  
Biosciences and Biomedical Engineering



**Dr. Debajyoti Sarkar**  
Physics



**Dr. Umesh A. Kshirsagar**  
Chemistry



**Professor Swadesh Kumar Sahoo**  
Mathematics



**Dr. Kedarmal Verma**  
School of Humanities  
and Social Science

### **Student Counselling Coordinators (SCC) & Student Gymkhana Representative**

Students from UG, PG and Ph.D are selected as student counselling coordinators yearly.



**Ms. Purna Kukadiya**  
Student Counselling  
Coordinator for Ph.D.



**Ms. Samiksha Rele**  
Student Counselling  
Coordinator for PG



**Ms. Bhavya Gupta**  
Student Counselling  
Coordinator for UG



**Mr. S. Shreshth**  
GS - COA,  
Student Gymkhana

### **Counselors**



**Ms. Monika Gupta**  
Senior Counselor



**Mr. Shubham Mandsaurkar**  
Counselor



**Ms. Harshita Murai**  
Counselor

### **Office Staff**



**Mr. Tanmay Harsh Vaishnav**  
Section Officer



### Counselling Cell undertakes the following activities:

**Individual counselling sessions (In-person, Online/Tele counselling)**- are carried out by the cell to assist the students in dealing with a wide range of concerns, be it academic, personal, emotional, family, or peer-related, as well as a wide range of psychological concerns including clinical depression, anxiety spectrum difficulties, suicidal tendencies, and complex personality traits.

**Parents counselling sessions**- Meetings with parents of students having concerns with academics or psychological concerns are conducted.

**Regular follow up**- Follow-up counselling sessions with students, and their parents are held to ensure effective interventions.

**Student Mentorship Programme**- With the aim to foster a healthy, stress-free environment for the student community, the Counselling Cell, with the support of gymkhana general secretary counselling and outreach, oversees a student mentorship programme. The student mentors help freshers in terms of both academic and non-academic concerns.

**Faculty Advisor Programme**- The counselling cell assigns faculty advisors for the new UG and PG students at the time of joining the Institute in consultation with the Dean of Student Affairs and Academic Affairs. The faculty advisors regularly interact with the delegated students and guide them with academic concerns. The students are further referred to the student counselor in case the student shows any signs of distress.

**Orientation to Counselling Cell**- A session for introduction to counselling cell is organized for the fresher students in which information regarding counselling services in IIT Indore is shared.

**Crises Intervention**- The counselor also sees the students at health center or hall of residence for any urgent and immediate concerns.

**To create a strong referral system** as a basis for enhancing mental health services, where students are being referred by officials, academic office, health center, faculty advisors, parents, and friends, apart from walk-in students who approach the counselling cell on their own.

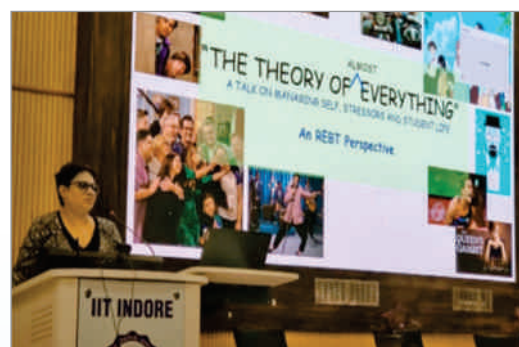
**Webinars and Expert Talks** are organized to create awareness of mental health issues and positive well-being.

## Events organized by the Counselling Cell during 2022-23

### 1. Managing Self, Stressors and Student Life- The Theory of Almost Everything

**Date:** August 6, 2022

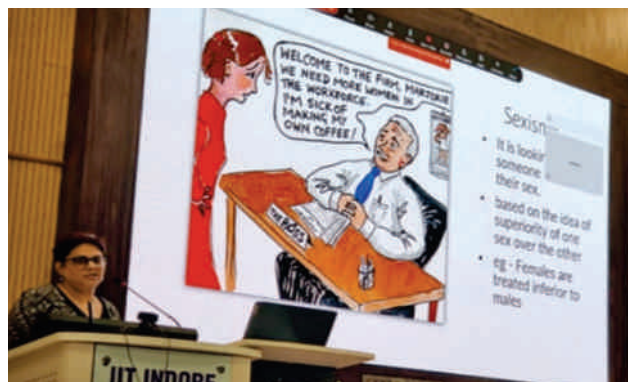
As the student moves forward in their life, challenges such as competition, difficulty in social interaction, and development take place. Along the same lines, the expert talk was organized by the counselling cell of IIT Indore. Mumbai-based psychotherapist Ms. Shashi Rekha was invited to deliver the expert talk titled "Managing self, stressors, and student life- The Theory of Almost Everything" for undergraduate students.



## 2. Mind Matter and Me

**Date:** August 7, 2022

A Seminar was held for the Postgraduate students of IIT Indore by Ms. Shashi Rekha on the topic “Mind Matter and Me”. During this talk, an Attention Retention Exercise was conducted by the expert, and it was explained to the students how Thoughts turn into Emotions – which turns into Behavior. She also shared how to change our goals into Real / Implied / Imagery to understand the possibility and required efforts to achieve that.



## 3. How to drive productivity under tough circumstances?

**Date:** August 29, 2022

This topic was deliberated upon by Dr. Meghna Verma, Associate Professor, Ramaiah Institute of Management Bengaluru. During the seminar, Dr. Verma shared the strategies to keep ourselves motivated in tough situations and able to be productive in various areas of life. The seminar was followed by the plantation in the campus area by the guest speaker and dignitaries of IIT Indore.



## 4. Interactive Meeting with Faculty Advisor and Student Mentor

**Dates:**

1<sup>st</sup> Interactive Meeting: October 27, 2022

2<sup>nd</sup> Interactive Meeting: December 1, 2022

3<sup>rd</sup> Interactive Meeting: February 17, 2023

Interactive meetings with new students, their faculty advisors, and student mentors were held three times a semester for PG and UG batch of 2022. The Director of IIT Indore, Professor Suhas S. Joshi, addressed the students, and it was followed by a QA session along with the Dean of Faculty Affairs, Dean of Student Affairs, and Head of Counseling Services.





### 5. World Mental Health Day Program

**Date:** October 13 & 14, 2022

On the occasion of the World Mental Health Day, the counselling cell at IIT Indore organized a two-day event on October 13 and 14. On October 13, a logo-making for counselling cell and art competition was organized titled “Paint Your Perspective”. The esteemed guest speakers of the day included Dr. Vijender Singh, HOD Psychiatry Department, AIIMS Bhopal; Lilavati Krishnan, Retired Professor of Humanities & Social Sciences, IIT Kanpur and Dr. Ashutosh Singh, Visiting Psychiatrist at IIT Indore, who shared their views on the following: -

1. Understanding the Mental Health Issues in Professionals and Management Strategies
2. Self-esteem and Resilience in Mental Health: Making Life Personally Meaningful
3. Mental Health issue: why can't we still identify it in time?



### 6. Time Management Workshop

**Date:** December 13, 2022, to December 16, 2022

The counseling cell organized a workshop on Time Management for students of B.Tech 1st year, 2022. It was an activities-based workshop where various practical tips for effective time management were shared with the students. The workshop was conducted in small groups to make it more interactive.





## 7. How much is Too much Screen Use? a Psychological Insight

**Date:** February 10, 2023

Dr. Manoj Kumar Sharma, heads SHUT Clinic (India's first tech de-addiction facility), Professor of Clinical Psychology, NIMHANS, Bengaluru, was invited to deliver a talk on "How much is Too much Screen Use? A Psychological Insight". During his talk, Dr Sharma spoke about digital addiction and other related problems like Zero inbox syndrome, and acute social withdrawal. Dr. Sharma also shared tips to manage excessive screen use.



## Major Achievements and Collaborations

With the addition of counselors to the counselling team, the crucial challenge of post-pandemic increase in counseling concerns of the students could be effectively handled. This further facilitated the prevention of suicide and improvement in the overall positive well-being of the IIT Indore student community. Timely intervention could be executed in crises with the support of the Institute health center and in close coordination with the Dean of Student Affairs and the Chief Warden's Office. The adjunct online and tele-counseling services with Ms. Sashi Rekha, a Mumbai-based Psychotherapist and Life Skills Coach, proved very helpful.



A series of interactive meetings organized by the counselling cell with faculty advisors, student mentors, and the Director's interaction with first-year students inspired the students to feel they belonged to the Institute. On the day of Orientation, the concerns of the parents were addressed by the Director of IIT Indore and Institute functionaries in an interactive session which led to a strong foundation of connect of the parents with Institute authorities and enhanced the approachability.

## Outreach & Public Lectures

During the year, the Institute Seminar and Outreach Committee conducted a series of Public Lectures by eminent speakers as outlined below:



*Prof. Subhasis Chaudhuri, Director, IIT Bombay  
Students' interaction with an eminent researcher*

Prof. Chaudhuri is the Kamalnayan Bajaj Chair Professor of the Electrical Engineering at IIT Bombay. He is known for his pioneering studies on computer vision. He is an elected fellow of all the four major Indian academies of engineering and sciences viz; the Indian National Academy of Engineering, the National Academy of Sciences, Indian Academy of Sciences, Indian National Science Academy. The Council of Scientific and Industrial Research, the apex agency of the Govt. of India, awarded him the Shanti Swarup Bhatnagar Prize, one of the highest Indian Science awards, in 2004 for his contributions to Engineering Sciences. He has been the Director of IIT Bombay since 2019.

During the event Prof. Chaudhuri interacted with research scholars and highlighted the importance of education in science and technology in the global context.



*USIEF: Fulbright outreach webinar held on  
18<sup>th</sup> of April at IIT Indore*

Miss. Suranjana Das, Program & Alumni Manager, United States-India Educational Foundation (USIEF) Fulbright Commission in India visited IIT Indore on 18th April 2022 to conduct an outreach webinar. It was an interactive session organized for IIT Indore students and Faculty members to entail about the Fulbright-Nehru, and other Fulbright opportunities for study, research, teaching, and professional development in the U.S.



*Prof. Sundararajan (Retd.)  
Nanyang Technological University,  
Singapore visited IIT Indore*

Prof. Narasimhan Sundararajan visited IIT Indore as the speaker of the workshop on "How to Improve Your Research Skills" from the 8th of September to the 10th of September 2022. The workshop was attended by 100+ research scholars and faculties from the IIT Indore campus in person, along with 200+ participants from other IITs, NIT, and IIITs virtually on the WebEx platform.

Brief about the speaker: Prof. N. Sundararajan has worked in ISRO, Trivandrum, India as a Control System Designer to Director, Launch Vehicle Design Group contributing to the design and development of the Indian satellite launch vehicles SLV3, ASLV, PSLV and GSLV. His major achievements include

working as the Project Engineer (Mission) for the first Indian Satellite Launch Vehicle project SLV3 team working directly under Dr. A. P. J. Abdul Kalam. After that, he worked in the School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, as a professor and retired from that position.





*First Group Monitoring Workshop of SERB Start-up Research Grant - Life Sciences (SRG-LS) from July 4-5, 2022*

IIT Indore hosted the first Group Monitoring Workshop of SERB Start-up Research Grant - Life Sciences (SRG-LS) from the 4th to the 5th July of 2022. Prof. Suhas S. Joshi, Director, IIT Indore delivered the inaugural address and welcomed all the dignitaries and Principal Investigators. The inaugural session was graced by Prof. Shiv Mohan Singh (Scientist G), SRG Programme Advisor, SERB-DST, Govt. of India, Prof. Manoj Prasad from National Institute of Plant Genome Research, New Delhi, Chairman of the SRG-LS Committee, and Dr Pramod Kumar Prasad, Programme Officer, SRG-Life Sciences, SERB-DST. The event was coordinated

by the International Relations (IR) office under the leadership of Prof. Avinash Sonawane, Dean of International Relations. 23 Expert Committee Members and 85 Principal Investigators from various Institutions attended the workshop. During the workshop, SERB monitored and evaluated the progress of approximately 85 ongoing projects in Life Sciences submitted under the Start-up Research grant program. The Start-up Research Grant (SRG) is meant to enable researchers working in frontier areas of science and engineering to establish themselves and move on to the mainstream core research grant. Prof. Suhas S. Joshi briefed about the course planned for start-up and said, "The Institute has around 75 technologies, which have emerged from the research of Professors and students at the Institute. We have documented them and made a brochure of these technologies, and one of the technologies is up for commercialisation. Apart from this, 17 patents have been filed out of these technologies and several patents are in the pipeline. We are very progressive not only in research but also in terms of technology development, its nurturing and licensing. I hope this workshop conducted by SERB will be very fruitful to the budding researchers as it will enable the technology developed to not remain confined to the laboratories but move to an advanced form."



*"Study in France" Seminar held on 5<sup>th</sup> of August 2022*

Miss. Divya Saxena, head of the Bhopal office for Campus France Madhya Pradesh, Chhattisgarh and Nagpur division - The Embassy of France in India visited IIT Indore to deliver a short presentation. It was an interactive session organized for IIT Indore students to entail about the "Higher Education, Research, Internships and Scholarship Opportunities in France". A strength of 100+ students joined the same in person.



*Public Lecture by Ambassador Manjeev Singh Puri (Retd.) at IIT Indore on 19<sup>th</sup> Sept 2022*

Ambassador Manjeet Singh Puri (retd) delivered a public lecture under "India @75: Videsh Niti Distinguished Lecture Series" on 19th of September 2022 on the title, "Tryst with Global Destiny" under the aegis of Ministry of External Affairs, Govt. of India. This lecture was organized under a commemorative lecture series entitled, "India@75: Videsh Niti Distinguished Lecture Series", as a part of the celebrations of 75 years of India's Independence. Under this initiative, lectures on India's foreign policy by distinguished Retired Ambassadors of India are being organized in various institutions across the nation.

Ambassador Puri is a retired Indian diplomat and has served as Ambassador of India to the European Union, Belgium, Luxembourg, Nepal and as Ambassador/Deputy Permanent Representative of India to the UN. In addition, he has served twice in Germany (in Bonn and Berlin), in Cape Town, Muscat, Bangkok and Caracas. From 2005 to 2009, he headed the UN-Economic & Social Affairs- Division in the Ministry of External Affairs of India and led the Indian delegation for the first meeting of the Global Forum on Migration and Development in Brussels in July 2007 and the presentation of various reports by India at the Human Rights Council. During 2011-2012, when India served on the Security Council, he was a senior member of its delegation. The session concluded with the presentation of a memento to the Distinguished Guest Speaker by Prof. Suhas S. Joshi, Director IIT Indore. Shri Siba Prasad Hota, Registrar In charge, IIT Indore conveyed vote of thanks to the visiting dignitary and the audience for their participation in online and offline modes.



## Ek Bharat Shresth Bharat



एक भारत श्रेष्ठ भारत

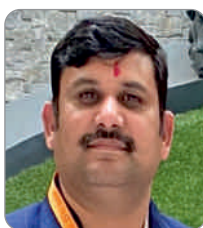
भारतीय प्रौद्योगिकी संस्थान इंदौर

Webpage: <http://ebsb.iiti.ac.in/>



The “Ek Bharat Shrestha Bharat” programme, an idea of a continual and intended cultural linkage between residents of different regions, was introduced by Prime Minister Shri Narendra Modi during the Rashtriya Ekta Diwas held on 31st October 2015, to venerate the birth anniversary of Sardar Vallabhbhai Patel. This program was initiated to celebrate cultural diversity through mutual interaction and exchange between people of different states and union territories so that a common spirit of understanding reverberates throughout the country.

Ek Bharat Shrestha Bharat (EBSB) team of IIT Indore is actively conducting various activities under the leadership of its Convener, Dr. Niraj Kumar Shukla (Associate Professor, Department of Mathematics) to promote various campaigns of the Government of India, such as Ek Bharat Shrestha Bharat, Rashtriya Aviskar Abhiyan, Unnat Bharat Abhiyan, Swachh Bharat Abhiyan, RuTAG, etc.



**Dr. Niraj Kumar Shukla**

Convener



**Dr. Ashisha Kumar**

Coordinator  
Rashtriya Avishkar  
Abhiyan  
(RAA)



**Dr. Mrigendra Dubey**

Coordinator  
Unnat Bharat  
Abhiyaan  
(UBA)



**Dr. Aruna Tiwari**

Coordinator  
Rural Technology  
Action Group  
(RuTAG)



**Dr. Ananya Ghoshal**

Coordinator  
Swachh Bharat  
Abhiyan  
(SBA)

To promote Ek Bharat Shreshtha Bharat Abhiyan, the EBSB team of IIT Indore organized the “North East Connect Programme: Yuva Sangam Program Phase-I (2023)”. Yuva Sangam, an initiative of the Government of India, is mooted to strengthen people-to-people connect and build empathy between the youth of North-Eastern states and the rest of India. This program was conducted under the ambit of Ek Bharat Shreshtha Bharat, and 11 Higher Education Institutions from North-East (NE) and 14 from the rest of the country were paired for mutual visits.

It is a matter of great pride that IIT Indore was nominated as the nodal Institute for the state of Madhya Pradesh and was paired with Manipur, with NIT Manipur as the nodal Institute. In this program, the youth of Manipur visited various significant places of Madhya Pradesh like Mahakal Corridor, Maheshwar Fort, Rajwada, IIM Indore and were acquainted with the cleanliness and management system of the Indore city, and the folk music and dance of Madhya Pradesh during March 20-26, 2023. During this visit, the youth of Manipur also had a unique opportunity to meet the Chief Minister of Madhya Pradesh, Shri Shivraj Singh Chouhan.



This program also brought a team of 49 students from 25 districts of Madhya Pradesh to Manipur and introduced them to various places in Manipur for cultural and educational activities. The Director of IIT Indore, Suhas S. Joshi, graced the flag-off ceremony. At Imphal, the youth of Madhya Pradesh interacted with the Governor of Manipur, Honourable Sushri Anusuiya Uikey, at Raj Bhavan. From IIT Indore, Dr. Niraj Kumar Shukla, Dr. Mrigenra Dubey, Dr. Ananya Ghoshal, Mr. Neeraj Kumar, Mr. Lalit Jain, and Mr. Santosh K. Sharma led the group.







The Sarpanch, members of staff, and Gram Panchayat Simrol were later commended with an official citation from IIT Indore Administration and Ek Bharat Shreshtha Bharat Team for hosting the 35 youth representatives of Manipur on 26th March 2023 and organizing for them a felicitation ceremony to make them aware of the various aspects of the Simrol village life.

To promote the **Rashtriya Aviskar Abhiyan**, the EBSB team of IIT Indore conducted more than 107 online sessions on "विज्ञान पर चर्चा-कार्यक्रम की श्रृंखला", for Hindi Medium school students (Class 6-8) of Madhya Pradesh, in association with Rajya Shiksha Kendra, M.P. Govt. In this series, experienced experts/Professors/Scientists explained the concepts of Mathematics, Science, and Technology in Hindi, which enhances the knowledge of Govt Schools teachers and students of Madhya Pradesh. The EBSB team also conducted workshops related to Mathematics, Science, and Technology in Hindi for the primary school teachers of Madhya Pradesh State Government. Many training workshops are also planned for Schools teachers.



The EBSB team of IIT Indore is frequently conducting activities in nearby adopted villages, namely Bai Gram, Indra Aawas, Jagjivan Gram, Mirzapur, and Nayagoan, and in their schools to achieve the noble objective of UBA. Faculty members and students of IIT Indore, in association with the EBSB team, are also continuously working on various projects under RAA, UBA, RuTAG, and SBA related to the upliftment of society.





On the occasion of Children’s Day and Diabetes Day on Nov 14, 2022, the team of Ek Bharat Shreshtha Bharat (EBSB), IIT Indore organised a free health checkup camp in Govt. School, Simrol, for students and villagers. The camp focused on Eyes, Bones & Spine check-up of the community. More than 200 people came for check-up and availed the camp facilities. The team informed the community on many government run medical schemes and encouraged them to contact the Government affiliated hospital for any treatment.



Dr. Niraj Kumar Shukla, Convener, EBSB said “IIT Indore has been continuously conducting many awareness activities for our adopted 5 villages under Unnat Bharat Abhiyan. This time, we organised a Free Health checkup Camp, under the supervision of Dr. D. K. Sharma, Dr. Teen Gupta and Dr. Rishi Gupta, from School of Excellence for Eye, Mahatma Gandhi Medical College, Indore.”



Mr. Lalit Jain, Mr. Santosh Sharma, Mr. Dushyant, Mr. Mukesh Yadav of IIT Indore along with Simrol Govt. School Principal and teachers also helped in spreading awareness on Swachhta and precautions to contain spreading of any disease.





# IIT Indore in Media

## शोध-पेटेंट में आगे बढ़ती आइआइटी की यात्रा

**उपलब्धि** • छह राज्यों में स्थित सात आइआइटी की वर्ष 2021 की रिपोर्टें

नई दिल्ली: आठ अक्टूबर को, भारत सरकार ने वर्ष 2021 की रिपोर्टें जारी की हैं। इन रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है।

**आइआइटी इंदौर में 443 गीतों पर 15 पेटेंट**

आइआइटी इंदौर ने वर्ष 2021 में कुल 443 गीतों पर 15 पेटेंट प्राप्त किए। इन पेटेंटों में, आइआइटी इंदौर की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है।

**आइआइटी इंदौर ने 62 पेटेंट, गीतों में**

आइआइटी इंदौर ने वर्ष 2021 में कुल 62 पेटेंट प्राप्त किए। इन पेटेंटों में, आइआइटी इंदौर की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है।

**आइआइटी इंदौर ने 30 पेटेंट प्राप्त**

आइआइटी इंदौर ने वर्ष 2021 में कुल 30 पेटेंट प्राप्त किए। इन पेटेंटों में, आइआइटी इंदौर की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है। रिपोर्टों में, आइआइटी की यात्रा के बारे में विस्तृत जानकारी दी गई है।

## IIT Indore secures patent for data-sensing technique

OUR STAFF REPORTER  
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**Dr. Bhupendra Singh Raniwal** | **Dr. Santosh Kumar Vishvakarma**

IIT Indore received a patent on Offset Compensated Data Sensing Technique for Low Energy Embedded SRAM from the Patent Office, Government of India. The inventors of the patent are Dr. Bhupendra Singh Raniwal and professor Santosh Kumar Vishvakarma.

