भारतीय प्रौद्योगिकी संस्थान इन्दौर
Indian Institute of Technology Indore

ANNUAL REPORT

2021 - 22

Contents

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 an unprecedented economic growth, Government of India reassessed the need of technical manpower and decided to set up eight new IITs. Six of them started functioning back from the academic year 2008-09. These were established at Hyderabad, Gandhinagar, Rajasthan, Ropar, Patna and Bhubaneswar. IIT Indore and IIT Mandi started functioning from 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 Education (MOE) Government of India. The institution started functioning from 2009-10 in a temporary campus at Institute of Engineering and Technology of Devi Ahilyabai University under mentor ship 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 km2), 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. All the Administrative Offices, Material Management Section, Finance and Account Section, The School of Basic Sciences, The School of Humanities and Social Sciences, The School of Engineering, Basic Science Labs and Engineering Labs are all established in this campus. The Central Library is also situated on this campus.

Office of the Registrar Meetings of the Authorities held during the F.Y: 2021-2022				
Board of Governors	:	Three meetings held on	:	13.08.2021, 08.11.2021, 16.02.2022
Finance Committee	:	Three meetings held on	:	12.08.2021, 08.11.2021, 16.02.2022
Building and Works Committee	:	Two meetings held on	:	29.10.2021, 03.02.2022
Senate	:	Two meetings held on	:	02.08.2021, 01.11.2021

Director's Message

Indian Institute of Technology Indore (IIT Indore) is one of the second generation IITs and it has grown exponentially through its research and academic activities as one of the top-ranking institutions in the country and is at a remarkable position in the global rankings as well. The Institute has more than 2300 students and about 175 faculty members and each one of them is an expert in their domain. We have BTech programs in 5 disciplines and MTech in 8 disciplines, and MS (Research) and MSc programs in 5 disciplines each. We also offer a joint MS degree in Data Science and Management with Indian institute of Management Indore, which is an on-line program and is becoming very popular. We offer PhD degrees in all the disciplines of Technology, Sciences and Humanities and Social Sciences. At any given point of time, we have about 550 PhD students on roll. There are several UG and PG programs in the pipeline in the coming years.

Research has been one of the brightest highlights of IIT Indore. Besides having over 4000 publications in high impact factor journals, teams of students and faculty members have developed over 80 technologies that are at various stages of evolution. One example of the mega project which the institute has recently received, is 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 has also several Centers of Excellence supported under the DST-FIST programme with a total funding outlay of Rs. 22 crores. We also have a Center for Futuristic Defense and Space Technologies, that have generated more than Rs. 5 crores funding since its inception a few years ago.

In line with the vision of the National Education Policy (NEP), the institute rededicates itself on striving for excellence through the following specific objectives:

1. **Catalyzing Translational Research:** There is a tremendous amount of excellent research that is undertaken at the institutions like IIT Indore, which needs to be translated efficiently to operational and functional products, and then to be converted to commercially viable products. The institute envisions itself pioneering in becoming a translational research hub and facilitating conversion of fundamental scientific and technological research to commercially and technologically feasible solutions. We are planning to establish a Translational Research Ecosystem at the institute, where several technologies which have been developed in-house, can be translated to useful products for the benefit of industry and society.

2. **Enhancing Student Teaching and Learning Programme:** The institute now intends to create, evolve, and

implement new methods and courses in its academic programmes to facilitate learning of the students from diverse spectra of life. To do so, many new UG and PG 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.

3. **Societal Connect through Rural Immersion and Technological Development:** On the societal level, we at IIT Indore have keen interest in contributing to the society and support people at the bottom of the pyramid. We would like our students to provide them with technological solutions to the problems they face. We have a program named 'TITLI' 'Technological Innovations for Tribal Livelihoods', under which we have introduced two new courses for our students that are titled 'Immersion for Rural Technology Development' and 'Design Thinking for Rural Applications'. Both these courses involve field visits to understand the needs of the rural population and develop solutions. We are also working with an NGO to set up a training center for Rural Healthcare workers. Here, we plan to provide primary healthcare training to the youth from rural areas, so that they can act as a mediator between remote patients and urban doctors. All these initiatives are offered by our 'Centre for Rural Development and Technology (CRDT)' at IIT Indore.

4. **Grounding students for Entrepreneurial Skills:** In the rapidly changing world it is indeed essential to train our youth to become self-reliant. Bridging the gap between   the knowledge and its applications in the real world can be achieved through systematic efforts in developing Entrepreneurial Skills. We have established ACE Foundation, the first Section 8 Company of the institute to support young minds and the out-of-the-box ideas of doing business.

5. **Nurturing Industry and Corporate Relations:** In the growing and seamless global value chain systems, it is pertinent to connect fundamental research to the needs of the present-day industries. The researchers and students equally require connecting with the industries in all sectors to understand the challenges on both sides and fill the gaps. In this context, we will be conducting a Corporate and Industry Connect Program on August 20, where we will be inviting several industries around IIT Indore to discuss their requirements in view of the expertise available at IIT Indore. There will be several panel discussions, where the industry experts and IIT Indore faculty members will interact with each other. We plan to conduct such programs periodically to remain in constant touch with the industries.

It is a matter of pride for the institute to have its Tenth Convocation on August 13, 2022. Padma Vibhushan, Dr Anil Kakodkar, Former Chairman of the Atomic Energy Commission of India and Former Secretary to the Government of India, will grace the occasion as Chief Guest. I feel delighted to share that this year we have 486 students who are graduating with flying colours. Those who could achieve accolades in their academic performance 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. The graduating batch also needs to be specially appreciated as they went through the toughest times of the pandemic of Covid 19 and could complete their graduation on time. 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

Chairman

Professor Deepak B. Phatak
Indian Institute of Technology Indore

Members

Professor Suhas S. Joshi
Director,
Indian Institute of Technology Indore,
since w.e.f. January 31, 2022

Professor Neelesh Kumar Jain
Director (Officiating),
Indian Institute of Technology Indore,
up to January 30, 2022

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

Shri Akash Tripathi
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

Professor Anand Parey (Senate Nominee)
Professor
Department of Mechanical Engineering, Dean,
Resources Generation IIT Indore Up to February 28, 2022

Mr. S.P. Hota
Registrar I/c, (Secretary to BoG) IIT Indore

Institute Functionaries

Director, IIT Indore
Prof. Suhas S. Joshi
w.e.f. January 31, 2022

Director (Officiating), IIT Indore
Professor Neelesh Kumar Jain
up to January 30, 2022

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

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

Dean, Research & Development
Dr. I.A. Palani
(w.e.f. Feb 11, 2020)

Dean, Student Affairs
Dr. Santosh Kumar Vishvakarma
(w.e.f. Sept 26, 2018 to Sept 23, 2021)

Dean, Student Affairs
Dr. Srivathsan Vasudevan
w.e.f. Sept 24, 2021

Dean, Infrastructure Development
Dr. Manish Kumar Goyal
(w.e.f. June 15, 2020)

Dean, International Affairs & Outreach
Prof. Avinash Sonawane
(w.e.f. Nov 27, 2020)

Dean, Resources Generation
Professor Anand Parey

Registrar I/c, IIT Indore
Mr. S. P. Hota

Associate Deans

Academics (PG Program + PhD Programs)	:	Dr. Eswara Prasad Korimilli
Academics (Infrastructure)	:	Dr. Antony Vijesh
Academics (UG Programs)	:	Prof. Ram Bilas Pachori
Faculty Affairs	:	Dr. Amod C. Umarikar
Research and Development- I	:	Prof. Ruchi Sharma
Research and Development- II	:	Dr. Bodhisatwa Mazumdar
Administration	:	Dr. Santosh Hosmani
Infrastructure Development-I	:	Dr. Guru Prakash
Student Affairs	:	Dr. Sanjeev Singh
International Affairs and Outreach-I	:	Prof. Raghunath Sahoo
International Affairs and Outreach-II	:	Prof. Sanjay Kumar Singh

Heads of School

Humanities and Social Sciences	:	Dr. Nirmala Menon

Heads of Departments

Computer Science & Engineering	:	Dr. Somnath Dey
Electrical Engineering	:	Prof. Vipul Singh
Mechanical Engineering	:	Prof. Santosh Kumar Sahu
Chemistry	:	Prof. Biswarup Pathak
Mathematics	:	Dr. Niraj Kumar Shukla (w.e.f. September 13, 2022)
	:	Dr. Md. Aquil Khan (up to September 12, 2021)
Physics	:	Dr. Pankaj R. Sagdeo
Astronomy, Astrophysics & Space Engineering	:	Prof. Abhirup Datta
Biosciences & Biomedical Engineering	:	Prof. Amit Kumar
	:	Dr. Debashish Nayak (w.e.f January 8, 2021 to July 21, 2021)
Metallurgy Engineering & Materials Science	:	Dr. Vinod Kumar
Civil Engineering	:	Dr. Abhishek Rajput (w.e.f. March 15, 2022)
	:	Prof. Neelima Satyam Devarakonda (up to March 14, 2022)

Heads of Centers and Services

Center of Advanced Electronics	:	Prof. Mukesh Kumar
Computer and Information Technology Center	:	Dr. Neminath Hubballi
Center of Futuristic Defense and Space Technology	:	Dr. Indrasen Singh
Center of Innovation, Incubation, Entrepreneurship and Industry Relations	:	Dr. Swaminathan R.
Center for Rural Development and Technology	:	Prof. Sandeep Chaudhary
DST-FIST Center of Excellence in Gear Engineering	:	Prof. Neelesh Kumar Jain
Sophisticated Instrument Center (SIC)	:	Prof. Suman Mukhopadhayay
Center for Indian Scientific Knowledge Systems	:	Prof. G. S. Murthy
Center for Electric Vehicle & Intelligent Transport Systems	:	Dr Amod C. Umarikar
Counseling Services	:	Prof. Aruna Tiwari
Training & Placement	:	Dr. Pavan Kumar Kankar
Central Workshop	:	Dr. Dan Sathiaraj

Senate

Professor Suhas S. Joshi
Director, IIT Indore and Chairman, Senate

External Experts

Professor Himanshu Rai
Director
Indian Institute of Management Indore,
Prabandh Shikhar, Rau-Pithampur Road, Indore - 453556, M.P. India

Mr. B Anil Baliga
Ex-Executive Vice President
VE Commercial Vehicles Ltd,78-86, Industrial Area No. III, A. B. Road, Dewas - 455001, M.P. India

Prof. Ajay Kumar Jain
Professor
(Organization Behaviour) Dean, Executive Graduate Programs & Consultancy, Management Development Institute, Mehrauli Road, Sukhrali,Gurgaon - 122 007, India

Shri Debashis Das
Director
Raja Ramanna Centre for Advanced Technology (RRCAT), Indore - 452013, M.P. India

Prof. Abhiram G. Ranade
Professor
Department of Computer Science & Engineering, Indian Institute of Technology Bombay, Powai, Mumbai - 400076, India

Deans

Dr. Devendra L Deshmukh
Dean, Academic Affairs, Associate Professor,
Mechanical Engineering

Prof. Manish Kumar Goyal
Dean of Infrastructure Development,
Professor, Civil Engineering

Prof. I. A. Palani
Dean, Research and Development,
Professor, Mechanical Engineering

Prof. Anand Parey
Dean, Alumni and Corporate Relations
Professor, Mechanical Engineering

Prof. Pritee Sharma
Dean, Administration,
Professor,
School of Humanities and Social Sciences

Prof. Avinash Sonawane
Dean, International Relations
Professor, Department of BSBE

Dr. Srivathsan Vasudevan
Dean, Student Affairs,
Associate Professor, Electrical Engineering

Heads

Dr. Abhishek Rajput
HOD, Civil Engineering,
Assistant Professor, Civil Engineering

Prof. Santosh Kumar Sahu
HOD, Mechanical Engineering,
Professor, Mechanical Engineering

Dr. Vinod Kumar
HOD, Metallurgy Engineering and Materials
Science (MEMS) Associate Professor, MEMS

Dr. Pankaj R. Sagdeo
HOD, Physics, Professor, Physics

Dr. Niraj Kumar Shukla
HOD, Mathematics, Associate Professor,
Mathematics

Prof. Abhirup Datta
HOD, Discipline of Astronomy, Astrophysics and
Space Engineering (DAASE), Professor, DAASE

Dr. Somnath Dey
HOD, Computer Science and Engineering,
Associate Professor, Computer Science and Engineering

Prof. Vipul Singh
HOD, Electrical Engineering,
Professor, Electrical Engineering

Prof. Amit Kumar
HOD, Biosciences and Biomedical Engineering (BSBE)
Professor, BSBE

Prof. Biswarup Pathak
HOD, Chemistry, Professor, Chemistry

Prof. Nirmala Menon
HOD, School of Humanities and Social Sciences (SHSS)
Professor, SHSS

Head of Centers and Services

Prof. Sandeep Choudhary
Head, Center for Rural Development and Technology,
Professor, Civil Engineering

Dr. Neminath Hubbali
Head, Computer Center
Associate Professor, Computer Science and Engineering

Dr. Indrasen Singh
Head, Center for Futuristic Space and Defense
Technologies
Assistant Professor, Mechanical Engineering

Prof. Mukesh Kumar
Head, Center of Advanced Electronics
Professor, Electrical Engineering

Prof. Aruna Tiwari
Head, Counselling Services
Professor, Computer Science and Engineering

Prof. Suman Mukhopadhayay
Head, Sophisticated Instrumentation Center
Professor, Chemistry

Dr. Pavan Kumar Kankar
Head, Training and Placement
Associate Professor, Mechanical Engineering

Professors

Computer Science and Engineering
Prof. Narendra S. Chaudhari
Prof. Aruna Tiwari
Prof. Abhishek Srivastava
Prof. Kapil Ahuja

Mechanical Engineering
Prof. Neelesh Kumar Jain
Prof. Anand Parey
Prof. I. A. Palani
Prof. Bhupesh Kumar Lad
Prof. Santosh Kumar Sahu
Prof. Ritunesh Kumar
Prof. Dhinakaran Shanmugam

Electrical Engineering
Prof. Ram Bilas Pachori
Prof. Abhinav Kranti
Prof. Vimal Bhatia
Prof. Santosh Kumar Vishvakarma
Prof. Shaibal Mukherjee
Prof. Vipul Singh
Prof. Prabhat Kumar Upadhyay
Prof. Trapti Jain
Prof. Mukesh Kumar

Chemistry
Prof. Rajneesh Misra
Prof. Suman Mukhopadhyay
Prof. Apurba Kumar Das
Prof. Sampak Samanta
Prof. Sanjay Kumar Singh
Prof. Biswarup Pathak

Civil Engineering
Prof. Sandeep Chaudhary
Prof. Manish Kumar Goyal
Prof. Neelima Devarakonda Satyam

Biosciences and Biomedical Engineering
Prof. Avinash Sonawane
Prof. Ganti. S. Murthy

Prof. Amit Kumar
Prof. Prashant Kodgire

Physics
Prof. Subhendu Rakshit
Prof. Krushna R. Mavani
Prof. Sarika Jalan
Prof. Preeti Anand Bhobe
Prof. Rajesh Kumar
Prof. Sudeshna Chattopadhyay
Prof. Raghunath Sahoo

Astronomy, Astrophysics and Space Engineering
Prof. Abhirup Datta

Humanities and Social Sciences
Prof. Nirmala Menon
Prof. Pritee Sharma
Prof. Ruchi Sharma

Metallurgical Engineering and Materials Science
Prof. Parasharam Maruti Shirage

Mathematics
Prof. Swadesh Kumar Sahoo

Other Authorities

Convener, Health Center Advisor Committee
Dr. Sharad Gupta
Associate Professor, Biosciences and Biomedical Engineering

Workshop Superintendent, Central Workshop
Dr. Anand Petare

Secretary, Senate
Mr. S. P. Hota
Registrar I/c, IIT Indore

Chief Warden
Dr. Lalit Borana
Assistant Professor, Civil Engineering

Academic Secretary, Student Gymkhana

General Secretary, Student Gymkhana

Mission

The driving force behind the 21st Century is the development of knowledge-intensive societies. It has led to 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 an extensive hands-on training on sophisticated facilities.
- To start new academic programs in the futuristic areas such as data science, electric vehicles, intelligent transport system, space engineering, Indian scientific knowledge, etc.
- To increase internationalization of the Institute by selecting 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 involvement of adjunct faculty from Industries for teaching, research, and innovation.
- To involve experts from reputed industry and Foreign Universities for curricula design.

Research, Development, and Entrepreneurship

- Promote inter-disciplinary research in science, engineering, and humanities and social sciences.
- Conduct disruptive and social impacting research some chosen areas such as sustainable development, climate change, food and water security.
- Promote industry-oriented research leading to new products, processes, and technologies.
- Focus on convergence of life sciences, medical sciences, and agricultural sciences with engineering.
- Promote 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 development of world class technological innovation in Engineering & Biomedical instrumentation, Defense, E-vehicles, alternate energy resources, etc.

Academic Affairs

Academic Affairs of the institute oversees with 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 coverup 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.

• In-spite of COVID pandemic, all the academic activities continued online starting from registration, online classes, examinations, convocation and issuance of all academic documents to the students without compromising the quality and standard of education.

• Classes were conducted using online platform of CANVAS and NKN facility. Online course material at a single place for all students through My Cloud, which is an in-housecloud platform.

• Successfully conducted Orientation Program and Convocation during the year 2019, 2020 and 2021.

• The institute have 21 students who have awarded with this prestigious Prime Minister Research Fellowship (PMRF) scholarship award.

• The institute Senate approved and offered 8 new academic programs under various Departments of PG and PhD programs during academic year from 2019-20 to 2021-22

• The JEE Advanced opening Rank for BTech admissions was 505 which improved from last year's rank of 585.

• The Preparatory program for Central Zone of IITs consisting of IIT Kanpur, IIT BHU and IIT Indore with 120 students was conducted in the AY2021-22.

• With the moto of "Gyanam Sarvjan Hitaay" IIT Indore signed MOU with many national and international institutions to foster student exchange programs, research and developments, joint degree programs, quality improvement programs and workshops.

• IIT Indore with IIM Indore started a joint MS Degree Program in Data Science and Management

• With a moto to promote inter-disciplinary research work, the following academic centers have been set- up:

  • Center for Electric Vehicles Intelligent Transport Systems (CEVITS)

  • Center for Advanced Electronics (CAE)

  • Center for Indian Scientific Knowledge Systems (CISKS)

  • Center of Innovation, Incubation, Entrepreneurship, and Industry Relations (CIIEIR)

  • Center of Futuristic Defense and Space Technology (CFDST)

  • Center for Rural Development and Technology (CRDT)

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
PhD (Including Dual Degree)	93	120	83	116	89	189	106	159	139
MTech	24	30	31	34	62	41	78	74	60
MSc	20	24	47	56	69	80	102	116	100
MS (Research)	-	-	-	-	7	21	24	32	28
BTech	117	111	258	249	265	283	351	355	Admission awaited
Preparatory Course	-	-	-	-	-	4	-	10	
MS–Data Science Management (With IIM Indore)	-	-	-	-	-	-	-	39	
TOTAL	254	285	419	455	492	618	670	785	

Degree Awarded in last 10 years

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

10th Convocation 2022:
Recipients of Medals and Awards

THE PRESIDENT OF INDIA GOLD MEDAL

For the best academic performance among all the UG graduating students

Mr. Danyal Shahid Shamsi
BTech (EE)
Roll No. 180002012

INSTITUTE SILVER MEDAL

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

Mr. Shah Miten Haresh
BTech (CSE)
Roll No. 180001049

Ms. Sumedha Srivastava
BTech (EE)
Roll No.180004032

Mr. Arnav Suhas Joshi
BTech (ME)
Roll No. 180005006

Mr. Arvind Mehta
BTech (CE)
Roll No. 180004005

Ms. Sonakshi Gupta
BTech (MEMS)
Roll No. 180005030

INSTITUTE SILVER MEDAL

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

Mr. Hari Narayanan Vasavan
M.Tech (MEMS)
Roll No. 2002105009

Mr. Jibin V Sunny
MSc (Astronomy)
Roll No. 2003121004

BEST B.TECH. PROJECT (BTP) AWARD

Amongst all the graduating UG students

Mr. Akshay Prakash
BTech (CSE)
Roll No. 180001004

Mr. Gaurav
BTech (CSE)
Roll No. 180001015

Project Title: "Designing a robust mechanism for finding out accurate
body measurements using 2D images taken on any mobile phone"

BUTI FOUNDATION GOLD MEDAL

Among all the graduating female PG students

Ms. Ankita Mondal

MSc (Chemistry)
Roll No. 2003131002

INSTITUTE SILVER MEDAL

For the best all round performance among all the graduating students

Mr. Mukala Jogesh Kumar

B.Tech (EE)
Roll No. 180002037

VPP MENON GOLD MEDAL

For the best PhD Dissertation work by a female student

Ms. Preeti Jha

PhD (Computer Science & Engineering)
Roll No. 1801201006

Thesis Title: "Design of Scalable Fuzzy Clustering Algorithms and
its Application to Huge Genomics Data"

Research and Development

IIT Indore envisages to promote 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, and humanities and social sciences. A key competence of IIT Indore is in research driven academic Program as it forms a core component of the undergraduate and postgraduate teaching. IIT Indore has consciously promulgated the idea of involving undergraduate students in forefront research projects. This 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 @ IIT Indore

- 460 R&D projects worth Rs. 270 cr. from different funding agencies
- 235 consulting projects worth Rs. 10 cr. till date.
- Over 4500 reputed publications.
- A mega 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.
- 8 DST-FIST from Centers of Excellence (CoEs) established with a funding worth Rs. 17 Cr.
- Filed over 83 patents, 18 have been already granted.
- 16 YFRSG (Young Faculty Research Seed Grant) 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.
- 39 national and 45 international MoUs have been signed with IIT Indore.
- A Technology has been Transferred on "Compressed coloured bi-layered bricks" and 75 Technologies are ready at various stages and are inching towards commercialization and several more in the pipeline.
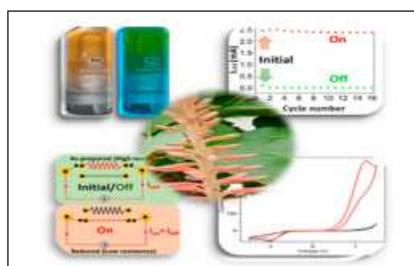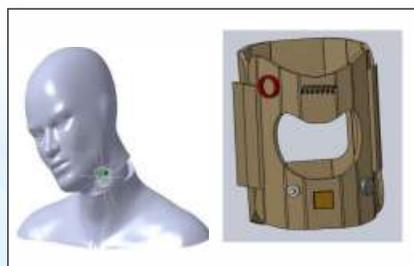