This invention has led to the development of a semiconductor memory architecture designed for low-energy electronic devices which can tolerate variations in the modern IC fabrication process.

The conventional micro-processor-based, hand-held device comprises of embedded memory which characterises a huge share of the system-on-chip (SoC).

There is a likelihood of functional failure because of offset during chip fabrication.

## IIT Indore signs MoU with the IIFM, Bhopal

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**Prof. Suhas S. Joshi** | **Prof. Sushant S. Joshi**

IIT Indore has signed an MoU with Indian Institute of Forest Management (IIFM), Bhopal, to provide a framework for long-term collaboration and advancement of knowledge sharing based on reciprocity and mutual interest.

The MoU was signed by Prof. Suhas S. Joshi, Director, IIT Indore and Subhash Chandra (IFS), Director, IIFM, Bhopal.

Both the institutes will work on using technological intervention in the domain of natural resource management, environment, sustainable climate change, rural development, rural livelihoods and other allied fields/areas through joint research projects, training programmes, consulting assignments and other activities.

Faculty members from both the institutes will jointly supervise for PhD

In the common areas of interest, Possibilities about starting a sustainability centre, working together on ecotourism and agro-forestry was also discussed in detail during the meeting of IIT Indore and IIFM officials.

The visit of IIFM delegation was a reciprocity visit of IIT Indore delegation to IIFM. IIFM delegation along with other senior forest officials of Indore region visited the forest area of IIT Indore and agreed to guide IIT Indore

In developing the forest area of IIT Indore, Discussions were also held about forest fire, Nagar Van scheme, commercial plantation and development of water reservoirs in forest areas.

Recently, IIT Indore had signed an MoU to host 30 meritorious students from MP government engineering colleges, for a one-month internship/project without any fee. In addition to this, free accommodation and expenses to carry out research will also be borne by IIT Indore.

## KV IIT Indore starts Balvatika for tiny-tots

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Pandey, who had visited the school for inspection. IIT Indore director Prof Suhas S Joshi was also present during the occasion.

At the event, principal JP Bohre spoke about ongoing activities in the school. Pandey said that children of all classes should first try to keep their peers happy. She wished the children to move ahead by studying while being happy in the positive and green environment of IIT.

The commissioner awarded the talented children of the school including K Arini Mishra, K Mahi Kaushal and K Kinjal Rai. School's music teacher Pandit Sudhanshu Mahant and Yoga teacher Anil Chaudhary were also felicitated on their achievement.

Balvatika, a pilot project of Kendriya Vidyalaya Sangathan for tiny-tots, was started at KV IIT Indore on Monday. KV IIT Indore has been selected amongst the 50 KVs wherein Kendriya Vidyalaya Sangathan is introducing Balvatika classes in a pilot mode.

Children from the age of 3 years can be admitted to the Balvatika I and subsequently would be promoted to Balvatika 2 & 3 before seeking admission in Class 1.

The inauguration ceremony of Balvatika was conducted on Monday. The inauguration was done by Kendriya Vidyalaya Sangathan commissioner Nidhi

## IIT-I TEAM SENSITISES BAIGAON VILLAGERS TO SWACHHTA



As part of the activities under Ek Bharat Shreshtha Bharat (EBBSB), IIT Indore team visited a village hospital and school of Baigaon on September 6 to spread awareness on cleanliness and the precautions to contain spreading of diseases. Team comprising of Dr. Niraj Kumar Shukla, Dr. Shilpa Raut, Suresh Chandra Thakur and Meenaxi Sen interacted with patients and villagers. They were made aware on importance of Indian culture of swachhta with respect to current scenario and were also informed on many government schemes for medical facilities. Sarpanch of Baigaon v. Jyoti Lovelesh Meena was also present. During the visit to the school, the students, teachers and staff were apprised on proper utilization of dustbins and first-aid kit, Oximeter, writing material, sports gears and stationeries were also distributed by IIT Indore.

## IIT-I signs MoU with Ethiopia

Times News Network

**Indore:** The Indian Institute of Technology (IIT) Indore has signed a Memorandum of Understanding (MoU) with the Ministry of Education and Ministry of Innovation and Technology, Ethiopia to promote bilateral cooperation with Ethiopian Universities.

As part of the MoU, 46 universities of Ethiopia will become partner institutes and work together to promote various academic and research programs. A joint multidisciplinary international quality improvement PhD program will also be designed under the MoU.

The MoU was signed by Professor Suhas S. Joshi, Director, IIT Indore and Dr

## IIT-Indore Organises Corporate & Industry Connect Programme

IIT Indore, in one of its own kind of initiative, organised a programme --Corporate and Industry Connect (CIC)-- on August 20. Around 36 participants from 15 major industries of Indore, Pithampur and nearby areas were invited for the event. The aim of the programme was to find common areas of research, discuss problem statements, finding economical and viable solutions and long-term association. Director Suhas S Joshi, alumni and corporate relations dean Anand Parey and research and development dean IA Palani were also present during the sessions. The invitees were briefed on the R and D activities of the institute.



## IIT Indore's 'TITLI' set to change tribals' life

Orientation programme for new PG & PhD students held

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Keeping tribal people in mind, Indian Institute of Technology Indore has started a programme named as Technological Interventions for Tribal Livelihoods (TITLI).

"Under this programme, two new courses have been introduced titled as 'Innovations for Rural Technology Development and The Sign Thinking for Rural Applications'. Both these courses involve field visits to understand the needs of the rural population," said Prof. Suhas S. Joshi while addressing orientation programme of new PG & PhD students on Monday.

It was the first orientation-orientation programme after the opening of academic year.

A total of 624 students in various programmes in addition to PG & PhD, while addressing orientation programme of new PG & PhD students on Monday.

It was the first orientation-orientation programme after the opening of academic year 2022-23 (Autumn Semester).

Joshi said, "Research has been one of the brightest highlights of IIT Indore.

Indoles having over 4,200 participants in high impact factor journals, teams of students and professors have developed over 30 technologies that are at various stages of evolution.

"He added, "We are planning to establish a Transnational Research Ecosystem to the institute, where several of the in-house developed technologies can be translated to useful products for the benefit of industry and society. On the societal level, we at IIT Indore would like our students to provide technological solutions to the problems faced by the people at the bottom of the pyramid."

Joshi asked all the students to render 50 contributions to good quality research that is meaningful to someone in the society. He advised all to work together to make IIT Indore an institution that cares for all.

"The students were also briefed on the academic, research & development, student affairs, training & placement, innovation & entrepreneurship, international network, safety & security, health and medical facilities, library and minority cell by the respective heads of the sections."

## COOPERATION AMONG VARSITIES

Buyassa Badada Badassa, state minister, Ministry of Innovation and Technology, Ethiopia.

IIT Indore said students and faculty exchange programmes will be conducted under the joint multidisciplinary international quality improvement PhD programme.

Professor Suhas S. Joshi, Director, IIT Indore said, "The collaboration with the Ethiopian universities under Ministry of Education and Ministry of Innovation and Technology will help in collaborative research."

Joshi also emphasized the importance of successful collaboration with the Ethiopian universities and briefed about the academic programs, research areas, facilities and vision for the internationalization of the IIT Indore.

Dr. Leta Tesfayo Jule, Member of Parliament, president of Dambi Dollo University, Professor Krishnaraj Ramaswamy, principal scientist, Ministry of Innovation and Technology, Ethiopia and Professor Avinash Sonawane, Dean, International Relations at IIT Indore were present on the occasion.



# IIT-I inks MoU with Germany varsity to expand academic cooperation

TIMES NEWS NETWORK

**Indore:** Indian Institute of Technology Indore (IIT-I) has signed a memorandum of understanding (MoU) with Julius-Maximilians University Wurzburg (JMU) to establish and expand academic cooperation between the institutes.

The MoU will promote bilateral research and academic cooperation, joint programmes and student and faculty exchange, an official release said on Saturday.



The two institutes will have common areas of cooperation

The two institutes will have common areas of cooperation which include student training by coordinated training courses, exchange of students, exchange of academic staff, exchange of scientific, edu-

cational and scholarly material, exchange of information in substantive educational and research programmes, conferences and seminars and collaborate to develop special projects, including joint research and training activities.

The MoU was signed by IIT Indore director Prof Suhas S Joshi and JMU president Prof Paul Pauli in Wurzburg, Germany.

JMU is one of the oldest and largest universities in Germany, which hosts over 28,000 students.

## IIT-I to help West Discom with AI, machine learning tools



West Discom officials brief the IIT Indore team about the working of smart meter system at their headquarters in the Pologround area on Thursday.

**A TEAM FROM THE INSTITUTE VISITS THE POWER COMPANY, SEES SMART METER CONTROL CENTRE**

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Indian Institute of Technology Indore will provide new technology to Madhya Pradesh West Zone Electricity Distribution Company, which will benefit both the company and the consumer.

A two-member team of IIT Indore led by Dr Tripti Jain visited West Discom's headquarters at Pologround on Thursday. Jain said that the electrical engineering department of IIT will help the power company. "We will provide artificial intelligence and machine learning tools to the West Discom. A team of faculty members and the students of the institute will work together for this. This work will be very useful for both IIT and West Discom," she said.

IIT Indore team visited the specially designed hi-tech control centre for

smart meters. During this, the visiting team was informed about the work of smart meter planning, technological up-gradation, consumer convenience, knowledge sharing being done about smart metering across the country, correct reading, utmost reduction in disputes after correct billing and other works.

Superintending engineer, smart meter cell, DS Chauhan and control centre in-charge Naveen Gupta presented each aspect of the development journey of Smart Meter in Indore through a power-point presentation. The smart meter provides daily different types of data of each consumer to the power company. This data will be used by the power company and the Department of Energy as well as the electrical engineering department of IIT Indore.

West Discom managing director Amit Tomar said IIT Indore will share its expertise with the West Discom, whenever need be. "We also have a member of IIT Indore on our board. The initiative of IIT will definitely prove a milestone for the energy sector," he said.

## IIT-I to extend tech support to industries

TIMES NEWS NETWORK

**Indore:** The Indian Institute of Technology (IIT) Indore plans to extend technological support to industry to meet their specific needs and help them overcome key challenges through smart solutions and research work.

IIT officials said the institute is working on multiple projects based on the re-

quirements of the industries of which around 10 projects have been implemented in the auto sector and few are in the pipeline.

The institute plans to work on projects in the wearable area and low the institute can chip in to meet their specific needs. IIT director and vice-chancellor Prof. Suhas S Joshi said, "IIT is taking various initiatives to connect with industries to help them overcome the technological challenges. The institute is planning to conduct CRC projects periodically with industries belonging to different domains in the country."

The institute is also conducting activities to help start-ups in their early growth and development stage. Research projects from the institute have been proposed

to the central government. Speaking about the proposed research park, Prof. Joshi said that the institute may be able to set up the R&D in the coming year. In the second CRC, around 10 industry players from the pharmaceutical and IT sector attended the event and two general discussions were conducted to discuss and the needs of industries.

The chief guest to the occasion, Professor Subhas Chandra, Director, IIT Bombay said, "The industry-academia interaction plays an important role in the growth of IIT and business. IIT Indore is taking various initiatives to develop the incubated, research ecosystem for innovation and development of cutting-edge technologies."

A follow-up and review meeting of the special Interest Group (SIG) formed after the first CRC meeting is expected to take place with industry players of the same sector was also held, he

## IIT Indore granted one more patent, tally reaches 20

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Indian Institute of Technology Indore has been granted one more patent, this time on "Read Recharge (RRC) based process variation tolerant 1T1 SRAM Cell". This takes the tally of total number of patents to 20.

The inventors, Dr Nandakishor Yadav and Prof. Santosh Kumar Vishwakarma have proposed a new memory technology for reliable electronic system design.

Inventors developed a Static Random Access Memory (SRAM) bit cell, which can tolerate the fabrication process related

variation for modern thin-film and nanoscale technologies. It will increase the life of electronic systems such as mobile phones and laptops.

Additionally, it will also improve the production yield of the mobile and laptop industries.

It is based on dual-gate FinFET technology, which helps find new devices with properties that fit current and future requirements; among the many proposed multi-gate transistors. As this memory technology will increase the life of the electric product, it can also be used for most reliable aerospace applications.

## IIT-I researchers write on rocks & soil types in MP

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The chapter discusses about the geotechnical details of geomaterials (soils and rocks) available in MP

A team of researchers from the Indian Institute of Technology of Indore has written a chapter on rocks and soil types of Madhya Pradesh. The research team, which includes Dr. Lalit Kumar, professor, Manish Kumar Goyal, and Dr. Vikas Bhojra, department of civil engineering, has contributed a book chapter, titled "Geotechnical Characterisation of Soils and Rocks of India", published by CRC Press London, Taylor and Francis Group. It

was edited by Sanjay Kumar Shukla from the School of Engineering, RMIT University, Perth, Australia. The chapter discusses about the geotechnical details of geomaterials (soils and rocks) available in Madhya Pradesh. The book also discusses the suitability of the existing soil as construction material and if it can withstand the potential hazards that trigger

ground properties of soil/rock and the existing water table. It presents the geotechnical characterisation, including the index and strength properties of the soil/rock layer. The chapter also discusses the suitability of the existing soil as construction material and if it can withstand the potential hazards that trigger

Suitable measures to counteract the possible hazards that may occur during the design construction phase are also discussed," said a press release issued by IIT Indore.

The book presents the geotechnical details of geomaterials found in all states and Union Territories of India. It covers practical information and technical data for applications in ground infrastructure projects, including the foundation of structures, highway, railway and airport pavements, embankments, retaining structures, walls, dams, reservoirs, canals and ponds, landfills and tunnels. These details are extremely useful for professionals dealing with mining, oil and gas projects and agricultural and aquacultural engineering projects.

## CDGI enters into Academic Association with IIT Indore

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The Chameli Devi Group of Institutions (CDGI), on Wednesday inked an agreement with the premier technology institute of India, the Indian Institute of Technology Indore (IIT).

The agreement is a joint venture agreement with the premier technology institute of India, the Indian Institute of Technology Indore (IIT). The agreement is a joint venture agreement with the premier technology institute of India, the Indian Institute of Technology Indore (IIT). The agreement is a joint venture agreement with the premier technology institute of India, the Indian Institute of Technology Indore (IIT).

Under the guidance of group director Jay Bhanu, the principal of CDGI, Manish Shrivastava, signed the agreement. Professor in-charge of industrial training and innovation & research, Arvind Shrivastava, has been instrumental in the agreement. Shrivastava said that the students of the CDGI would get extraordinary opportunities to avail of a number of facilities at the IIT. They will be provided with internships and projects to work on at IIT. The faculty members will get an opportunity to pursue their research projects under the guidance of professors at IIT. Expert talks and lectures will be organised by the IIT professors at the CDGI.

## Traffic cops seek help from IIM, IIT to smoothen traffic at 15 squares

OUR CITY REPORTER  
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Traffic police is seeking help from IIM, IIT Indore, SGSITS, and other prominent institutions to discuss and resolve the issue of traffic at 15 major squares of the city DCP (Traffic), Mahesh Chand Jain has recently written letters to these institutions asking them to contribute to their mission of traffic management.

This initiative is to make sure smooth flow of traffic at these usually busy squares. Institutions will help in traffic engineering for smoother flow of traffic in the city. Department has chosen the 15 busiest squares including those of Bombay Hospital and Super Corridor.

### TRAFFIC MANAGEMENT OF 15 PROMINENT SQUARES

The list of 15 squares are Niranjanpur, Dewas Naka, Chotchar, Rajeev Gandhi, IT Park, Musakhedi, Patnipura, Navlaha, Bombay Hospital, Gopur, Malwa Mill, Bada Ganpati, Super Corridor, Geeta Bhavan, and Bapat.

### An initiative by Free Press

Free Press recently highlighted the traffic problem in IT Park Square. Problems along with reasons were discussed and a likely solution was provided to readers.



## Institute Events and Functions

### Orientation Program on 'Safety of Women at Workplace' held on 13<sup>th</sup> April 2022

Indian Institute of Technology Indore, being an Institute of National Importance, is home to a very heterogeneous population inclusive of all genders at all three layers, i.e., Students, Faculty, and Non-Faculty members. As such, and as mandated by law and various guidelines, the Institute must provide a safe workplace for women. A congenial work environment is always a significant factor in boosting performance.

As an initiative to achieve this, Adv. Bhavna Tripathi, an expert in this domain, was invited to the Institute to conduct an orientation program on 13th April 2022. Adv. Tripathi is a member of the Internal Complaints Committee in various State Government Departments, NID Bhopal, TCS, and many more. The target audience was members of the Internal Complaints Committee, Women Cell, and Officers, and staff members of concerned departments.



### IIT Indore hosts a Brainstorming Session on the Promotion of Indian Languages

IIT Indore hosted a brainstorming session on the promotion of Indian languages on May 3, 2022. The session was inaugurated by Shri Dharmendra Pradhan, Hon'ble Education Minister, Government of India, and Shri Suresh Soni. Shri Dharmendra Pradhan was on a 2-day visit to Indore and was welcomed by Prof. Suhas S. Joshi, Director, IIT Indore. This brainstorming session was attended by quite a few eminent personalities from academia.

The brainstorming session explored the way forward for the promotion of Indian languages. The latter half of the day was spent discussing the role of language institutions in implementing NEP 2020.

The Hon'ble Minister inaugurated the Indoor Sports Complex of IIT Indore. Built up at an area of 4,257 sq. mtr., it houses 06 Badminton Courts, 02 Basketball Courts, an Indoor Gallery with a capacity of 580, a gym, 03 Squash Courts, and a Swimming pool of Olympics size (50 x 25 sq. mtrs) with a viewing gallery of 288 capacity.



**International Day of Yoga:** On June 21, 2022, following the mantra of “Yog se Sahyog,” IIT Indore celebrated the 8th International Day of Yoga. The event was conducted by Dr. Omanand Guruji. Dr. Omanand has been a merit holder throughout their education and has been honored with various awards. He served as the President of the Hindu University of America, Florida, USA. Currently, he is serving as the Honorary Patron of Paramanand University Trust and Paramanand Institute of Yoga Sciences & Research. His students came to the Institute and demonstrated various Asanas to the community. The event saw a large participation of students, faculty members, staff, and families.

Under the initiative of Abhyudaya, IIT Indore also celebrated International Day of Yoga Month from May 20 to June 20, 2022. It included the conduct of the Yoga Quiz and Yoga Essay Competition.

1. June 13 - Essay Contest (Pre-International Yoga Day Event)
2. June 19 - Quiz on Yoga
3. June 19 - Yoga Competition
4. June 21 - Celebration of 8th International Yoga Day - 2022
5. Yoga Session under the guidance of Dr. Omanand Guruji, a well-known yoga expert.
6. Shramdaan (voluntary contribution to the excavation of the Amrit Sarovar site at the IITI Campus)
7. Plantation Drive saplings at the IITI Campus.



### Orientation Program for new PG & Ph.D students at IIT Indore

IIT Indore conducted the Orientation Program for new PG & PhD students on July 26, 2022. This was the first offline, in-person orientation program after the spread of the COVID pandemic. Around 424 students across various programs, i.e., 198 in PhD, 104 in MSc, 81 in MTech, and 41 in MS (Research), have been admitted at IIT Indore for the academic year 2022-23 (Autumn Semester). Prof. Suhas S. Joshi, the Director, congratulated all newly joined students and addressed the community.







### Visit of International Students to IIT Indore campus

IIT Indore hosted a group of 32 International students from 10 different countries, including USA, UK, Germany, Brazil, Belgium, Mexico, Egypt, Trinidad & Tobago, Azerbaijan, and South Africa, on 4th August 2022 under the Global BP STEM Academic program in association with American Field Service (AFS), India. The visit was coordinated by Emerald Heights International School, Indore, which has been an active member of AFS since 2012 under the Indore chapter (MP) India. AFS is an international, voluntary, non-governmental, non-profit organization that provides intercultural learning opportunities to help people develop the knowledge, skills, and understanding required to create a more just and peaceful world.

Prof. Suhas S. Joshi, the Director, IIT Indore, delivered the welcome address and highlighted the importance of technology and its application for humanity. He also informed the visiting students about the past glory and heritage of the Indian education system imparted at Nalanda and Takshashila universities which were renowned seats of learning during ancient times. He also urged the students to pay equal attention to humanities and social sciences for the overall development of a nation.





### भारतीय प्रौद्योगिकी संस्थान इंदौर में 14-28 सितम्बर के दौरान हिंदी पखवाड़ा मनाया गया

भारतीय प्रौद्योगिकी संस्थान इंदौर में दिनांक 14 से 28 सितम्बर, 2022 के दौरान हिंदी पखवाड़ा – 2022 का आयोजन किया गया। हिंदी दिवस के अवसर पर 14 सितम्बर को संस्थान के निदेशक प्रोफेसर सुहास एस. जोशी के द्वारा दीप प्रज्वलन के साथ हिंदी पखवाड़ा – 2022 का शुभारंभ हुआ। उद्घाटन समारोह में अधिष्ठाता (प्रशासन) प्रोफेसर प्रीति शर्मा, राजभाषा समिति के संयोजक प्रोफेसर राजेश कुमार, कुलसचिव श्री एस पी होता, संयुक्त कुलसचिव श्री प्रदीप अग्रवाल, सहायक कुलसचिव (प्रशासन) श्री सुरेशचंद्र ठाकुर एवं अन्य अधिकारीगण के साथ-साथ बड़ी संख्या में छात्रगण, संकाय सदस्य तथा कर्मचारीगण उपस्थित रहे। इस अवसर पर निदेशक महोदय ने अपने सम्बोधन में हिंदी के महत्व को रेखांकित किया। कुलसचिव महोदय द्वारा हिंदी भाषा की उपयोगिता एवं प्रचार पर प्रकाश डाला गया। हिंदी पखवाड़ा – 2022 के अंतर्गत संस्थान में विभिन्न प्रतियोगिताओं का आयोजन किया गया, जिसमें मुख्य रूप से स्वरचित कविता पाठ प्रतियोगिता, निबंध लेखन प्रतियोगिता, आशुभाषण प्रतियोगिता तथा वस्तुनिष्ठ प्रश्नों की लिखित परीक्षा करवाई गई। सभी प्रतियोगिताओं में संस्थान के छात्रगण, संकाय सदस्य तथा कर्मचारियों की उत्कृष्ट सहभागिता रही तथा चयनित प्रतिभागियों को पुरस्कृत किया गया। अंततः हिंदी पखवाड़ा कार्यक्रम का समापन दिनांक 28 सितंबर को हुआ।

### भारतीय प्रौद्योगिकी संस्थान इंदौर में 10 जनवरी को विश्व हिंदी दिवस मनाया गया

संस्थान की राजभाषा समिति द्वारा दिनांक 10 जनवरी, 2023 को विश्व हिंदी दिवस कार्यक्रम का आयोजन किया गया। इस कार्यक्रम का आयोजन संस्थान के पुस्तकालय (विद्यार्जन संसाधन केंद्र) में हुआ। इस अवसर पर संस्थान के कुलसचिव श्री एस पी होता, राजभाषा समिति के संयोजक प्रोफेसर राजेश कुमार, डॉ. शरद गुप्ता, संयुक्त कुलसचिव श्री प्रदीप अग्रवाल, सहायक कुलसचिव (प्रशासन) श्री सुरेशचंद्र ठाकुर एवं अन्य अधिकारीगण, छात्रगण, संकाय सदस्य तथा कर्मचारियों की उपस्थिति में कार्यक्रम का शुभारंभ हुआ। इस मौके पर हिंदी की महत्ता पर ध्यान आकर्षित करते हुए नववर्ष 2023 के हिंदी संस्करण वाले कैलेंडर का विमोचन किया गया। साथ ही, विश्व भर में हिंदी भाषा का प्रचार-प्रसार हो सके, इसलिए संस्थान के कई संकाय सदस्यों, छात्र/छात्राओं एवं कर्मचारियों ने कविता, भाषण आदि की प्रस्तुति दी। अंत में, इस कार्यक्रम का समापन लोगों के बीच भेंट के रूप में नववर्ष – 2023 के कैलेंडर का वितरण करके किया गया।



### IIT Indore organized Free Health Checkup Camp

On Children’s Day and Diabetes Day on Nov 14, 2022, the team of Ek Bharat Shreshtha Bharat (EBSB), IIT Indore, organised a free health checkup camp in Govt. School, Simrol, for students and villagers. The camp focused on the eyes, bones and spine check-ups of the community. More than 200 people came for the check-ups and availed of the camp facilities. The team informed the community about many government-run medical schemes and encouraged them to contact the Government affiliated hospital for any treatment.

Dr. Niraj Kumar Shukla, Convener, EBSB, said, “IIT Indore has been continuously conducting many awareness activities for our five adopted villages under Unnat Bharat Abhiyan. This time, we organized a free health checkup camp, under the supervision of Dr. D. K. Sharma, Dr. Teen Gupta, and Dr. Rishi Gupta, from the School of Excellence for Eye, Mahatma Gandhi Medical College, Indore.”



**Celebration of 76<sup>th</sup> Independence Day:** IIT Indore celebrated 76<sup>th</sup> Independence Day with great zeal and fervor. The occasion was marked by the hoisting of the national tricolor by Professor Suhas S. Joshi, Director of IIT Indore.





**Celebration of Teachers' Day 2022:** IIT Indore celebrated Teachers' Day on September 5, 2022. Prof. Deepak B. Phatak, Chairperson, BoG was invited as Chief Guest and joined online for the event followed by the distribution of Institute Awards.



**IIT Indore celebrated Mahatma Gandhi and Lal Bahadur Shastri Jayanti:** IIT Indore celebrated the birth anniversary of Mahatma Gandhi and Lal Bahadur Shastri in the Institute. The program was organized under the banner of CRDT, IIT Indore, and was an attempt in the direction of the Institute's rural outreach activities to offer a platform to local and rural folk to come and display their products, skill, and creativity.

The program was graced by the Director, Suhas S. Joshi, and more than ten stalls for the display and sale of rural products have been arranged. It also included food stalls, stalls for cotton cloths, handicrafts, toys, earthen items, organic products, etc. There was also a display of books on Gandhian thoughts and Green and sustainable initiatives. The students of CRDT also arranged stalls featuring the activities conducted by the Centre.



**The 10<sup>th</sup> Convocation of the Institute:** IIT Indore conducted its 10th convocation on August 13, 2022, with Dr. Anil Kakdakar, Padma Vibhushan, Former Chairman of Atomic Energy Commission of India, and Former Secretary to the Government of India, gracing the occasion as the Chief Guest. Prof. Deepak B. Phatak, Chairperson, BoG, presided over the ceremony. Prof. Suhas S. Joshi, the Director, and other Senate members were present during the convocation. In this convocation, a total of 490 students received their degrees, which included 269 BTech, 61 PhD, 88 MSc, 65 MTech, and 07 MS (Research) students.





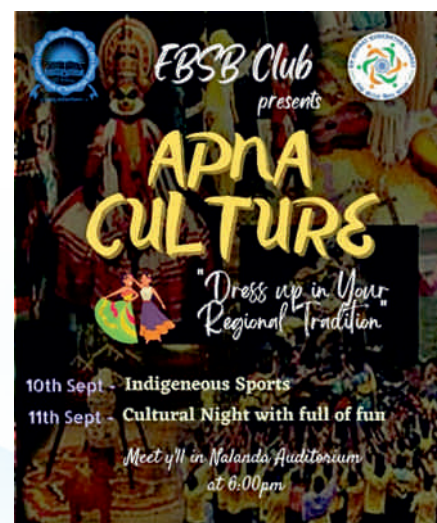
Visit of students from Medi-Caps International school at IIT Indore: 16th September, 2022



IIT Indore team visited gramin hospital & school to teach swachhata lesson on 6th September 2022



IIT Indore celebrated "Apna Culture-Unity in Diversity" during 10 & 11th of September, 2022





Under EBSB activities of IIT Indore, more than 300 students from 30 Govt Schools of Indore’s district visited the campus of IIT Indore on November 04, 2022



**Republic Day 2023:** IIT Indore celebrated the 74<sup>th</sup> Republic Day with great enthusiasm and many faculty members, staff and students participated. The occasion was marked by hoisting of the national tricolor by Professor Suhas S. Joshi, the Director, IIT Indore.



**Celebration of 14<sup>th</sup> Foundation Day of IIT Indore:** IIT Indore celebrated its 14<sup>th</sup> Foundation Day of IIT Indore on February 17, 2023 with Professor Deepak Bhaskar Phatak, Chairperson BOG, as the Chief Guest. Professor Suhas S. Joshi, Director, IIT Indore, welcomed the IIT community with a motivational speech.

Prof. Joshi emphasized the joint efforts of Faculty Members, Research Scholars, and Staff Members to develop IIT Indore. He also explained the importance of Research in the growth of GDP and nation-building. He appreciated the efforts put in by IIT Indore to develop the translational research ecosystem for innovation and the development of cutting-edge technologies.

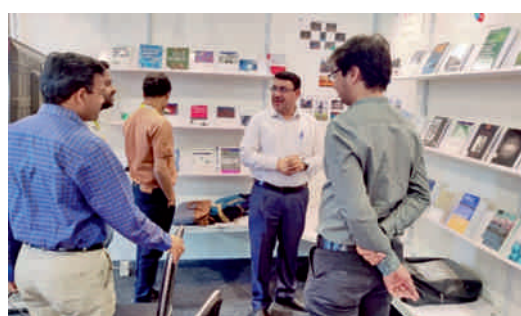


Institute Awards for Faculty Members, Research Scholars, and Staff Members were distributed by the Chief Guest, Chairperson Board of Governors, Professor Deepak Bhaskar Phatak, with a motivational Foundation Day Speech.



### Participation of IIT Indore in the NEP Pavilion at the World Book Fair 2023:

IIT Indore participated in the NBT World Book Fair 2023 at Pragati Maidan, New Delhi, held from 25th February 2023 to 05th March 2023. A stall was allotted to the Institute to showcase the books authored by faculty members and to display the posters on the academic programs, research activities, technologies, patents, awards and achievements, and outreach activities in various fields.



### National Science Day Celebrated at IIT Indore on 28<sup>th</sup> February 2023

The Outreach teams of the Department of Physics and Chemistry organized the National Science Day at IIT Indore on 28th February. The event began with lamp lighting by Professor Suhas S. Joshi, Director, IIT Indore, who graced the occasion as the Chief Guest. Professor Sarita Vig (IIST) was the Guest Speaker on the occasion. The event was attended by several faculty members, research scholars, PG Students, staff members, school children, and special guests from Uchhatar Madhyamik Vidyalaya, Simrol. During his address, Prof. Joshi inspired the students and school kids to develop a keen interest in science. He exhorted the school kids to study the contributions of eminent Indian Scientists like Sir C. V Raman, Dr. APJ Abdul Kalam, Dr. Homi Jahangir Bhabha, and Dr. Jagadish Chandra Bose and emulate their life and research acumen. It was followed by words of inspiration from Professor Raghunath Sahoo, Convener, Institute Seminar & Outreach Committee; Dr. Pankaj Sagdeo, Head of the Department of Physics; Professor Bishwarup Pathak, Head of the Department, Chemistry.





**Visits of youth delegates of Manipur from March 20 to 26, 2023, under the Ek Bharat Shreshtha Bharat-Yuva Sangam program:** Under Yuva Sangam, an initiative of Government of India, mooted with an aim to strengthen people to people connect and build empathy between youth of North-Eastern states and the rest of India, IIT Indore hosted around 35 youth delegates of Manipur from March 20 to 26, 2023. The entire tour of these delegates was meticulously planned, and the itinerary was designed to provide them with multi-dimensional exposure of Paryatan (Tourism), Parampara (Traditions), Pragati (Development), Prodyogik (Technology) and Paraspar Sampark (People-to-people connect).



International Women's Day celebrated at IIT Indore on 17<sup>th</sup> March 2023



At IIT Indore, International Women's Day was celebrated on the 17th of March 2023, in association with the Women Cell and Indian National Young Academy of Sciences (INYAS) on the theme of “DigitALL: Innovation and technology for gender equality,” decided by the United Nations Observance of International Women’s Day 2023. This theme was aligned with the need for inclusive and transformative technology and digital education for women and girls to achieve gender equality. Attendees of the event were Dean of Administration Prof. Sandeep Chaudhary, IIT Indore students, staff, faculty, and children from the Simrol school. Inaugurating the event, Director, Prof. Suhas S. Joshi, provided statistics on women students and staff of IIT Indore and motivated the school students to continue their education and attain the height of excellence in their chosen field by giving them the example of Devi Ahilya Bai Holkar. Prof. Sandeep Chaudhary motivated the students to be courageous.



Director Prof. Suhas S. Joshi along with the other institute dignitaries.

Subsequent to the Institute’s dignitaries’ speech, invited speakers from academia, industry, UN women, and women and the child department sector delivered a series of talks to motivate and provide awareness over several topics. Among the speakers were Mr. Gaurav Sharma, the founder and Director of “Camp India Adventures” who shared his experience of climbing the Mount Everest, and Dr. Nishima Wangoo, Assistant Professor at Punjab University, who spoke about Indian women scientists and their remarkable contribution towards the development of science and technology.

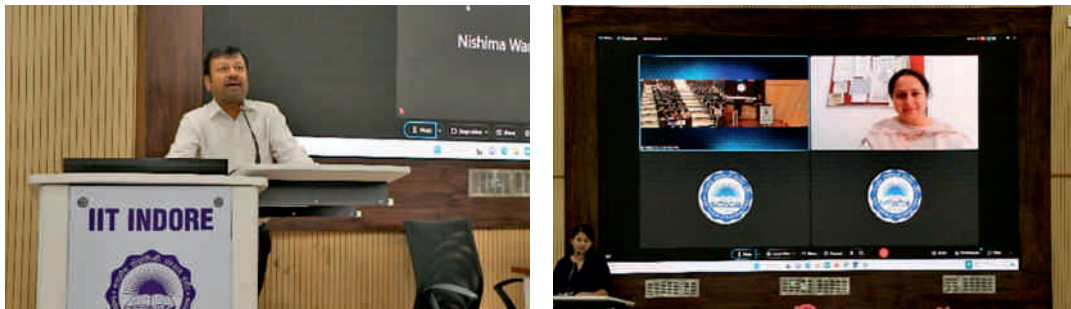


Figure 3. Mr. Gaurav Sharma (left) and Dr. Nishima Wangoo (right)

Dr. Savita Jain, from the department of Women and Child Development in Madhya Pradesh, spoke on women’s empowerment and provided critical information about various efforts and initiatives taken by the Government of India to provide parity among the genders.

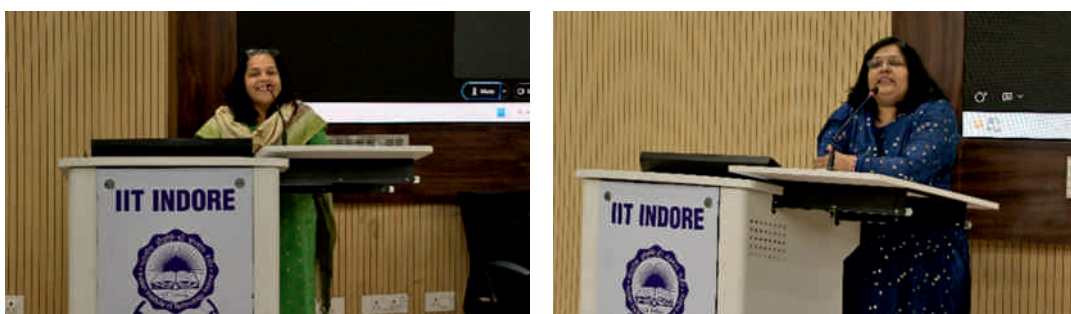


Figure 4. Dr. Savita Jain (left) and Dr. Vanchana Singh Parihar (right)



Dr. Vanchana Singh Parihar, from the Safe City Program in the Women and Child Development Department of Madhya Pradesh conducted an interactive session on violence, safety, rights and laws to provide awareness and capacity building in the community for crime against women and their safety. Prior to this event, the Women Cell organized several events and competitions starting from the 7th March in which faculty, staff and frontline workers were honoured. Sun-coats were distributed to the frontline workers and awareness of personal hygiene was spread through a dance performance. A mobile toilet was also inaugurated near the IIT Indore gate towards the Swachh Bharat initiative. In tandem with the techno-cultural fest, "Fluxus", the Women Cell with INYAS conducted poster and essay competitions on the theme of women empowerment. These competitions allowed the participants to reflect on the role of women in society, science, their struggles, and achievements.



Figure 5. Poster making competition and posters created by participants in Fluxus.

To contribute to the Institute's outreach activities and support the local community, the Women Cell of IIT Indore conducted a poster-making competition in a school nearby IIT Indore in Simrol village on 16th March. Around 55 Students of the 9th standard from the school participated in the competition.

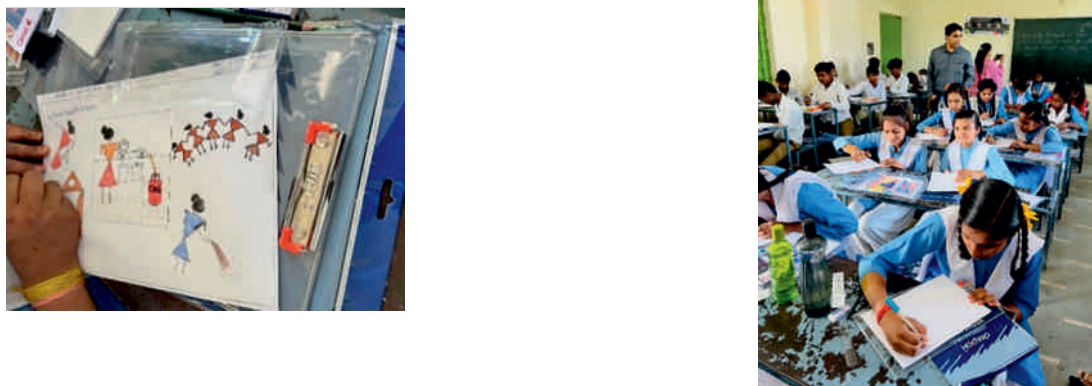


Figure 6. Poster making competition at Simrol village school.



Figure 7. A group picture of the school participants with experts and event organizers.



## Institute Facilities

### Learning Resource Center

The Learning Resource Center (LRC) has been providing essential support to the Institute's teaching, learning, research and other scholarly activity on the campus. Using appropriate technology, the library delivers resources to satisfy information needs, promote lifelong learning and create productive environments for the scholarly community.



Figure 1. The Learning Resource Center (LRC) Building

### Library Collection

The library continues to build and extend its collection in print and digital formats. These include books on all relevant subjects for teaching and research. The LRC also boasts of a fine collection of fiction, literature, and general interest books such as current events, sports, etc., to take care of the users' leisure and recreational reading needs. Special Collections such as the Gandhian Studies Collection, Hindi Collection, Children's Books Collection, and Matrubhasha Collection take pride of place in the LRC. The total collection of print books is 39,960+, and E-Books are 8,050+ as on 20th June 2023.

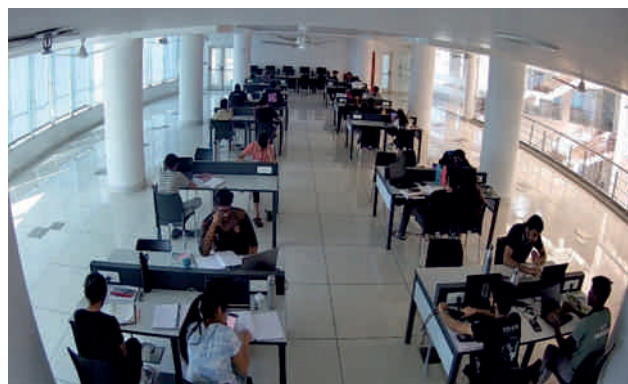
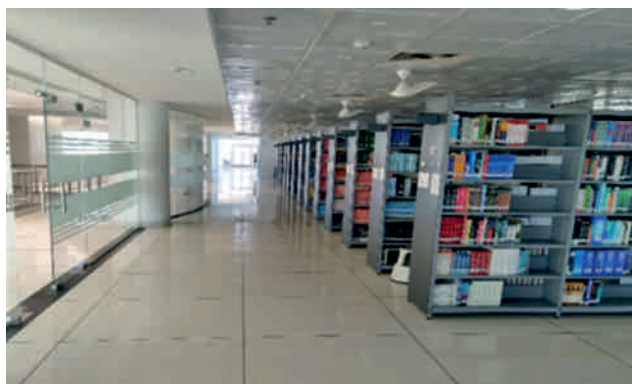


Figure 2. Main Stack Area and Reading Hall

### Electronic Resources

In today's world of Information explosion, access to electronic information resources is essential, particularly in an academic environment. During the year 2023, the LRC has subscribed and provided access to more than 2,760+ e-Journals and 08 databases. Some of the major subscribed e-resources are Science Direct (5 subject collection), Taylor & Francis (Science and Technology package), American Chemical Society, ASCE, Royal Society of Chemistry, IEEE/IET Electronic Library, SIAM, SciFinder -n,

Scopus, Indiastat, CMIE Prowess, CSD Enterprise Campus, Grammarly, Turnitin Feedback Studio, etc.

Further, as a member of the E-Shodhsindhu Consortium, IITI academic community is getting access to more than 5,230+ e-Journals and some databases.

The complete list of e-resources with hyperlinks is available on the LRC website for users' convenience.

## Institutional Repository

The library has created an Institutional Digital Repository (<http://dspace.iiti.ac.in:8080/jspui/>) using a widely used open source DSpace software to collect, preserve, organize and provide access to the creative and scholarly works and research of IIT Indore's faculty, students, and staff. This repository contains more than 10,690+ items in the following collections: IITI Scholarly Publications (Research articles and books), Theses & Dissertations, B.Tech Projects, Digital Humanities Lab, Newspaper Clippings, Resources for Visually Impaired Persons (Audio lectures), Annual Reports, Convocation Reports, etc.