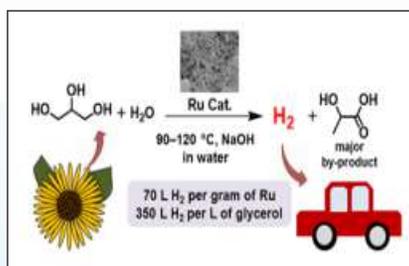Electronic Memory Effect from Aloe Vera Flower
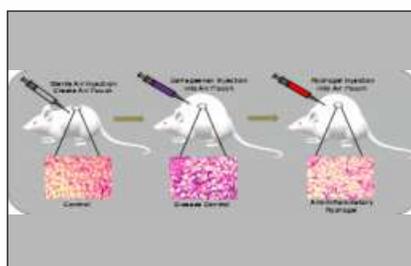
Engineered Biomimetic Inherent Antibacterial Hydrogel
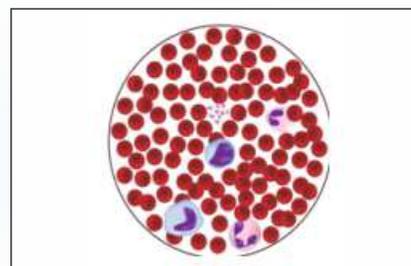

Algorithm on Geographically Distributed Environments
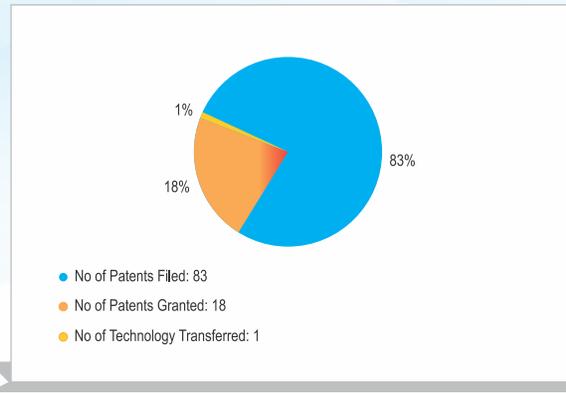

Smart Cervical Collar

Low Temperature Hydrogen Production from Methanol

M-ASPAR Treatment is able to kill more than 90% cancerous cells Make in India Initiative

Patents

1%

18%

83%

- No of Patents Filed: 83
- No of Patents Granted: 18
- No of Technology Transferred: 1

Projects

Number of Sponsored Projects

60

460

- Total Sponsored Projects: 460
- Sponsored Projects in F.Y.21-22: 60

Revenue from Sponsored Projects

25.78 cr

270.29 cr

- Total Sponsored Projects Revenue: 270.29 Cr
- Total Consultancy Projects Revenue F.Y 25.78 Cr

Consultancy

Consultancy Projects

63

235

- Total Consultancy Projects: 235
- Consultancy Projects F.Y 21-22: 63

Revenue from Consultancy

3.34 cr

9.48 cr

- Total Consultancy Projects Revenue: Rs. 9.48 cr
- Consultancy Projects Revenue F.Y 21-22: Rs. 3.34 cr

Publication

Overall

249   49

920

3515

- Journals: 3515
- Conferences: 920
- Book Chapters: 249
- Books: 49

Revenue from Consultancy

27   5

21

423

- Journals: 423
- Conferences: 21
- Book Chapters: 27
- Books: 5

COVID-19 (Research Works)

- Candidate Vaccine
- Reusable Mask
- UVC LED
- SARS-CoV-2 protein
- Sterilization Chamber against SARS-CoV2
- Wearable optical body temperature sensor
- Disinfection Tunnel for Covid-19
- Fusion peptide for SARS-CoV-2
- Fluorescent disinfectant bricks
- Time dependent Mathematical Model for Covid-19
- Machine Learning for virus detection
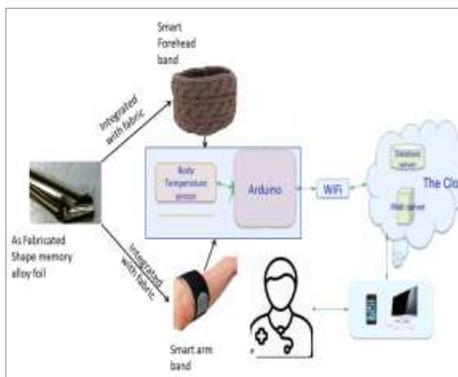
LAB TO LAND ECOSYSTEM
Start-ups from IIT Indore Research Lab by Ph.D students and Faculty members

THINK VLSI

Think VLSI focuses on skill development, service, and product development in the field of Electronics (VLSI Design, IoT, AI, ML, Robotics Automation) and Electrical Vehicle Infrastructure.

SCAS TECHNOLOGIES

Developing the product using Swadeshi Microprocessor Challenge (SMC) that first time initiation in UAVs stepping towards Atma Nirbhar Bharat.

Smart I fabtech

Developing 3 d printing and related components for catering industry and bio-medical sector.

Freebird Aerospace is a DGCA approved drone manufacturer specializing in the design, development and manufacturing of unmanned aerial vehicles that meet the regulatory aerospace standards and solve specific industry needs.

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 Dr. Amod C. Umarikar, Acting DoFA and Associate Dean, who is assisted by Cdr. Sunil Kumar (Retd.) –Joint Registrar, Mr. Sunil Sawle – Junior Superintendent and Mr. Amit Mishra – Junior Superintendent (Technical).

This office enables the following tasks

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

Some of the major works undertaken during the year 2021-22 are as follows:

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

Faculty positions filled as on March 31, 2022

Designation	Strength
Professor	46
Associate Professor	43
Assistant Professor Grade-I	65
Assistant Professor Grade-II	14
Total	**168**

The number of faculty members joined service at IIT Indore during the year 2021-22 is 16 & details are as follows:

Designation	Strength
Assistant Professor Grade-I	02
Assistant Professor Grade-II	14
Total	**16**

Total 33 Professor and 09 Associate Professor were appointed.

Dr. Gourinath Banda, Associate Professor, Computer Science and Engineering relieved on lien for one-year w.e.f. December 6, 2021 to join as Associate Professor at University of Southern Denmark.

Recognition and Awards

Best Technology Development Award 2021

Prof. Avinash Sonawane, Department of Biosciences and Biomedical Engineering was awarded Best Technology Development Award 2021 for "Development of a novel asparaginase (M-ASPAR) drug," which is under phase I and II clinical trials to improve the treatment of primary and relapse acute lymphatic leukemia- a type of blood cancer.

Best Technology Development Award 2021

Best Teacher Award 2021
Prof. Suman Mukhopadhyay
Department of Chemistry

Best Teacher Award 2021
Dr. Ankur Miglani
Department of Mechanical Engineering

Best Teacher Award 2021
Dr. Shomik Dasgupta
School of Humanities and Social Sciences

International Relations

IIT Indore is rapidly expanding internationally with an aim to globalize its teaching and research portfolios. Currently, we have grants received from Norwegian Research Council, INTPART, Arts and Humanities Research Council, DST - RFBR, SICI, Swedish Institute, DST, Max Planck Society, DAAD, DST-SERB, DST-RSF, Commonwealth and many more. We are collaborating extensively with countries like the USA, UK, Canada, Australia, Germany, France, Portugal, Japan, Russian Federation, Taiwan, Korea, South Africa for more of the international bilateral projects. We have 65+ active international MoU and 379 externally funded research projects along with 200+ international publications. Moreover, continuing the upward trajectory in recruiting foreign students in our degree programs, in 2021-22, we hosted 05 international students who pursued their Masters and PhD programs in various disciplines at IIT Indore. These students were from SAARC nations and joined us through the Study in India (SII), ASEAN, ICCR and EdCIL programs. Moving ahead with our national ranking and global recognition we are now receiving large number of applications of prospective international students.

Now we are also a member of Heritage Network with the aim to strengthen Higher Education Cooperation (research and training) between Europe and India in the field of Engineering Sciences. We are also partners with SICI, ACU (The Association of Commonwealth Universities), Green Network. We have also introduced Epidemic and Pandemic Innovations Center (EPIC) and Sharman Foundation Scholarship (Rs. 70,000/- per student annually) recently.

International Faculty: Prof. Indrajith D. Nissanka, Senior Lecturer, Department of Mechanical Engineering, University of Moratuwa, Katubedda, Sri Lanka visited IIT Indore on 2nd Feb 2022 (for 03 months) for Research Training under Indian Science and Research Fellowship (ISRF).

MoUs with Foreign Universities: We have 65+ active international MoUs, the most recent ones are mentioned below:

- The University of Alberta, Canada
- Université de lille, France
- Széchenyi István University, Hungary
- University of Luxembourg, Luxembourg
- University of Agder, Norway
- Leibniz University Hannover, Hannover, Germany
- The University of Bordeaux, France
- University of Rostock, Germany
- The University of Kansas, US
- 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
- Foundation for Innovation and Social Entrepreneurship (FISE), Texas Global Health Security Innovation Consortium (TEXGHS) and Health Innovation Exchange (HIEx), UN
- Universitàdeglistudi Di Udine, Italy
- Forschungszentrum Borstel - Leibniz Lung Center, Germany
- Dipartimento di Scienze Biomedichedell' Università di Sassari (UNISS); Sassari, Italy
- University of Johannesburg, South Africa
- Tec De Monterrey, Mexico
- University of Purdue, USA

Virtual Meetings:
Webinars to explore higher studies opportunities in foreign universities for IIT Indore students.

Webinar by Dr. Mala Pandurang on Opportunities at Alexander Von Humboldt foundation

GRE and TOEFL webinars by ETS-India held for the students of IITI.
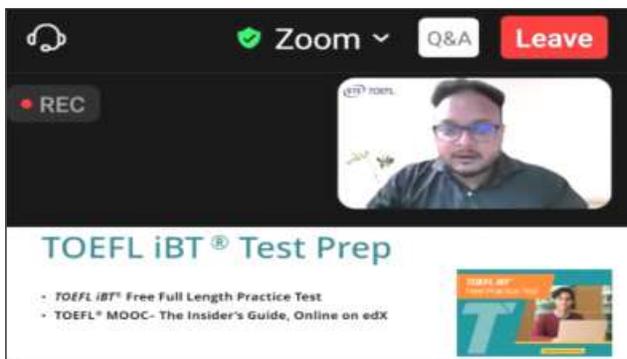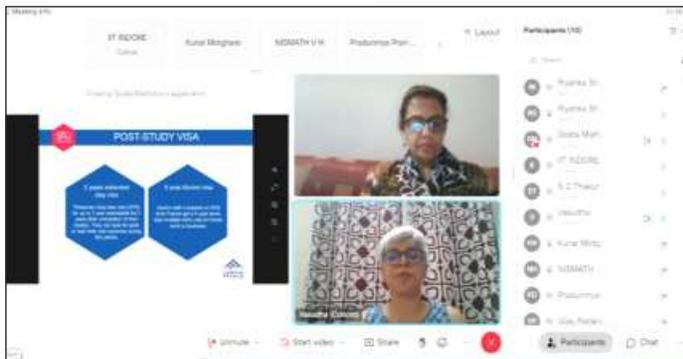
DAAD's E-visit to entail about the opportunities & procedures for applying through different channels.

Meeting of International Relations representatives with Leibniz Universität Hannover.

Meeting of International Relations representatives with IMT Nord, Europe

Workshop and Seminars:

IIT Indore in association with the Embassy of Hungary at New Delhi successfully hosted a virtual scientific meeting with a team of scientists from various Hungarian Universities/ institutions. The primary objective of this scientific meeting was to proliferate the scope of cooperation in research, technology development, innovation and exchanges between IIT Indore and Hungarian Universities/ institutions.

Visit of Norwegian delegates from the University of Agder, Grimstad, Norway for signing the MoU and finding possibilities of student/faculty exchange and collaborative research with IIT Indore.

USIEF:
Fulbright outreach webinar organized for the students of IIT Indore.

Short interaction of Prof. Samir H. Mushrif from the University of Alberta, Canada with the IIT Indore students on"Study and Opportunities in higher studies, Work and Life in Canada".

Prof. Samir H. Mushrif, University of Alberta, Canada with the International Relations team

Student Exchange Program list

Program Name	Beneficiaries
Short-term Research Program (1-6 months)	International scientists
Short-term Research Program (1-3 months)	International UG/PG/PhD students
Research Internship Program (RIISSHE) 1-6 months	International students

Outreach Initiatives: There were a total of 25 lectures delivered by the foreign faculties.

Talks	Speakers
Nobel Laureate Lecture Series	Prof. David J. Wineland (Nobel Laureate in Physics), Prof. William D. Phillips (Nobel Prize in Physics)
Role of Science in Nation Building	Prof. Anil D. Sahasrabudhe, Prof. Nirmal Kumar Ganguly, Prof. Gagandeep Kang, Prof. Anurag Agrawal, Prof. Rohit Srivastava
Public Outreach Lectures on Nobel Prizes - 2021	Prof. Rama Govindarajan, Prof. Gautam I. Menon, Prof. Ravi S. Srivastava, Prof. Dhevalapally B. Ramachary, Ms. Nidhi Razdan, Prof. Nishat Zaidi, Prof. Debasis Nayak

Student Affairs

Student Affairs Office operates as an administrative interface to the students at IITI for conduction of various events through Student Gymkhana through a team headed by the Dr. S. Vasudevan, Dean of Student Affairs (DoSA) assisted by Associate Dean of Student Affairs (ADoSA), Joint Registrar Student Affairs, Section Officer and PA to DoSA.

Student life at IIT Indore comprises a judicious balance between different academic and extra-curricular activities, including BTech project work, projects 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 worth-mentioning clubs 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 the 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.

Science & Technical Council

IIT Indore has a fast-developing technical network. The IIT Indore contingent stood at 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. IITISoC and Winter of CP were also conducted by the Programming Club. Other Tech Clubs conducted various workshops and events throughout the year.

Cultural Council

Various events were organised by the Cultural Clubs that engaged people both offline and online. Throughout the year, various clubs including The Debating Society, The Literary Club, Srijan, Aaina, Dance Club, Prakriti and Avana conducted multiple workshops.

The IBCC 3.0 was conducted under the Cultural Council this year, which saw huge online and offline participation. The Cultural Clubs ran various events such as the Solo Quiz and Improwizard. Offline treasure hunts and cooking competitions were the highlights of the event.

Sports Council

The Sports Council at IIT Indore organised various sports events, which include the Athletics meet, Kho Kho tournament, Futsal Tournament, Volleyball Tournament, etc. Further, the Sports Council organised the first ever Annual Sports Fest, LAKSHYA - 1.0, which received the participation of 1242 students for the online events from all over India and 300 students for the offline events.

Academic Council

The Academic Council, under the Students' Gymkhana of Indian Institute of Technology Indore, conducted the Research Conclave to nurture young minds towards research, innovation and entrepreneurship. Further, the Career Guidance Series 2.0 was organised 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 of batch 2021-25, 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

The highlight of the year was the reintroduction of TEDx, IIT Indore. It was the third edition of TEDx with the theme 'Phoenix in the Making' representing how humans can rebuild themselves and reach jubilant heights. It featured inspirational speeches from Ms. Rachana Ranade, Mr. Amit Borkar, Dr. Sarita Ahlawat, Mr. Nirmal NR, Mr. Soumesh Pandey and Mr. Yagnesh Sanghrajka. The event was a grand success and added another feather to our cap.
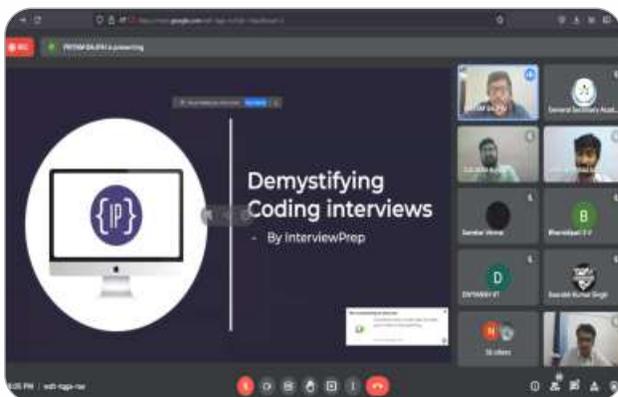
Center of Innovation, Incubation, Entrepreneurship, and Industry Relations (CIIEIR)

Center of Innovation, Incubation, Entrepreneurship, and Industry Relations (CIIEIR) administers a business incubator which provides 'Start to scale' support for technology-based entrepreneurship and facilitates the conversion of research activity into entrepreneurial ventures.

Vision and Mission

Our main vision is to transform knowledge and innovation into the creation of successful entrepreneurs for society and contribute to nation building. Our mission is to develop innovation and entrepreneurship skills among students, staffs, and faculties as well as to mentor incubated startups and assist them to progress from one stage of business development to other.

CIIEIR team reports toProf. Anand Parey, Dean, Alumni and Corporate Relations. Dr. Swaminathan R. (Head CIIEIR), CIIEIR Committee, Dr. Kumar Gaurav (Assistant Registrar) and Ms. Kavita Enamdar (Junior Assistant), are managing incubation and entrepreneurship activities with the joint efforts of students of Entrepreneurship Cell (E-Cell).

Incubation Support and Facilities

1. Fully furnished air-conditioned offices, Board Room, Conference Room.
2. Wi-Fi and IT support.
3. Mentorship for innovation, research, testing, prototyping.
4. Timely guidance for seeking financial aids through various funding schemes.

Collaborations

The following MoUs/collaborations with various organizations are currently active

- Design Expertise to Manufacturing MSME Sector (Design scheme of Ministry of MSME).
- Support for Entrepreneurial and Managerial Development of MSMEs through Incubators (Incubation scheme of Ministry of MSME).
- FICCI FLO to promote Women Entrepreneurship.
- Digital Futuristic Angels Network Private Limited.
- NNM Next Gen (CoKaCo) Angels Investor.
- Inocorn Angels Network Private Limited.
- Bank of Baroda for providing Loans and funds to our incubatees.
- Procured YNOS technology platform for innovation, entrepreneurship, intellectual property, industry linkages and start-ups.

Major Achievements:

- 24 start-ups have been Incubated at CIIEIR, IIT Indore.
- 2 ideas were approved by Ministry of MSME for funding of Rs. 30 Lakhs under MSME Innovative Scheme.
- Mr. Kunal Choudhary, Alumni & Incubatee, has been appointed as Core Group member for Drone regulations by the DGCA.
- Spark Green Ventures, a startup incubated at CIIEIR developing Krishak Kalyan App, secured a grant of Rs. 10 Lakhs through CIIEIR from Yukti Portal - Innovation cell, Ministry of Education.
- Spark Green Ventures also secured a funding support of Rs. 15 Lakhs from ICAR, Ministry of Agriculture.
- Scas Technology, a startup developing Semi-autonomous AI-enabled UAVs, was shortlisted as one of the 30 finalist teams in Swadeshi Microprocessor Challenge 2020 organized by MeitY, Govt. of India amongst 6169

Teams (with over 10,000 participants).

- Padmapriya Technovat Pvt. Ltd., a startup incubated at CIIEIR, is selected for receiving funding support from NewGen IEDC Center at IIIT Allahabad.
- IITI Advanced Center for Entrepreneurship (ACE) Foundation, which is a separate Section 8 company focusing on startups and incubation related activities, was successfully incorporated.

Webinars/Major events organized or participated

- Mr. Austin Davis from NID Ahmedabad delivered a webinar on Not just a Toy! Not just a Game! A story or Design + Play.
- Professor D.L. Sunder from IIM Indore delivered a webinar on Mitigating Risk in Entrepreneurship.
- Ms. Sinjini Sengupta delivered a webinar on Personal Branding for Entrepreneurs.
- Dr. Amit Kumar Dwivedi and Dr. Satya Ranjan Acharya from EDII delivered a webinar on "Entrepreneurship Opportunities and Ecosystem During and Post COVID Pandemic".
- Professor N. S. Dinesh from IISc Bangalore delivered a webinar on Challenges in developing automated puppetry under the theme Rebranding of Indian Toys.
- One-day Workshop on Creating Lab-to-Land Ecosystem: Challenges & Opportunities was jointly organized by IIT Indore and RRCAT Indore
- Under Skill Development Training Program, two training programs were conducted on "Entrepreneurship Development" and "Leadership Practices for Entrepreneurs"
- Marketing Fiesta event was conducted by E-cell
- i5 Summit, which is the largest entrepreneurship summit of central India, was jointly organized by E-cell, IIT Indore and IIM Indore.
- "The IITM Nexus" book launch event was organized by E-Cell and this book covers the story of 16 IITM Entrepreneur alumni, which is coauthored by Ms. Shibani Shashin, UG student of IIT Indore.
- MP Start up 2022 Conclave to launch MP Startup policy was organized by Government of Madhya Pradesh at Indore. IIT Indore participated in the conclave and the startups associated with IIT Indore showcased their innovative products to more than 2000 students who attended the event.

MP Start up 2022

Startups associated with CIIEIR IIT Indore

1. Inter view Prep
2. MiBi Services Private Limited
3. Scas Technology
4. FoodKamp
5. Otomator Technologies Private Limited
6. Smart I Fab Technology Private Limited
7. Freebird Aerospace India Private limited
8. THINK -VLSI
9. Spark Green Ventures & Innovation
10. Funds4SMEs
11. Xohani Solutions Private Limited
12. DOCMEP
13. Padmapriya Technovat Private Limited
14. Cymbient Technologies Private Limited
15. Advanced Lightning System
16. DASA (Driver Anti Sleep Alarm)
17. Diagbnostic kt for early detection of malignant transformation of oral submucous brosis
18. Pancham Infinity Private Limited
19. Bhusatyam Technologies Private Limited.
20. Efficacy Nex Private Limited
21. Anantshree Vehicles Private Limited
22. Bull Bikes
23. Hyginiee
24. Happiness Candytoys Private Limited

Computer and Information Technology Center

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

Network Connectivity: CITC provides 2 Gbps network connectivity to the entire campus. 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 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 1600 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. Vijay Kumar Rai, System Engineer
6. Pralhad Singh Panwar, System Analyst
7. Shailesh Kaushal, Superintend
8. Subha Jana, Superintend

CITC Building

Server Room

Center for Advanced Electronics (CAE)

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

Center for Advanced Electronics (CAE) has launched a Ph.D. program exclusively in Advanced Electronics, which comprises research areas such as Nanoelectronics/Microelectronics, Integrated photonics/Optoelectronics, Advanced Materials and Devices, Advanced Materials and Devices, Advanced Porous Organic Electronics, Computational Electronics and Materials, and 2D Electronic Materials.

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: 10	
PROFESSOR	PROFESSOR
ASSOCIATE PROFESSOR	ASSOCIATE PROFESSOR
ASSISTANT PROFESSOR GRADE	ASSISTANT PROFESSOR GRADE
PhD	PhD
NO. OF POST DOC FELLOWS	NO. OF POST DOC FELLOWS

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	NA	-
MTech	NA	-
MSc	NA	-
PhD	02	-

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

Research Outcomes

a. Development of Optical modulator based on Si-ITO.
b. Technology Development for 2DEG based Photonic Devices.
c. Development of Biochemical sensor for detection of foodborne pathogens.
d. Portable real-time sensor system for soil and water quality monitoring for agriculture and environment.
e. NeuroSynaptic chips for biomedical image processing for crop early disease detection and homeland security.