## Circulation And Reference Service

The library circulation service is automated using Koha-ILMS (open-source software) and integrated with the RFID system. Users can get issued and return the loan item through an RFID self-service kiosk. From July 2022 to June 2023, 25,063 documents were issued/renewed to all categories of users for home study. User category-wise circulation data is presented in the table below:

	B.Tech.	M.Tech.	M.Sc.	MS Research	Ph.D. & RA	Faculty	Others
Documents circulated for home study	14431	1155	3550	254	3002	1826	845

The library also provides user services like references, the new addition of books, orientation programs for new students, inter-library loans, subject guides, training session programs for e-resources, QR codes for various library services, and faculty profile management through the IRINS portal, etc.

## Document Delivery Service Portal

The LRC arranges to procure research articles not held in its collection from different sources. This service is being provided for academic and research purposes to the faculty, research scholars, students and staff within the limit of copyright laws. To streamline this service, the LRC has developed a "Document Delivery Service" portal by using open-source software. This can be accessed at [http://library.iiti.ac.in/?page\\_id=2988](http://library.iiti.ac.in/?page_id=2988) on the library website. There is a total of 790+ research articles arranged from other institutions' libraries and provided to IITI users during the period July 2022 to June 2023.

## Matrubhasha Collection

This Matrubhasha Collection section of the library was dedicated to the community by Prof. Suhas S. Joshi, Director, IIT Indore. More than 800 books in 8 Indian languages (viz. Sanskrit, Telugu, Kannada, Odia, Marathi, Bengali, Gujarati, and Hindi) have been donated by IIT Indore faculty and staff members.

## Swadhyay

The creation and development of different reading spaces and other facilities are under process for the new LRC building. The Swadhyay (Self Study Space) was dedicated to its users to provide a conducive environment for self-study. This space is independent of the main LRC building and is open 24x7.



Figure 3. Swadhyay (Self-study Space)



## Health Centre



The Health Centre provides dedicated services to the Institute community comprising students, research staff, employees, and their dependents. It has outpatient, daycare, and in-patient facilities for minor ailments. Emergency services are available 24 X 7. It facilitates well-equipped physiotherapy services. Diagnostic services - In-house Diagnostic laboratory and X-Ray facilities help in comprehensive care. Pediatric immunization is carried out on a weekly basis. The Health Centre team provides essential investigation facilities, including ECG and Rapid investigations such as GRBS.

Specialist Consultation Facilities-Specialist consultation services are available for Dental, ENT, Medicine, Obstetrics and Gynecology, Psychiatry, Ophthalmology, Orthopedics, and Cardiology cases. Further facilities such as minor dental procedures, Antenatal follow-up, and minor ENT procedures are also made available to community members.

Cases requiring higher investigations and management are referred to empaneled hospitals.

Numerical data of the Health Centre for the year 2022-2023

<b>Total OPD</b>	-	<b>13,917</b>
<b>Total Day care and IPD</b>	-	<b>722</b>
<b>Emergency And trauma</b>	-	<b>348</b>
<b>In-house investigations such as ECG, GRBS</b>	-	<b>723</b>
<b>Minor emergencies after OPD hours</b>	-	<b>2974</b>
<b>Total Physiotherapy</b>	-	<b>1983</b>

### Other activities-

- 1) A session on women's health and wellness was organized on September 10, 2022.
- 2) A blood donation camp was organized on February 17, 2023.
- 3) A basic life support training session was held for B.Tech students during their 3-day orientation session 'Genesis.'
- 4) Oral Polio vaccination was organized on May 30, 2023.
- 5) Routine health checks for KV students were carried out twice a year in Health Centre for Nursery to the 12th class.



## Central Workshop



The Central Workshop, IIT Indore, was established during AY 2011-2012 and spared over 10000 square feet of area. It is equipped with modern state-of-the-art facilities for laboratory classes to support fabrication works of research projects and other fabrication works of the Institute. Besides, the state-of-the-art facilities developed under the roof of the Central Workshop are also extended for research scholars to perform novel and cutting-edge research. It has seven shops, Machining, Welding, Forming, Foundry, Injection Molding, Fitting, and Carpentry, with a team of efficient and highly

skilled operating staff. The workshop has more than 54 machines/ instruments for undertaking turning, milling, drilling, surface grinding, injection moulding, sheet shearing, bending, drawing, wire drawing, nibbling, arc welding, MIG/MAG welding, TIG welding, gas welding, plasma air cutting, induction heating, metal casting, fitting and carpentry related fabrication works.

The workshop also has a facility for cutting force dynamometers and surface roughness measurements. It was established to provide hands-on experience to students in the Production and Fabrication of simple mechanical components. This is a small, effective, and successful working model using machine tools and computers at the workbench. Students are exposed to different manufacturing methods, materials and components, procedures, and software programs currently used in commercial manufacturing and assembly processes. This is of immense help in transforming students into engineers. Besides, the state-of-the-art facilities developed under the roof of the Central Workshop are also extended for research scholars to perform novel and cutting-edge research.

The Central Workshop undertakes practical classes in the Basic Manufacturing Techniques Laboratory (IC-156), Manufacturing Processes Laboratory (ME-258), and Machining Science and Metrology Laboratory (ME-355). During COVID-19 pandemic, all the laboratory experiments were conducted in online mode by following safety protocol.

### Faculty In charge, Central Workshop- Dr. Dan Sathiaraj

Assistant Professor, workshopincharge@iiti.ac.in

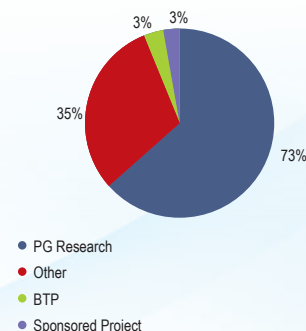
#### Research Interests:

- Medium to High entropy alloys
- Recrystallization and grain growth study
- Surface modification Engineering (SMAT, Laser Shot-peening, etc.)
- Severe plastic deformation (SPD)
- Micro, Nanomachining of MEAs and HEAs
- Mechanical and functional property study

### Activities during the year 2021-2022

This year, the Central workshop introduced a muffle furnace facility and handheld surface roughness evaluation facility for practical classes and to support research work. Service-related works of lathe machines and TIG welding machines were also completed during the year.

During 2021-2022, the central workshop received 114 Nos. of work requests for various purposes, including PG Research, BTP, Sponsored projects, and other fabrication works. The distribution of work requests for various categories is shown in Figure.





The photographs of some work requests are as follows



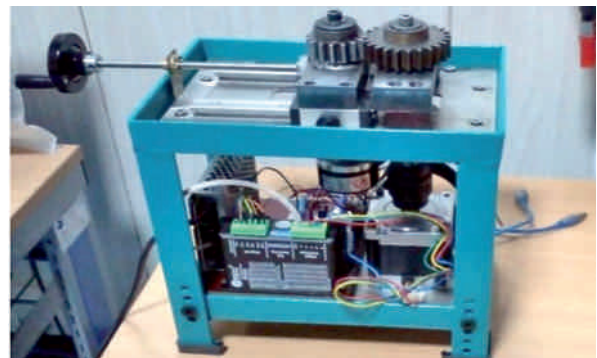
Fabricated 30 ft length Wooden Wind Tunnel



Fabricated Water Channel



Fixture for Jominy Quench Setup



Fabricated structure for Single Gear Flank Roll Tester



Fabricated Nursing Stations for the Health Center



Fabricated Emergency Pole for Safety and Security Department



Fabricated components for Mufflers



Fabricated Tables by utilizing scrapped materials



## Department Profiles

### Department of Astronomy, Astrophysics and Space Engineering

The Discipline of Astronomy, Astrophysics and Space Engineering (DAASE) has expanded significantly from 2015 and in the last academic year. I am happy to report that our strength has grown to nine regular faculty members, one Ramanujan Faculty Fellow, one INAE Distinguished Professor, 34 PhD research scholars, and 40 PG students.

DAASE is a unique department in the IIT system in the field of Space research and Astronomy cultivating research with a unique blend of science and engineering. We collaborate with other departments within IIT Indore and outside to work on novel projects. Students graduating at PG or PhD level are well placed in their respective career endeavors mostly abroad but also in reputed institutes in India.

DAASE has major involvement in the outreach. We have developed a concept Tinkering Lab in Astronomy and Space mainly in the line of the New Education Policy. Our outreach events are well attended by school and college students of Indore and across Central India on both offline and online modes.

With the above vision in mind, DAASE is starting a unique interdisciplinary BTech programme in Space Science and Engineering (SSE) in July 2023, which envisions developing skilled human resources to meet the demand of the booming space and allied sectors of India and the world. Students of this programme can specialize in one of the following domains with curated elective courses and a semester-long research project - Space Instrumentation: Detectors & Payloads,

Imaging & Data Analytics, Remote Sensing & Atmospheric Engineering, Astronomy & Astrophysics.

#### Academic Programs

- 1) PhD Program (since 2016)
- 2) BTech program in Space Science and Engineering (starting 2023)
- 3) MTech program in Space Engineering (since 2021)
- 4) MS (by research) program in Space Sciences and Engineering (since 2021)
- 5) MSc program in Astronomy (since 2018)

Number of Faculty Members	
Professor	1
Associate Professor	4
Assistant Professor Grade II	2
Assistant Professor Grade I	2
Visiting Professor/Inae Fellow	1

Programs	Student Intake	Degree Awarded
BTech	20*	-
MTech	9	-
MSc	40	16
MS (by research)	8	-
PhD	34	11

## R&D Activities

DAASE faculty members work on several projects in the following areas:

- 1) **Astronomy and Astrophysics** - Connected to three Mega Science Projects of India - Square Kilometer Array (SKA), Thirty Meter Telescope (TMT) and LIGO India (Gravitational Wave Observatory) - Funding comes from DST, DAE, CSIR, MoE (Ministry of Education)
- 2) **Space Technology** - Connected to a few Mega Science projects and space missions with ISRO - funding comes from ISRO, MoE, DST
- 3) **Earth and Atmospheric Sciences** - Connected to remote sensing applications and climate/ weather studies - funding comes from DST, ISRO, MoES, etc.

## Notable Activities in the Department

- 1) International Linkages: 3 SPARC projects, 2 DST-SIRE projects, 1 Max Planck Partner Grant.
- 2) DAASE has been awarded the DST-FIST grant at level 2 (Rs. 3.2 crore)
- 3) Prof. Hari Hablani received the prestigious INAE Distinguished Professor Award
- 4) Several high -impact publications, including 2 publications in Nature Journal
- 5) Organized two international conferences: URSI-RCRS Conference December 2022, ASI Annual Meeting, March 2023

## Project

Project	Sponsored	Consultancy
New Projects	7	
Ongoing Projects	17	
Completed	8	1

## Publications

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	1	4	15	72

## Department of Biosciences and Biomedical Engineering



### About the Department

Department of Biosciences and Biomedical Engineering (BSBE) at the Indian Institute of Technology Indore was founded in July 2012 with a vision of establishing a Center of Excellence that will focus on human resource development and research in Biosciences, Bioengineering, and Biomedical Engineering. The Department of BSBE aims to be internationally recognized in Bio-related areas and produce the leaders of tomorrow in the field, with the integrated use of training and career development efforts to improve individual, group, and organizational effectiveness.

### Academic Programs

The academic programs consist of MSc (Biotechnology), MTech (Biomedical Engineering) and the PhD. In the MSc (Biotechnology) program, students are admitted through JAM & GAT-B. The department also offers a minor degree for BTech students in Biomedical Engineering. In the coming years, the department intends to start BTech Program.

Our vibrant group of faculty members aspire to create an ambience for the smooth pursuit of scholarly activities in research as well as training on the study of life and living organisms, ranging from simple bacteriophage to complex multicellular organisms such as humans; with the focus being on structure, function, growth, origin, evolution, distribution, and taxonomy. In addition to basic biology research, the BSBE department seeks to contribute to applied research on practical problems in the country.

Number of Faculty Members	11
Professor	04
Associate Professor	06
Assistant Professor Grade I	01
Assistant Professor Grade II	Nil
No. of Post Doctoral Fellows	07

Programs	Student Intake	Degree Awarded
MSc	17	9
PhD	13	11



### Notable R&D Activities

- Organized six days of hands-on training Karyashala by Dr. Hem Chandra Jha titled “Isolation and characterization of DNA/RNA/Protein from various infected samples” in July 2022.
- Organized six days of training Karyashala by Dr. Kiran Bala titled “Microbial Biomass and Bio products characterization using high end instruments” in December 2022.
- Organized VRITIKA, 4 weeks training and skill internship (from 14.11.2022 to 11.12.2022) by Dr. H C Jha titled “Virus cell culture and Quantification through quantitative real- time PCR.”
- Organized VRITIKA, one month training and skill internship (from 01.06.2023 to 30.06.2023) by Dr. Kiran Bala.
- Organized seven days (from 26.06.2023 to 02.07.2023) of hands-on training Karyashala by Dr. Hem Chandra Jha titled “Genomics and proteomics analysis of DNA and RNA virus-induced disease progression”.
- In house Symposium organized by Dr. Parimal Kar titled “Recent Advances in Biosciences and Bioengineering” on December 7, 2022.
- Laboratory Safety Management program organized by Dr. Prashant Kodgire on October 12, 2022. Dr. G S Grover, an expert in Lab Safety Management visited BSBE Lab.

### Projects: Year 2022

Project	Sponsored	Consultancy
New Projects	6	Nil
Ongoing Projects	20	01
Completed	5	Nil

### Publications: Year 2022

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	NA	4	4	104

## Department of Civil Engineering



The Department of Civil Engineering has been functioning since 2016 with a focus on basic and applied research to solve real world problems. The Department offers a four-year course leading to a bachelor's degree in civil engineering and PhD in civil engineering. The faculty of civil engineering and students are actively involved in sponsored research projects funded by various organizations of the Government of India as well as industries/consultancy projects throughout the country and abroad. The Department has an active and dynamic faculty member team with international exposure having expertise in diverse fields of civil engineering like Structural, Geotechnical, Transportation, Water resource and Environmental engineering. The CE faculty has been recognized on different platforms across the world as committee chairs/members, outstanding reviewers, and editorial board members. The Department of civil engineering looks forward to establishing itself, nationally and globally, as a premier academic Center with active industry interaction and national/international collaborations.

### Academic Programs

The Department runs BTech and PhD Programs in Civil Engineering. The Department also hosts Postdoctoral Fellows in various specializations, sponsored by the Institute, sponsored research projects and other agencies.

Number of Faculty Members: (Assistant/Associate/Full Professors)	13
Professor	03
Associate Professor	02
Assistant Professor Grade II	02
Assistant Professor Grade I	06
No. of Post Doc Fellows	01

Programs	Student Intake	Degree Awarded
BTech	53	43
MTech	-	-
MSc	-	-
PhD	-	04

### Notable Activities in the Department

The Department has been awarded several research and industrial consultancy projects (around 76 projects) and the value of Rs. 4.86 crores. Our dynamic faculty and students are recognized on various platforms; some of our key achievements are as following:

- Prof. Sandeep Chaudhary has received Eminent Engineer Award from The Institution of Engineers (India) during the 37th National Convention in 2022 and Best Research Paper award by IIT Indore.
- Prof. Neelima Satyam has been received the JSPS BRIDGE Fellowship (2023) by Japan Society for the Promotion of Science (JSPS) and SERB - POWER Fellowship (2022) by Science and Engineering Research Board, GoI.
- Prof. Manish Kuma Goyal ranked in the Top 2% scientists in a list prepared by Stanford University in the sub-area "Environmental Engineering (Meteorology and Atmospheric Sciences)- 2022 and Associate Editor: Nature Scientific Reports.
- Dr. Lalit Borana was appointed as Guest Editor for a Special issue on Smart Sensors and Data Analytics for Geotechnical Monitoring in the Journal "Sensors", MDPI and delivered a Keynote in "BRI Forum on Safety & Protection of Civil Infrastructures" in November 2022, at Wuhan University of Technology, China.
- Dr. Mohd. Farooq Azam received Early Career Scientist Award from the International Union of Geodesy and Geophysics (IUGG, 2023) for taking Indian Glaciology at global recognition.
- Dr. Guru Prakash visited as a Visiting faculty at the University of Waterloo during 1 December 2022 – 31 December 2022.
- Dr. Priyank J Sharma Contributed as 'Editor' of two book volumes on 'Climate Change Impact on Water Resources' and 'Hydrology and Hydrologic Modelling' as a part of Lecture Notes in Civil Engineering by Springer and Convener of a special session on "Trends and Variations in Hydroclimatic Variables: Links to Climate Variability and Change" at EGU General Assembly 2023 in Vienna, Austria during April 23-28, 2023.
- Dr. Ashootosh Mandpe developed a low-cost adsorbent using corn-cob for fluoride removal from drinking water and developing a novel approach to harness energy/fuel from organic solid

### R&D Activities

The Department has expertise in various sub streams of civil engineering like Structural, Geotechnical, Transportation, Water resource and Environmental engineering.

#### Projects:

Project	Sponsored	Consultancy
New Projects	12	33
Ongoing Projects	21	23
Completed	8	21

#### Publications:

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	06	20	50	49



## Department of Computer Science and Engineering



### About the Department

The Department of Computer Science and Engineering (CSE) was set up in July 2009. The department offers Bachelor of Technology (B. Tech.), Master of Science (M. S.) Research and Doctor of Philosophy (Ph.D.) programs. From 2023 onwards, the department offers a Master of Technology (M. Tech.) program. The department adopts a modern approach to teaching wherein students are rendered adequate academic freedom to innovate and learn in the process. The state-of-the-art facilities including the latest software and advanced hardware are available in various laboratories for use in both teaching and research. This facilitates adequate implementation of major B.Tech., MS (Research) and Ph.D. projects and for verification and validation of research results.

The department benefits from the location of the Institute. Indore is fast developing into a major IT hub in central India. Organizations like CSC and Impetus have a strong presence in the city and major players like TCS, Infosys, and other major IT organizations have set up their offices here. For the Department of CSE, this provides an excellent opportunity to foster industry-academia partnerships.

### Academic Programs

The Department of CSE offers Bachelor of Technology (BTech), Master of Science by Research (MS by Research), and Doctor of Philosophy (PhD) programs. A total of 38 PhD, 20 MS by Research and 532 BTech students have graduated from the Department of CSE until July 2023. Currently, the department has 42 PhD, 16 MS by Research and 256 BTech students.

Number of Faculty Members	19
Professor	04
Associate Professor	07
Assistant Professor Grade I	04
Assistant Professor Grade II	03
Visiting Professor	01
No. of Post Doctoral Fellows	Nil

Programs	Student Intake	Degree Awarded
B.Tech	84	532
MS Research	15	20
PhD	NA	38

## Notable R&D Activities

### Prof. Aruna Tiwari

1. Initiated Collaboration with ICAR- Central Institute of Agriculture Engineering Bhopal: Dr. Shashi Rawat, Principal Scientist in the department of Agricultural Mechanization Division for Development of Mobile app for farmers to help them in Agricultural activities: Krishi Sewa, April 2023.
2. The Ground Water Management App developed by IIT Indore under the supervision of Prof. Aruna Tiwari in collaboration with RuTAG IIT Delhi has been copyrighted jointly with IIT Delhi, and then an MoU is signed between RuTAG IIT Delhi (via Innovation Technology Transfer Office i-TTO) and RuTAG, EBSB IIT Indore, and the app is given to an NGO, Ramkrishna Jaidayal Dalmia Seva Sansthan, Block-Chirawa, Dist- Jhunjhunu, Rajasthan (Bhupendra Paliwal, Project Manager). The complete unit (Groundwater level measuring device and Groundwater Management app) is presented to African Asian Rural Development Organization (AARDO) member countries (Sudan, Namibia, Zambia, and Ghana) in a technology awareness and outreach event, a joint initiative of AARDO & office of PSA to the Government of India (on Sept. 28, 2022).

### Dr. Anirban Sengupta

1. Ranked in Stanford Universities' top 2 % scientist globally across all domains including in THE top 10 Indian scientist in Computer Hardware area and top 16 Indian scientist in IT/Networking area
2. Fellow of IET (UK), Fellow of British Computer Society (BCS) and Fellow of IETE, Distinguished Visitor & Gold Medalist of IEEE Computer Society and Distinguished Lecturer of IEEE Consumer Technology Society

### Dr. Surya Prakash

1. Best Research Paper Award 2023 of IIT Indore: Research paper titled "Adaptation of Pair-Polar Structures to Compute a Secure and Alignment-Free Fingerprint Template" and authored by Vivek Singh Baghel, Syed Sadaf Ali, and Surya Prakash received the Best Research Paper Award 2023 of IIT Indore. The paper is being published in IEEE Transactions on Industrial Informatics. DOI: <https://doi.org/10.1109/TII.2022.3195938>
2. The survey work titled "A Survey of 3D Ear Recognition Techniques" got accepted in ACM Computing Surveys in August 2022. The 2022-2023 Journal's Impact factor of ACM Computing Surveys is 14.324. DOI: <https://doi.org/10.1145/3560884>

### Prof. Kapil Ahuja

1. On Council of Scientific & Industrial Research (CSIR) – India Committee to Monitor AI projects with Industrial/ Societal Impact (Aug 2022 – July 2025).
2. Editor, IETE Journal of Research (Taylor & Francis) (Feb 2021 – Jan 2024).

### Dr. Gourinath Banda

1. Two articles are published in the Industry Consortium Object Management Group's prestigious Journal of Innovation.
2. One bachelor dissertation project is bestowed with Gold Award at the International flagship event of Global M-Awards at the World Government Summit 2023.

**Dr. Puneet Gupta**

1. Promoted to Associate Professor in October 2022
2. Received TDP research project grant from IIT Indore Drishti.

**Dr. Nagendra Kumar**

1. Developed CovilS: A Real-Time Covid Help Information System using Digital Media
2. Organized AICTE Sponsored Indian Workshop on Artificial Intelligence

**Dr. Chandresh Kumar Maurya**

1. Prime Minister Fellowship
2. Young Scientist fellowship

**Dr. Ayan Mondal**

1. Received the IEEE TCSC Outstanding Ph.D. Dissertation Award, 2022
2. S. Maiti, S. Misra, and A. Mondal, "CBP: Coalitional Game-based Broadcast Proxy Re-encryption in IoT," IEEE Internet of Things Journal, Early Access, pp. 1-10, April 2023. DOI: 10.1109/JIOT.2023.3265028

**Projects**

Project	Sponsored	Consultancy
New Projects	14	-
Ongoing Projects	25	01
Completed	4	-

**Publications**

	Patent	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	02	02	13	30	50



## Department of Electrical Engineering



Department of Electrical Engineering at the Indian Institute of Technology Indore, established in 2009, envisions providing the guidance and conducive learning environment necessary to mold young minds to become technology experts, leaders, and high-quality professionals. The department endeavors to send forth talented individuals having the highest professional competence who can contribute to technological advancements. The department faculty members strive to create synergy between teaching and research activities and provide students with the most recent and relevant domain knowledge aided by high-quality research. The faculty members aim to stimulate students intellectually and create an atmosphere of inquiry and innovation. We endeavor to provide research programs in cutting-edge technologies and create skilled researchers who are passionate and equipped to work in a rapidly evolving technological landscape. Currently, the department faculty members and students are actively engaged in research in Communications, Signal Processing, Image Processing, VLSI, Nanoelectronics, Semiconductor Devices, RF and Microwave, Photonics, Power Engineering, and Biophotonics Instrumentation.

### Academic Programs

The vision of the department is to impart quality education and promote inter-disciplinary, industry-oriented advanced scientific research to address the challenges and develop future technologies having relevance to industrial and societal requirements. The department offers undergraduate (B.Tech.), postgraduate (M.Tech. in Communication and Signal Processing, M.Tech. in VLSI Design and Nanoelectronics, and M.S. by Research), and doctoral (Ph.D.) programs. The department's first international student graduated this year.

Number of Faculty Members	19
Professor	12
Assistant Professor Grade II	5
Assistant Professor Grade I	2

Programs	Student Intake	Degree Awarded
BTech	81	69
M. Tech. CSP	6	9
M. Tech. VDN	9	11
MS (Res)	6	7
Ph.D.	25	12

**Projects**

Project	Sponsored	Consultancy
New Projects	22	4
Ongoing Projects	46	2
Completed	23	5

**Publications**

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	07	10	80	120

## Department of Mechanical Engineering

### About the Department

The Department of Mechanical Engineering holds a prestigious position as one of the oldest and largest departments in our Institute, boasting a team of 26 dedicated full-time faculty members and over 10 skilled administrative and technical staff members. Our curriculum focuses on science, engineering, and technology, with a strong emphasis on imparting technical skills, problem-solving abilities, and fostering innovation in new technologies. To support our academic and research programs, we offer state-of-the-art research facilities. Our primary objective is to provide high-quality engineering education, equipping students with a comprehensive foundation and specialized training to meet the present and future demands of the field. With unwavering commitment, we strive to shape capable engineers who can contribute to advancements in the mechanical engineering domain.

### Academic Programs

The Department of Mechanical Engineering offers a comprehensive range of programs, including BTech, MTech, MS (Research), and PhD, along with dual degree options, in Mechanical Engineering. With a current student enrollment of over 244 UG, 32 PG, and 56 PhD students, the department provides a vibrant academic environment. It also hosts postdoctoral fellows and welcomes personnel from organizations like DRDO, armed forces, and government/private sectors. The department's MTech programs cover Advanced Manufacturing, Mechanical System Design, and Thermal and Energy Systems. Furthermore, it embraces international students, including those from Nepal and Nigeria, fostering a global learning atmosphere. The Department of Mechanical Engineering is committed to nurturing academic excellence, research innovation, and the development of well-rounded engineers who will make significant contributions to the field.

Number of Faculty Members	26
Professor	9
Associate Professor	5
Assistant Professor Grade II	2
Assistant Professor Grade I	10
No. of Post Doc Fellows	06

Programs	Student Intake	Degree Awarded
BTech	70	70
MTech	28	21
MS Research	7	5
PhD	10	8



### Notable R&D Activities

The Department of Mechanical Engineering has undertaken numerous sponsored and consultancy research projects for esteemed organizations such as DRDO, ISRO, John Deere (India), and Simple Energy Private Limited. With state-of-the-art research facilities in place, the department has conducted various academic activities including Short-Term Programs (STPs) and Faculty Development Programs (FDPs) for industry professionals and academic personnel. Some notable research endeavors include the development of micro-plasma transferred arc ( $\mu$ -PTA) wire and powder deposition processes for meso-sized additive manufacturing, advancements in biocompatible knee implants and functionally graded materials, the creation of fault detection algorithms for wind turbine gearboxes, and the exploration of lead-free triboelectric nanogenerators for energy harvesting. The department has also made significant contributions in fields such as soft robotics, thermal management using phase change materials, ceramic coatings for various applications, reliability testing of shape memory alloy springs, nanoglass research, and biomechanical analysis of root canal preparation.

### Projects

Project	Sponsored	Consultancy
New Projects	13	13
Ongoing Projects	36	10
Completed	10	10

### Publications

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	1	23	50	117

## Department of Metallurgical Engineering and Materials Science



The department was started as the Center of Materials Science and Engineering in 2013 and then established as the Department of Metallurgical Engineering and Materials Science (MEMS) in 2016. The department focuses on carrying out interdisciplinary research in Material Science and Metallurgy, to find solutions for intricate real-world problems that benefit society. Presently the department has 18 core faculty members along with 6 supporting staff. Our collective goal is to understand the synthesis, processing, and characterization of several classes of materials; and then correlate the properties towards enhancing their performance. MEMS faculty members are working in research areas ranging from conventional metallurgy to modern materials science.

Number of Faculty	18
Professor	01
Associate Professor	09
Assistant Professor	08

### Academic Programs

The department offers various programs at UG and PG levels. It offers B. Tech in Metallurgical Engineering and Materials Science, M. Tech in both (i) Materials Science and Engineering, (ii) Metallurgical Engineering and PhD Program. The department covers a variety of courses, including basic science and engineering along with advanced level elective courses.

Programs	Student Intake (2022)	Degree Awarded (2022)
B. Tech	55	42
M.Tech	12	14
Ph.D.	12	12

### R&D and other activities

1. Organized 1st International Conference on Frontiers in Materials Engineering' (ICFME-2022), 14-16 December 2022, at IIT Indore.
2. Organized DHARA event on Dhatushastra (Metallurgy) at IIT Indore during March 20-21, 2023.
3. Organized Indo-Slovenia Joint workshop at IIT Indore on Feb 20, 2023.
4. Organized Satellite Event of National Conference on the contribution of Dr. Homi Jehangir Bhabha to the National Building, Nov 03, 2022, IIT Indore Campus.

5. Organized SERB Vidyan Karyashala, July 4-8 2023 and “Recent Development in Energy Materials for Sustainable Future” November 21 to December 3, 2022.
6. 6-Days short-term course on ‘Materials Engineering from Synthesis to Applications’ (AICTE-QIP sponsored) 21st -26th Mar. 2022.

#### **Awards and other Achievements**

- Best Teacher Award from Indian Institute of Technology Indore, received by Prof Sunil Kumar.
- Best Oral Presentation Award, received by Prof. Ajay Kumar Kushwaha at the 11th Asia Conference on Mechanical and Materials Engineering (ACMME-2023) which was held during 8th to 11th June, 2023 at Sapporo Japan.
- Prof. Parasharam M. Shirage received Fellow of Maharashtra Academy of Science

#### **International visit of Faculty/Students and Visitors to MEMS Department**

- Dr. Ajay Kumar Kushwaha visited Taiwan (13-20th May 2023) and Japan (7-14th June 2023)
- Dr. Hemant Borkar visited Japan during 8-11 June 2023.
- Dr. Ram Sajeevan Maurya visited Japan during 8-11 June 2023.
- Dr. Vinod Kumar visited South Korea, April 2023
- Dr. Dharendra Rai, visiting Canada during June-July 2023.
- Dr. Eswar Prasad Visited Singapore, 2023
- Department Adjunct Faculty Prof Vilas Pol, Purdue University, USA visited the Institute in January 2023
- Visit of Mr. Devendra Vishwakarma (CTO and Vice President of Technology CTO and Vice President of Technology Larsen & Toubro, USA, 21 June 2023
- Prof Vivek Bajpai (Mechanical Engineering, IIT ISMDHANBAD) visited during 18-22 June ,2023

#### **Notable activities in the Department**

- Outstanding Researcher in Materials Science by Venus International Foundation, India.
- Covered in PV Magazine International for contribution in all oxide solar cells.
- Keynote Lecture on “Effect of Severe Surface Deformation on Plasma-Nitriding and Oxidation Behaviour of Austenitic Stainless Steel” at the International Conference & Exhibition on Materials, Engineering, Technology and Advances in Heat Treatment ASM International, India Chapter, Mumbai
- Keynote Lecture on “Surface Engineering of Stainless Steel: Severe Surface Deformation & Surface Alloying” International Conference on “Advances in Steel, Power and Construction Technology” (ICASPCT).
- Received “Outstanding Reviewer” appreciation award by International Journal “Transactions of Indian Institute of Metals”.
- Dr. Ajay K. Kushwaha delivered an invited talk on "Graphene" at CSJMU Kanpur.
- Dr. Siddharath Suman, Scholar under Dr. Ajay Kumar Kushwaha joined as Postdoc Fellow at IIT Bombay
- Collaborating with TCS Researc, Pune, India by Dr. Venkata Vamsi Koruprolu .
- Dr. Ajay Kushwaha, Dr. Hemant Borkar, Dr. Ram Sajeevan Maurya and Dr. Nisheeth Prasad have visited a foundry at Pithampur.



- Dr. Vinod Kumar visited Rajratan Industries, Eicher motors, and other industries.
- 'Recent development in energy materials for sustainable future', (AICTE-QIP sponsored Faculty development program (FDP) was held by the Department of Metallurgy Engineering and Materials Science at the Indian Institute of Technology Indore from 21st Nov. 03rd Dec. 2022.
- Prof. Parasharam M. Shirage was Co-Ordinator, SERB Vidyan Karyashala, July 4-8 2023 and Co-Ordinator for Faculty Development Programme (FDP) at IIT Indore on, "Recent Development in Energy Materials for Sustainable Future" from November 21 to December 3, 2022.
- Prof. Parasharam M. Shirage delivered the Planetary Lecture at the Indore Institute of Science and Technology Indore on February 28, 2023 -National Science Day, and at the 6th International Conference on Microactuators, Microsensors, and Micromechanisms (MAMM) at IIT Hyderabad, 3-5 December 2022.
- Prof. Parasharam M. Shirage was invited at the International Conference on Advanced Materials Synthesis, Characterization and Applications (AMSCA-2022) during October 18-20, 2022, at Savitribai Phule University, Pune. 2022. The short-term course under the AICTE-QIP scheme on 'Materials Engineering from synthesis to application' ran from 21st to 26th February 2022, IIT Indore. 2022
- Dr. Hosmani was Technical Committee Member (Advances in Heat Treatment), at the International Conference & Exhibition on Materials, Engineering, Technology and Advances in Heat Treatment, organized by ASM International, India Chapter, Mumbai. (November 2-4, 2022).
- Two Keynote Lectures were given by Dr. Hosmani during June 2022 - June 2023 (one was organized by ASM International, India Chapter, Mumbai (November 3, 2022) and the other was organized by OP Jindal University, Raigarh (CG), India (June 17, 2022)). He also gave invited talks at the International Conference on Frontiers in Materials Engineering (ICFME-2022) organized by Dept. MEMS, IIT Indore, India (December 14, 2022).
- Dr. Ram Sajeevan Maurya was invited to chair a session in ACMME 2023 conference - Japan, and delivered a talk as well.
- Dr. Rupesh S. Devan delivered a talk on "Nano-architectures for battery-supercapacitor hybrid: the way ahead in the era of battery technology" at the Online Short-Term Course on 'Renewable Energy and Green Technology, UGC HRDC Mumbai, 26th Dec. 2022 to 1st Jan. 2023
- Dr. Rupesh S. Devan delivered a talk on "Understanding the Optical and chemical properties of nanomaterials using UV-VIS spectroscopy and XPS" at DST-STUTI program on Advances in Characterization of Materials, M.S. University of Baroda, Vadodara and IIT Gandhinagar, during 12th to 18th September 2022.
- Dr. Rupesh S. Devan delivered a talk on "Nano-hetero-architectures for energy application", one day National Conference on Advances in Functional and Sustainable Materials, SGM College Karad and KRP Kanya Mahavidyalaya Islampur, 8th April 2022. He also spoke on "1D nano-hetero-architectures: synthesis to application" at the AICTE-ATAL FDP on Molecular Manufacturing, Department of Chemistry, Central University of Punjab, Bathinda, 3rd to 7th January 2022.
- Dr. Vinod Kumar delivered a talk on the eve of their 50th Anniversary of Ajou University, South Korea.
- Keynote Lectures were given by Dr. Hosmani during June 2022 - June 2023 (one was organized by ASM International, India Chapter, Mumbai (November 3, 2022) and the other was organized by OP Jindal University, Raigarh (CG), India (June 17, 2022). He also gave an invited talk at the International Conference on Frontiers in Materials Engineering (ICFME-2022) organized by Dept. MEMS, IIT Indore, India (December 14, 2022).
- Prof. N.B. Ballal has joined as Visiting Distinguished Professor in the department in May 2023.

**Projects**

Project	Sponsored	Consultancy
New Projects	11	03
Ongoing Projects	11	04
Completed	Nil	Nil

**Publications**

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	Nil	01	02	71

## Department of Physics



### About the Department

The Department of Physics has been a vibrant and flourishing department since the inception of the Institute in 2009. With a current faculty strength of 17, our faculty possess expertise in diverse fields such as condensed matter physics, high energy physics, black-hole physics, gauge/gravity duality and complex networks. Our state-of-the-art facilities, including computer labs and well-equipped condensed matter experimental setups, have grown and evolved over the years to support cutting-edge research and innovative teaching methods in line with the new education policy of the Government of India.

### Academic Programs

We offer a range of academic programs, including M.Sc. and Ph.D. in Physics, and have proudly graduated over 50 PhD students and 125 MSc students who have gone on to join prestigious institutes worldwide. The Department is also in the process of launching new programs, such as a 2-year MTech in Synchrotron Science and Technology and a 4-year BTech in Engineering Physics (approved by the Senate), to provide students with more opportunities to excel. The Department prides itself on fostering a highly collaborative environment, facilitating close interaction between different research groups within the department, across IIT Indore, and with renowned national and international institutions. Our commitment to providing students with practical research experience extends across all levels of education, from undergraduate to postgraduate and Ph.D. programs. To this end, the Department of Physics at IIT Indore has established more than 15 advanced research laboratories, each focusing on different branches of physics, to provide our students with unique research opportunities and an exceptional learning experience.

Number of Faculty Members	17
Professor	10
Associate Professor	01
Assistant Professor Grade I	06

Programs	Student Intake	Degree Awarded
MSc	25	26
PhD	13	06



### Notable Physics Departments Activities

Presently we have established collaborations with several national institutes, including IISc, IITs (Bombay, Delhi, Madras, Kanpur, Ropar, Hyderabad etc.), RRCAT, BARC, IISERs (Kolkata, Pune, Behrampur etc), HRI, Several Universities (Pune, Mumbai, Allahabad, Calcutta), SNB-NCBS and SNIP - Kolkata,

Our international collaborations include the University of Cambridge, University of Oxford, Stanford University, Michigan State University-USA, Penn State University-USA, CUNY-USA, LUH Hannover-Germany, Rutherford Appleton Laboratory and ISIS Facilities - UK, TU Berlin - Germany, TU Dortmund - Germany, Queens Marry University London-UK, LMU-Munich, Germany, Bern University-Switzerland, Osaka University- Japan, NTU - Singapore, Complexity Science Institute - CNRS Italy, Instituto Superior Tecnico, Lisbon, Portugal.

We further plan to collaborate in Energy generation and storage, Quantum Materials and technology, Soft Matter and Biological Physics, 2D Materials, Machine Learning and Artificial Intelligence etc, through bilateral projects. As the next step further, we also look forward to starting student exchange programs for study and research with these international partners.

### Projects

Project	Sponsored	Consultancy
New Projects	05	Nil
Ongoing Projects	28	Nil
Completed	24	Nil

### Publications

	Chapters in Books	Papers in Conference	Papers in Journals
Total	02	02	54

## Department of Chemistry



### About the Department

The Department of Chemistry at IIT Indore, established in August 2009, is rapidly growing, with research diversity, external funding, and several publications. We have 20 faculty members with research interests ranging from traditional areas (organic, inorganic, physical, and theoretical/computational) to highly interdisciplinary research areas such as nanotechnology, catalysis, energy, machine learning, biochemical, analytical, and materials. The department's faculty is exceptionally well qualified and motivated, with a solid commitment to teaching and research. Our department has state-of-the-art sophisticated instrumentation facilities to facilitate research in several chemistry and interdisciplinary research areas.

### Academic Programs

The academic programs at the Department of Chemistry consist of courses for Ph.D., M.Sc., and B.Tech. undergraduate students. Research work in a plethora of fields ranging from coordination chemistry, theoretical chemistry, synthetic organic chemistry, supramolecular chemistry, solid-state chemistry, and other Interdisciplinary fields make this department a significant center for cutting-edge research. The Department of Chemistry at IIT Indore is the only 2nd generation IIT built in India to introduce a two-year master's program in Chemistry (MSc Chemistry) wherein an entire year, especially the 2nd year of the program, is dedicated to laboratory research in the field of the student's choice. Since 2013, this unique program has devoted a whole year to solving fundamental research problems in the laboratory and giving exposure to students to decide if they would like to proceed with a doctoral program in their higher studies. This ensures that only qualified and motivated students pursue the doctoral program and contribute to the welfare of society. Additionally, students decide on their journey to a doctoral program or look for a lucrative job after completing a master's program at IIT Indore.

Number of Faculty Members		20
Professor		09
Associate Professor		05
Assistant Professor Grade I		05
Assistant Professor Grade II		01
No. of Post-Doctoral Fellows		07

Programs	Student Intake	Degree Awarded
MSc	25	30
PhD	6	8

### Notable R&D Activities

- Royal Society of Chemistry and IIT Indore Symposium on Materials Science Towards New Horizons 2023 January 12-13, 2023,
- Sustainable Chemistry - 2023 Under INDO-GERMAN Higher Education Partnerships 22nd -23rd February 2023 Funded by UGC and DAAD



- The Chemistry Day & In-House Chemistry Symposium (CHEM 2023), March 6, 2023.
- Prof. Suman Mukhopadhyay's research group developed a functional polymer for absorbing hazardous waste.
- Prof. Sanjay Kumar Singh's research group developed protocols for the production of purified hydrogen gas, for which one Indian Patent has been granted this year (patent No. 422056).
- Prof. Apurba Das's research group developed benzoselenadiazole-capped tripeptides with inherent vitro anti-cancer and anti-inflammatory activity.
- Prof. Tushar Kanti Mukherjee's research group developed urine glucose sensor strip.
- Dr. Debayan Sarkar's research group developed the transformation of plastics to chemicals employing visible light catalysed dearomatisation.

### Projects

Project	Sponsored	Consultancy
New Projects	11	1
Ongoing Projects	19	Nil
Completed	13	Nil

### Publications

	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	-	03	15	108



## Department of Mathematics



The Department of Mathematics at IIT Indore has been a major center for academic and research programs in various branches of Mathematics. The Department has constantly been engaging in frontier research areas and been encouraging collaborative research with the other Science and Engineering Departments.

Number of Faculty Members	
Professor	02
Associate Professor	04
Assistant Professor Grade I	12

### Academic Programs

The Department currently offers PHD and MSc programs in Mathematics and envisages other master programs in allied fields, such as statistics and applied computing. Starting from the academic year 2023, the department is going to start a BTech program in Mathematics and Computing.

Programs	Student Intake	Degree Awarded
MSc (Mathematics)	20	17
PhD	37	01

### Notable R&D Activities

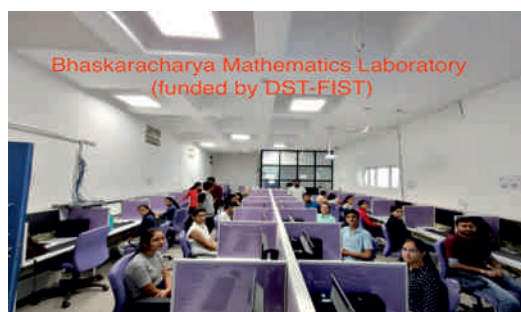
- 29th International Conference on Neural Information Processing (ICONIP2022) from Nov. 22-26, 2022, New Delhi, India (M. Tanveer as General Chair).
- 2022 IEEE CIS Summer School on Deep Learning and Computational Intelligence: Theory and Applications from Dec. 12-16, 2022, IIT Indore, India (M. Tanveer as General Chair).
- 2023 International Joint Conference on Neural Networks (IJCNN 2023) (Core Rank A) from June 18-23, 2023, Australia (M. Tanveer as Competition Co-Chair).
- Special Session on Randomization-Based Deep and Shallow Learning Algorithms at IJCNN 2023, Australia from June 18-23, 2023 (M. Tanveer as Organizer).
- One day EEG Training Workshop on May 05, 2023 (M. Tanveer as Organizer)
- Organized a Lecture Series on Nonlinear Dynamics and Applications, Department of Mathematics, IIT Indore, February 13-16, 2023
- Organized a workshop on One-day workshop on "Hands-on Training using MATLAB", Bhaskaracharya Mathematics Laboratory, Dept. of Mathematics, IIT Indore, October-06, 2022
- Organized 10th Indian Conference on Logic and its Applications (ICLA 2023), March 3 - 5, 2023

### Projects

Project	Sponsored
New Projects	06
Ongoing Projects	16
Completed	16

### DST-FIST support

Bhaskaracharya Mathematics Laboratory
Brahmagupta Mathematics Library



### Publications

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	02	09	16	84

Further, the department is also engaged in promoting Mathematics among college teachers, postgraduate & undergraduate students in India through various outreach activities, like short-term courses, Webinars, Student seminar Series, etc. The department regularly organizes lectures by eminent mathematicians from reputed institutes around the world.