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. We are proud to file and publish the following three patents with CAE affiliation:

1. A biochemical sensor with engineered nanophotonic structure, the process of preparation and use thereof.
   Investors: Mukesh Kumar, Sulabh, L. Singh, S. Jain, S. Rajput, V. Kaushik, H. C. Jha
2. Ultrasensitive NO2 sensor based on S and N doped carbon dot functionalized tungsten oxide.
   Inventors: Shaibal Mukherjee, Apurba K Das, Chandrabhan Patel, Biswajit Mandal, Rohit Gajanan Jadhav
3. Silicon Compatible yttria-based memristive crossbar array and a method of fabrication thereof.
   Inventors: Shaibal Mukherjee, Sanjay Kumar, Mangal Das, Kumari Jyoti

Outreach Activities

1. AICTE QIP-sponsored Faculty Development Program (FDP) on "AI and IoT in Nanoelectronics, Agriculture and Communication in the Unravelling of Aatmanirbhar Bharat", March 7-12, 2022, Organized by Prof. Shaibal Mukherjee.
2. ATAL FDP on "Artificial Intelligence and Internet of Things in Nanotechnology, Sensors, and Communication in the making of Aatmanirbhar Bharat", December 6-10, 2021, organized by Prof. Shaibal Mukherjee.
3. 5th IEEE Electron Devices Technology and Manufacturing (EDTM) Conference, China, April 8-11, 2021, organized in the capacity of Education/Short-Course Committee Member by Prof. Shaibal Mukherjee
4. 2021 IEEE Day through IEEE Nanotechnology Council (NTC) Student Chapter (Organized by Prof. Shaibal Mukherjee)
5. Distinguished Lecture by Prof. Yogesh S. Chauhan through IEEE MP Section Electron Devices Society (EDS) Chapter (Organized by Prof. Shaibal Mukherjee)

PROJECT

PROJECT	SPONSORED	CONSULTANCY
New Projects	01	-
Ongoing Projects	01	-
Completed	-	-

PUBLICATIONS

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total		02		52

Center of Electronic Vehicle & Intelligent Transport System (CEVITS)

CEVITS was started 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 kickstarted. 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.

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.

NUMBER OF FACULTY MEMBERS ASSOCIATED WITH THE CENTER: 25

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
MTech in ELECTRIC VEHICLE TECHNOLOGY	5-10	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 IN THE DEPARTMENT

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.

Name of Faculty or Fellow	Area of contribution to CEVITS
Dr. Gourinath Banda (CSE)	(a) Autonomous Vehicular (AV) Systems: Fundamentals, I2, LoA, V & V (b) RAES for AV and Electric Vehicles (EV); (c) SSE plus FS in AV; (d) AV/EV Testing: (Non-mechanical) Scenarios and Languages (e) E/S-based industry qualification of AV/Ev; (f) Trust frameworks for AV in frames (S/NS) Traffic Engineering, Traffic Flow Theory
Dr. Gourab Sil (CE)	Power Electronics for Electric Vehicles
Dr. Amod C. Umarikar (EE)	Speed Control of Electric Vehicles
Dr. Abhinoy Kumar Singh (EE) (DST-INSPIRE Faculty)	Noise and Vibrations of Electric Vehicles
Prof. Anand Parey (ME)	Hybrid Vehicles, Dynamics and Simulation of Electric Vehicles
Dr. Devendra Deshmukh (ME)	Autotronics System Design Fuel Cells; CFD
Dr. I.A. Palani (ME)	Vehicle Dynamics, Composite Materials for Electric Vehicle Applications
Dr. S. Dhinakaran (ME)	Thermal Management of Electric Vehicle
Dr. S.I. Kundalwal (ME)	Materials and Crashworthiness for Electric Vehicles
Dr. Harekrishna Yadav (ME)	Light-weight Materials for Electric Vehicles, Mechanical Testing, Design of
K. Eswara Prasad (MEMS)	Materials for Electric Vehicles
Dr. J.P. Murugesan (MEMS)	Electrochemical Energy Storage for Electric Vehicles
Dr. Rupesh S. Devan (MEMS)	Electrochemical Energy Storage for Electric Vehicles
Dr. Sunil Kumar (MEMS)	Advanced Materials and Processes for Electric Vehicles
Dr. Sumanta Samal (MEMS)	Energy related Materials and Futuristic Battery Materials
Dr. Somaditya Sen (Physics)	Triboelectric and Nano-generator
Dr. Pankaj R. Sagdeo (Physics)	Human Factors in Automobiles
Dr. P.K. Sanjram (HSS)	

Center of Futuristic Defence and Space Technology (CFDST)

This center is committed to provide 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 in 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 handing Center of futuristic defense and space technology.

Members in CFDST:

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

Notable Achievements: Webinar Organized During COVID 19 Pandemic

- Expert Talk Dr. Ajay Kumar IAS Defence Secretary Ministry of Defence, Govt. of India webinar on Indian Defence Industry The Sunrise Sector.
- Expert Talk 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 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 Indian Scientific Knowledge Systems (CISKS)

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

In this resource constrained world, it is essential to balance the needs of development, sustainability and equitable development. For example, the nuanced view of Intellectual properties in Indian civilization could be a model for the world that balances the common societal good with the need for providing incentives to individuals for knowledge creation.

A few specific examples are provided as illustration

1. Understanding some of the techniques in metallurgy could help us in developing new materials with unique properties (metal mirrors, rust proof iron, high strength steel alloys).

2. Knowledge from agricultural treatises such as vrikshayurveda, Krishi Parashara, viswa vallabha, kashyapiya krushi sukti among others would help us in developing sustainable technologies for watershed management, sustainable agriculture and pest management.

3. Textile Industry could benefit from some of the techniques used for animalizing cotton and it could have commercial implications. For example, please see a patent for Animalizing Cotton that was filed by a US company that found uses for such techniques in textile dyeing (https://patents.google.com/patent/US2947594A/en)

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.

MISSION:

This center will focus exclusively on the research and education of the Indian scientific heritage by studying original texts in all Indian languages and understanding their relevance to address current technological challenges to sustainable societal development. This center will focus on developing specific courses for various engineering disciplines in Samskrit aimed at undergraduate/graduate students, research into texts and identifying their relevance in modern context and serve as a center for dissemination of knowledge and training the teachers and students in the engineering colleges of India.

OBJECTIVES:

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

Focus Areas

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

Ongoing Projects

S.No.	Project Title
1.	Positional Astronomy with the Ancient Ved-shala in Ujjain.
2.	Traditional liquid fertilizer as a substituent to conventional inorganic chemical fertilizers and solid manure.
3.	Investigating 'Panchgavya' (cow dung, urine, milk, ghee, curd) for synthesizing graphene and carbon quantum dots.
4.	Identification and purification of Phytochemicals derived from Indian medicinal plants as Cancer therapeutics

Center for Rural Development (CRDT)

The institute has established the Center for Rural Development (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

Team Members

1. Prof. Sandeep Chaudhary (Head)
2. Dr. Pritee Sharma
3. Dr. Neeraj Mishra
4. Dr. Neelima Satyam D.
5. Dr. Santosh Kumar Vishvakarma
6. HOD, Computer Science and Engineering
7. HOD, Electrical Engineering
8. HOD, Mechanical Engineering
9. Associate Dean-II, Infrastructure Development
10. Associate Dean-III, Infrastructure Development
11. Dr. Shaibal Mukherjee

R&D ACTIVITIES

Worked on developing appropriate technologies for the rural community.

Developed bilayer-coloured bricks and low-cost devices for the ready use by the rural community. The technology of bilayered coloured brick was transferred to a local industry for MP state.

NOTABLE ACTIVITIES

- Gandhi Jayanti Celebration on October 02, 2021
- Exhibition by local Artisans on October 02, 2021
- Visit to ICAR-Indian Institute of Soyabean Research for exploring collaboration
- Visit to Jhabua district and NGO working there.
- Organised a short-term course on Low Cost Housing for Rural Development.
- Organised a one day workshop on Local Waste Utilization in Rural Construction Activities.

IITI DRISHTI CPS FOUNDATION
(Section 8 company)

The IITI DRISHTI CPS Foundation (henceforth Foundation) is a Technology Innovation Hub (TIH) within the National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS), which is coordinated by the Department of Science and Technology, Government of India. The Foundation is a section 8 company of IIT Indore with the technological vertical of System Simulation, Modelling, and Visualization. The Foundation aims to become self-sufficient and generate revenue to maintain its operations beyond the initial five-year period through an emphasis on return on investment. In light of this, seven interconnected programmes (Affiliate, Technology Development, Fellowship, Intellectual Property Rights, Skill Development, Outreach and End-Users Connect, and Startup) have been implemented. The ethos of these programmes is based on product life cycle. The following are the most significant results of these programmes throughout the past year.

Programme Updates

S.No.	Project Title
Affiliate Programme	Total Affiliate Members: 95 (Undergraduate: 7, Postgraduate: 1, PhD: 14, Faculty members: 68, Industry Personnel: 5)
Fellowships Programme	Undergraduate Fellowships: 9 Postgraduate Fellowships: 1 PhD Fellowships: 2 Total Fellowships Amount Approved/Sanctioned: INR 39.25 Lakh
Technology Development Programme	Short Term Technology Development Scheme: • Number of projects Approved: 9 • Total grant approved: approx. INR 90 Lakh Technology Development for End User Problem Statements (TD-EUP) Scheme: • Number of projects started with joint support of end users: 1 • Number of projects under review by end users: 3 Lab to Market (L2M) Scheme: • Number of proposals under review: 7 Increase in CPS Base: 36
Start-up Programme	Scheme announced: CPS-Seed Support, CPS-EIR Number of Projects Approved: 1 Tie-up with Indore Smart City Incubator for various stratup and incubation schemes was done on June 1, 2022
Skill Development Programme	Course(s) announced: 01 Course Name: Skill enhancement for Building Blocks of Industry 4.0 Skill Center of IITI DRISHTI CPS Foundation was selected for an NVIDIA academic hardware grant.
Outreach and End Users Connect Programme	Total Problem Statements Received: 10 MoU with media partner was signed on November 23, 2021 First Outreach Bulletin viz. DRISHTIKON was released on April 26, 2022

Research Highlights:

IITI DRISHTI CPS Foundation collaborates with researchers from around the nation to develop technology for industrial and societal needs pertaining to digital twin development. Many of the projects funded by the Foundation are being executed in partnership with end users to ensure commercial viability and deployment. A brief overview of some of the Foundation's supported projects is provided below.

- A PhD fellowship awardee (Mr. Jaideep Singh) is working on the development of digital twin based real time shop-floor decision support system for Industry 4.0. Smart manufacturing laboratory setups, useful for testing and hands-on training of industrial personnel for technologies related to Industry 4.0, are developed at IIT Bombay (figure 1) and IIT Indore under this endeavour.

- In another project, a 3D holography based digital twin technology for an induction motor for predictive maintenance is being jointly developed by Dr. Anand Kumar S and his team at IIT Jammu, and Mr. Hari Krishna from CMTI, Bengaluru. Using plugins for animation software, engineers and scientists can interact with digital twin in real-time, and facilitate viewing of 3D representation of the

Fig 1: Smart manufacturing setup

mechanical system without VR/AR headgear friction. The holographic images will show the dynamically changing key parameters (figure 2) of the system as a pop in 3D image representation scheme. As a consequence, health monitoring can be mapped with appropriate AI algorithms.

Digital twin development for smart cities is another important focus area of the Foundation. Various technology development projects have been initiated in this theme.

- Prof. Guru Prakash and his team at IIT Indore are developing approaches for road condition assessment and repair cost estimation using a cyber physical system.

Fig 2: 3D Holography based digital twin

- A group of researchers from IIT Indore (Dr. Siddharth S. Malu, Prof. Abhishek Srivastava and Prof. Abhirup Datta, Dr. Saurabh Das) along with Mr. Rohit Sharma from Tata Digital, are developing a Car Collision Avoidance and Recording Systems (CCARS) (Figure 3).

Undergraduate students have been at the forefront of the initiatives of the Foundation.

- A team of UG students from IIT Indore (Mr. Kshitij M Bhat, Mr. Bhavya Dalal, Mr. Raghuvamsi Bokka, Mr Yeeshukant Singh, Mr. K Vishnu Vardhan, Mr. Jitendra Kumar Choudhary) are developing smart phone based autonomous driving module.

- An undergraduate student (Mr. Sumer Thakur) at IIT Indore is developing a CPS for low energy HVAC solutions based on natural thermal cycles and adaptive thermal comfort for smart cities.

- A PhD fellowship awardee (Ms. Oshin Rawlley) at BITS Pilani is working on the development of a digital twin for AI empowered

Fig 3: Prototype of proposed CCARS

vision-based driver support system to resolve the complexity and uncertainty issues involved during perception and decision making in volatile environment of Internet of Vehicles (IoV).
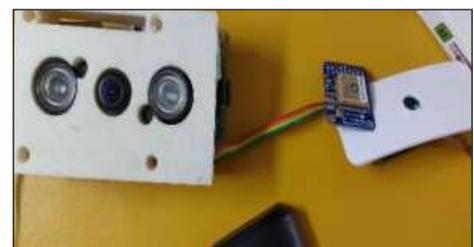
In addition, various allied technologies are also being developed.

- Reconfigurable Intelligent Surfaces (RIS) structure which exhibits a wide tunability of reflection phase angle (-160° to +160°) by varying the voltage across a varactor diode is being developed by Dr. Saptarshi Ghosh and his team.

- In another project supported by the Foundation, Prof. Abhishek Shrivastava from IIT Indore is developing means for provision of data security in restricted IoT environments through Machine Learning techniques.

Counselling Cell

Counselling Cell has been an integral part of IIT Indore since its inception in December 2011. The function of this cell is to offer a supportive and conducive environment for students wherein they can discuss personal issues or academic challenges and seek help from counselling committee members. With primary focus on prevention of mental health issues - prevention of suicide and chronic mental health problems, Counselling Cell works for early identification and intervention for various mental health issues in students.

Counselling Cell Team comprises of Professor Aruna Tiwari, Head Counselling Services, Department of Computer Science Engineering, Ms. Monika Gupta, Senior Counselor, Dr. Ashutosh Singh (MBBS, DNB Psychiatry), Visiting Consultant Psychiatrist, Counselling Committee having one faculty member from each discipline as Faculty Counselling Coordinators and student representatives from PhD, PG and UG as Student Counselling Coordinators. The committee members provide guidance and advice on counselling related matters to the students of the respective discipline.

Counselling Cell undertakes the following activities

Individual counselling sessions 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 wide range of psychological concerns including clinical depression, anxiety spectrum difficulties, suicidal tendencies, difficult personality traits.

(a)　In view of COVID 19 pandemic, an online counselling facility and tele-counselling, was made available to the students and their parents.

(b)　In person-counselling sessions are also conducted for those students who are residing inside the campus by following the COVID -19 protocols.

Parents Counselling Sessions - Meeting with parents of students having concerns with academics or psychological concerns are also held.

Regular Follow Up - Follow-up counselling sessions are also held.

Student Mentorship Programs - 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 student mentorship Programs. The student mentors help freshers by extending their helping hand both for academic and non-academic concerns.

Faculty Advisor List Preparation - The counselling cell prepares the list of faculty advisors for the new students of BTech and Masters Programs. The faculty advisors regularly interact with the delegated students and guide them for academic concerns. The students are further referred to the student counselor in case the student shows any signs of distress.

Orientation to Counselling Cell - To provide information regarding counselling services at IIT Indore to all the new UG, PG and Ph.D students and parents during the orientation and registration program and subsequently another session for introduction to counselling cell is organised for the fresher students.

Webinars and expert talksare organized to create awareness on mental health issues and enhance positive well-being.

Crises Intervention - Counselor also sees the students at the health Center or hall of residence for urgent and immediate concerns.

To create a strong referral systemas a basis for enhancing mental health services, where students are being referred by academic office, health Center, faculty advisors, sports and security officers, wardens and hostel office, parents and friends, apart from walk- in students who approach the counselling cell on their own.

Counselling during COVID -19 Pandemic - Students were approached for follow-up counselling sessions by the counselor.

Tele-counselling is done for students having COVID- 19 infection as per the list received from the health Center.

During the re-entry of the students in campus post lockdown, the psychological concerns of the students are assessed by administering an online questionnaire. This has helped in prevention and early identification and intervention of emotional concerns of the students.

Further detailed assessment and counselling of those students who were found to have stress symptoms on the questionnaire is done.

Online group motivational sessions on "Dealing with new normal" are conducted for students in quarantine. Further online small group interactions were done with students in quarantine.

**Some of the Events Organized by Counselling Cell during 2021-22 are as follows:**

- Counselor and General Secretary Counselling Outreach and Alumni conducted a meeting with Student Mentors on December 6, 2021.
- A webinar on "Be Joyful To Be Successful" by Professor Pradeep. R. Bijwe, Ex- IIT Delhi, was organized on February 12, 2022 for the IIT Indore community.
- A webinar on "The Digital Detox Dilemma" by Ms. Sashi Rekha T, Psychotherapist and Life Skills Coach - Mumbai, was organized on March 24, 2022 for IIT Indore community.
- The Counselling Cell conducted One-On-One Counseling sessions for students with regards to stress related to exams and feel that they might need to talk to someone. These online sessions were taken by Ms. Sashi Rekha T., Psychotherapist and Life Skills Coach - Mumbai.
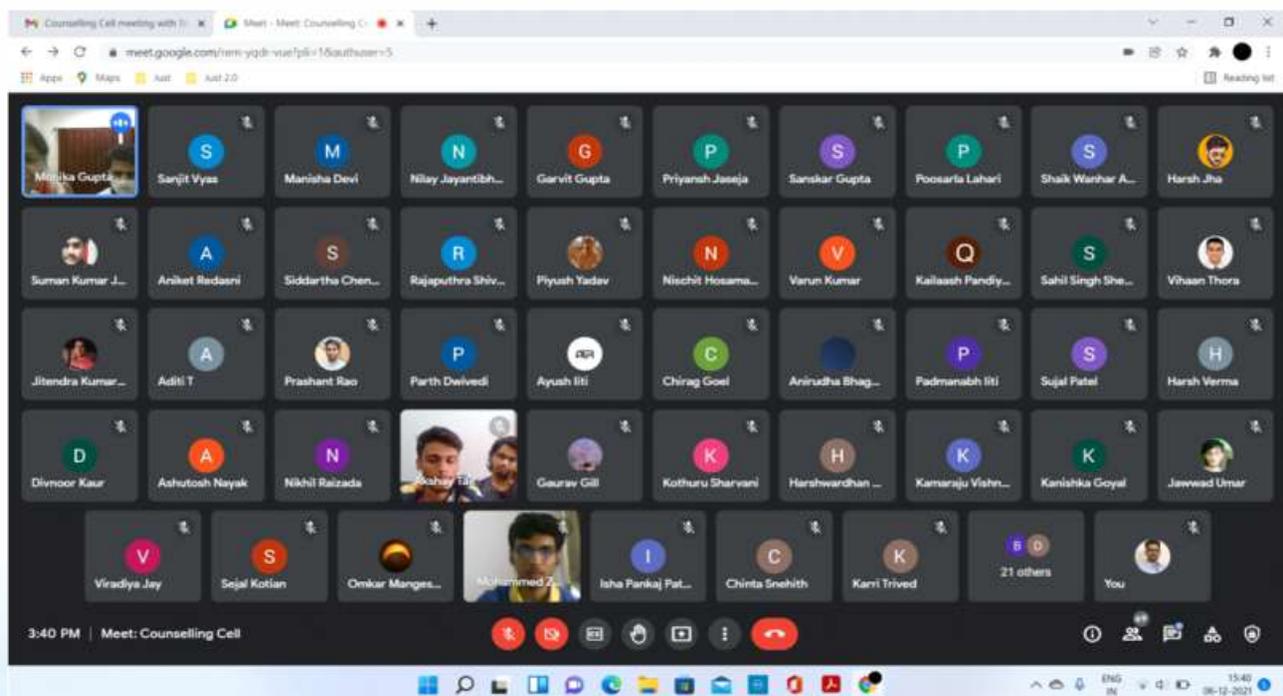
Meeting with Student Mentors
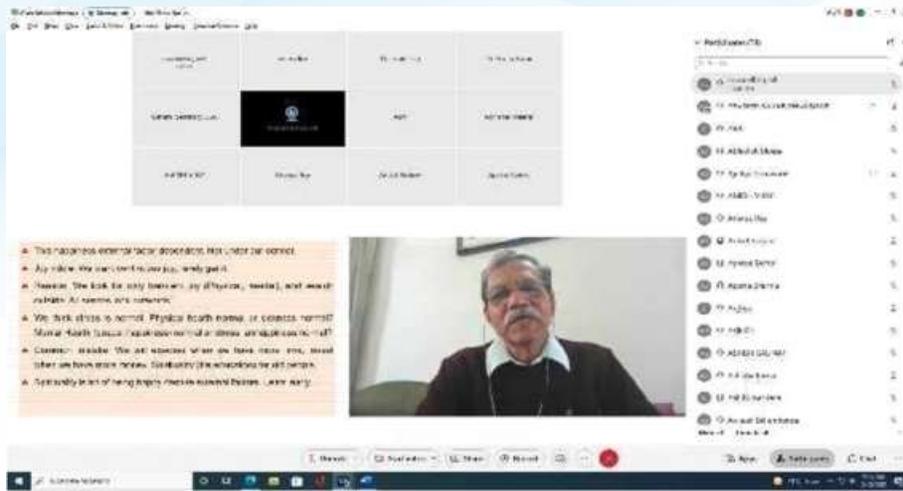
Webinar on "Be Joyful To Be Successful" by
Professor Pradeep. R. Bijwe, Ex- IIT Delhi
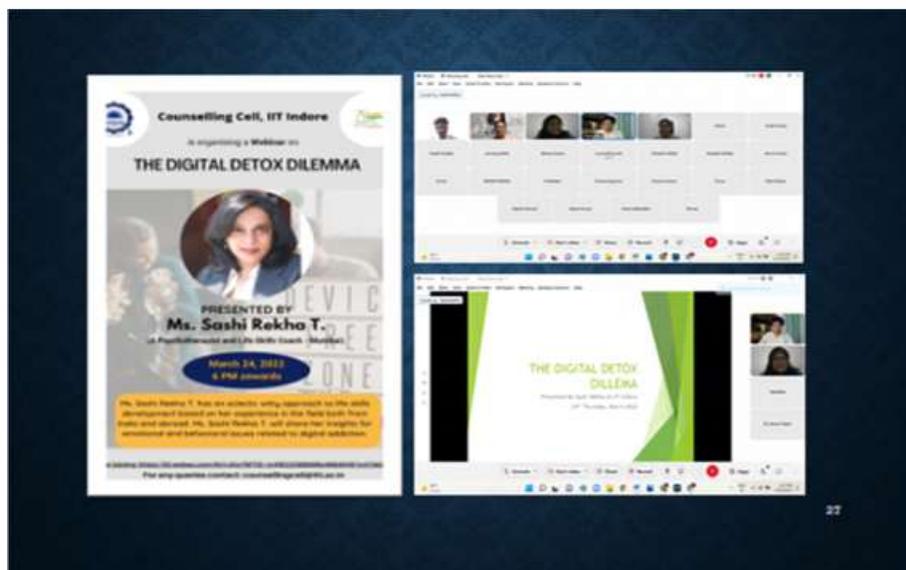
Webinar on "The Digital Detox Dilemma" by
Ms. Sashi Rekha T, Psychotherapist and Life Skills Coach – Mumbai

One-On-One Counseling sessions for students
with regards to stress related to exams

Placement Cell

The Training and Placement Cell is the Central point of Contact for Campus Placements of students of the Institute. The Placement session at IIT Indore was a virtual event throughout the year, which started in the month of September 2021 and ended in May 2022 (for full-time hirings), while for Internship the process started in the month of August 2021 and lasted until September 2021. Total number of companies visited for On-Campus Placement is 130.

The number of selected students increased by 6.4 % as compared to previous year. The placement was conducted in two phases where Phase I started from September 1, 2021, while second phase started from December 2021, amidst the pandemic following Covid Appropriate Behavior as laid down by the Institute and Guidelines approved by Govt. of India per se. Despite the detrimental effects, graduating students and recruiters showed utmost support and cooperation throughout the process. Taking into consideration, the increasing no. of courses and the corresponding specializations, the Placement cell has continuously strived towards achieving maximum participation of students from across all programs.

Highlight in Brief

Key Metrics	Details
Total No. of Companies	130
Total No. of Offers	246 (including PPO)
Total No. of accepted Offer	48
International Job Offers	30
Highest Domestic CTC	62.5 LPA (INR)
Average Domestic CTC	23.5 LPA (INR)
Highest International CTC	48.2 LPA (INR)
Average International CTC	42.75 LPA (INR)
Top Recruiting Sector	Software Development/AI

Student Pre-Placement Preparation

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

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 trend with an aim to invite the most prominent recruiters offering lucrative compensation. Efforts were made to understand the virtual process that include career planning and help was extended to discover opportunities based on 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, Data Science Analyst roles. Most of these firms are world leaders in their respective domains. The world's best consulting firms, banks, 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 and ethical guidelines etc.
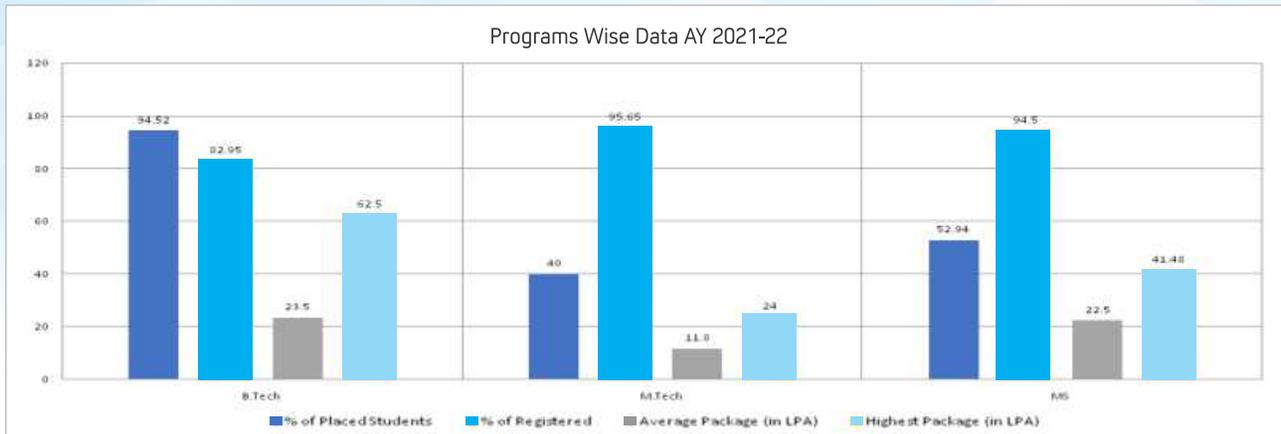
Overall Placement Statistics with Chart and Matrix (AY 2021-22)

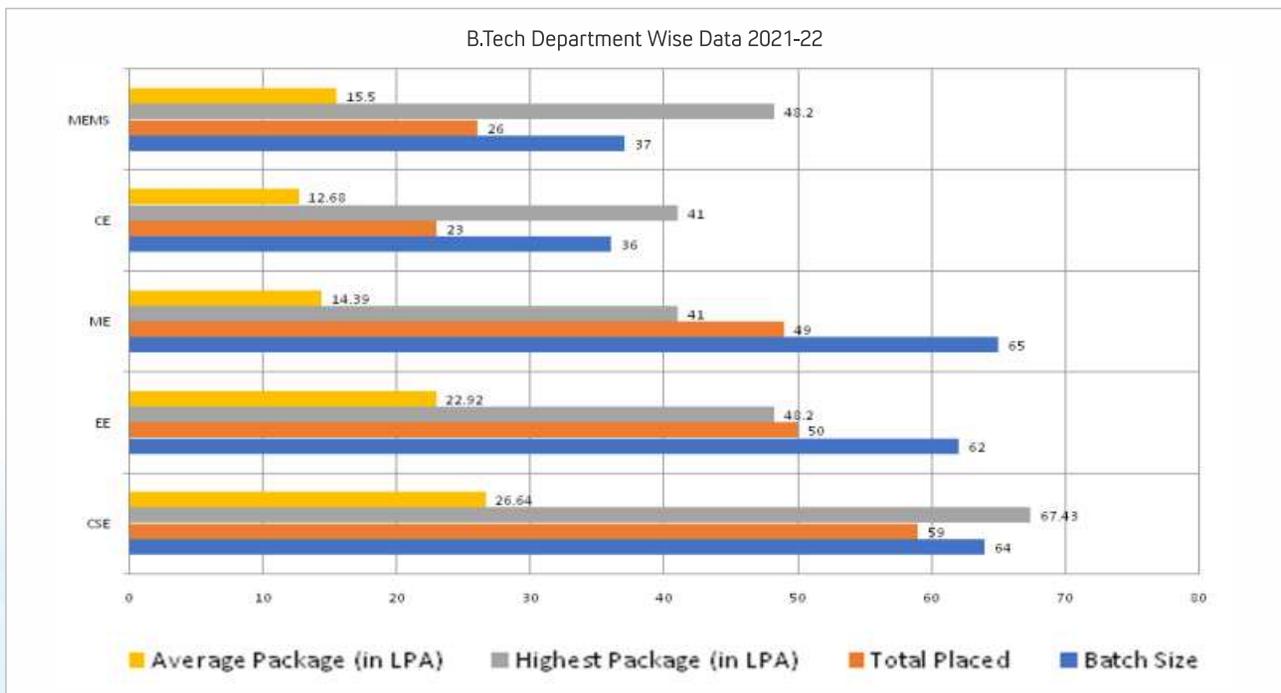| Program	Batch Size	Registered Students	Total Placed	Percentage of Placed Students	Percentage of Registered Students	Average Package, INR (in LPA)	Highest Package, INR (in LPA)
BTech	264	219	207	94.52	82.95	23.5	62.5
Masters	87	83	35	42.17	95.4	16	41.48

Placement Statistics AY 2021-22
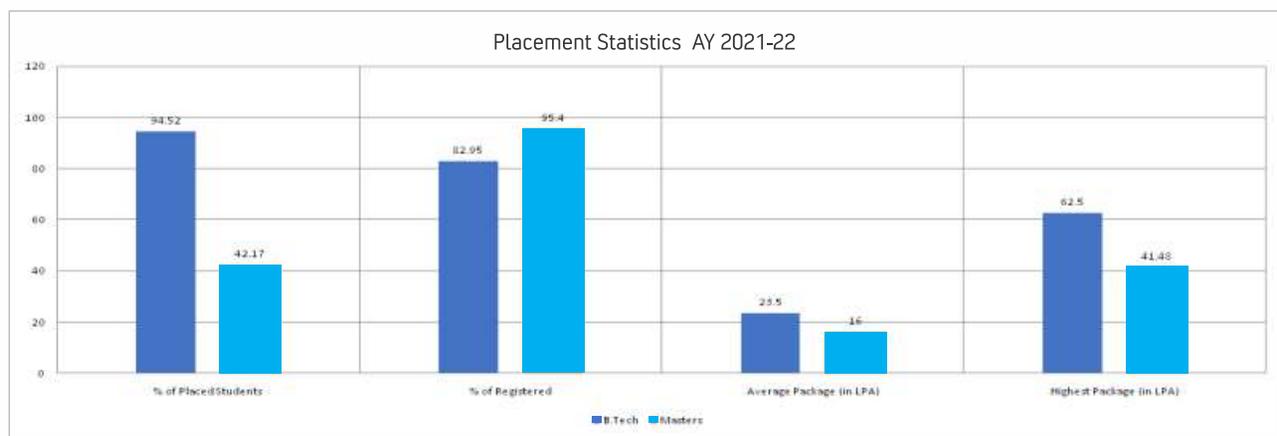
Program- Wise Placement Statistics in Chart and Matrix (AY 2021-22)

Program	Batch Size	Registered Students	Total Placed	Percentage of Placed Students	Percentage of Registered Students	Average Package, INR (in LPA)	Highest Package, INR (in LPA)
BTech	264	219	207	94.52	82.95	23.5	62.5
MTech	69	66	26	40	95.65	11.8	24
MS	18	17	9	52.94	94.5	22.5	41.48

Programs Wise Data AY 2021-22

Department Wise Placement Statistics in Graphs and Matrix
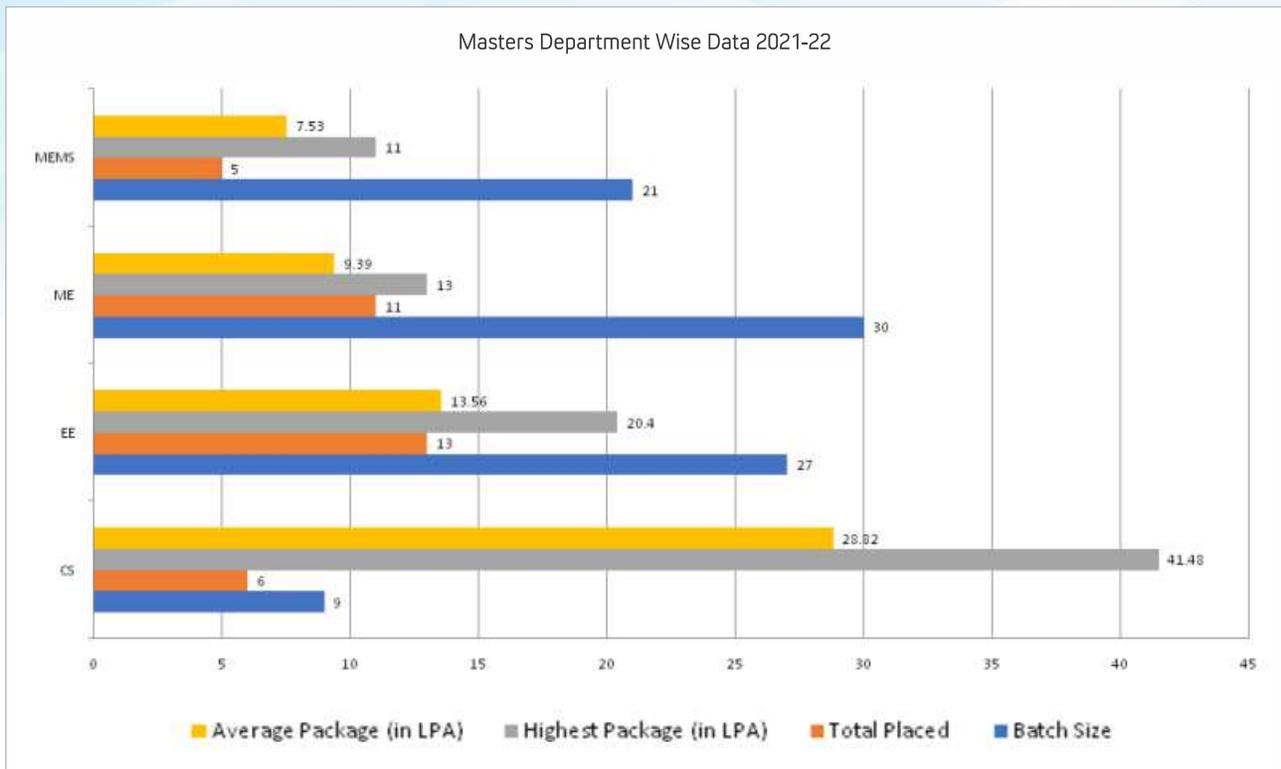
Dept Wise (UG & PG)	Batch Size	Registered Students	Total Placed	Percentage of Placed Students	Percentage of Registered Students	Average Package, INR (in LPA)	Highest Package, INR (in LPA)
CSE (BTech)	64	51	59	100	79.69	67.43	26.64
EE (BTech)	62	52	50	96.15	83.87	48.2	22.92
ME (BTech)	65	55	49	89.09	84.62	41	14.39
CE (BTech)	36	29	23	79.31	80.56	41	12.68
MEMS (BTech)	37	32	26	81.25	86.49	48.2	15.5
CS (Masters)	9	8	6	75	88.87	41.48	28.82
EE (Masters)	27	25	13	52	92.59	20.4	13.56
ME (Masters)	30	29	11	37.93	100	13	9.39
MEMS (Masters)	21	21	5	23.8	100	11	7.53

B.Tech Department Wise Data 2021-22

Masters Department Wise Data 2021-22

Legend: Average Package (in LPA), Highest Package (in LPA), Total Placed, Batch Size

MEMS — Average Package: 7.53, Highest Package: 11, Total Placed: 5, Batch Size: 21
ME — Average Package: 9.39, Highest Package: 13, Total Placed: 11, Batch Size: 30
EE — Average Package: 13.56, Highest Package: 20.4, Total Placed: 13, Batch Size: 27
CS — Average Package: 28.82, Highest Package: 41.48, Total Placed: 6, Batch Size: 9

Last three years Placement Statistics Comparison

Last Three years comparison (2019-20, 2020-21 & 2021-22)			
Program	2019-20	2020-21	2021-22
Overall Students Placed (%)	79.42	70.14	94.52
Highest package, INR (LPA)	46.3	47.25	62.5
Average Package, INR (LPA)	17.88	17.8	23.5

Last three years Comparitive Analysis

2019-20 — Overall Students Placed (%): 79.42, Highest package (LPA): 46.3, Average Package (LPA): 17.88
2020-21 — Overall Students Placed (%): 70.14, Highest package (LPA): 47.25, Average Package (LPA): 17.8
2021-22 — Overall Students Placed (%): 94.52, Highest package (LPA): 62.5, Average Package (LPA): 23.5
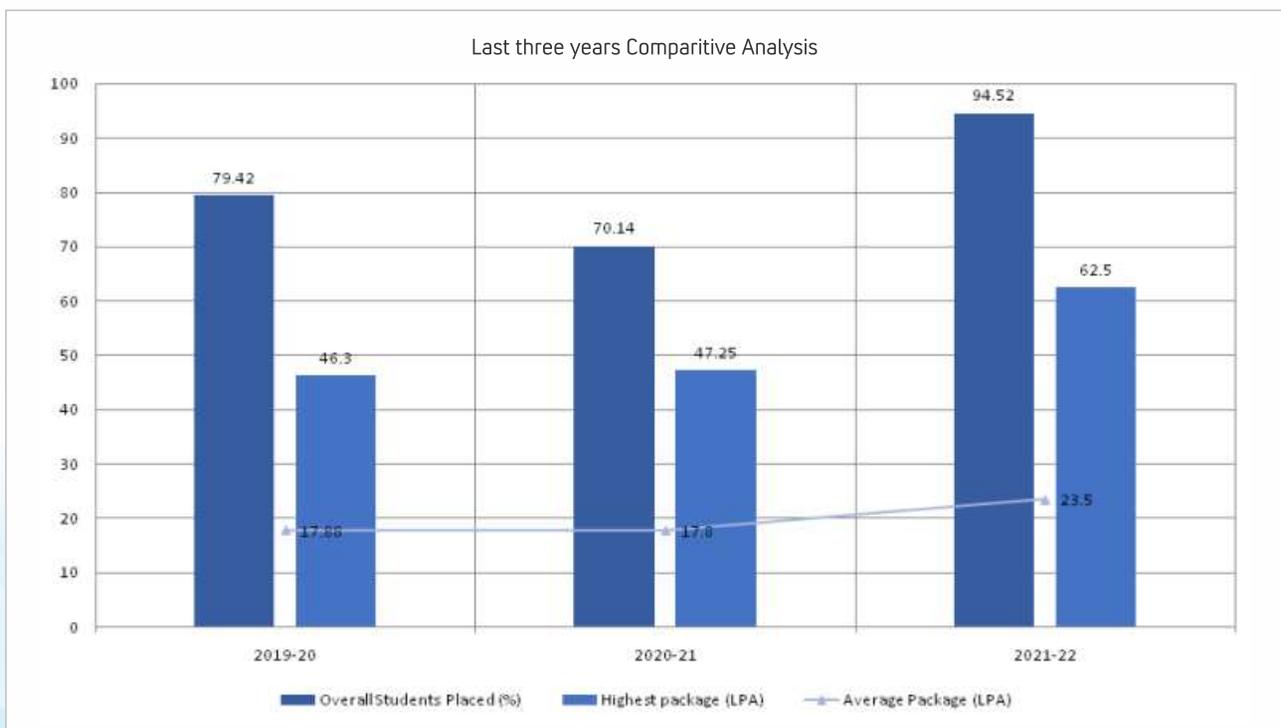
Internships Report

Industrial exposure is a Prerequisite to enter the corporate world. Students at IIT Indore pursue Internships usually as part of BTP Project. Students from their third year of B. Tech appear for the Campus Internship Process. Taking into consideration, student and the roles offered, the Placement Office strives to provide students with the best of the opportunities in their areas of interest. Placement Office also encourages research by providing students the research internship opportunities at esteemed universities. The Internship season 2021-22 started in August 2021 and continued until September 2021. There were total of 67 students who got selected for Internship, out of which 48 got Pre-Placement offers. Prominent recruiters include Goldman Sachs, D.E Shaw, Trilogy, Flipkart, Amazon etc.

Department Wise Internship Matrix and Graph (AY 2021-22)

Department	No. of Students (Interns)	No. of PPO
Computer Science	37	32
Electrical Engineering	18	12
Mechanical Engineering	0	0
Civil Engineering	5	3
Metallurgical & Material Sciences	2	1

Internship Graph (AY 2021-22)
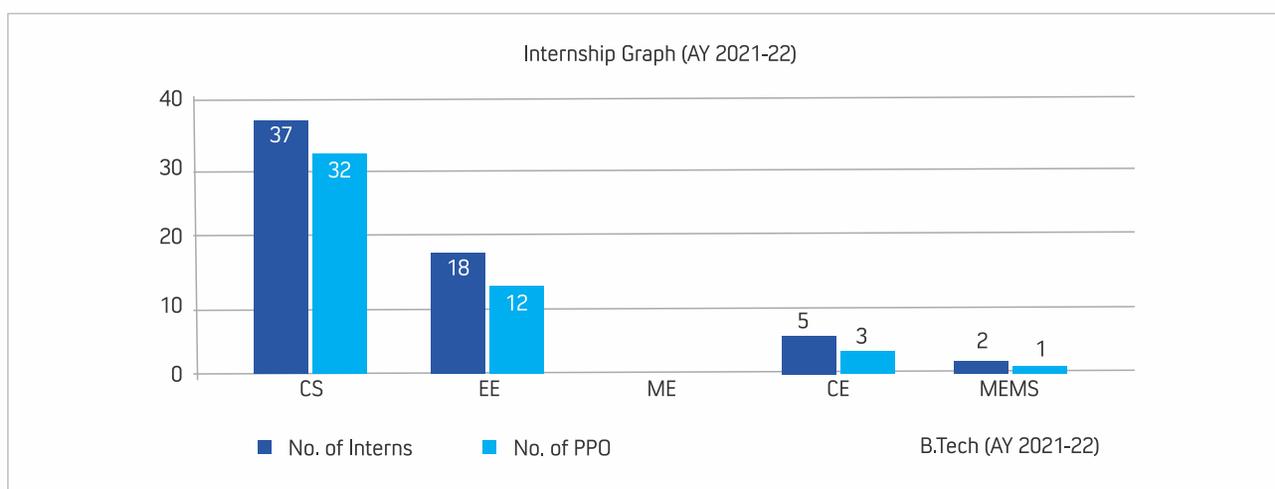
Conclusion

he Placement Drive at IIT Indore has witnessed a tremendous increase in the Placement Statistics over the years. For the AY 2021-22, the Campus Placement Process started in the month of August 2021 and ended in May 2022. The Placement was successfully concluded in two phases. The Placement Process for phase I, was conducted during September- November 2021, which witnessed a participation of top-notch companies recognized globally, including Pre-Placement Offers (PPO), while phase II was conducted during December 2021- May 2022. A total of 268 students registered for placements (both UG and Masters). The entire Placement Process was conducted in virtual mode. The compensation Offered to our students and the number of job-offers has also seen steady rise over the years. Despite of the detrimental effects of the pandemic, IIT Indore has achieved excellent Placement record for the AY 2021-22. The overall placement percentage is 94.05 %. Some of the 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.

Sophisticated Instrumentation Center (SIC)

A National Facility was established in September 2011 to expedite the research program at IIT Indore. It is now a national facility providing services and expertise to academics and industries from all parts of the country and some international centers.

Our Vision

To be amongst the top analytical instrument laboratories in the world in terms of cost, efficiency, and range of services.

Our Mission

- To support and foster the research enterprise in all branches of science and engineering at the Indian Institute of Technology Indore (IITI).

- Providing data recording facilities and expertise in different state-of-the-art instruments, all under one section to facilitate high-quality data analysis to academia and industries.

- To promote growth & competitiveness of the local industries by providing services in the identified gaps to make Indian industrial products in terms of quality as per global standards.

Function

- SIC has been operating with 32 instruments funded by the institute exclusively and recording data for all departments of the institute.

- SIC is continuously supporting academic programs including Ph.D., Masters & BTech students by giving hands-on training with the instruments by providing them the opportunity to analyze their own samples.

- SIC so far supported various projects funded by external agencies total valued above INR 48.0 crores.

- The center has been supporting various industrial organizations across India to develop their bestselling products using SIC sample testing facility.

- SIC is playing a very important role in developing curiosity towards science in school students, under grads & post-grads students by giving them live demos and training on the instruments.

SIC Progress & Evolution so far

- In the year 2011, the facility started functioning in our 2-satellite temporary campuses viz., IET & PACL campus with a total of 18 instruments.

- Since 2013, 8 more high-end instruments have been added to facilitate the research at IITI.

- In 2014, the facility was shifted to the permanent campus at Simrol and became an integral part of IITI.

- With the gradual addition of more instruments, the facility is now working with a total 35 instruments and planning to expand this number in near future.

Role of SIC in Research at IIT Indore

In ten years of time IIT Indore has achieved remarkable progress in which SIC has significant contribution which is reflected from its achievements:

- Strong research component across UG, PG and Ph.D. program with very high number of publications per faculty member among all Indian Institutes duly supported by SIC.

- 23 patents are registered using SIC data.

- With more than 2000 publications SIC has been catering the research needs of institutional faculties & research scholars.
- Analyzing and recording more than 10000 samples yearly in diverse instruments across the disciplines of science and engineering.
- Catered more than 700 users and many institutes across India.
- Data recorded at SIC has been successfully presented in more than 200 national & international conferences.
- The facility has a vital role in more than 150 projects associated with different departments among the institution which is approx. 34 % of total institutional projects till date and amounting approximately 48 Cr.
- More than 200 students have completed their Ph.D. using the facilities available at SIC to expedite their research.
- SIC is also supporting the projects of master students in relevant areas.