For more details please visit <http://math.iiti.ac.in>.

## School of Humanities and Social Sciences



### About the School

The School of Humanities and Social Sciences at IIT Indore is an exciting and vibrant place for research and pedagogy. The faculty members of the school are an eclectic mix of researchers from the varied disciplines of Economics, English, History, Philosophy, Psychology and Sociology. We have 19 faculty members including one Honorary Professor and one Distinguished Visiting Professor. More than 60 PhD students are currently working on exciting projects and research problems. The research collaborations of the faculty members, whether within the school, or across the Sciences and Engineering disciplines at the Institute, or those with colleagues both nationally and internationally, demonstrate the truly interdisciplinary nature of the research conducted at the school.

### Academic Programs

The School of Humanities and Social Sciences has two main academic Programs: First, a PhD Program that comprises course work and a rigorous dissertation work. Our students have won prestigious national and international scholarships, fellowships, and awards. The graduated students have gone on to excel in their chosen careers. Second, an MS (Research) Program. The first batch of this Program commenced in Autumn 2021.

Number of Faculty Members	17
Professor	3
Associate Professor	3
Assistant Professor Grade II	6
Assistant Professor Grade I	5
No. of Post Doc Fellows	0

Programs	Student Intake	Degree Awarded
MS (Research)	2	0
PhD	24	2



### Notable R&D Activities

Prof. Nirmala Menon and Prof. Pritee Sharma received a grant from MoE for establishing J P Narayan National Centre for Excellence in the Humanities, 2022: 9.68 crores.

Prof. Manish Goyal (from CE Dept.) and Prof. Ruchi Sharma received grant from DST for establishing Centre for Policy Research on Technological Innovation and IPRs Ecosystem, 2023: 50 lakhs.

Dr. Ashok Kumar Mocherla was a Yang Scholar in World Christianity (2022-2023) at Harvard University, USA.

Dr. Sanjram and his teams' idea secured a place in the top 75 in the global competition, "LiFE Global Call for Ideas and Paper" organized by NITI Aayog (Behavioural Insights Unit) and the MOEFCC, in partnership with the United Nations, World Resources Institute, Centre for Social and Behaviour Change (CSBC) and Bill and Melinda Gates Foundation (BMGF).

Dr. Ananya Ghoshal received Best Teacher Award from IIT Indore (2022).

Dr. Shomik Dasgupta was elected as a Fellow of the Royal Historical Society, FRHistS, London, UK (2022).

The Discipline of Economics, with Prof. Ruchi Sharma as Secretary, organized the IndiaLICS Conference 2022, India's Innovation System @ 75 Achievements, Limits and Way organized virtually from 21-23 December 2022.

Dr. J Thapasya's paper co-authored with her student Mr Dibya Prakash Panda won the Prof. Vennelakanti Prakasam Award 2023 for the Best Paper on Systematic Functional Linguistics in the 50th All India Conference of Dravidian Linguistics organised by Dravidian Linguistics Association.

### Projects

Project	Sponsored	Consultancy
New Projects	8	1
Ongoing Projects	11	0
Completed	1	0

### Publications

	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	2	16	8	21

## Center Profiles

### Centre for Entrepreneurship Education and Development (CEED)

#### About CEED

Centre for Entrepreneurship Education and Development (CEED) is one of the recently established Centres of IIT Indore for teaching courses related to innovation and entrepreneurship to students of IIT Indore as well as offering short-term courses and faculty development programs for outside community members.

#### Objectives

- To train aspiring entrepreneurs through courses related to innovation and entrepreneurship
- To develop innovation & entrepreneurship skills among students and motivate them towards choosing entrepreneurial career option

#### People

- Dr. Swaminathan R (Professor In-charge)
- Dr. Ananya Ghoshal
- Dr. Shomik Dasgupta
- Dr. Ashootosh Mandpe
- Dr. Mohanasundari Thangavel
- Prof. Ruchi Sharma
- Ms. Sonal Rai (Junior Assistant)

#### Academic Programs

CEED offers an open elective course on Foundation for Entrepreneurship for all bachelors/ masters/ PhD students since Autumn 2022. The main scope of this course is to develop innovation and entrepreneurship skills among the students through experiential learning. In the Autumn 2022 course, invited lectures on different topics were given by domain experts, startup founders, faculties from IIM Ahmadabad and IIT Bombay.

#### Major Achievements

- CEED, IIT Indore in association with IITI Advanced Centre for Entrepreneurship (ACE) Foundation organized Startup Bootcamps at four higher educational institutions of Madhya Pradesh (MP). These bootcamps were financially supported by MP Startup Centre. A total of around 529 student participants including startups from three different parts of MP (Indore, Ujjain and Rewa) attended these bootcamps, where our experts engaged in delivering 8 technical sessions for 2 days (around 6 hours per day) related to various aspects of Startup and Entrepreneurship such as choosing a startup idea, developing the idea into an MVP, creating a successful startup, key terms and jargons in startup, valuation basics, funding avenues, basics of IP for entrepreneurs, etc. The technical session also included one mock pitching session exclusively for student participants to pitch their ideas in front of experts.
- CEED, IIT Indore in association with IITI ACE Foundation and MSME DFO Indore organized two Awareness programmes on Design scheme of Ministry of MSME for which IIT Indore is serving as an implementing agency. It was attended by 91 MSMEs of MP. The objective of the design scheme is to provide expert advice and cost-effective solutions on real time design problems for new product development.
- CEED in association with IITI ACE Foundation organized a two-week faculty development programme (FDP) on Entrepreneurship and Leadership Management funded by AICTE Teaching and Learning (ATAL) academy. Around 50 faculty members from various institutions of MP participated and successfully completed the programme.
- CEED in association with IITI ACE Foundation organized a two-week FDP on Foundation for Entrepreneurship. More than 50 faculty members/staff from various higher educational institutions and incubation centers of MP participated in this programme.

## Glimpse of the Outreach Activities



Startup Bootcamp at Medi-Caps University, Indore  
(Jan 31 and Feb 1, 2023)



Startup Bootcamp at IPS Academy Indore  
(Feb 16 and 17, 2023)



Startup Bootcamp at Govt Madhav Science College, Ujjain  
(March 1 and 2, 2023)



Startup Bootcamp at Rewa Engineering College, Rewa  
(March 16 and 17, 2023)



MSME Design Scheme Awareness Programme  
(31/03/2023)



MSME Design Scheme Awareness Programme  
(18/01/2023)



ATAL FDP on Entrepreneurship and Leadership Management  
(Aug 1 to 12, 2023)



Online FDP on Foundation for Entrepreneurs  
(June 12 to 24, 2023)



## Sophisticated Instrumentation Center (SIC)

Sophisticated Instrumentation Centre (SIC) was established in September 2011 with Institute funding to expedite the research program at IIT Indore. The mission of SIC is to support and foster the research initiatives at IIT Indore, by providing a state-of-the-art instrumentation facility and its use and application in cutting-edge research. The high-value instruments are accommodated under one umbrella to provide the highest quality of data analysis to its stakeholders. SIC offers analytical services across the Institute's departments and external academic/industry users. SIC is constantly working on its mission to support and foster research in all branches of science and engineering at IIT Indore.

SIC is now working towards being a self-sustained center by generating funds from services provided to external users. A significant advantage of the SIC facility is its easy accessibility to the students, and faculties with a very healthy ratio of students vs. instrument availability.

The following departments in the Institute have been actively using the SIC instruments to strengthen their research and development activities: Biosciences and Biomedical Engineering, Chemistry, Civil Engineering, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering and Materials Science, and Physics.

### Vision/Mission and Objectives

1. To provide facilities of SIC to professors, scientists, and students of IIT Indore as well as various academic institutes and industries to carry out sample analysis for research and development work.
2. To organize workshops on the use and application of various SIC Instruments for students, teachers from universities, and industries.
3. To develop new analytical techniques/methods to fully utilize the instruments and provide them to explore new research horizons in various areas of science and technology.
4. To ensure easy data collection for advanced research with nominal charges.



**Prof. Apurba K. Das**  
Professor In-Charge SIC



**Mr. Ghanashyam Bhavsar**  
Technical Superintendent



**Mr. Kinny Pandey**  
Technical Superintendent



**Dr. Ravinder**  
Junior Technical Superintendent



**Mr. Atul Singh**  
Junior Technical Assistant, Contractual



**Mr. Ranjeet Raghuvanshi**  
Administrative Staff, Contractual

## Facilities available with SIC

SIC includes various instruments which can be categorized such as:

### X-Ray Diffractometers

Single Crystal XRD (SCXRD)

Energy Dispersive X-Ray Spectroscopy (EDS/EDX)

Wavelength Dispersive Spectroscopy (WDS/WDX)

Powder XRD (PXRD)

X-ray Absorption Fine Structure (XAFS)

### Spectrometers

Fourier Transform Infrared Spectrometer (FT-IR)

Time-Correlated Single Photon Counting (TCSPC)

Polarimeter

UV-VIS-NIR Spectrometer

Photoluminescence (PL)

Spectrofluorometer

Circular Dichroism (CD)

NMR 400 MHz

UV-Visible Spectrometer

### Microscopy

Field-Emission Scanning Electron Microscopy (FE-SEM)

Total Internal Reflection Fluorescence Microscopy (TIRFM)

Atomic Force Microscopy (AFM)

Confocal Laser Scanning Microscopy (CLSM)

### Chromatography

High Resolution Mass Spectrometry (HR-MS)

High-Performance Liquid Chromatography

Gas Chromatography-Mass Spectrometer (GC-MS)

### Analyzer

CHNSO Analyzer

Surface Area Analyzer (BET)

Rheometer

### Electro-Analytical

Cyclic Voltammetry (CV)

Spectro Electro-Chemical Cell (SEC)

### Thermal Analysis

Thermogravimetric Analyzer (TGA)

Differential Scanning Calorimetry (DSC)

### Sample Preparation

Lyophilizer

Dual Ion Beam Sputtering Deposition System (DIBSD)

Microwave Synthesizer



Glimpses of Major Facilities in SIC

Industries	Academics
1. Navin Fluorine, Dewas	1. DAVV, Indore
2. Sarna Chemical, Gujrat	2. VNIT Nagpur
3. Prism Johnson, Dewas	3. Vikram University, Ujjain
4. Hetero Drugs, Hyderabad	4. SGSITS, Indore
5. Medilux Laboratories, Pithampur	5. IIT Kanpur
6. Symbiotec Pharmalab, Indore	6. IIT Gandhinagar
7. Trio Tech Chemical, Indore	7. NIT Patna
8. Angeel Oak, Indore	8. Manipur University, Imphal
9. Shrinivas Pharmachem, Ujjain	9. IGNTU, Amarkantak
10. Macsen Drug, Udaipur	10. NIT Silchar
11. SSC Industries, Indore	11. Sage University, Indore
12. Kriti Nutrients, Indore	12. PMB Gujarati Science College, Indore
13. Knovea Pharmaceutical, Indore	13. Sardar Patel University, Gujrat
14. Rajratan Wires, Indore	14. Dr. Harisingh Gour University, Sagar

#### Role of SIC in Institute Research Activity

- With providing support to more than 2500 publications SIC has been catering the research needs of institutional faculties & research scholars.
- 23 patents are registered using SIC data
- SIC so far supported various projects funded by external agencies total valued above INR 50 crores.



## Center for Advanced Electronics (CAE)



The Center for Advanced Electronics (CAE) has been established in June 2020 at IIT Indore as an interdisciplinary research center that aims to develop materials, devices & technologies for multidisciplinary applications including computing, communication, medicine, and energy. The Center is headed by Prof. Mukesh Kumar with a prominent team of other faculty members from across the Institute and administrative staff.

The CAE is honoured to have on board some of the renowned academicians, working in electronics and its allied areas, under one technical roof to enable high-quality applied research for the benefit of mankind. We focus on building a platform for applied research, device development, and skill & manpower development in the nationally important area of electronics.

### Academic Programs

The Center for Advanced Electronics (CAE) has launched a Ph.D. program exclusively in Advanced Electronics, which comprises research areas such as Nanoelectronics/Microelectronics, Integrated Silicon Photonics/Optoelectronics, Advanced Materials and Devices, Advanced Memory Technology, Electronic Waste Utilization, Computational Electronics and Materials, and 2D Electronic Materials, Biochemical Sensors, Signal Processing, VLSI Circuit and System Design, Photovoltaics, Wireless & Optical Communication and AI and Machine Learning.

The Center is also in process of proposing a PG program, MS Research in Advanced Electronics with a vision to cater to national semiconductor needs, specifically to generate manpower and to technically contribute towards India Semiconductor Mission.

Number of Faculty Members	11
Professor	08
Associate Professor	01
Assistant Professor Grade	02
Ramanujan Fellowship	01

Programs	Student Intake	Degree Awarded
BTech	NA	-
MTech	NA	-
MSc	NA	-
PhD	04	-

## R&D Activities

The Center is focused on applied research in multidisciplinary fields. There are some state-of-the-art facilities for research and development in advanced semiconductor technology and material science.

### Research laboratories under CAE

1. Optoelectronic Nanodevice Research Lab
2. Non-equilibrium Advanced Engineering Lab
3. Hybrid Nanodevice Research Group (HNRG) Nanoscale Devices
4. VLSI Circuit & System Design Research and Development Lab
5. Supramolecular Chemical Nanoscience Group
6. Materials & Device Research Group
7. Signals & Software Group (Sasg)
8. Theoretical Condensed Matter Physics & Advanced Computational Materials Science Lab
9. Signal Processing Research Group
10. Nano and Energy Materials Laboratory
11. Optoelectronic and functional oxides lab
12. SMN Group lab

### Research Outcomes

- a. Fabricated chemiresistive sensor for the detection of ethanol using organic-inorganic nanohybrid.
- b. Electronic Structure of Point Defects, Surfaces, and Interfaces in Compound Semiconductors and their Impact on the Electrical and Magnetic Properties using First-Principles Calculations.
- c. Nanomaterial Science and Engineering, Defects in Materials, Single Wall and Multi Wall Carbon Nanotubes (CNT), Multi-layers Graphene and 2D and 3D Materials Engineering.
- d. Transition Metal Dichalcogenides (TMDs), Novel Perovskite, Topological Insulators, Porous Materials for Hydrogen and Fuel Cell, Alkali-ion Battery and Energy Storage, Solar cell, Renewable Energy Technology, CO<sub>2</sub> and CO Capture and H<sub>2</sub> storage.

The Center has conducted and organized various short courses/webinars/FDPs covering various advanced technologies as a part of outreach activities. CAE has contributed notably with its high-quality research publications and patents and provided training to a good number of external UG students.

### Notable activities in the department

In CAE we have signed a non-disclosure agreement with Bharat Electronics Ltd. for joint research work in the area of Radar Technology and Photonics. We are pushing our outreach activities very strongly by conducting FDPs and other courses to benefit internal and external students and faculty members. The Hybrid Nanodevice Research Group (HNRG) led by Prof. Shaibal Mukherjee in Electrical Engineering at IIT Indore explores new physics of micro- and nano-structured materials, and to apply this knowledge in realizing advanced tools and devices for chemical, biological, optical, electronic and energy applications. HNRG has been actively involved in diverse research domains including design, fabrication, testing, and packaging of high-performance devices in: (a) RRAM/Artificial Neurons, (b) Photovoltaic, (c) Biochemical sensors to detect toxic gases and chemicals in the environment, (d) HFETs/HEMTs for high-power and high-frequency systems, (e) LED/Photodetectors.

### We are proud to file and publish the following patent with CAE affiliation:

1. M. Kumar, S. Rajput, V. Kaushik, P. Babu, S. K. Pandey, "All optical modulation in engineered indium tin oxide based vertically coupled ring resonator employing epsilon near zero state", Indian patent, No. 202321010734; Filed in February 2023

### Projects

Project	Sponsored	Consultancy
New Projects	04	-
Ongoing Projects	02	-

### Sponsored projects

1. Development of Porous Metal-Organic Frameworks and Covalent Organic Frameworks and Their Potential Applications in Hydrogen Storage, DST-SERB, Govt. of India. (Project Value: 36 Lakhs INR), PI-Dr. Srimanta Pakhira (Duration: 2022 - 2025).
2. Implantable Pacemaker Chip (iPACE-CHIP) Duration: 5 Years (June 2023 - May 2028)
3. Design and Fabrication of Energy Efficient In-Memory Computing Design Framework for Analog Neural Processor with Improved Linearity for Neuromorphic Computing Applications Duration: 3 Years (2023-2026).
4. Impact of spacer layer in ZnO-based MOSHFET, DST SERB, INR 57,31,264, February 2022 – February 2025, Role: PI
5. Power Monitor and Control using HEMT based Power Converters in IoT Nodes, TIH IoT CHANAKYA GROUP (PhD, PG, UG) FELLOWSHIP PROGRAM 2022-23, INR 19,69,760, March 2023 – February 2027, Role: PI
6. Implementation of IoT enabled MCA based Image Processing for Early Identification of Diseases in Crops, TIH IoT CHANAKYA GROUP (PhD, PG, UG) FELLOWSHIP PROGRAM 2022-23, INR 11,64,600, March 2023 – October 2024, Role: PI
7. IoT-enabled 2D TMD based Hybrid Photodetector for Wearable Electronics, TIH IoT CHANAKYA GROUP (PhD, PG, UG) FELLOWSHIP PROGRAM 2022-23, INR 11,29,400, March 2023 – July 2024, Role: PI

### Outreach Activities

1. Workshop on Advanced Photonics the inaugural event of IEEE Photonics Society Chapter of Madhya Pradesh in association with IIT Indore student chapter of Photonics Society, November 30 2022 and December 1, 2022 (Organized by Prof. Mukesh Kumar)
2. IEEE Electron Devices Society (EDS) Upskilling Course on the theme "Electric Vehicle (EV) mobility and solutions", Student Chapter, March 10-11, 2023 (Organized by Prof. Shaibal Mukherjee)

### Publications

Details	Books Published	Chapters in Books	Papers in Conference	Papers in Journals
Total	1+1 (a book proposal contract from IoP is signed)	-	17	51

### Books Published

1. Dixit, Sudhir & Bhatia, Vimal & Khandanba, Sanjram & Agrawal, Anuj. (2022). 6G: Sustainable Development for Rural and Remote Communities, Springer, Singapore, <https://doi.org/10.1007/978-981-19-0339-7>.



## Computer and Information Technology Center (CITC)



This center provides various services to the members of the IITI community. The services include:

**Network Connectivity:** CITC provides 2 Gbps network connectivity to the entire campus. The entire campus is covered by more than 1200 latest wireless access points. All the buildings, departments, hostels, learning resource center, administrative department, lecture hall complex, health center and faculty residence are connected with 10 Gbps 144 core fiber backbone. IIT Indore is also a part of the global EDUROAM network.

**High Performance Computing (HPC):** CITC is hosting servers, storage, and a high-performance computing facility. The data center developed at the CITC building is equipped with redundant UPS and 320 KV DG facility. There are 5 InfiniBand Linux clusters hosted in CITC, a total of more than 1900 CPU cores and 100 TB of storage.

**Essential IT services:** CITC is running all the essential services in-house like maintenance and development of the Institute Website, internal/external DNS servers, web-based automation, centralized authentication using LDAP/Radius, DHCP-based dynamic IP allocation services for each building, campus Wi-Fi, storage, campus telephone services, online automation services, virtual resource allotment, internal cloud storage for a different level of users, personal homepage hosting services and open-VPN for each user. CITC has a ticket-based online service request system; the user can file online service requests and complaints and subsequently track their status.

**Technical Support:** CITC provides support for the installation and maintenance of IT equipment and application software in all the departments, LHC, hostels, residential areas, and administrative sections. We also provide technical support for the establishment and maintenance of smart classes, conference rooms and board rooms.

### Our Team Members:

1. Dr. Neminath Hubballi, Head CITC
2. Yogendra Singh, Deputy System Manager
3. Jitendra Gupta, Technical Superintend
4. Dhiraj Vijayavargia, Junior Technical Superintend
5. Subhash Soni, Junior Technical Superintend
6. Ms. Preeti Sharma, Junior Technical Superintend
7. Pralhad Singh Panwar, System Analyst
8. Shailesh Kaushal, Superintend
9. Subha Jana, Superintend
10. Ms. Princy Awadhiya, Programmer

## — Center for Electric Vehicle & Intelligent Transport Systems (CEVITS) —

### Vision/Mission of The Center

CEVITS was established in April 2021. It has three key objectives:

- i) Developing skills and talent in the field of electric vehicle technology;
- ii) Creating a world class ecosystem for Research and Innovation in Transformative Mobility; and
- iii) To produce entrepreneurs in the field of EV technologies.