SIC Instrument list for Proposal

Yellow: In new instrument list 1st phase: Value: INR 62.65 Cr.

Grey: Included in SIC backup instruments: Value: INR 21.20 Cr.

Pink:It will through the computational facility: Value: INR 19.50 Cr.

Instruments in white boxes are for 2nd phase: Value: INR 35.20 Cr.

Sr. No.	Instruments	Approximate prices
I	**Department of Mechanical Engineering**	
1.	Ferroelectric Tester or Ferroelectric Hysteresis Loop Measurement Set-up	80.0 lakh
2.	Particle image velocimetry (PIV):	90.0 lakh
3.	Plasma spray coating system	1.0 Cr
4.	Wind tunnel	95.0 Lakh
5.	Temperature based Powder XRD with residual stress measurement capability	1.5 Cr.
6	X-ray photoelectron spectroscopy (XPS)	9.5 Cr.
7.	Field Emission Electron Microscope (FESEM)	2.5 Cr.
	TOTAL	**17.15 Cr.**
II.	**Department of Computer Engineering**	
1.	High performance cluster (HPC)	16.5 Cr
	TOTAL	**16.5 Cr.**
III.	**Central Workshop**	
1.	CNC machining center	35.0 lakh
2.	CNC wire EDM	30.0 lakh
3.	CNC lathe trainer	10.0 lakh
4.	3D printer	30.0 lakh
5.	Laser cutting	10.0 lakh
6.	Foundry facilities	50.0 lakh
7.	Forging hammer	20.0 lakh

8.	Universal milling	15.0 lakh
9.	Cylindrical grinder	10.0 lakh
	TOTAL	**2.1 Cr.**
IV	**Department of Chemistry**	
1.	Powder XRD	1.5 Cr.
2.	High-resolution Transmission Electron Microscope (TEM)	12.0 Cr.
3.	ITC (isothermal calorimetry)	55 lacs
4.	AAS & ICP-MS	1.3 Cr
5.	MALDI	7.0 Cr.
6	Circularly polarized luminescence	50.0 lakh
7.	EPR	2.5 Cr
	TOTAL	**25.35 Cr.**
V.	**Department of Physics**	
1.	Physical property measurement system (PPMS)	4.5 Cr.
2	Transmission Electron Microscope (TEM)	10.0 Cr
3	X-ray photoelectron spectroscopy (XPS)	9.0 Cr
4.	SQUID MAGNETOMETER	3.5 Cr
5.	Computational facility	3.0 Cr
6.	Wide range IR spectroscopy measurements setup	1.5 Cr
7	Chemical Vapor Deposition (CVD)	50.0 lakh
8	Attachment probe for existing facilities	5.0 Cr
9	High field Magnet	2.0 Cr
10	AFM-Raman microscope	2.5 Cr
11	Low to high end electronic probe station	10.0 lakh
12	High end electron bean thin film deposition system	40.0 lakh
	TOTAL	**42.0 CR**
VI	**Department of Material Engineering & Material Sciences**	
1.	HRTEM	15.0 Cr.
2.	VSM	35.0 lakh
3.	Fatigue testing machine (axial-torsion, 100 kN, if possible, with temperature control)	1.75 Crore
4.	Gleeble machine	3 Cr.
5.	Axial torsion servo hydraulic testing system	1.7 Cr
6.	Optical emission spectrometer	40.0 lakh
7.	Rolling machine	80.0 lakh
8.	X-ray photoelectron spectroscopy (XPS)	9.0 Cr.
9.	High Pressure and High Temperature Apparatus	1.0 Cr.
10.	Existing 400 NMR probe Upgradation (Solid State)	1.0 Cr.
	TOTAL	**43.0 Cr**

VII	Department of Electrical Engineering	
1.	Electron Beam Lithography System	5.0 Crores
2.	Reactive Ion Etching (RIE) System	3.0 Crores
	TOTAL	**8.0 Cr.**
VIII	Department of Biosciences & Bio Engineering	
1.	Instron series universal testing machine for mechanical testing of biomaterial scaffolds/ 3D constructs and biological tissues	30.0 lakh
2.	GPU-enabled HPC Cluster (Dell/SuperMicro/Fujitsu) Software: Discovery Studio	55.0 lakh
3	DLS and Zeta Sizer	15.0 lakh
	TOTAL	**1.0 Cr.**

INSTRUMENTS TO BE INCLUDED IN PHASE 2:

Sr. No.	Department	Amount (Cr.)
1	Mechanical Engineering	2.7
2	Computer Engineering	16.5
3	Central Workshop	1.7
4	Chemistry	0.55
5	Physics	12.0
6	MEMS	1.2
7	BSBE	0.55
	TOTAL	**35.2**

BACKUP INSTRUMENTS FOR EXISTING SIC FACILITIES

Sr. No.	Instrument	Amount (` in Crore)	Justification
1	LC-HRMS	4.00	Backup required as the capacity of instrument for the samples to be analyzed per day is beyond the capacity of the instrument.
2	FESEM-EDS	2.50	The instrument is heavily used by research students of all departments of the institute. A smaller version of the instrument will help sort the samples to be analyzed over the main instrument as well as also serve as a backup in case the main instrument is down due to maintenance issues.
3	TGA	0.65	The instrument is heavily used by research students of all departments of the institute. The existing instrument is nearly 10 years old and needs multiple spares to be procured which cost almost the price of the new instrument.

4	Confocal microscope with super resolution	2.75	The instrument will sort the samples before they get analyzed over the main Confocal Microscope
5	GCMS	1.00	The instrument is heavily used by nearly 100+ research students at the institute.
6	SCXRD	2.80	Large no of internal and external users is using the facility. Hence, backup of it is required so that load on single instrument is reduced.
7	400 MHz NMR SOLID PROBE UPGRADE	2.00	Our existing 400 NMR has an ability to be upgraded to Solid state NMR. It is required by various disciplines (MEMS, Physics, EE, ME & Chemistry). It is also 11 years old, and its liquid probe has also been deteriorated hence needs an upgrade on the liquid probe as well.
8	CD	0.85	The instrument is 11 years old now and needs a backup instrument.
9	AFM-RAMAN	2.50	The instrument is high on demand with nearly all departments of the institute hence a backup instrument is required to cater all research student requirements.
10	ATR-IR	0.10	The instrument is 11 years old now and needs a backup instrument.
11	RHEOMETER	2.00	
	TOTAL	**21.20**	

Summary of Cumulative Sample Tested on some of the Major Facilities.

Instruments	Internal Samples	External Samples
SC-XRD	3068	1026
NMR	48350 {on 400 MHz NMR} 6180 {on 500 MHz NMR}	155 83
LCMS	11432	135
SEM	8048	348
AFM	2495	14
GCMS	4139	41
Confocal Microscopy	1048	27

Revenue Generation

Inhouse Users

DEPARTMENTS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Chemistry	30120	691190	678790	780510	1348950	1624030	1574260	1864380	1604340	1158640
Physics	1900	13000	55435	53640	94400	109450	48860	61350	43820	1300
BSBE	NA	4850	28100	35340	195110	210900	262170	210620	120880	97120
ME	650	5400	44710	49270	88590	145540	133160	135360	81450	4420
EE	5060	12250	44500	62650	41470	57590	21050	36580	18980	12460
MEMS	NA	NA	NA	NA	NA	17400	30670	45860	35840	40590
CE	NA	NA	NA	NA	NA	NA	7300	8640	1800	560
TOTAL	**37730**	**1453380**	**1703070**	**1962820**	**3537040**	**2164910**	**2070170**	**2362790**	**1907110**	**1315090**
	Service rendered of Rs. 1.86 Crore									

Users from Industries & Academia

Financial Year	Amount (Lakhs)
2011-2012	4.32
2012-2013	10.46
2013-2014	11.31
2014-2015	5.73
2015-2016	6.3
2016-2017	10.98
2017-2018	10.85
2018-2019	11.3
2019-2020	13.24
2020-2021	8.14
2021-2022	3.4
TOTAL	**96.03**

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 will be exposed to different manufacturing methods, materials and components, procedures, and software programs currently used in commercial manufacturing and assembly processes. This will be 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). This year due to 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
- Severe plastic deformation (SPD)
- Recrystallization and grain growth study
- Micro, Nanomachining of MEAs and HEAs
- Surface modification Engineering (SMAT, Laser Shot-peening, etc.)

Mechanical and functional property study

Activities during the year 2021-2022

The central workshop this year 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.
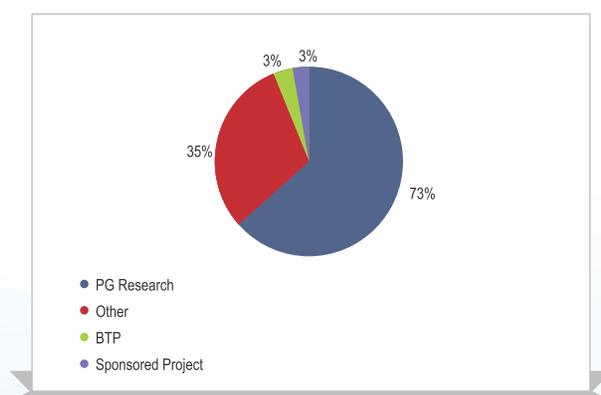
The photographs of some work requests are as follows

Fabricated 30 ft length Wooden Wind Tunnel

Fabricated Water Channel

Fixture for Jominy Quench Setup
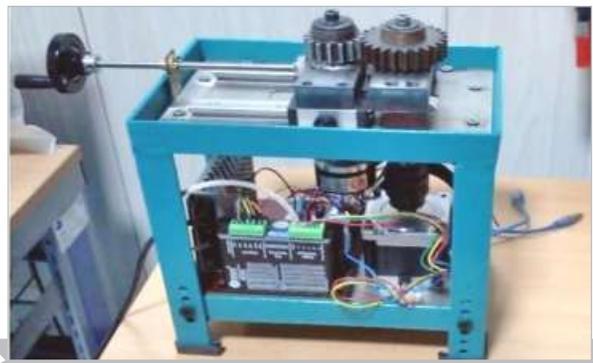
Fabricated structure for Single Gear Flank Roll Tester

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

Health Center

Facilities

The health center provides outpatient department, day care and in-patient facility for minor ailments.Emergency services are available 24 X 7. It facilitates well equipped physiotherapy services to institute community. Health Center team provides essential investigation facility including ECG and Rapid investigations. For routine investigations, In-house Diagnostic laboratory facility is outsourced from Apollo hospitals limited. Pediatric immunization is carried out on weekly basis.

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

Pradhan Mantri Janaushadhi Kendra -Health Center initiated the procedure for establishment of Pradhan Mantri Bharatiya Janaushdhi Kendra under guidance of administrative authorities.

Covid 19 Case Management-The health Center provided Covid screening, evaluation, treatment to institute community. Moderate to severe patients were referred to higher centers. However, cases under home isolation and admitted in tertiary centers were followed up for their health conditions on daily basis by the health Center staff.

Covid 19 vaccination:Health center organized Covid vaccination for students, employees, and their dependents on campus for the first, second and the precautionary (third) doses. Covid vaccination drive was conducted for Kendriya Vidyalaya students for the age group of 12 to 14 and 15 to 18.

Other Activities

1) Diabetes and Hypertension screening camp was organized on December 23, 2022.
2) Webinar on "Covid-19 and After Covid conditions: Cautions and care" was organized on July 24, 2021.

Annual numerical data of Health Center of the Year 2021-202					
S. No.	Details of Outpatient Department	In Patient and Day Care Cases	Covid Positive Cases	Trauma and Emergency Cases	Ecg and Other Rapid Investigations
1	10109	237	411	403	612

Dental OPD

Ortho OPD

OPD

Covid Vaccination

Physiotherapy

PM Jan Aushadi

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 both in print and digital format.These include books on all relevant subjects for teaching and researh. The LRC also boasts of a select collection of fiction, literature, and general interest books such as current events, sports, etc. to take care of the leisure and recreation reading needs of the users. 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 are 37,777 and E-Books are 8027 as on 31st March 2022.

Electronic Resources

In today's world of Information explosion, access to electronic information resources is essential, particularly in an academic environment. During the period under report, the LRC has subscribed and provided access to more than 2500+ e-Journals and 09 databases. Some of the major subscribed e-resources are Science Direct (5 subject collection), Taylor & Francis (Science and Technology package), American Chemical Society, Royal Society of Chemistry, IEEE/IET Electronic Library, SIAM, Lecture Notes in Computer Science with Computer Science e-Books, Scifinder –n, Scopus, Indiastat, CMIE Prowess, CSD Enterprise Campus, Grammarly, Turnitin Feedback Studio, etc.

Further, as a member to the E-Shodhsindhu Consortium, IITI academic community is getting access to more than 6110 e-Journals and some databases. The complete list of e-resources with hyperlinks is available on the LRC website for users' convenience.

Circulation And Reference Service

The library circulation service is automated using Koha-ILMS (open-source software). During the period 2021-22, a total of 12054 documents were issued/renewed to all categories of users for home study. User category wise circulation data is presented in below table:

	BTech	MTech	MSc	MS Research	Ph.D. & RA	Faculty	Others
Documents circulated for home study	4809	373	1134	206	3047	1658	827

The Library also provides user services like reference, new addition of books, orientation program for new students, inter library loan, subject guides, training session programs for e-resources , QR codes for various library services, etc.

Document Delivery Service Portal

The LRC arranges to get research articles that are 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 on library website.

Institutional Repository

The library has created an InstitutionalDigital Repository (http://dspace.iiti.ac.in:8080/jspui/) using a widely used open source DSpace software to collect, preserve, organize and provide access to IITI scholarly publications. During the period of this report, 96 Master's degree theses, 115 PhD thesis and 319 Newspaper clippings were uploaded to the repository.

Rfid System Implementation

A RFID System has been implemented in the LRC and it was inaugurated by Dr. Subhas Sarkar, Union Minister of State for Education, Government of India on December 25, 2021. This system has added value to the services of the library with regard to issue/return, tracking of documents and enhances security feature to the collection.

Figure 2. Inauguration of RFID System

Matrubhasha Collection

With an aim to promote Bhartiya languages and make literature in Indian Languages available to IITI community, the LRC initiated a unique Matrubhasha collection drive in September 2021 and requested IIT Indore community to demonstrate their love for the Matrubhasha by donating some books in their mother tongue. This Matrubhasha Collection section of the Library was dedicated to the community by Prof. Suhas S. Joshi, Director, IIT Indore on February 21, 2022 on the occasion of the International Mother Language Day. More than 500 books in 8 Indian languages (viz. Sanskrit, Telugu, Kannad, Odia, Marathi, Bengali, Gujrati and Hindi) were donated by IIT Indore faculty and staff members.

Figure 3. Inauguration of Matrubhasha Collection

Infrastructure

Library Shelves

The library continues to add new infrastructure for new LRC building to attract and facilitate the usage of its resources. This year the library procured 102 units of double side library shelves and get it installed on the second floor (book stack area) of the LRC.

Swadhyay

Creation and development of different reading spaces and other facilities are under process for new LRC building. Swadhyay (Self-study space) was dedicated to its users which provide conducive environment for self study. This space is independent from main LRC building and open from 6.00 a.m. to 2.00 a.m.

Lrc Services During Covid-19

The LRC team have worked very hard during the lockdown period of second wave of covid-19 to make the library services available to its users to the extent possible. During this period, the LRC has provided access of e-resources through RemoteXs to users. The LRC have arranged 177 research papers from other libraries and also provided 2544 similarity check reports to students and faculty. The LRC team has co-ordinated with students and hostel team to collect issued books for providing no dues to students.

राजभाषा हिंदी संबंधित किये गए कार्यक्रमों का ब्यौरा

1. हिन्दी पखवाड़ा 2021 का आयोजन

भारतीय प्रौद्योगिकी संस्थान इंदौर द्वारा राजभाषा समिति के तत्वाधान में 14 से 28 सितम्बर 2021 के दौरान हिन्दी पखवाड़ा का आयोजन किया गया।

14 सितम्बर 2020 को हिंदी दिवस एवं हिंदी पखवाड़ा का उद्घाटन समारोह का आयोजन किया गया। संस्थान की हरित कैम्पस की अवधारणा को परिलक्षित करते हुए अतिथियों का स्वागत पौधे देकर किया गया। तत्पश्चात सभी अतिथियों द्वारा दीप प्रज्ज्वलन कर कार्यक्रम की औपचारिक शुरुआत की गयी।

हिंदी पखवाड़ा 2021 के अंतर्गत निम्नलिखित प्रतियोगिताओं का आयोजन किया गया।

क्रमांक	प्रतियोगिता का नाम	दिनांक	प्रतिभागिओ की संख्य
1	हिंदी स्वरचित कविता पाठ	20 सितम्बर 2021	39
2	हिंदी निबंध लेखन प्रतियोगिता	22 सितम्बर 2021	39
3	वस्तुनिष्ठ प्रकार की लिखित परीक्षा (हिंदी राजभाषा के विषय में)	24 सितम्बर 2021	31

संस्थान के पुस्तकालय द्वारा हिंदी पखवाड़ा के अवसर पर हिन्दी पुस्तकों की विशेष प्रदर्शनी लगाई गयी ताकि अधिकाधिक लोग हिन्दी भाषा में उपलब्ध साहित्य एवं ज्ञान से परिचित हो सकें। संस्थान के संकाय सदस्य, छात्रगण तथा कर्मचारीगण सभी ने इस पुस्तक प्रदर्शनी का लाभ लिया तथा इसे सराहा।

दिनांक 28 सितम्बर 2021 को पुरस्कार वितरण एवं समापन समारोह का आयोजन किया गया। समारोह के मुख्य अतिथि के रूप में संस्थान के निदेशक (कार्यवाहक) प्रोफेसर नीलेश कुमार जैन उपस्थित रहे। विशेष अतिथि के तौर पर अधिष्ठाता (प्रशासन) महोदया सुश्री प्रीति शर्मा जी उपस्थित रही। सम्मानित अतिथि के रूप में कुलसचिव महोदय श्री एस.पी. होता उपस्थित रहे। कार्यक्रम की अध्यक्षता प्राध्यापक रजनीश मिश्रा, (संयोजक राजभाषा समिति) ने की।

मुख्य अतिथि द्वारा विजेता प्रतिभागियों को पुरस्कार एवं प्रमाणपत्र प्रदान किये गए। प्रतिभागियों को प्रोत्साहित करने के लिए समस्त प्रतिभागियों को सहभागिता प्रमाणपत्र भी प्रदान किये गए। अंत में श्रीमती शिल्पा चौहान के धन्यवाद ज्ञापन के साथ समारोह एवं हिन्दी पखवाड़ा 2020 का

राजभाषा हिंदी संबंधित किये गए कार्यक्रमों का ब्यौरा

भारत माँ के भाल पर सजी स्वर्णिम बिंदी हूँ, मैं भारत की अपनी बेटी आपकी अपनी हिन्दी हूँ। सभी कार्यक्रमों का संस्थान की वेबसाईट पर सजीव प्रसारण किया गया।

विश्व हिंदी दिवस–2022

संस्थान की राजभाषा समिति द्वारा दिनांक 10 जनवरी 2022 को विश्व हिंदी दिवस कार्यक्रम का आयोजन किया गया। इस कार्यक्रम में संस्थान के संकाय सदस्यों, छात्रों तथा कर्मचारियों द्वारा अनुसंधान पेपर को हिंदी भाषा में रूपांतरित कर उनपर व्याख्यान दिया गया। इनमे कूल 15 अनुसंधान पेपर पर संबंधित प्रतिभागी द्वारा व्याख्यान दिया गया। हिंदी रूपांतरित अनुसंधान पेपर को छपवाकर संस्थान के पुस्तकालय में प्रदर्शनी हेतु रखवाया गया जिससे अधिकाधिक छात्र हिंदी में अनुसंधान पेपर हिंदी भाषा में बनाने हेतु प्रेरित हो सके। इसके अतिरिक्त इस अवसर पर हिंदी कविता पाठ का भी आयोजन किया गया जिसमे संस्थान के संकाय सदस्यों, छात्रों तथा कर्मचारियों ने बढ़ – चढ़कर हिस्सा लिया। हिंदी में अनुसंधान पेपर प्रस्तुत करने वाले प्रतिभागियों को पुरस्कृत किया गया। कविता पाठ में भाग लेने वाले प्रतिभागियों को भी पुरस्कार प्रदान किये गए।

Administration

1. Staff Position:

As on 31st March 2022, 114 non-teaching staff have been appointed, as per the details given in the table below:

Group 'A' Officers - 21 Technical   staff   - 38

Other Administrative Staff - 55

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

Non-teaching staff - 03

No. of staff were relieved due to resignation/other reasons – 04

1.2. List of staff appointed between 1st April, 2021 and 31st March 2022 are as under:

S. No.	Name of Employee	School / Discipline / Center	Position / Designation	Date of Joining
1	Mr. Divyanshu Jain	Learning Resource Center	Library Information Assistant	09-Jun-21
2	Mr. Nipul Gordhanbhai Shihora	Learning Resource Center Assistant	Library Information	09-Jun-21
3	Ms. Apeksha Rajpurohit	Training & Placement	Junior Superintendent	28-Jun-21

1.3 List of Staff Promoted/upgraded between 1st April, 2021 and 31st March 2022 are as under:

S. No.	Name of Employee	School / Discipline / Center	Position / Designation	Promoted w.e.f.
1	Mr. Prashant S. Kulkarni	Infrastructure Development Office	Senior Engineer (Civil)	23-Sept-21
2	Mr. Pranay Chopra	Infrastructure Development Office	Deputy Executive Engineer (Electrical)	22-Dec-21
3	Mr. Vijayendra Shastri	Infrastructure Development Office+ Housekeeping	Assistant Registrar	20-Sept-21
4	Dr. Anand Petare	Central Workshop	Assistant Workshop Superintendent	30-Nov-21
5	Ms. Rajni Sharma	Health Center	Nursing Sister	27-May-21
6	Ms. Pooja Dutta	Purchase + Legal Cell	Assistant Registrar	20-Sept-21
7	Mr. Shailendra Kumar Jat	Infrastructure Development Office	Deputy Executive Engineer (Civil)	23-Sept-21

8	Mr. Roshan Bhatia	Finance and Accounts	Section Officer	20-Sept-21
9	Dr. Shilpa Raut	Health Center	Chief Medical Officer (NFSG)	04-May-21
10	Mr. Sunny Namdev	Physics	Senior Assistant	09-Sept-21
11	Mr. Rakesh Jain	Administration	Senior Assistant	09-Sept-21
12	Mr. Mayur Bangar	Finance and Accounts	Senior Assistant	13-Sept-21
13	Mr. P. K. Parthiban	Chemistry	Technical Superintendent	27-Aug-21
14	Ms. Pooja Tiwari	Health Center	Pharmacist	24-Dec-21

1.4 Details of Training Programs (Outside)

S. No.	Name of Employee	Post Held	Training obtained from	Training/Course	From	To
1	Mr. Nilesh Jadhav	Junior Superintendent	Arun Jaitley National Institute of Financial Management	PUBLIC PROCUREMENT (ADVANCED)	28-Jun-21	30-Jun-21
2	Mr. Sunil Chandanshive	Senior Assistant	Arun Jaitley National Institute of Financial Management	PUBLIC PROCUREMENT (ADVANCED)	28-Jun-21	30-Jun-21
3	Mr. Harsh Raj Singh Chauhan	Junior Assistant	Arun Jaitley National Institute of Financial Management	PUBLIC PROCUREMENT (ADVANCED)	28-Jun-21	30-Jun-21
4	Mr. Dushyant Pratap	Junior Assistant	Arun Jaitley National Institute of Financial Management	PUBLIC PROCUREMENT (ADVANCED)	28-Jun-21	30-Jun-21
5	Mr. Swapnil Sonp	Junior Assistant	Arun Jaitley National Institute of Financial Management	PUBLIC PROCUREMENT (ADVANCED)	28-Jun-21	30-Jun-21
6	Mr. Deepanshu	Junior Superintendent	ISTM, New Delhi	03 days Online workshop on "Pay Fixation"	01-Sep-21	03-Sep-21

1.5 Details of Training Programs (In-house)

S. No.	Topics of Training	Trainer/Instructor	Designation	Date	Officials participated in training
1	Inaugural Session	Mr. S.P. Hota	Registrar I/c	26-Nov-21	All Non-Teaching Staff
2	Leave Rules	Mr. T. Satyanarayana	Joint Registrar (Admin)	3 & 4 Dec - 2021	All Non-Teaching Staff
3	Budget & HEFA	Mr. Pradeep Agarwal	Joint Registrar (F&A)	10 & 11 Dec - 2021	All Non-Teaching Staff
4	R&D and CIIER	Dr. Kumar Gaurav	Assistant Registrar (R&D & CIIER)	17-Dec-21	All Non-Teaching Staff
5	Academic Affairs	Mr. Suresh Chandra Thakur	Assistant Registrar (Academics)	18-Dec-21	All Non-Teaching Staff
6	Works & Tender IDO	Mr. Vijayendra Shastri	Assistant Registrar (IDO)	12-Jan-22	All Non-Teaching Staff
7	Purchase Procedures other than Works & GeM	Ms. Pooja Dutta	Assistant Registrar (MMS)	21-Jan-22	All Non-Teaching Staff
8	Inventory and Store Management	Mr. S.P. Hota	Registrar I/c	28-Jan-22	All Non-Teaching Staff
9	Leadership Practices	Dr. Kumar Gaurav	Assistant Registrar (R&D & CIIER)	4-Feb-22	All Non-Teaching Staff
10	CCS (Classification, Control & Appeal Rules) 1965	Mr. Neeraj Kumar	Assistant Registrar (Academics)	11-Feb-22	All Non-Teaching Staff
11	Driving and Road Safety Considerations	Mr. Ramakant Kaushik	Chief Security Officer (Grade-II)	18-Feb-22	All Non-Teaching Staff
12	CCS (Classification, Control & Appeal Rules) 1965 - Part II	Mr. Neeraj Kumar	Assistant Registrar (Academics)	25-Feb-22	All Non-Teaching Staff
13	Work-Life Balance	Cdr. Sunil Kumar (Retd.)	Joint Registrar (FA & SA)	4-Mar-22	All Non-Teaching Staff
14	Noting & Drafting	Mr. S.P. Hota	Registrar I/c	11-Mar-22	All Non-Teaching Staff
15	Noting, Drafting & Office Procedures	Mr. Suresh Chandra Thakur	Assistant Registrar (Admin)	25-Mar-22	All Non-Teaching Staff
16	Allowances (TA/LTC/CEAS)	Mr. Pradeep Agarwal	Joint Registrar (F&A)	1-Apr-22	All Non-

17	English and Effective Communication for Professionals: Strategies, Discourse, and Practical Application	Dr. Ananya Ghoshal	Assistant Professor	8-Apr-22	All Non-Teaching Staff
18	An overview of RTI Act 2005	Mr. Suresh Chandra Thakur	Assistant Registrar (Admin)	3-Jun-22	All Non-Teaching Staff
19	Transport Allowance for Central Government Employees	Mr. Tanmay Harsh Vaishnav	Section Officer (F&A)	10-Jun-22	All Non-Teaching Staff
20	Disaster Management and Overview	Mr. Ramakant Kaushik	Chief Security Officer (Grade-II)	17-Jun-22	All Non-Teaching Staff
21	Management of Departmental Library	Mr. Rajesh Kumar	Assistant Librarian (Grade-I)	24-Jun-22	All Non-Teaching Staff
22	Abilene Paradox : Management of Agreements	Mr. Saroj Kumar Mallick	Executive Engineer (Electrical)	01-Jul-22	All Non-Teaching Staff
23	Expert Talk cum Motivational Session	Commodore (Dr) Manohar Nambiar	Registrar, IIT Hyderabad	15-Jul-22	All Non-Teaching Staff

Finance and Accounts

2.1 The year 2021-22 is characterized with the following Income and Expenditure:

(₹ in crores)

S. No.	Particulars	2021-2022
		Current Year
1	**INCOME**	
1.1.	Grants	114.92
1.2.	Academic Receipts	25.29
1.3.	Income from Investment	8.54
1.4.	Interest Earned	3.41
1.5.	Other Income	33.01
1.6.	Total of 1	185.17
2	**EXPENDITURE**	
2.1.	Staff Payments & Benefits	65.46
2.2.	Academic Expenses	18.91
2.3.	Administrative & General Expenses	20.91
2.4.	Transportation Expenses	0.32
2.5.	Repairs and Maintenance	2.79
2.6.	Depreciation	41.85
2.7.	Other Expenses	16.34
2.8.	Total of 2	166.58
3	Balance being excess of Income over Expenditure	18.59

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

(₹ in crores)

S. No.	Particulars	2021-2022		
		HEFA	Other Purpose	Total
2.1	Opening Balance of Grant-in-Aid Plan	26.78	29.29	56.07
2.2	Grant received during the year	64.70	106.68	171.38
2.3	Deficit under OH-31 being added from IRG	-	5.19	5.19
2.4	Total funds available at the disposal of the Institute	91.48	141.16	232.64
2.5	Grant utilized for Revenue Expenditure	-	99.57	99.57
2.5.1	Interest on Term Loan for HEFA	15.35	-	15.35
2.5.2	Repayment of HEFA Loan (75%)	50.39	-	50.39

2.6	Plan Grant after adjusting utilization for Income & Expenditure	25.74	41.59	67.33
2.7	Utilized for developing infrastructure, Buildings & Works & for Equipment's, and other Assets	-	31.22	31.22
2.8	Unspent balance as on 31.03.2022	25.74	10.37	36.11

2.3 Funds availability and status of utilization thereof:

During financial year 2021-22, against sanction of Revised Detailed Project Report (DPR) of ₹ 1,911.12 crores, a sum of ₹ 171.38 crores (For Recurring & non-recurring Purpose ₹ 106.68 crores + For HEFA Purpose ₹ 64.70 crores) were released by Ministry of Education and Deficit under OH-31 being added from IRG credited to Grant-in-Air ₹ 5.19 crores. The Internal income of the Institute reckoned during the year was ₹ 44.86 crores, after adjusting payment of 25% HEFA principal loan from IRG (Institute share) ₹ 11.98 cores and after considering the unspent balance as on 01.04.21 of ₹ 56.07 crores, the total funds available at the disposal of the Institute was of the order of ₹ 277.50 crores.

A sum of ₹ 31.22 crores have been utilized for the creation of Capital assets and a sum of ₹ 165.31 cores (For Recurring purpose ₹ 99.57 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 ₹44.86 crores transferred to Corpus Fund.

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

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

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

2.4.2 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.

2.5. Education assistance for children:

During the financial year 2021-2022, the Institute reimbursed a sum of ₹ 42,46,000/- 118 faculty and staff members against for education assistance according to Government of India norms.

2.6. 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.

2.7. 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 (in ₹)	Amount outstanding as on 31.03.2022 (in ₹)
1	House Building Advance	02	19,48,880	89,91,216
2	Car Advance	-	-	77,000
3	Two-wheeler advance	-	-	6,500
4	Personal computer advance	07	3,49,900	5,77,404
		Total	**22,98,780**	**96,52,120**

2.8 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 ₹ 10,97,273/- during financial year 2021-22. Care of Out-patient treatment is taken care mainly by the Health Center internally.

2.09 Fellowships/scholarships:

2.09.1. To Research Students:

During financial year 2021-22, 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	189	JRF- ₹ 31,000/- SRF- ₹ 35,000/-
02.	DST Funded (PHD)	33	
03.	CSIR Funded (PHD)	78	
04.	UGC Funded (PHD)	92	
05.	Institute Funded through MOE grant – M. Tech.	122	₹ 12,400/-
06.	Institute Funded through MOE grant – M. S. Research	41	₹ 12,400/-
07.	DBT – NCCS Pune	5	₹ 35,000/-

Merit cum Means Scholarship:

Institute has disbursed ₹ 1,34,98,192/- 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/disbursed ₹ 4,30,77,937/- as Remission of Tuition fees of Under Graduate Students of Depraved Class admitted in Academic Session 2021-22 as per Ministry of Education letter F. No. 24-2/2016 TS 1 dated April 04, 2016.

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

A. BALANCE SHEET AS AT 31ST MARCH'2022

(Amount in ₹)

SOURCES OF FUNDS	SCHEDULEAS	AS AT 31-03-2022	AS AT 31-03-2021
Corpus/Capital Fund	1	9,29,09,26,320	8,35,93,31,248
Designated/Earmarked/Endowment Funds	2	15,43,59,784	12,34,96,131
Current Liabilities & Provisions	3	3,71,59,69,394	4,29,67,02,488
TOTAL		**13,16,12,55,498**	**12,77,95,29,867**
APPLICATION OF FUNDS			
FIXED ASSETS	4		
A. Tangible Assets		9,39,51,66,561	8,53,21,73,071
B. Intangible Assets		3,76,96,022	4,34,99,732
C. Capital Work-In-Progress		47,37,67,960	95,49,74,024
INVESTMENTS FROM EARMARKED/			
ENDOWMENT FUNDS	5		
Long Term			
Short Term		5,75,571	5,75,571
INVESTMENTS - OTHERS	6	-	-
CURRENT ASSETS	7	2,86,99,62,108	2,80,33,48,531
LOANS, ADVANCES & DEPOSITS	8	38,40,87,276	44,49,58,939
TOTAL		**13,16,12,55,498**	**12,77,95,29,867**

B. INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH'2022

(Amount in ₹)

PARTICULAR		SCHEDULEAS	2021-2022	2020-2021
(A) INCOME				
Academic Receipts		9	25,29,76,202	20,29,33,380
Grants & Subsidies:		10	1,14,92,35,713	1,04,00,99,273
I. Grant Utilised for payment of Intereston				
Term Loan from HEFA	15,35,03,422			
ii. Grant Utilised for Revenue Expenditure	94,38,34,622			
iii. IRG Utilised for Revenue Expenditure	5,18,97,669			
Income from Investments		11	8,54,36,386	5,83,75,213

Interest Earned	12	3,40,60,991	7,44,59,952
Other Income	13	31,65,98,982	1,05,05,882
Prior Period Income	14	1,34,75,118	67,75,974
TOTAL (A)		**1,85,17,83,391**	**1,39,31,49,674**
(B) EXPENDITURE			
Staff Payments & Benefits (Establishment Exp)	15	65,45,98,650	54,10,79,060
Academic Expenses	16	18,91,20,212	17,91,15,960
Administrative and General Expenses	17	20,91,21,862	19,17,62,101
Transportation Expenses	18	31,48,192	21,68,764
Repairs and Maintenance	19	2,78,85,142	2,83,28,871
Finance Costs	20	15,35,68,757	13,60,25,231
Depreciation	4	41,85,13,266	37,14,60,138
Other Expenses	21	22,65,823	89,35,484
Prior Period Expenses	22	75,91,103	94,94,564
TOTAL (B)		**1,66,58,13,007**	**1,46,83,70,173**

Balance being excess of Income over Expenditure (A-B)			**18,59,70,384**	**-7,52,20,499**
Less: (i) Interest on grant (payable to MOE)			-3,40,60,991	-7,44,59,952
(ii) Defecit under OH-31 being Utilised from IRG			-5,18,97,669	-2,90,46,182
(iii) Payment of 25% HEFA Principal Loan from IRG (Institute Share)			-16,79,79,343	-11,98,48,542
(iv) Transfer to Corpus fund towards Internal Revenue Generation of 2021- 2022 (2020-21) (See Significant Accounting Policies - point no. 8.1)"			-44,86,09,675	-12,96,95,725
Total			**-51,65,77,294**	**-42,82,70,900**
Add: Amount transfer from Capital Fund				
- Depreciation	41,85,13,266		-	-
- Leave Encashment liability	8,04,46,821		-	-
- Gratuity liability	1,76,17,207		-	-
Balance being Surplus (Deficit) Carried to Capital Fund			**-51,65,77,294**	**-42,82,70,900**

Institute Functions

1. International Day of Yoga

On June 21, 2021 by following the mantra of "Yog se Sahyog" IIT Indore celebrated the 7th International Day of Yoga. The event was streamed live for all the fraternity who could not attend in person owing to the Covid protocol. The event was conducted by Dr. Omanand Guruji. Dr. Omanand is a merit holder throughout education and honoured with various Awards. His students came to Indore from 95 countries who become successful Yoga professionals. He served as President of Hindu University of America, Florida, USA. Currently he is serving as Honorary Patron of Paramanand University Trust and Paramanand Institute of Yoga Sciences & Research. The event saw a large participation and was attended by all the dignitaries including Prof. Neelesh Kumar Jain, Director (Officiating). The one hour event ended with a pledge to inculcate the habit of practicing Yoga on a daily basis. Later the participants, who have been practicing Yoga since before, shared their experience of well-being and benefits.

2. ATAL FDP on Sustainable Construction Technology conducted by IIT Indore

Indian Institute of Technology Indore organized a 5-day Faculty Development Program (FDP) on Sustainable Construction Technology from July 26 to 30, 2021, as a part of FDPs conducted by AICTE Training and Learning (ATAL) Academy. The online program was attended by 200 participants from 22 states and professional and academic backgrounds.

Prof. Sandeep Chaudhary, Program Coordinator and faculty at IIT Indore said "Construction industry has a long way ahead to achieve sustainability and this FDP will add few steps in the right direction. The online program focused on environmental challenges associated with construction industry and their solution with the help of latest sustainable construction technologies. In the course of 5 days, 14 experts from both industry and academia, imparted technical knowledge on various sustainable construction technologies. The diverse professional associations of the experts with reputed institutes, like IITs, NITs, BITS, IIIT, NICMAR, JK Cement and others including foreign universities of South Korea and Belgium, brought knowledge and experience from various aspects of the construction industry. The program also included a session on stress management, to help the participants deal with rising stress levels in the pandemic." The participants, during the valedictory ceremony, shared their experience and highly appreciated the FDP, its expert speakers and knowledge shared.

3. Vigyan Par Charcha conducted by IIT Indore

Rastriya Avishkar Abhiyan under Ek Bharat Shrestha Bharat, IIT Indore Team launched a program "Vigyan Par Charcha" in association with the State Education Department, Madhya Pradesh since January 13, 2021. This program is designed for students of Class 6 to 8 to develop their basic scientific concept as well as for teachers to develop their teaching skills by using Internet based tools and reduce stress level created due to online teaching. The program is being organized under the guidance of Dr. Niraj Kumar Shukla, Convener-Ek Bharat Shrestha Bharat and by their team.

Prof. Neelesh Kumar Jain, Director (Officiating) said "The growing viewership of the program shows the interest amongst the students and teachers towards Science. Such programs not only find the hidden talents but also improve the education system as it is intended for teachers as well."

4. Celebration of 75th Independence Day

IIT Indore celebrated the 75th Independence Day with great zeal and fervor. The occasion was marked by hoisting of the national tricolor by Professor Neelesh Kumar Jain, Director (Officiating). This time we are celebrating the 75th Independence Day as the Azadi ka Amrit Mahotsav and lot of events are being conducted by the Institute to participate in this grandeur celebration. Though we do not belong to the era of freedom struggle, but definitely we have a greater role in nation building. There are lot of disruptive innovations required in the field of climate change, cleanliness, energy storage, removal of technical illiteracy. We as an IIT community have a larger role to initiate such innovations."

The Institute has conducted Fit India Freedom run 2.0 to make a resolve to include physical activity for at least 30 mins daily in our lives i.e. Fitness ki Dose, Adha Ghanta Roz. Similarly, the community is actively taking part in singing the National Anthem and uploading their videos in the designated portal by Government of India. Quizzes emphasizing on the freedom struggle are being conducted.

Prof. Jain also inaugurated the green initiative of QR code of plants in the Institute campus for cataloging and sharing the plant kingdom information with use of latest technology. Earlier, the Institute had the inauguration of new facility, Drishti Bhavan, IITI Drishti CPS Foundation, on August 12, 2021 by Prof. Deepak B. Phatak, Chairman, Board of Governors.

5.   NSG conducts mock drill at IITI

26 Special Composite Group of National Security Guard conducted an exercise at IIT Indore on August 21, 2021. A total of 170 commandoes participated in the exercise along with local administration, local police, ATS, IB, State emergency services, State Disaster Management Forces, Fire and Medical Services. Apart from practicing the drills and procedures of NSG, the exercise was done to fine tune the coordination aspects with various agencies. It was aimed at honing and rehearsing Counter Terrorist drills so that optimum levels of Operational Preparedness are maintained to enhance the capacity of first responders.

Various emergencies were triggered simulating actual scenarios including medical and hostage situation. The commandoes performed various manoeuvers which included rappelling, forced entry, use of detonators thus thwarting the attempt of any possible destruction or hostage situation. The exercise commenced at 9:30 a.m. and lasted for 5 hours.

6. Celebration of Teachers' Day 2021

IIT Indore celebrated the Teachers' Day on September 5, 2021. Prof. Deepak B. Phatak, Chairperson, BoG was invited as Chief Guest for the event followed by the Distribution of Institute Awards for the Best Technology Development, Best Undergraduate Researcher, Best Teacher and Best Research Paper.

7. Visit of Army Student Officers to IIT Indore

IIT Indore hosted future Technical Officers of the Indian Army who are undergoing training at MCTE, Mhow on September 9, 2021. The visit was organized by Centre of Futuristic Defence and Space Technology (CFDST).

The student officers visited various labs and facilities of IIT Indore. It included laboratories of Civil Engineering, Computer Science Engineering, Mechanical Engineering, MEMS, Chemistry, Astronomy, Physics and Sophisticated Instrumentation Center. They were also given a brief introduction on the history and research activities of the Institute by Dr. Devendra Deshmukh, Dean of Academic Affairs. The student officers also interacted with the Faculty Members, Staff and Research Scholars. Further, they discussed methodology adopted by IIT Indore for research-driven teaching, innovation and application-oriented research. The student officers were eager to learn different technology employed in CNC machine, X-Ray machine, Raman Spectroscopy etc.

Dr. Indrasen Singh, Head, CFDST organized the visit on behalf of the Institute. He said "IIT Indore conducts various research activities related to varied field including defence. The proximity of both the Institutes would act in advantage to further collaborate in common interest and areas. We have a MoU with MCTE to have close working relationship in terms of scientific research, exhcange of know-how in various fields of expertise and sharing of facilities/resources between MCTE MHOW and IIT Indore."

8. IIT Indore celebrates Mahatma Gandhi and Lal Bahadur Shastri Jayanti

The day of Mahatma Gandhi and Lal Bahadur Shastri Jayanti was a plethora of activities for IIT Indore. The celebration started with the inauguration of nursery by Prof. Neelesh Kumar Jain, Director (Officiating), IIT Indore in the presence of Mr. S.P. Hota, Registrar In-charge. The structure of the 2000 sq. ft. nursery has been made from unserviceable materials and in-house efforts. It houses various plants including organic, medicinal and herbal saplings.

It was followed by a series of cultural program highlighting various important incidents and aspects of the life of Mahatma Gandhi and Shri Lal Bahadur Shastri. Students, Faculty, Staff, Families and Children actively participated in the event. During the occasion, Prof. Neelesh Kumar Jain said "We should endeavour to imbibe some of the qualities of Mahatma Gandhi and Shri Lal Bahadur Shastri. We need to follow the mantra of forgive and forget as was followed by Mahatama Gandhi. We may be able to rule any country by weapon or by force but if we have to win hearts then it can be done only through the spirit of truth and non-violence. We should work upon Swachh se Swasthya, the mandate of Mahatma Gandhi and the present government. The end should not justify the means hence we should be very careful in choosing the path leading to our destination. Shri Lal Bahadur Shastri has also had a great impact on the country. He had sown the seeds of green revolution through Jai Jawan Jai Kisan."

As part of an outreach programme for local development in line with the Atmanirbhar programme of the Government of India, Centre for Rural Development (CRDT), IIT Indore organized special Atmanirbhar stalls in the Takshila Lecture Hall Complex. These stalls were used for display and sale of organic and handmade products by the local tribal villagers of Simrol-Choral area and Khadi & Village Industries. It also included Fabric with hand block print Handloom and Classical Music design by Huda printers and crafters, handmade toys by National Leather Arts, Social and Rural development by Yashvi foundation, Handloom cluster Kasrawad Art Cluster and MP garments and batik prints, Supari Art and Kalakriti. A special display of books on the Life and Teachings of Mahatma Gandhi was also organized in the Learning Resource Centre of the Institute. Dr. Sandeep Choudhary, Convener CRDT apprised the audience on the vision of CRDT of providing a platform to local artisan and Collaborative Research Activities to develop products and technologies for rural people.

9. IIT Indore to conduct 9th convocation in hybrid mode

IIT Indore organized its 9th convocation on 9th November 2021 with Principal Scientific Adviser to Govt of India Prof. K. Vijay Raghavan gracing the occasion as the Chief Guest. Shri Amit Khare, Advisor to the Hon'ble Prime Minister was the Guest of Honour and Prof. Deepak B. Phatak, Chairperson, BoG presided the ceremony. In this convocation total number of 498 students received their degrees which was largest number of the students graduating from IIT

Indore till now. There were 2 recipients of gold medal (i.e. President of India and Buti Foundation), 8 recipients for Institute Silver Medals in different categories and a recipient of Best BTech project award. There were 4 female students of 11 recipients of medals and awards. This convocation was organized in hybrid mode in which around 270 graduating students attended it in person and others online.

10. Celebrations of Constitution Day on 26th November 2021

The Institutecelebrated the Constitution Day of India on 26th November 2021 to commemorate the day of adoption of our Constitution, a mass reading of the Preamble of the Constitution was organized at IIT Indore. Information about the two portals developed by the Ministry of Parliamentary Affairs were also circulated for wider publicity among the IIT community, including students, employees, families and their friends.

11. Madhya Pradesh Vigyan Sammelan and Expo. 2021

On 25 Dec, 2021, Hon'ble Minister of State for Education, Government of India Dr. Subhash Sarkar visited IIT Indore Campus, as a Chief Guest for the valedictory ceremony of Madhya Pradesh Vigyan Sammelan and Expo.2021.