CEVITS started academic programs related to Electric Mobility with the objective of providing comprehensive knowledge of electric mobility to students and professionals across the country.

It has started MTech programs in Electric Vehicle Technology (EVT) since the academic year 2021-22. The courses in these programs cover all the essential aspects of EV. Further, MTech+PhD dual degree program has also been started. The center will focus on three types of research and development projects: a) Research, Development & Engineering (R,D&E) leading to production capability (needs Industry Support); b) Application oriented Research, Design and Development (R,D&D) having production potential; and c) Basic R&D.

### Team Members

Number of Faculty Members Associated with the Center: 21

Name of Faculty or Fellow	Area of contribution to CEVITS
Dr. Gourab Sil (CE)	Traffic Engineering, Traffic Flow Theory
Dr. Amod C. Umarikar (EE)	Power Electronics for Electric Vehicles
Dr. Anand Parey (ME)	Noise and Vibrations of Electric Vehicles
Dr. Devendra Deshmukh (ME)	Hybrid Vehicles, Dynamics and Simulation of Electric Vehicles
Dr. I.A. Palani (ME)	Autotronics System Design
Dr. S.L. Kundalwal (ME)	Vehicle Dynamics, Composite Materials for Electric Vehicle Applications
Dr. K. Eswara Prasad (MEMS)	Materials and Crashworthiness for Electric Vehicles
Dr. Rupesh S. Devan (MEMS)	Electrochemical Energy Storage for Electric Vehicles
Dr. Sunil Kumar (MEMS)	Electrochemical Energy Storage for Electric Vehicles
Dr. Pankaj R. Sagdeo (Physics)	Triboelectric and Nano-generator
Dr. P.K. Sanjram (HSS)	Human Factors in Automobiles
Dr. Vijay A. S. (EE)	Power Electronics and Drives
Dr. Sumit Gautam (EE)	Vehicular Communications
Dr. Bodhisatwa Majumdar (CSE)	Network Security
Dr. Sanjay Kr. Singh (Chemistry)	Fuel Cells
Dr. Krishna Mohan Kumar (ME)	Vehicle Dynamics
Dr. Trapti Jain (EE)	Electric Vehicles in Power Systems
Dr. Subhadeep Paladhi (EE)	Electric Drives
Dr. Janakiraman (ME)	Battery Modelling and Management
Dr. Vipul Singh	Autotronic Systems

### Academic Programs

CEVITS started academic programs related to Electric Mobility with the objective of providing comprehensive knowledge of electric mobility to students and professionals across the country. CEVITS has started an MTech program in Electric Vehicle Technology (EVT) from the academic year 2021-22. A MTech+ PhD dual degree program has also been started in the center.

Programs	Student Intake	Degree Awarded
MTech in Electric Vehicle Technology	10-15	MTech

### R&D Activities

Current research areas in CEVITS are:

Energy Storage, Power Electronics and Drives, Vehicular Communication Systems, Vehicle Dynamics, Traffic Engineering, Advanced Materials for EV

### Notable Activities at the Center

- 1) DST SERB Karyashala on 'Vehicular Communications for Next Generation Intelligent Transportation Systems' Conducted between 12-19 July 2022.
- 2) Courses planned for Professionals in VECV Pithampur: Thermal Management, Networking and Security Aspects of Connected Vehicles, Battery Cell and Battery Chemistry, Radar and Lidar Technology.
- 3) First Batch of MTech. in Electric Vehicle Technology is passing out in July 2023.



## Center for Indian Scientific Knowledge Systems (CISKS)

The center focuses on understanding, preserving, teaching, and adapting the science and technology heritage of India. The center focuses exclusively on the scientific and technology heritage of India and its relevance to the modern world. The focus is on hard sciences such as mathematics, astronomy, metallurgy, biology, agriculture, engineering and medicine among others. This center is not focused on the language studies or humanities or social science aspects of Indian knowledge systems.

**Vision:** The grand vision of the Center for Indian Scientific Knowledge Systems is to train generations of scholars who will show the 'Indian way' to the world.

### Objective of Center

The objectives of the Center for Indian Scientific Knowledge Systems (CISKS) are to:

1. research classic scientific texts of India
2. educate students about the scientific texts of India
3. nurture scholarship in Indian scientific Knowledge Systems
4. preserve classic scientific texts of India
5. collaborate with other HEIs of India in the field of Indian Scientific Knowledge Systems

### Teaching

The CISKS houses the Non-Formal Sanskrit Education (NFSE) centre of the Central Sanskrit University. The centre conducts the certificate and diploma courses as part of the NFSE center. The centre is conducting a spoken Sanskrit course for beginners.

The process of signing an MoU with Maharshi Sandipani Rashtriya Veda Vidya Prathisthan (MSRVVP), Ujjain is in advanced stages of implementation. Once signed, the MoU will enable IIT Indore to offer short courses and teacher training for faculty and students of MSRVVP.

### Research

The CISKS research is focused on five strategic areas:

1. Knowledge Paradigms;
2. Sustainable Agriculture;
3. Novel Materials;
4. Holistic Medicine;
5. Preserving Traditional knowledge

Over the last two years of its existence, the CISKS has funded eight internal research projects. Faculty have been successful in obtaining three external grants funded from the IKS Division of Ministry of Education (Table 1). A third call for proposals to encourage collaboration with MSRVVP and Maharshi Panini Sanskrit Vidyalaya, Ujjain are underway. We expect to fund another 6-12 projects in the third call for proposals.

Table 1. List of projects currently being implemented in CISKS.

S.No.	Project Title
Extramural projects (funded by the IKS Division of the Ministry of Education)	
1	Development and characterization of novel metallic Vajra Lep coating (Dr. Vinod Kumar; Rs. 19.7 Lakhs)
2	Development of Fe-based composite materials mimicking Delhi iron pillar's structure (Dr. Santosh Hosmani; Rs. 17.5 Lakhs)
3	Investigation of traditional iron monuments in the central India and understanding their metallurgical origins (Dr. Easwar Prasad Korimilli; Rs. 17.3 Lakhs)

### The significant events in the past one year

Two significant events were organized by the CISKS in collaboration with the Indian Knowledge System (IKS) Division. These events aimed to promote awareness and engagement with Indian knowledge systems, contributing to the preservation and dissemination of our rich cultural heritage.

#### A workshop on Bhāratīya Game: Awareness and Play in a Lifestyle of Joy

The workshop "Bhāratīya Game: Awareness and Play in a Lifestyle of Joy" was conducted on January 20, 2023, at IIT Indore. The workshop aimed to provide participants with a unique platform to explore Indian knowledge systems through Bhāratīya Games. During this workshop, participants engaged with ancient Indian board games, which were thoughtfully designed to incorporate elements of design, infographics, statistics, mindfulness, empathy, and joy, allowing them to experience and imagine the cultural richness inherent in these games. By combining education and entertainment, this innovative approach sought to make learning more engaging and enjoyable.

The event witnessed the participation of two representatives from the IKS Division, Prof. Ganti S. Murthy and Shri. Somnath Danayak. Shri Aman Gopal was the resource person who shared his expertise and active involvement to ensure a very successful workshop. Approximately 100 participants, comprising students, faculty members, researchers and experts attended the workshop, demonstrating the growing interest and enthusiasm for such initiatives within the IIT Indore community.



#### Conference on Dhārā Bhāratīya Dhātudhāstra

The conference "Dhārā Bhāratīya Dhātudhāstra" took place from March 20 to March 21, 2023, at IIT Indore. The conference aimed to provide a platform for experts, scholars, and enthusiasts to discuss and delve into the intricacies of Bhāratīya Dhātudhāstra, an ancient Indian science of metallurgy. The event facilitated knowledge exchange, research presentations, and discussions to promote a deeper understanding of this significant branch of Indian knowledge systems.

This conference focussed on the key contributions of Bhāratīya Dhātudhāstra which include extracting copper from copper ores, shaping it into beads and tools, refining high-quality zinc through distillation, producing superior copper alloys (brasses and bronzes), creating intricately shaped objects through lost wax casting, extracting gold using ancient ant digging technology, preparing a adhātu alloy, producing high strength and toughness steel (wootz steel), making crucible steel with high hardness and wear resistance, developing corrosion-resistant iron, fabricating precision instruments for surgical applications, manufacturing long pillars through forge weld technology, and purifying heavy metals for medicinal use.

Three distinguished representatives from the IKS Division, namely Prof. Ganti S. Murthy, Dr. Anuradha Choudry, and Shri. Pijus Kanti Pal actively participated in the conference. Their active participation enriched the discussions and established valuable connections with fellow experts in the field. The conference attracted a significant audience, with approximately 300 participants from various academic and research institutions across the country, showcasing the growing interest and relevance of Dhātudhāstra.



## Center of Futuristic Defence and Space Technology (CFDST)

This center is committed to providing a platform to the students and researchers for their contribution in “Nation-Building” through developing various forefront and futuristic technologies for Defense and Space Sectors towards “Aatmanirbhar Bharat”. The center is contributing to providing technological solutions to some of the research problems of the premier laboratories of defense institutions of country such as the Defense Research and Development Organization (DRDO). The center is also planning to offer specialized and dedicated M.Tech/MS (research) and Ph.D. programs in the broad area of defence and space in near future.

Dr. Indrasen Singh (Head CFDST), Ms. Kavita Enamdar, are heading Center of futuristic defense and space technology.

### Members in CFDST

• Prof. Neelesh Kumar Jain	• Dr. Ram Sajeewan Maurya
• Prof. Rajneesh Misra	• Prof. Sanjay Kumar Singh
• Prof. Ram Bilas Pachori	• Dr. Saurabh Das
• Prof. Vimal Bhatia	• Prof. Shaibal Mukherjee
• Dr. Abhinoy Kumar Singh	• Dr. Vinod Kumar
• Prof. Abhirup Datta	• Dr. Vivek Kanhangad
• Dr. Abhishek Rajput	• Dr. Hem Chandra Jha
• Prof. Avinash Sonawane	• Dr. Jayaprakash Murugesan
• Dr. Ajay Kumar Kushwaha	• Dr. Mukesh Kumar
• Prof. I A Palani	• Prof. Nirmala Menon
• Dr. Lalit Borana	• Prof. Ruchi Sharma
• Dr. Mrigendra Dubey	• Dr. Somaditya Sen
• Prof. Neelima Satyam	• Dr. Sumanta Samal
• Dr. Pankaj Sagdeo	• Dr. Surya Prakash
• Dr. Puneet Gupta	• Dr. Swaminathan Ramabadran

### Notable Achievements: Webinar Organized During COVID 19 Pandemic

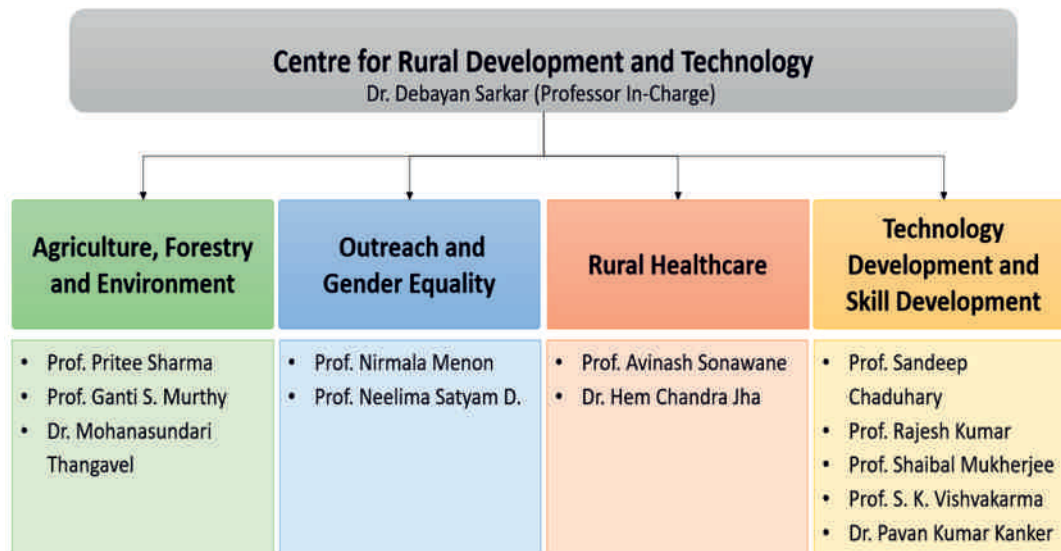
- Expert Talk by Dr. Ajay Kumar IAS Defence Secretary Ministry of Defence, Govt. of India webinar on Indian Defence Industry, The Sunrise Sector.
- Expert Talk by Maj Gen A K. Channan, PVSM, SM Additional Director General Army Design Bureau webinar on Technology as a disruptive influence on military warfare.
- Expert Talk by Lt. Gen VG Khandare PVSM, AVSM, SM (Retd.) Military Adviser, National Security Council Secretariat webinar on Role of technology in national security and comprehensive national power.
- One day Workshop on Opportunities in Research and Developments in Armament Establishments (ARMREB-2020) on 26th August 2020.



## Center for Rural Development (CRDT)

The Institute has established the Center for Rural Development and Technology (CRDT) as a nodal hub for researchers, volunteers, practitioners, educators, and others to collaborate and facilitate rural empowerment and progress solutions. CRDT shall strive to facilitate empowering and enabling the rural population to improve their living conditions by development and application of appropriate and people-friendly technologies adopting participatory, sustainable, democratic, transparent and gender-sensitive processes. We aim to work into the following broad areas:

- Skill development and training programs for various trades
- Small scale entrepreneurship, sustainable cottage industries, development of value-added products
- Access and Opportunities for Gender justice
- Developing user-friendly interfaces for launching e-platforms for various rural activities that require outreach to larger communities.
- Evaluation and policy recommendations for government welfare schemes.
- Harnessing Forest products and helping rural entrepreneurs to develop and sell their products with easy access to technology.
- Identifying gaps between skills and outreach and facilitating in filling that gap
- Outreach to NGOs, Govt organizations, international bodies such as UNICEF to have a broad-based approach.
- Right to Education (RTE) Act- Efficacy and Outcomes.
- Technology Development in Food Processing, Food Packaging and Food Storage.



### Academic Programs

Center for Rural Development and Technology (CRDT) has launched a Ph.D. program exclusively in Rural Development and Technology, which comprises research areas such as Agricultural and Environmental Economics, Sustainability Studies, Impacts of Climate Change, Food Security Water Energy Food Nexus. / Application of Artificial Intelligence Techniques in Agriculture problems. / Building Products for Rural Areas. / Development and evaluation of sustainable materials for soil stabilization in rural infrastructure. / Disaster risk reduction in rural areas. / Early disease detection in crops for sustainable ecosystem. / Evaluation of the socioeconomic impact of rural infrastructure development on local communities. / Food and bioprocessing equipment design and scaleup. / Integration of traditional knowledge and practices

with modern technologies for sustainable rural development. / Natural Resource and Environmental Economics, Climate change impact on Agriculture, Tribal Studies, Policy Analysis, Rural Development. / Noise, Vibration, and Harshness in Agriculture Machinery and Automobiles. / Nutrient energy water nexus. / Optimization of construction techniques and materials for cost effective and sustainable rural housing. / Resilience of Agro ecological Systems. / Sensors for agriculture. / Sustainable Construction. / Sustainable rural healthcare. / Sustainable Techniques for Food Storage. / VLSI Circuit and System Design.

Elective courses are being conducted by the Centre and the Center is also in the process of proposing new courses from the next session.

**R&D Activities:** The Center is focused on applied research in multidisciplinary fields. It is also working on developing appropriate technologies for the rural community.

**Internal Sponsored Project:** Eleven centre funded projects are underway under the aegis of CRDT in collaboration with CIAE Bhopal, and two projects are ready for approval.

S. No.	Project Title
1	Development of bioplastic utilizing cellulose extracted from corn-stalk
2	Sustainable management of organic waste stream comprising fecal, municipal, and agro wastes employing resource recovery approach
3	Assessing the Farm Mechanization and its impacts on farmers' Economic
4	Real-time detection of diseases in paddy/ Soyabean using via memristive crossbar array-based image
5	Assessment of Soyabean based probiotics to combat antimicrobial resistance Helicobacter pylori growth and disease pathogenesis
6	Development of economic super absorbent Agri-gel for studying and soil, water and nutrients retention properties
7	Deep CNN-based estimation of Above-Ground Biomass of corn crop using variable magnification UAV images.
8	Design and development of cost-effective manually operated rice transplanter
9	Development of Cost-Effective Photo Active Soft Materials for Efficient Removal and Degradation of Pesticides from Contaminated Ground Water
10	Development of Mobile app for farmers to help them in Agricultural activities: Krishi Sewa
11	Sustainable Production of Polylactic Acid (PLA) using Agro-Industrial Waste for PLA based bioplastic Formulation.

### External Sponsored Project

- IoT-enabled Resistance Readout Circuit for Water and Gas Sensor, 'AYANSH'-TIH-IoT Start-ups and Spin-offs Program' 2022, IIT Bombay, INR 10,00,000, 2023-2025; Role: PI (NOTE: This is an Industry Project through our Startup QuanTechL2M Innovations Pvt. Ltd.).
- Implementation of IoT enabled MCA based Image Processing for Early Identification of Diseases in Crops, TIH IoT CHANAKYA GROUP (PhD, PG, UG) FELLOWSHIP PROGRAM 2022-23, INR 11,64,600, March 2023 - October 2024; Role: PI.
- Professor Pritee Sharma, Co-PI Economic Loss and Damage Assessment due to Forest Fires in Hoshangabad Forest Division, MP, ICIMOD-South Asian Network for Development and Environmental Economics (SANDEE)

## Research Outcome

- Developed a low-cost adsorbent using corn-cob for fluoride removal from drinking water.
- Developing a novel approach to harness energy/fuel from organic solid wastes.
- Assessing the Farm Mechanization and Its Impacts on farmers' Economic
- A mobile app developed for Disease & Insect Identification in Potato Crop: Krishi-Seva.
- Things (IoT) / Artificial Intelligence (AI) / Machine Learning (ML) algorithms plugged through a portable, handheld sensor network system to perform real-time analysis of soil fertility conditions to prevent various crop diseases.
- Development of Portable kit for visible light Photo dynamic inactivation microbes on food surfaces- An alternative to Cold Storages

## Outreach Activities

- Field visit to Golabadi and Sad villages of Jhabua, Madhya Pradesh (India) as part of academic course Design Thinking for Rural Application (RDT 301/401/601).
- Gandhi Jayanti Celebration on October 02, 2022
- Exhibition by local Artisans on October 02, 2022
- CIAE Bhopal Scientist Visit to IIT Indore for Collaborative Projects.
- Director, CIAE Bhopal Visit to IIT Indore for Collaborative Research Program
- Expert Talk on October 14, 2022, by Prof. Pascal Maussion from Toulouse INP and Researcher with CNRS Lab. LAPLACE, Laboratory for Plasma and Conversion of Energy, France and the Vice President of International Affairs on Frugal Innovations for Rural Electrification.
- Multistakeholder Roundtable on Friday, 25th November 2022,
- MoU between CRDT, IIT Indore and JSV Innovations Pvt Ltd.
- Sathiya Welfare Society (SWS) Bhopal Visit to IIT Indore for Collaborative Research.
- Expert Talk on February 03, 2023, by Prof. S.K. Saha, Professor, IHFC Chair Professor & Project Director, I-Hub Foundation for Robotics (IHFC) Dept. of Mech. Engineering, IIT Delhi on Multibody Dynamics for Rural Applications (MuDRA)---An Innovative Research by Connecting Engineering Minds with the Society.
- Expert Talk on February 09, 2023, by Mr. Arpit Maheshwari, Professor, Co-Founder of Jeevantika on A journey into Sustainable Living.
- Expert Talk on February 13, 2023, by Dr. Rajesh Seth, Professor, Department of Civil & Environmental Engineering at the University of Windsor, Ontario, Canada on Protecting Our Freshwater Resources: Thinking Outside The Box.
- MoU between CRDT, IIT Indore and Central Institute of Agricultural Engineering (CIAE) Bhopal.
- Field visit to Nimar Abhyudaya Rural Management and Development Association (N.A.R.M.A.D.A.), Tehsil - Kasrawad, District - Khargone, Madhya Pradesh (India) as part of academic course under the Centre for Rural Development and Technology (CRDT), IIT Indore

## Patent

- Shaibal Mukherjee, Chandrabhan Patel, Vikash Kumar, Sumit Chaudhary, Ranjan Kumar, A wide range variable resistance readout circuit, Patent Application No. 202221061451, FILED on October 28, 2022.



## IITI Drishti CPS Foundation (Section 8 company)

IITI DRISHTI CPS Foundation, a Technology Innovation Hub was set up at IIT Indore with an overarching objective of becoming a one-stop solution provider for CPS technologies with a specific focus on system simulation, modeling, and visualization. The hub has created an ecosystem which works as a focal point for the convergence of the efforts of academia, industry and government agencies for technology development and commercialization. It is currently working to support breakthrough technologies in the area of CPS through translational research, product commercialization, startup incubation, and skill enhancement, catering to the country's growing demand in this field.