Minister inspired faculties to link ancient India's knowledge in educational system. He also added that NEP 2020 aims to enhance the new learning paradigm through the adoption of new education technologies or developing available in-house skills. National Education Policy 2020 has laid special focus on the use of technology in the teaching-learning process. It emphasizes online learning with proper support of digital infrastructure and bridging the present digital gap. He concluded his talk with many congratulations IIT Indore, MPCST and Vijnana Bharti for successfully conducting the MPVS-2021.

He also chaired an Important discussion meeting regarding academics, research & devolvement, international affairs, patents, incubation, entrepreneurship, Industry relations and general administration with all Deans, Registrar, and higher officials of IIT Indore. He also discussed the NEP plans pertaining to IIT systems, Technology development and make in India. Dr. Sarkar deliberated the initiatives of IIT Indore for the implementation of NEP-2020 and how IIT Indore is contributing towards the vision of Prime Minister Shri Narendra Modi Ji to make India Vishwa Guru. Dr. Mohan Yadav, Hon'ble Minister of Higher Education, Govt. of MP praises the support provided by IIT, Vigyan Bharti and MPCST to implement NEP in Madhya Pradesh, Dr. Mohan also added that ideas of the common man also creates new inventions.

He visited hi-tech buildings, labs, Kshipra Residential Complex, Nursery & KV School, Central Workshop, HVAC Plant, Hostels, Central Dining Hall, MP region's biggest pillarless Auditorium, Health Center, Abhinandan Bhavan and Learning Resource Center. He has Inaugurated the RFID System Learning Resource Center (Library).

The event was concluded with the vote of thanks by General Secretary of MPVS-2021 Dr. Santsh Kumar Vishvakarma, Faculty of IIT Indore.
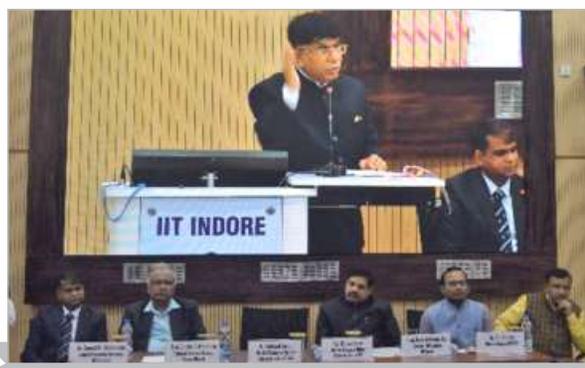
12. World Hindi Day-2022 (January 10, 2022)

The "World Hindi Day-2022", was organized by the Institute Rajbhasha Samiti at IIT Indore. Prof. Neelesh Kumar Jain, Director (Officiating) graced the occasion as the Chief Guest. During his address, he emphasized the need to carry out the research and teaching activities in Rajbhasha and also in various Indian regional Languages. Citing examples of excellent research work done in China and Japan in their own native languages, he stressed upon the fact that language is not a limiting factor in achieving excellence in teaching and research in science and technology.

Dr Rajesh Kumar, Associate Professor and Convener, Rajbhasha Samiti delivered the welcome address and highlighted the importance of Rajbhasha. He demonstrated the power of Rajbhasha in making the learning process simple and lucid with posters designed on scientific topics by the Research Scholars. The event was also graced by Shri S.P Hota , Registrar In-charge. During his address, he highlighted the initiatives taken by the Institute in promoting the use of Rajbhasha such as use of bilingual signages, name boards, honour boards, letter heads and substantial increase in correspondence in Rajbhasha, cash incentives awarded for promoting Rajbhasha and also about the future plans for promotion and implementation of Rajbhasha to make it globally significant.

The event culminated with inauguration of Poster Presentation Competition at Library and Resource Centre. The participants and guests were also presented with coffee mugs printed with various themes and research scripts in Hindi as mark of appreciation. There was overwhelming response by the entire IIT Indore community.

13. Celebration of 73rd Republic Day at IIT Indore

IIT Indore celebrated the 73rd Republic Day with great zeal and fervour. The occasion was marked by hoisting of the national tricolor by Professor Neelesh Kumar Jain, Director (Officiating). In the prevalent pandemic situation, the physical presence of the guests was limited, and the event was webcasted live on the Institute website for the community.

Prof. Jain addressed the community and appreciated the efforts of the Institute during the pandemic situation. He said "I congratulate everyone on the occasion of 73rd Republic Day. We have done very good work in the last 25 months. Whilst we have done exceedingly well in the fields of research and academics, we have significantly increased our outreach and inclusiveness. We have signed 17 international and national MoUs and have been granted 11 patents. The majority of the students of KV IIT Indore belong to nearby villages and areas which shows our commitment towards inclusiveness. All of this has possible due to hard work, patience and perseverance of the entire IITI community. It should be our endeavour to focus now on our future goals. The Institute should focus on developing patents, incubation & start-up, quality publication."

14. Professor Suhas S. Joshi takes over as the Director of IIT Indore

Professor Suhas S. Joshi, Department of Mechanical Engineering, IIT Bombay has taken over as the second regular Director of IIT Indore form January 31, 2022. He takes over the charge from Professor Neelesh Kumar Jain who was the Officiating Director since Professor Pradeep Mathur relinquished his term as the Director on December 31, 2019.

15. Celebration of 13th Foundation Day of IIT Indore

Indian Institute of Technology Indore celebrated the 13th Foundation Day of the Institute on February 17, 2022. A series of event was planned during the day. Shri Shankar V. Nakhe, Director RR CAT was the Chief Guest. Prof. Deepak B. Phatak, Chairman, Board of Governors was the Guest of Honour and Prof. Suhas Joshi, Director, was present during the event.

The event started with the inauguration of Pradhan Mantri Jan Aushadi Kendra, which is one of the largest medicine supply chain networks. IIT Indore is the first IIT to open such a centre for the benefit of common people. The Kendra will provide medicine and surgicals at subsidized price which will not only benefit the community but also the locals. Magnum Opus 22, annual Alumni meet, flagship event of the Alumni Cell was declared open. Various talks and discussions will happen during the next few days involving the Alumni and IITI community.

Shri Nakhe highlighted the achievements of RRCAT and said "RRCAT has been associated with IIT Indore from the very first day. In the formative years of IIT Indore, RRCAT community was associated with IIT Indore for the development of labs, lab manuals and certain set-ups. Shri Nakhe congratulated all the stakeholders and community of IIT Indore to give wings to the students to fly, to think big and venture into the world with great knowledge. Institute Awards were also given to the non-teaching staff during the event.

16. National Science Day 2022

As an outreach event, Indian Institute of Technology Indore conducted a series of event during the National Science Day. The events, conducted by the Department of Chemistry, included online Science Drawing competition and Science model and Quiz competition held on February 27 & 28, 2022 respectively. Over 200 students from various schools of Indore participated in the drawing competition. Several teams of students from SICA School (No. 2 and 3), Army Public School, The Millennium School, and Kendriya Vidyalaya IIT Indore participated in Science Model and Quiz competition, where teams presented their innovative idea to find solution to the societal problems. The key theme of the program was to cultivate interest of young school students towards pursuing a career in science through interactive approach.

17. IIT Indore celebrated International Women's Day

IIT Indore celebrated the International Women's Day in a 2-day program i.e. March 7 & 8, 2022, felicitating all the women community and recognizing their immense contribution in the path of progress of the Institute. The celebration was also conjoined with Jan Aushadhi Diwas on March 7, 2022. The event was conducted by the Women's Cell in association with the Office of Students Affairs. The theme of the event for "Gender Equity for Sustainability". Dr. Kiran Bala, Convener, Women's Cell welcomed the guests and acknowledged the support provided to the women on their journey of success. The Chief Guest for Jan Aushadhi Diwas was Dr. Pragati Gupta, Ayush Medical Officer, PHC Simrol.

The day also included talks by Dr. Nishad Fathima from CSIR-CLRI on "Science pursuits through the lens of a women scientist", Dr. Kalpana Nagpal from Amity University on "Gender equity: a new motivational way ahead" and Dr. Shweta Kaushal from IIM Indore on "Women leaders: the key to sustainable change". Sanitary Pads were also distributed to the labourers working at the campus in collaboration with Pradhan Mantri Jan Aushadhi Kendra (M/s Mishika Pharmaceuticals Pvt. Ltd.).

Material Maintenance Store (MMS)

Statement of activities of Material Management Section for the Financial Year 2021-2022 till March 31, 2022

S.No.	Details	2021-22	Value ( )
1.	Total Indent Issued	993	Non-Project- 603 Project- 390
2.	Total Purchase Order Issued	1491 PO- 715 Total GeM Order (including direct order by user) - 776 (52% Order placed through GeM)	Total Po Value 31,97,80,160/- PO 27,98,69,160/- e-procurement on GeM 3,35,15,814/- Direct Purchase through GeM 63,95,186/-
3.	Letter of Credit	02	16,66,281/-
4.	Import of Materials (Equipment+Consumables)	25	92,39,803.00
5.	Total Indigenous Orders	961	30,41,45,171.00
6.	LD Charges deducted	LD on PO Bills- 8,55,679.29 LD on GeM Bills - 24,724.23	8,80,404.00
7.	Old EMD Refund processed	53	1,23,68,100/-
8.	PBG Received	27	1,62,90,182/-
9.	PBG Returned (Expired)	57	1,52,49,598/-
10.	Export of Spare parts for Repairs	02	Z Scanner RMA 18-424 spar part of FESM Export of sample to brazil.
11.	Scrap Sales	03 nos. (Automobile + Packing Materials)	2,52,551/-
12.	Stock Entry Till 31/03/2022		

Direct Purchase Stock Entry Data 2021-22

Consumable/ Non-Consumable	Total Entry No.	Total Amount
PO/DP/GeM	11929	25,73,67,409.7/-

Purchase Order Stock Entry Data 2021-2022

Consumable/ Non-Consumable	Total Entry No.	Total Amount
Purchase orders Stock Entry	4100	18,89,00,167.7/-

GEM Order Stock Entry Data 2021-22

Consumable/ Non-Consumable	Total Entry No.	Total Amount
Total Stock Entry	1546	3,56,58,172.23/-

Yearly Statistical Report of CPPP

Financial Year	2021-22	2020-21	2019-20	2018-19	2017-18	4 Years
Organization	No of Tenders	No of Tenders	No of Tenders	No of Tenders	No of Tenders	No of Tenders
Indian Institute of Technology Indore	73	111	258	191	16	649
Total	73	111	258	191	16	649

Yearly Statistical Report of GeM

Financial Year	No of Order	Value of Procurement on GEM (INR)
FY 2017-2018	10	44,09,088.00
FY 2018-2019	85	1,74,52,687.00
FY 2019-2020	436	4,39,20,775.00
FY 2020-2021	431	9,26,48,214.00
FY 2021-2022	776	3,99,11,000.00

Graphical Growth on GeM Procurement

● **No. of Orders**
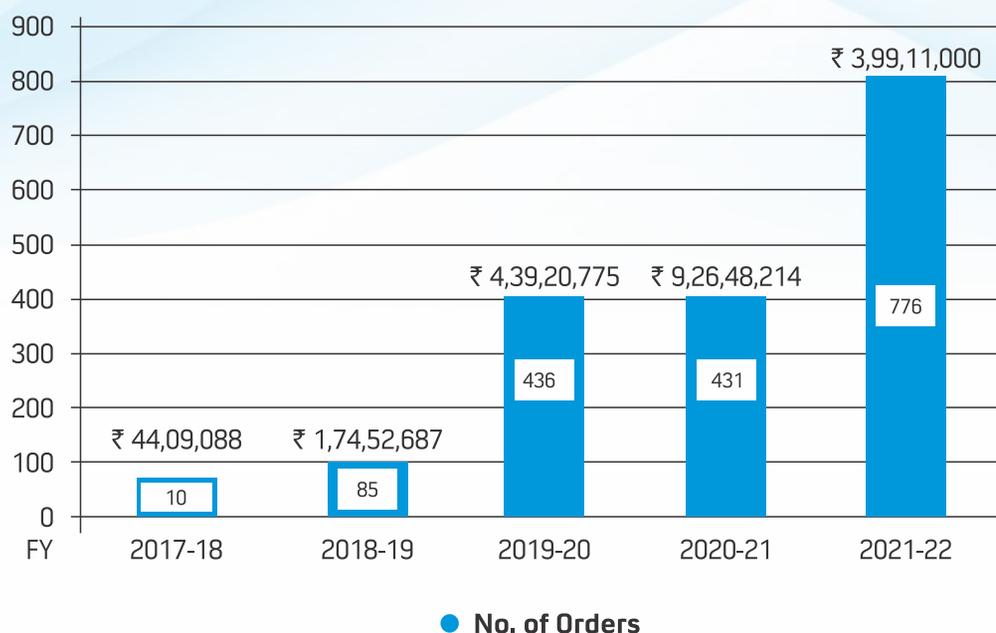
Major Saving of Expenditure on e-Procurement:

Details of Procurement	Estimate Cost (₹)	GeM Order Value (₹)	Saving of Expenditure (₹)
Desktop Computer (150 Nos) for LRC	₹ 1,05,00,000/-	₹ 77,01,750/-	₹ 27,98,250/-
Nalanda Auditorium Hall Furniture	₹ 4,80,00,000/-	₹ 1,69,28,280/-	₹ 3,10,71,720/-
Backhoe Loader for central stores	₹ 30,60,000/-	₹ 27,86,490/-	₹ 2,73,510/-
Total Saving of expenditure			**₹ 3,41,43,480/-**

Achievement of MMS Activities:

a) Set up of Pradhan Mantri Bhartiya Jan Aushadhi Kendra at IIT Indore:

b) Online Indent Module & Stock ledger module: updation of online Indent module and stock module to maintain the assets.

c) Procurement of Backhoe Loader for central stores through GeM BOQ Bidding : The Backhoe loader is purchase for central stores for daily routine work and requirements of different user departments.

d) Implementation of Hindi language in Office working for daily routine procurement file.

e) Standardization of Furniture for all teaching & Non-Teaching staff /Students is under process.

f) Opening of Allied services & Kiosk services in the Campus.

g) Online Procurement on GeM, CPPP listed IITI as Major Entity with DSC of MMS, Finance, Administration, R&D members.

Policy Matters:

a) MoU between GeM and IIT Indore: MoU has been signed with GeM for developing advanced version of GeM including development of mobile app with participation from the students and faculty members of IIT Indore.

b) Scanning and Digitization of Official Documents/Records: The subject order has been placed to the lowest responsive technically qualified offer for facilitating scanning and digitization of office records is 5,80,000/- for 10 Lakh Pages @ .58 per page including A0, A1, A3, A4, Legal etc. inclusive of GST. The operation activity has been started for scanning and digitization of official documents.

c) Updation in DSIR & PAN Record: After rigorous follow-up, the details of the competent authority and Simrol address are updated in the DSIR & PAN card of IITI for clearance of import & export shipment.

d) Revision in MM & Stores: Forms are revised incorporating the GFR clauses and GeM Order.

e) GST Certificate: Initiated a form for issuance of GST Certificate against direct purchase for research purpose.

f) Bid Openers on CPPP: Member finance/admin/R&D have been taken on board for online bid openings on CPPP.

Miscellaneous- Time-Bound Task:

1. Convocation 2021 - Proactively involved in Event Management Services including supply of Structure, Services, Facilities for Convocation function, Printing of Invitations and Convocation Reports etc.

2. Procurement of Desktop computer (Qty 100 nos.) within timelines i.e. One Month of Computer science Engineering Department.

3. Settlement of old advances for capitalization of the assets.

4. Refund of old pending EMDs to respective bidders.

5. Return of old/expired Performance Bank Guarantee.

6. Furnishing of Nalanda Auditorium Hall & Seminar Hall.

7. Active support to facilitate the requirement for various events of TEQUIP/Fluxes.

8. Active participation and coordination for Foundation Day Celebration & Alumni Meet.

9. Active participation in recruitment activities such as timely publication of recruitment advertisement, scrutiny of application and invigilation duty etc.

10. Finalization of Accounts: Submission of order details with delivery & installation status, LC status, submission of bills etc.

Various Kiosk/Outlet services started in Campus:

The captioned subject services are started in campus to facilitate the students, staff, faculty members / IITI Community.

1. Photocopy, Printing & Binding Shop in LRC Building - M/s. RAVECHI SEROX & STATIONERY

2. Tea/Coffee and Snacks shop - M/s. Radhe Gopal Corporation, M/s. A.S. Canteen and M/s. My Village Coffee Shop

3. Juice Shop Service - M/s. Sainath Juice Point

4. New Vegetable & Fruit Counter.

5. Salon/Barbar Shop (Male & Female Both)

Conducted Training Session for Institute officials:

a) Organized Training session on "MSME, Start-up and Make in India Schemes & Roles in Procurement of Goods, Services and Works: The Training session was organized on "MSME, Start-up and Make in India Schemes & Roles in Procurement of Goods, Services and Works" on December 20, 2021 by MMS and the Guest speaker was Mr. Gaurav Goyal, Assistant Director, MSME. The session was attended by 70 persons offline and 10 persons online of various sections/segments of the institute and by other institutes and organizations such as IIM Indore&Airport Authority of India, Indore.

b) Conducted Training Session on GeM for Institute officials: The Ministry of Education organized a Training for officials of autonomous bodies, institutions etc. under MOE by GeM on "Procurement of Goods and Services" by Mr. Suraj Sharma through Online mode on January 19, 2022. The session was attended by around 1000 person's online of various Institutions like IITs, NITTRs, IIITs, KVS, NVS, CBSE, NCERT, etc.

IIT in News

IIT Indore and DAVV ink pacts with AIGGPA over public policy, governance

आइआइटी इंदौर व आरआरकैट मिलकर करेंगे शोध कार्य

IIT-I sets up DRISHTI in Interdisciplinary Cyber Physical Systems

Army student officers see facilities at IIT-Indore

499 students step out with IIT degr[ee]

आइआइटी इंदौर में हो रही हरियाली की 'इंजीनियरिंग'

IIT-I develops low-cost coloured bricks for affordable rural houses

NO PAINT OR PLASTER NEEDED

Army student officers see facilities at IIT-Indore

IIM-IIT Indore's first joint master's degree course launched

IIT, CIMEI join hands for tech support to startups

आंत्रप्रेन्योर को आइआइएम और आइआइटी दे रहे आत्मनिर्भरता का

IIT Indore faculty represents South Asia at Stanford University

OUR STAFF REPORTER
Indore

IIT Indore maintains position in World University Rankings

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Indore

IIT Indore is 4th amongst the Indian universities

'There's a need to link ancient Indian knowledge with education system'

MP Vigyan Sammelan ends on a high note

OUR STAFF REPORTER
Indore

आइआइटी में जलवायु परिवर्तन और पर्यावरण पर मंथन शुरू

IIT-I gets patent for design invention

Professor Of The Institute Gets Another Individual Patent

Times News Network

RARE FEAT

योग से सहयोग के मंत्र का अनुसरण

इंदौर (आरएनएन)। योग से सहयोग का मंत्र का अनुसरण करते हुए आईआईटी इंदौर ने 7वां अंतर्राष्ट्रीय योग दिवस सेमिनार को मनाया।

आईआईटी इंदौर में काउंटर टेररिस्ट ड्रिल का पूर्वाभ्यास

इंदौर ॥ राज न्यूज नेटवर्क

राष्ट्रीय सुरक्षा गार्ड के 26 सदस्य कमांडो ग्रुप ने शनिवार को आईआईटी इंदौर में एक अभ्यास किया।

IIT-I prof bags National Bio Entrepreneurship Award, 2021

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Indore

REQUIREMENTS FOR B.E.d
- Principal • Professors
- Associate Professors • Assistant Professors
- Librarian • Sports Incharge, For

College Of Education Indore M.P.

IIT-IIM Indore joint start-up summit will be held online

'Rananeeti-The Case Study Challenge' to be introduced this year

OUR STAFF REPORTER
Indore

The seventh edition of the i5 Summit, virtually to be hosted by IIM-Indore and IIT-Indore, will be held from August 20-22.

Start-up Expo, 'Chai pe Charcha'

आइआइटी इंदौर विश्व रैंकिंग में 84वें स्थान पर

इंदौर। टाइम्स हायर एजुकेशन की वर्ल्ड यूनिवर्सिटी इमर्जिंग इकोनॉमी रैंकिंग-2022 में भारतीय प्रौद्योगिकी संस्थान (आइआइटी) इंदौर को 84वीं रैंक मिली है। 2021 में संस्थान 79 रैंक पर था।

IIT-Indore first IIT to start PM Jan Aushadhi Kendra

This Kendra will provide medicine and surgicals at subsidised prices, which will not only benefit the institute community, but also locals: IIT-Indore said in a press release

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Indore

COLLABORATIVE ACTIVITIES

'VERY GOOD PERFORMANCE'

MAJOR PLANS UNDERWAY

ALL IN IIT INDORE GET THE JAB

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Indore

Indian Institute of Technology-Indore has probably become the first educational institute in the state to get all inhabitants, including students vaccinated.

While many teaching and non teaching members received the second jab of the Covid 19 vaccine, most of the students had got the first shot of late.

IIT Indore has organised a special vaccination camp on the campus for students and staff members.

The institute claimed that all in residential campus are now vaccinated and those outside the campus have also been suggested to get vaccination done.

शोध — नीदरलैंड्स-जापान के शोधकर्ताओं के साथ मिलकर किया काम

आईआईटी इंदौर ने खोजी कोविड की नई दवा

IIT-B faculty Suhas Joshi is new director of IIT Indore

IIT-Indore to give tech boost to traditional toy sector in state

IIT, CIMEI join hands for tech support to startups

आइआइटी छोटे संस्थानों को आगे बढ़ाने में करें मदद

'Ek Bharat Shrestha Bharat' unit visits 4 schools

IIT-I team distributes education & health kits

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The IIT-Indore team led by Dr Niraj Shukla and Dr Mrigendra Dubey along with SP Hota, distributed education and health kits among government school students

5 IIT-I students bag Young Scientist Congress Award

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Indore

आईआईटी इंदौर की टीम ने 3 ऐसे अणु खोजे, जिनसे फ्रेजाइल एक्स सिंड्रोम जैसी दुर्लभ बीमारी के इलाज में मिलेगी मदद

आइआइटी इंदौर देश के पहले माइक्रोप्रोसेसर वेगा से विकसित कर रहा ड्रोन

उज्जैन में खुलेगा आईआईटी इंदौर का सेटेलाइट कैंपस : डॉ. यादव

आसपास की औद्योगिक इकाइयों को शोध कार्य में करेगा मदद

IIT Indore faculty selected national respondent for Himalayan glaciers

BY STAFF REPORTER

आईआईटी इंदौर जल्दी शुरू करेगा बायोमेडिकल इंजीनियरिंग में एमटेक

In Covid times, IIT-I gets 5 patents for research work

KV IIT gets sanction up to Class 9

Indore: Kendriya Vidyalaya (KV) on IIT-Indore campus has received sanction up to Class IX for academic session 2021-22 starting June 21st.