### Programme Updates

Affiliate Programme	Total Affiliate Members: 151
Fellowships Programme	Undergraduate Fellowships: 35 Postgraduate Fellowships: 3 Doctoral Fellowships: 10 Faculty Fellowships: 2 Chair Professors: 2 Total Fellowships Amount Approved/Sanctioned: INR 2.33 Cr
Technology Development Programme	Lab to Market (L2M) Scheme: <ul style="list-style-type: none"> <li>Number of projects Approved: 15</li> <li>Number of proposals under review: 4</li> </ul> Increase in CPS Base: 66
Start-up Programme	Scheme announced: CPS-Seed Support, CPS-PRAYAS, CPS-EIR CPS-Seed Support Number of Startups Onboarded: 5 CPS-PRAYAS Number of Startups Onboarded: 9 <ul style="list-style-type: none"> <li>Tie-up with Indore Smart City Incubator to promote entrepreneurship in the country with a focus on Madhya Pradesh.</li> <li>Tie-up with MathWorks for startups. They will have one-year free access to MATLAB, Simulink and 100+ companion products. Startups will also access value-added benefits such as online training, support from MathWorks engineers.</li> <li>MoU with Zoho for Startup associated with us to provide them Zoho Wallet credits for a period of 360 days. These credits can be used to explore individual Zoho applications as well as for bundles like Zoho One, Remotely, Workplace, etc. They can also be used for renewals, upgrades and add-ons during the validity period.</li> <li>Tie-up with AWS to their Activate Program for startups.</li> </ul>

Skill Development Programme	<p>Course(s) announced: 13</p> <p>Course Name: Cloud, Industrial Simulation and Automation, IoT Simulation and Hardware</p> <p>Total no. of persons trained-578</p> <p>The Skill Center of IITI DRISHTI CPS Foundation was selected for an NVIDIA academic hardware grant.</p> <p>The training program on Cloud Computing has attracted the Mahindra Group who will be upskilling their employees and vendors through our future programs.</p>
International Collaboration	<ul style="list-style-type: none"> <li>• In the process of finalizing an international collaboration with Belgium's UCLouvain in association with the NGO Louvain Cooperation for their Ingenieux Sud project.</li> <li>• Supporting 4 Entrepreneurs in the first cohort working in areas like Agriculture and Smart Cities (EV) under Business Ideas for Development Program, Germany (BID-GIZ).</li> </ul>
	<p>MoU with a media partner was signed on November 23, 2021.</p> <p>Two Issues of Outreach Bulletin viz. DRISHTIKON has been released.</p>

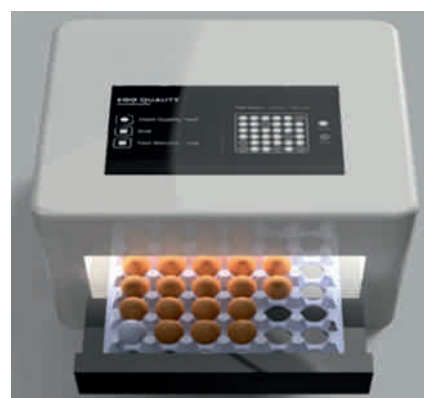
### Research Highlights

A brief overview of some of the Foundation's supported projects is provided below.

**Name of the Technology:** Hardware Software Co design for a Low-Cost Egg Quality Prediction and Anomaly Detection

**TRL Stage:** TRL 5, The product is under validation currently at Regional Thatchery Ernakulam Kerala

**Description:** A low-cost mini egg grading machine that can be used to select eggs suitable for hatching at home or small poultry farms, especially useful for organic and open range poultry farms is being developed. The system will extract spectral information, such as the absorption and reflectance of light at different wavelengths. This spectral information can be used to identify and quantify the chemical composition of the egg, including proteins, lipids, and pigments.

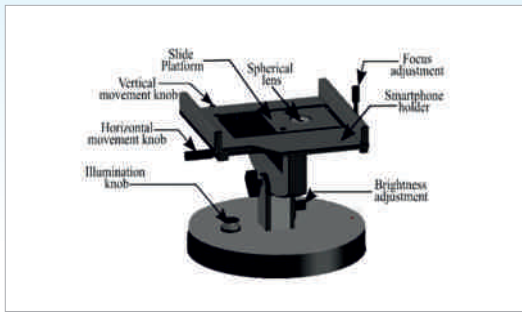


Final Product for Egg Quality Prediction and Anomaly Detection

**Name of the Technology:** Microscopic Image Based Vegetable/Fruit Quality Assessment

**TRL Stage:** TRL 5, The developed technology has been applied for Indian patent and first examination report has already been submitted in January 2023

**Description:** A microscopic image capturing system has been developed using Foldscope on a mobile App on Android to analyze the quality of vegetable quality using deep learning (CNN). This technology provides quantitative assessment in real time and prediction of vegetable quality in terms of nutrients, freshness index and shelf life. Useful primarily for export crops to reduce rejection and quality related issues.



Designed microscopy image generation module and its different parts

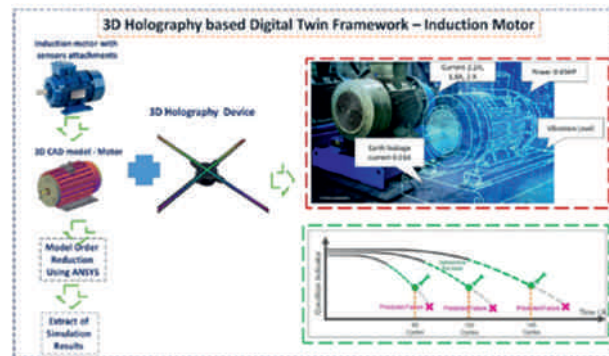


A prototype of microscopic image based vegetable quality assessment system

**Name of the Technology:** 3D holography based digital twin technology for an induction motor for predictive maintenance.

**TRL Stage:** TRL 5, The technology has received support from M/s. T.V. Super Filters Industries, Jammu for this proposed project.

Electric motor/pump manufacturing companies in Jammu as well as around Chandigarh are being approached for the adoption of the proposed research prototype for on-site validation.



3D Holography based Digital Twin Framework- Induction Motor

**Description:**

- This technology assesses and offers real-time inputs and suggestions for improvement, monitor experiments, analyze health, and predict repair and maintenance of the electrical/mechanical systems.
- The key data/content from the system under consideration is updated dynamically with the support of artificial intelligence (AI), big data and other technologies. Machine learning supports the renewal and improvement of mathematical models, refines the evaluation dimension and strengthens holographic digital twin through the calculation and analysis of the algorithm.

**Name of the Technology:** Multistrategy Shop Floor Job Scheduling software tool

**TRL Stage:** TRL 5, Lab testing of semi-integrated system

**Description:** A software tool based on Modeling an Automated Production environment and simulating production scheduling in a job shop has been developed. The tool offers a thorough, adaptable, and practical answer for a variety of Job Shop circumstances. It uses a variety of heuristics and metaheuristics to solve problems while taking into account multiple performance measurements in various industrial contexts. The tool was demonstrated in IMTEX 2023 with our industrial partner. The technology was developed by a cohort of experts from multiple organizations including IIT Indore, IIT Bombay, AmiT and DRISHTI CPS Foundation.



Demonstration of Software Tool at IMTEX 2023



### Startup Highlights

A brief overview of some of the Foundation's supported startups is provided below.

**Arficus Private Limited:** Arficus offers a highly advanced AI-based SaaS Medical platform that has reduced disease diagnosis time to just 53 seconds. It diagnoses over 53 highly infectious diseases, cancers, and chronic diseases with a 99.3% accuracy level. The product called “Medhini” emphasizes on improving the efficiency of radiologists & pathologists, Reducing Multiple tests, Reducing Diagnosing time & cost, Disease Prognosis with four verticals: -

- MedhX Symptom Checker
- MedhX Clinical Diagnosing
- MedhX Health Future Prediction Mapping
- MedhX New Drug Discovery & Support

Website: [www.arficus.com](http://www.arficus.com)

Domain: HealthTech

Product Name: Medhini

TRL and deployment status: TRL 7, Ready for deployment

#### Product Features:

- Decreased Disease Diagnosing time to less than 1 minute
- Providing Accurate Lesion and Anomaly areas
- Networks, Patient Future Health Mapping and New Drug- Discovery Support



User Interface of the software

**GV Black DenTech Private Limited:** GV Black DenTech Private Limited is developing XClick3D which is a 3D image reconstruction software that turns 2D Dental X-ray images into more intuitive 3D volumes, using algorithms of the normal and diseased tooth anatomy.

Domain: 3D image reconstruction software for tooth anatomy

Product Name: Xclick3d

TRL and deployment status of product: TRL 9

**Product key features:** XClick3D is a cloud-based software service that will make use of 2D dental X-ray images to generate 3D volumetric images. It will utilize advanced generative deep-learning methods in combination with statistical shape models to do so.

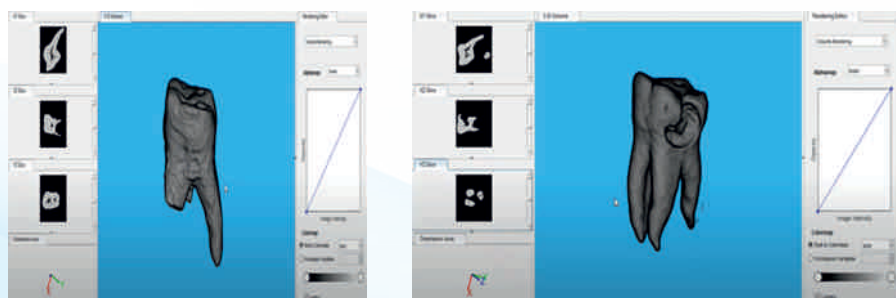


Image-1

Image-2

From 2D images to 3D Projection & Analysis of the Tooth for Better Inspections and Medication

**MLworkX:** MLworkX offers an online cloud electronics manufacturing platform that is a one-stop solution for complete electronics manufacturing requirements making market journey of product faster and cheaper from prototype to mass manufacturing.

Website: <http://www.mlworkx.com/>

Domain: Cloud manufacturing platform

Product Name: Manutrax Cloud manufacturing

TRL and deployment status of product: TRL 9

**Product key features:**

- One-stop-shop electronics manufacturing platform for organizations to develop, prototype and bulk manufacture their product from ideation phase to mass production phase.



EV Charging Unit



Quality Inspection Machine

## Events & Programmes

IITI DRISHTI CPS Foundation organized a Roundtable on Digital Transformation for MSMEs focusing on Industry 4.0 on February 3, 2023 at IIT Indore. More than 80 participants including Senior MSME Personnel, Representatives from Original Equipment Manufacturers (OEMs), Professors from IITs, NITs, etc, startup founders, and Ph.D. Scholars joined the program.

The program led to an understanding between academia and Industry where DRISHTI CPS can act as a bridge for technology development and transfer, Skilling and Connecting startups to promote the digitalization of MSMEs and make India industry 4.0 ready. More than 50 problem statements were identified and IITI DRISHTI CPS Foundation is now striving to establish a cohort of interested entities including academicians, startups, industries etc to solve these problems.



A Roundtable discussion among participants



Identification of problems of MSMEs during the event

### Two-day residential workshop on Establishment and Implementation of Incubation Centers and Startups

- Supported by Higher Education Department, Government of Madhya Pradesh.
- The event successfully sensitized 30 higher education faculty members belonging to various institutes from MP to entrepreneurship, role of academia in fostering an entrepreneurial ecosystem and the role and establishment of incubation centers.



### Technology Startups Demo and Mentoring BootCamp

IITI DRISHTI CPS Foundation hosted a two-day startup boot camp at IIT Indore Campus on May 8th and 9th, 2023. The event was aimed to provide a platform for tech-based startups funded by DRISHTI CPS, to showcase their products, connect with industry leaders, and obtain expert guidance to enhance the growth and scalability of their businesses.



IITI DRISHTI CPS Foundation partnered with ProMFG to organize the 8th Annual Aditya Birla Group Manufacturing Summit at IIT Indore campus on May 18, 2023. It brought together over 100 leading manufacturing companies who presented compelling case studies showcasing their innovations for cost optimization, quality improvement, and supply chain best practices. By evaluating these case studies based on impact, innovation, and complexity, the event facilitated a gathering of industry problems and potential solutions.

This event paved the way for several future partnerships with the larger corporations towards innovative solutions through researchers and startups of DRISHTI CPS.



A presentation of case study by industry representatives



## DST-Centre for Policy Research

**Project Title:** Technological Innovation and IPRs Ecosystem

**About the Centre:** The Centre has twin goals that are to focus on technological and policy dimensions for an integrated management of water resources and water governance and to understand different facets of Science, Technology, and Innovation policy. We plan to use big data applications and harness data in different intellectual property rights documents along with traditional field surveys. The aim is to deliver industry relevant model outputs and policy notes for the State. The Center's activities would largely address strengthening localizing water & climate, DRR and resilience agenda by enabling effective policy-planning-practice interface with S&T and innovation potentials. The Centre is established in the year 2023.

**Vision/Mission and Objectives:** It is essential to develop rigorous research that blends scientific evidence-based knowledge and approaches with public participation and practitioner's viewpoint in ways that yield practical solutions for instance for major water and climate change challenges facing the world today with focus on resilience, DRR and sustainability. This proposal also includes establishing a working group with a focus to harness data in different IPRs documents to understand patterns of innovation and various facets of inventions.

### Team Members

Sl No.	Name	Designation	Department	Area of Expertise
1	Manish Kumar Goyal	Professor	Dept of Civil Engineering, IIT Indore	Climate Change and Water
2	Ruchi Sharma	Professor	School of Humanities and Social Sciences	Economics of Innovation
3	Santosh Kumar Vishvakarma	Professor	Dept of Electrical Engineering, IIT Indore	VLSI Circuit and System Design
4	Kiran Bala	Associate Professor	Department of Biosciences and Biomedical Engg, IIT Indore	Ecology of Water and wastewater, Bioremediation
5	Mayur Shirish Jain	Assistant Professor	Dept of Civil Engineering, IIT Indore	Solid Waste Management, Waste & Water interactions
6.	Nirmala Menon	Professor	School of Humanities and Social Sciences, IIT Indore	Digital Humanities, Open Access and Scholarly Publishing ecosystem, Bibliometric analysis
7.	Biswarup Pathak	Professor	Department of Chemistry	Clean Energy and Health
8.	Lalit Borana	Associate Professor	Department of Civil Engineering	Geotechnical and Geoenvironmental Engineering
9.	Puneet Gupta	Associate Professor	Department of Computer Science Engineering	Computer Vision, Deep Learning, and Image Processing
10.	Priyank J. Sharma	Assistant Professor	Department of Civil Engineering	Hydrology and Climate Change

11	G S Murthy	Professor	Department of Biosciences and Biomedical Engg, IIT Indore	Agriculture and wastewater
12	Abhishek Srivastava	Professor	Department of Computer Science Engineering	Service-Oriented Systems, Dynamic Systems, Geographically Distributed Development Environments
13	Neeraj Mishra	Associate Professor	School of Humanities and Social Sciences, IIT Indore	Water Governance, Political Sociology of River Basin Management
14	Preeti Sharma	Professor	School of Humanities and Social Sciences, IIT Indore	Agricultural Economics (Economics of Land, Water and Forests), Development Economics (Rural Poverty and Trade Concerns of Developing Countries)
15	I A Palani	Professor	Dept of Mechanical Engineering	Development of multi-functional products and instruments with modern interdisciplinary technologies

## The J P Narayan National Centre of Excellence in the Humanities

The J P Narayan National Centre of Excellence in the Humanities was established through a project grant from the Ministry of Education, Government of India, in October 2022 at IIT Indore. The Centre conducts research, academics and outreach activities focusing on two areas: 1) Digital Humanities and 2) Environmental Humanities.

### Mission and Objectives:

The Centre's objective is to bring together researchers in Literature, Publishing, Digitisation, Computational Linguistics, Archiving, Cultural Studies, Ontology of Nature, Environmental History, Environmental Justice and Sustainability studies to name a few and facilitate a conversation across disciplines. Digital Humanities and Environmental Humanities has also been identified as a Sub-Domain in MoE's IMPRINT Domains, SPARC Collaborative calls and recently been included as a thrust area under UGC programmes. The Centre will be a nodal hub where new media and technologies are used for Humanities based research, teaching and intellectual engagement. Collectively, the goal of this diverse group of researchers is to further Humanities scholarship, create new forms of knowledge and explore technology's impact on humanities-based research. Therefore, the Centre brings together researchers across Humanities, Engineering and the Sciences and function as a nodal place that fosters collaborative initiatives at disciplinary intersections of language, literature, and technology to model the high standards of digital scholarship. The Centre will offer scholars a unique environment for extending the boundaries of traditional research using digital technologies. JPNCOEH also has a core objective of becoming a platform for undertaking long and short-term training programmes, workshops, deliberative panels and exploratory studies in the core and emerging areas in the Humanities and Multidisciplinary research and pedagogy keeping in line with the objectives of the New Education Policy (NEP) of the Government of India.

### Achievements:

**Funded Projects:** A total of 11 projects that focus on Digitisation, Archiving, Indian Languages across universities across India have been approved for funding by the Centre. For Example, projects such as "Māgadhī Culture and the Endangered Indigene of India: A Project of Archiving, Dissemination and Pedagogy" "Dialectics of prakriti and samskriti: An ecosophical study of the select ancient Indian texts" and "Socio-economic-environmental vulnerability due to climate change-induced disasters: A tehsil-level assessment for Madhya Pradesh".

### Projects awarded for Centre:

1. Professor Nirmala Menon, Co-PI Indo-Swiss bilateral project: Digital Twins: Negotiating identity and translocated heritage in the global age., in collaboration with EPLF, Lausanne, Switzerland.
2. Professor Nirmala Menon, PI SPARC Project: Developing a Multilingual Literature Scholarship Database, University of Oxford and Alan Turing Institute, UK
3. Professor Pritee Sharma, Co-PI Economic Loss and Damage Assessment due to Forest Fires in Hoshangabad Forest Division, MP, ICIMOD-South Asian Network for Development and Environmental Economics (SANDEE)

### Team

#### Lead Faculty Members:

(I) Prof. Nirmala Menon

Convenor

Jaya Prakash Narayan National Centre of Excellence in the Humanities

School of Humanities and Social Sciences

Indian Institute of Technology Indore





**Research Area and Highlights:** Nirmala Menon is a Professor of Literature, School of Humanities and Social Sciences. She leads the Digital Humanities and Publishing Research Group and is the Project Director for KSHIP (Knowledge Sharing in Publishing), an Open Access Publishing platform. She is also on the Advisory Board of the Open Library of Humanities (OLH) and Ubiquity Press, UK. Dr Menon is a founder member and current President of Digital Humanities Alliance in Research and Teaching Innovation (DHARTI). She is General Editor, Digital Humanities Quarterly (DHQ) since Jan 2022.

(ii) Prof. Pritee Sharma

Co-Convenor

Jaya Prakash Narayan National Centre of Excellence in the Humanities

School of Humanities and Social Sciences

Indian Institute of Technology Indore



**Research Area and Highlights:** Professor Pritee Sharma has undertaken policy-oriented research focusing on rural and urban poor. Several studies were related to natural resource utilization particularly Forests, Water and Land resources, Food Security, Impacts of Climate Change on Agriculture, and rural and urban poor. She directs the Sustainability Studies Research Group at the institute which works on various socio-economic aspects of targeting sustainable development concerns in India. She is the Lead Faculty Member undertaking and supervising research in the Environmental Humanities.

#### Post Doctoral Researchers:

(i) Dr. Reema Chowdhary Sukhija

Post Doctoral Fellow

Jaya Prakash Narayan National Centre of Excellence in the Humanities

Indian Institute of Technology Indore



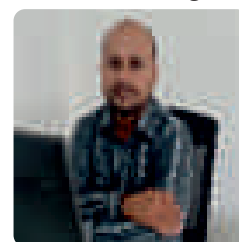
**Research Area and Highlights:** My research focuses on investigation of multilingual text analysis, cultural heritage preservation, digital storytelling, and digital pedagogy. The objective is to contribute to the evolving landscape of digital humanities research, bridging the gap between technology and the study of human culture, languages, and identities. My work centers around digital preservation of intangible cultural heritage like folklores and rare Sindhi manuscripts.

(ii) Salla Nithyanth Kumar

Post Doctoral Fellow

Jaya Prakash Narayan National Centre of Excellence in the Humanities

Indian Institute of Technology Indore



**Research Area and Highlights:** My research interest is environmental and natural resource economics. I am extending my doctoral research in the area of water-energy-food nexus in my postdoctoral work to environmental justice. Primarily my research focuses on allocation and access to natural resources.

#### Research Associates:

(i) Dinabandhu Mahata

Research Associate

Jaya Prakash Narayan National Centre of Excellence in the Humanities

Indian Institute of Technology Indore



**Research Area and Highlights:** The main area of research focused on urban geography linkages with the environment and his work also focuses on population and development, tribal health, and gender issues.

(ii) Shenbaga Priya

Research Associate

Jaya Prakash Narayan National Centre of Excellence in the Humanities

Indian Institute of Technology Indore



**Research Area and Highlights:** My Research Interests are Digital Humanities and Cognitive Theory, Natural Language Processing and Text Mining.

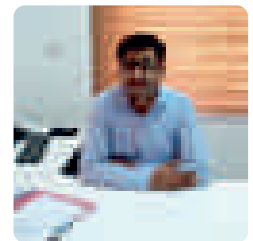
**Administrative Staff:**

Himanshu Ramawat

Administrative Assistant

Jaya Prakash Narayan National Centre of Excellence in the Humanities

Indian Institute of Technology Indore



**Infrastructure:** This is a new national Centre with a Digital Humanities Lab with equipment and Software for training faculty and researchers in using Digital Technologies for Humanities and Digital Environmental Research. The lab is under development.