IIT-I, Vijgyan Bharti to hold MPVS-2021

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Indore

हाइड्रोजन फ्यूल के उपयोग पर कोर्स करा रहा आइआइटी इंदौर

इंदौर। मानव संसाधन विकास मंत्रालय के सहयोग से भारतीय प्रौद्योगिकी संस्थान (आइआइटी) इंदौर में यूज ऑफ हाइड्रोजन फ्यूचर फ्यूल विषय पर पांच दिनी शॉर्ट टर्म कोर्स कराया जाएगा। इसकी शुरुआत 20 दिसंबर को होगी। इसमें हाइड्रोजन का उपयोग वाहनों में कैसे हो सकेगा, इस पर विस्तार से बात होगी। कोर्स में प्रवेश प्रक्रिया 19 दिसंबर तक चलेगी। इसके लिए आइआइटी की वेबसाइट पर आनलाइन आवेदन करना होगा। कार्यक्रम आनलाइन माध्यम से होगा। कोर्स में प्रवेश लेने वाले प्रतिभागियों को ई-सर्टिफिकेट दिया जाएगा। इसमें बीटेक, एमएससी, एमटेक और पीएचडी करने वाले प्रतिभागी शामिल हो सकते हैं। इस क्षेत्र में शोध करने वाले भी आवेदन कर सकते हैं। कोर्स में प्रतिभागियों को पढ़ाने के लिए दो विशेष प्रोफेसर शामिल होंगे।

IIT-I developing surveillance system to detect forest fire

IIT Indore ranked 396ᵗʰ in QS World University Rankings 2023

In yet another matter of great pride to Indore, IIT Indore has been ranked 396ᵗʰ in the QS World University Rankings 2023. It is 9th 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 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. 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.

Campus Infrastructure Development

The Infrastructure Development Office constructed and developed various buildings, services, and infrastructure facilities in the campus.

Building/ Services completed during the year :

1. Nalanda Auditorium with AV facilities
2. Kshipra Residential Complex
3. Indoor Sports Complex
4. Vehicle Covered Parking
5. Central Air-Cooling facilities
6. Construction of Permanent sitting benches
7. Providing and fixing raised flooring in the Computer & Information Center
8. Construction of front canopy shed, compound gate at Kshipra Residential   Complex
9. Road marking & Kerb stone painting of Campus roads
10. Construction of Automatic Sliding gates at Gate no. 1B at Road No. 1
11. Toughene
12. Interior Furnishing of Drishti Bhavan (Taste Buds) for TIH activities
13. Repairing & Painting work at School Building at IIT Indore

Details of Completed Projects/ Works:

1. Nalanda Auditorium with AV facilities

Date of completion: 15.04.2021

Configuration – G +2

Brief Description: The Nalanda auditorium having capacity of more than 2000, & the same is one of the largest in Central India.

Nalanda auditorium is equipped with latest AV facility with special stage lighting provision. The height of the auditorium is 22m. A unique feature of the auditorium is that the slab is supported on PT beam structure and there is NO column throughout its span of 45 m.

2. Kshipra Residential Complex

Estimated Cost – Rs. 29.56 Crs

Built Up area – 10000 sqm.

Date of Completion – 31.05.2021

Configuration – G +6

Brief Description: The KRC is a residential facility comprising 27 2BHK units and 27 3 BHK units for staff and faculty members of IIT Indore. It also has a common hall on the ground floor for the community members.

3. Indoor Sports Complex

Estimated Cost – Rs. 12.63 crores

Built Up area – 4,257 sqm

Date of Completion – 03.05.2022

Brief Description: a) Indoor Badminton Court (06 numbers)

b) Indoor Basketball Court – (02 numbers)

c) Viewing gallery capacity is 580 numbers (Basketball & Badminton Court)

d) Gym

e) Squash Court (03 numbers)

f) Swimming pool of Olympics size (50 meters x 25 meters) (Capacity of viewing gallery -288 Nos.)

g) Outdoor Volleyball Court

h) Outdoor Basketball Court

4. Vehicle Covered Parking in front of JC Bose

Estimated Cost – Rs. 29,92,400

Built Up area – 640 sqm

Date of Completion – 19.02.2022

Brief Description: To Facilitate the Parking facilities for the IITI community

5.   Centrally Air-Conditioning Facilities

Estimated Cost – Rs. 29.42 cr

Date of Completion –

Brief Description: Laboratories, Offices, Learning Resource Center & Lecture Hall Complex are fully equipped with Central Air-Cooling facilities connected by the Central HVAC Plant

6.   Construction of Permanent sitting benches at bus stops (E-Vehicles) at IIT Indore

Estimated Cost – Rs.3,53,010

Date of Completion – 15.06.2021

Brief Description: To facilitate students, faculties and staff members

7.   Providing and fixing raised flooring in the Computer & Information Center (Hub building) at IIT Indore

Estimated Cost – Rs.12,94,084

Built Up area – 200 sqm

Date of Completion – 04.02.2022

Brief Description: The raised flooring is done to provide an elevated structural floor above a solid substrate (often a concrete slab) to create a hidden void for the passage of mechanical and electrical services.

8. Construction of front canopy shed, compound gate at Kshipra Residential Complex at IIT Indore

Estimated Cost – Rs.6,72,501

Built Up area – 70.43 sqm

Date of Completion – 05.03.2022

Brief Description: To protect the entrance foyer from rain and direct sunlight and also to restrict the rain water entry in lift area.

9. Road marking & Kerb stone painting of Campus roads at IIT Indore

Estimated Cost – Rs. 18,24,500

Date of Completion – 08.11.2021

Brief Description: To guide and control traffic within the campus roads and kerb stone painting done for day and night visibility, with different color combinations as per requirement/design

10. Construction of Automatic Sliding gates at Gate no. 1B at Road No. 15 at IIT Indore

Estimated Cost – Rs. 10,81,450

Date of Completion – 27.08.2021

Brief Description: To control the traffic and movement of vehicles by security personnel by providing automated system

11. Interior Furnishing of Drishti Bhavan "Office of IIT Drishti CPS Foundation) for TIH activities at IIT Indore

Estimated Cost – Rs. 8,88,060

Built Up area –   405.5 sqm

Date of Completion – 28.06.2021

Brief Description: Setting up of Drishti Bhavan for TIH activities

12. Repairing & Painting work at School Building at IIT Indore

Estimated Cost – Rs. 5,77,565

Built Up area – 8628 Sqm.

Date of Completion – 23.07.2021

Brief Description: The building was occupied in the year 2016-17. The painting was got damaged at various locations. The painting was done enhance the life of building.

Hostel

A.P.J. Abdul Kalam Hostel is the first Hostel at IIT Indore 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 is having 98 units with capacity of accommodating total 490 students. Each unit has five bedrooms with single occupancy for each room. It also has a furnished living area, common kitchen, two toilets and two washrooms. IIT Indore ensures that students from different states, languages and different departments are allotted in a unit to promote inter-disciplinary approach in study and research and national bonding among them. All the hostels are also equipped with solar hot water facility and APJ Hostel is centrally air conditioned.

The Hostel Department is headed by Dr. Lalit Borana, Chief Warden who is assisted by Mr. Digant Karve, Senior Assistant, Chief Warden Office. Each Hostel is Headed by a Warden with assistance of Supervisor and Attendant. The details of Hostels and are as follows: -

Hostel No.	Hostel Name	Hostel Type (Girls/Boys)	Warden/Warden In-charge	Associate Warden
01	APJ Hostel (Avul PakirJainulabdeen 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 Sanjeevan Maurya	–

Guest Rooms/Units in Hostel

The Hostel also has guest house facilities to cater for 100 guests. The guest rooms provide facilities which include like smart LED TV, Sofa Set, Center Table, Cooler, Microwave, Electric Cattle, Mattress, Blanket, Bedsheet, Pillow, Bath Wears Cloth Stand etc.

Hostel Photos

Hostel No. 01 – A.P.J. Abdul Kalam

Hostel No. 02 – C. V. Raman

Hostel No. 03 – Homi J. Bhabha

Hostel No. 03 -Devi Ahilya

Hostel No. 05 - Vikram Sarabhai Hostel

Basic Facilities in Hostel

Basic Room

Common Hall

Washroom

Kitchen with RO Water

Water Chiller

Wi-Fi

Sports Facilities in Hostel

Badminton Court

Table Tennis

Soccer Table

Other Facilities in Hostel

News Paper Stand

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 dining hall. Separate sections have been developed for dining of students, institute staff or any guests. The dining hall comprises of 02 big sized and 04 small sized kitchens, 02 common washrooms and lift facility as well. An Executive Dining Hall has also been equipped in 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. Quality of food is maintained by taking frequent feedbacks and immediate addressal of complaints. The payments are made to the caterer on the monthly meal plan basis. The payment is done through Smart Card Facility and is cashless only. The entire central dining facility follows COVID appropriate behaviour. Other than regular dining services, the carbon building also houses several kiosks which serve delicacies and other services round the clock.

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

Dining Hall Building

Cleaning in Dining Hall during worldwide pandemic time

Secured and cleaned seating arrangements

Cooking activities with safety gears during worldwide pandemic time

Department of Biosciences and Biomedical Engineering

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.

Facilities:

The Department of Biosciences and Biomedical Engineering has several state-of-the-art laboratories. The BSBE department has a Cell Culture Facility with Class II A2 biosafety cabinets, fluorescence microscopes, electroporator, CO2 incubators, etc. Additionally, we have wet laboratories for performing Molecular Biology, Biochemistry and Microbiology experiments that include Real time PCR, 96 well plate reader, gel doc, etc. Moreover, BSBE has set up a Instrumentation Center with the following Sophisticated Instruments:

1. FACS Sorter [BD FACS AriaIII Fusion – equipped with 4 laser]
2. FACS Analyser [BD LSRFortessa –equipped with 5 laser]
3. Confocal Microscope [Olympus, which includes FLIM (Fluorescence lifetime imaging microscopy), FCS (fluorescence correlation spectroscopy), and Multi-photon emission imaging with Mai Tai Femto- second laser]
4. Proteomics facility [AKTA avant, Isoelectric focusing, 2D gel electrophoresis]
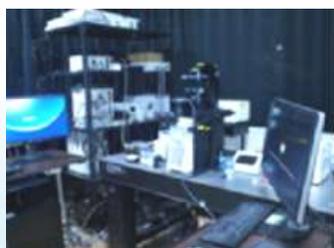
Confocal Microscopy   FACS Facility   Isoelectric Focusing   2D Gel Electrophoresis

Gel Doc. System   Discovery Studio   AKTA Avant

Academic Programs:

In the BSBE department there are eleven core faculty members (Professor - 04, Associate Professor-06, Assistant Professor (Grade-1) – 01).

The academic programs consist of the MSc (Biotechnology) 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 and MTech Programs.

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.

With the application of engineering principles, design concepts of biology, medicine, and other sciences, the group hopes to devote its energy and expertise on translational technology innovations to achieve improved longevity, health, and well-being for humans; to pursue research and development activities resulting in discoveries in imaging techniques, diagnostic kits; and novel therapies.

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	20	09
PhD	30	12

R & D Activities

1. Prof. Amit Kumar: The main area of research of AK Lab (Prof. Amit Kumar) is focussed on Drug Discovery and target Identification for various diseases including cancer, infectious and neurological disorders. His research group has identified several molecules and their molecular target in several pathogenic bacteria and viruses. This work was highlighted by various news media (Republic News, The Science Wire, The Hindu Business line, down to Earth, Biotecnika etc).

2. **Prof. Avinash Sonawane:** The Cellular Immunology and Disease biology Group, led by Prof. Avinash Sonawane, works on modulation of host immunity during tuberculosis infection, anti-tuberculosis drug development and diagnostics. His group also works on development of asparaginase based therapy for blood cancer treatment.

3. **Prof. Ganti S. Murthy:** The Sustainable Technologies Laboratory team led by Prof. Murthy broadly focuses on developing sustainable solutions for a resource-constrained world. Sustainable solutions are technically feasible, economically viable, resource sustainable, environmentally conscious and socially acceptable. The research group is specifically focused on sustainable bioprocessing and engineered systems analysis. They employ a combination of experimental and theoretical approaches to conduct multi scale and systems level analyses. They study the nutrient-energy-water nexus with a particular focus on building the resilience of agro-ecological systems to pulse and pressure disturbances.

4. **Prof. Prashant Kodgire:** Prashant Kodgire's ongoing research is broadly in the area of Molecular Immunology and Molecular Biology, especially focusing on immunoglobulin gene regulation and understanding the molecular basis of somatic hypermutation (SHM) of immunoglobulin (Ig) genes. His group's current efforts are on identifying the molecular mechanisms of action and targeting of activation-induced cytidine deaminase (AID) on the Ig genes. These studies are important for determining how the varied repertoire of antibody genes is created with the potential to react against any foreign antigenic substance, including tumor cell antigens. Besides aiding the defense against tumors by creating potent anti-cancer antibodies, SHM can have a negative effect as a promoter of cancer by giving rise to B cell lymphomas and leukemias. Understanding somatic mutation will aid in the investigation of the cellular, genetic and environmental causes of Blymphocyte malignancies as well as in learning how to influence the production of high-affinity antibodies against infectious agents and tumor antigens.

5. **Dr. Mirza S. Baig:** The Macrophage Biology Group, led by Dr. Mirza S. Baig, aims to explore an in-depth understanding of macrophage biology to unravel events actively involved in the development of immunological diseases. The group is actively involved in identifying therapeutic targets in macrophages and drug discovery strategies for chronic inflammatory diseases and cancer.

6. **Dr. Kiran Bala:** The Algal Ecotechnology and Sustainability Group, led by Dr. Kiran Bala, works on investigating the microbial bioproducts targeting various environmental applications including bioremediation, biofuels and bioplastics etc.

7. **Dr. Sharad Gupta:** The BioPhysics and Bioengineering Research Group, led by Dr. Sharad Gupta, focuses on developing non-invasive tools for disease diagnosis and biological sample characterization. Specifically, his research group is working on a Bio-nanotechnology based approach for bio-fluid analysis, NIR imaging, biophotonics, and silk and other biomaterials based regenerative medicine.

8. **Dr. Hem Chandra Jha:** The Infection bioengineering Group, led by Dr. Hem Chandra Jha, deals with infection and coinfections of various pathogens such as Helicobacter pylori, oral bacterias, Epstein Barr Virus, and Plasmodium. The possible role of these pathogens is studied in different cancers (i.e., gastric and oral cancer) and neurodegenerative diseases (e.g., Multiple sclerosis and Alzheimer's disease). Besides, the group also works in the domain of SARS-CoV-2 mediated host interaction and use of traditional medicine components for the treatment of these diseases.

9. **Dr. Parimal Kar:** The Computational Biophysics Group, led by Dr. Parimal Kar, works on investigating the conformational dynamics of proteins, glycans, and protein-glycan complexes using multiscale simulations. The group also works on computer-aided drug discovery. We study the phosphorylation-induced conformational dynamics of kinases implicated in autoimmune disorders and hypertension. We also work on the conformational plasticity of kinases implicated in neurological disorders, such as Down Syndrome and Alzheimer's disease.

10. **Dr. Abhijeet Joshi:** Therasens lab led by Dr. Abhijeet Joshi work in the domain of bionanotechnology,

nanomedicine, biomaterials and fluorescence-based biosensors and translating them to point care devices.

11. **Dr. Sunil Kumar Boda:** The Biomaterials and Tissue Engineering group led by Dr. Sunil Kumar Boda works on the design of biomedical implants and synthetic grafts/ scaffolds for musculoskeletal tissue engineering. Further, the group works across the research themes of bioadhesives/ surgical sealants, biomimetic peptides, biofabrication and organ-on-a-dish technologies development.

Notable Activities in the Department:

- The QIP Program on "Emerging Techniques and Application in Biosciences and Bioengineering Research" is scheduled from March 21, 2022 to March 26, 2022. In which following BSBSE faculty members have given lectures as an expert:
1. Prof. Prashant Kodgire
2. Dr. Abhijeet Joshi
3. Dr. Parimal Kar
4. Dr. Sharad Gupta
5. Prof. Ganti S Murthy
6. Prof. Amit Kumar
7. Dr. Sunil Kumar Boda

- Organized MPVS on Traditional and Modern Healthcare conference by Dr. Hem Chandra Jha & Dr. Parimal Kar in Dec 2021.
- 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.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	3	NIL
ONGOING PROJECTS	20	NIL
COMPLETED	5	NIL

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	7	14	3	107

Department of Astronomy, Astrophysics and Space Engineering

The Discipline of Astronomy, Astrophysics and Space Engineering (DAASE) has expanded significantly from such a thought and 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, thirty eight PhD research scholars, and 41 PG students.

DAASE is an unique department in the IIT system in the field of Space research and Astronomy cultivating research with the 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 mode.

Academic Programs

1) PhD Program (since 2016)
2) BTech Minor program in Astronomy and Space Engineering (since 2017)
3) MTech program in Space Engineering (since 2021)
4) MS (by research) program in Space Sciences and Engineering (since 2021)

NUMBER OF FACULTY MEMBERS:	
PROFESSOR	1
ASSOCIATE PROFESSOR	1
ASSISTANT PROFESSOR GRADE II	1
ASSISTANT PROFESSOR GRADE I	6
VISITING PROFESSOR/INAE FELLOW/RAMANUJAN FELLOW	2
NO. OF POST DOC FELLOWS	1

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	-	
MTech	9	-
MSc	40	16
MS (by research)	8	-
PhD	44	6

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 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) DAASE has been awarded the DST-FIST grant at level 2 (Rs. 3.2 crore)

2) Prof. Hari Hablani received the prestigious INAE Distinguished Professor Award

3) Two faculty members received DST-SIRE award for International Linkages and visit

Projects:

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 Chemistry

The Department of Chemistry at IIT Indore established in August 2009 is rapidly growing in terms of size, research diversity, external funding, and number of publications. At present, we have 19 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 faculty of the department is extremely well qualified and motivated with a strong commitment to teaching and research. Our department is well equipped with state-of-art sophisticated instrumentation facilities to facilitate research in almost all areas of chemistry and interdisciplinary research.

Academic Programs

The Department of Chemistry aims to provide exceptional training to students to impart cutting-edge education and research. The Department of Chemistry at IIT Indore offers a two-year master's program in Chemistry wherein a full year, especially 2nd year of the program, is dedicated for laboratory research in the field of student's choice. Since 2013, this unique program devotes a full year to solve real research problems in the laboratory and give an exposure to students if they would like to proceed with a doctoral program in their higher studies. This makes sure only qualified and motivated students pursue doctoral program and contribute to the welfare of the society. Additionally, students decide on their journey for doctoral program or look for a lucrative job after the completion of master's program at IIT Indore. At present we have approximately 60 MSc and 100 PhD students enrolled in the department. The alumni base of the department is slowly increasing, in which, many of them have excelled both academia and industry at national and international levels. Their accomplishments have been outstanding and reflect on the quality training imparted at the graduate and doctorate levels. We suggest all prospective students and other visitors to explore our website to learn more about our department.

NUMBER OF FACULTY MEMBERS:	19
PROFESSOR	06
ASSOCIATE PROFESSOR	08
ASSISTANT PROFESSOR GRADE II	-
ASSISTANT PROFESSOR GRADE I	05
NO. OF POST DOC FELLOWS	03

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	-	-
MTech	-	-
MSc	30	24
PhD	-	12

R&D Activities

Faculty and students are involved in the research activities in several frontier areas of chemical sciences that includes nanotechnology, organic light harvesting materials, organometallic pharmaceuticals, asymmetric synthesis, heterocyclic chemistry, biosensor metal clusters, molecular fluorescence spectroscopy, organic inorganic hybrid polymer, computational aspects of materials and molecular inhibitors for disease targets, drug discovery, catalysis, clean energy, green and sustainable chemistry and total synthesis of natural products, biomaterials, energy storage and conversions, epitaxial metal oxide heterostructures, and all-solid-state ionic

devices. Research in all these areas has been recognized by the scientific community in the form of international peer-reviewed research publications, patents, book chapters and lectures in national and international conferences. Our research is supported by generous funding from private as well as Government agencies, particularly DST-SERB, CSIR, DBT, SPARC, DAE and DAAD. Recently, department has acquired DST FIST 500 MHz NMR and FTIR facilities.

Notable Activities in the Department

Notable Outreach Activity:

- Chemistry Outreach Team (Dr. Dipak K Roy and members) - Organized National Science Day, Department of Chemistry 2022.

- Chemistry Outreach Team (Dr. Dipak K Roy and members) - Organized "Acharya Prafulla Chandra Ray Chemistry Lecture Series" in the Department of Chemistry.
- Chemistry Day & In-House Chemistry Symposium (CHEM 2022).

Notable Achievements

- Prof. Biswarup Pathak - CRSI Bronze medal Award 2023.
- Prof. Rajneesh Misra - CRSI Bronze medal 2022.
- Prof. Biswarup Pathak - Top 5% of highly cited authors in Physical portfolio of Royal Society of Chemistry journals, 2021.
- Prof. Sanjay K Singh - International Advisory Board member, ChemCatChem by Wiley-VCH (2020-22).
- Dr. Shaikh M Mobin - Fellow of Maharashtra Academy of Sciences
- Prof. Biswarup Pathak has been admitted as FRSC by the Royal Society of Chemistry, UK, January 2022 (Invited by RSC).
- Dr. Shaikh M Mobin- Fellow of Royal Society of Chemistry (FRSC) (Under Leaders in the Field Category), Dec 2021
- Prof. Biswarup Pathak among the Indian researchers making ACS journals the most impactful 2021.
- Prof. Biswarup Pathak- 2021 DUO-India Professor Fellowship Award.
- Dr. Shaikh M Mobin - He has been named among the Golden Authors for Dalton Trans on occasion of 50th volumes of Dalton Transactions from Royal Society of Chemistry.
- Dr. Shaikh M Mobin- Recipient of Material Research Society of India (MRSI) Medal 2021.
- Dr. Shaikh M Mobin- Fellow of Indian Chemical Society (FICS) (Invited), Dec 2021.
- Prof. Sanjay K Singh - Involved in the organization of the National Science Day program (through International Affairs and Outreach)
- Dr. Chelvam Venkatesh - Department of Biotechnology sponsored Bio-Ignition Grant (BIG) by BIRAC for a Startup from Aug. 2021-Feb. 2022.
- Prof. Suman Mukhopadhyay - conferred the Institute's Best Teacher Award on Teacher's day 2021 (September 5th 2021).
- Chemistry Outreach Team (Dr. Dipak K Roy and members) - Organized "Chemistry Day 2022" in the Department of Chemistry.
- Dr. Dipak K Roy - Start-up Research Grant Award from SERB -2020-2022.
- Dr. Selvakumar Sermadurai - Early Career Research Award from SERB -2019-2022.
- Prof. Apurba K Das (workshop)- Organized AICTE QIP-sponsored Faculty Development Program on "Nanomaterials for Next-Generation Applications at IIT Indore (March 22, 2021 - March 27, 2021).
- Ms. Bhawna a PhD student working under the supervision of Dr. Tushar K Mukherjee for her best oral presentation award in NSRP-2021.
- Mr. Amitabha Das a PhD student working under the supervision of Prof. Biswarup Pathak received the best poster award, TCS, IISER Kolkata, December 2021.
- Mr. Souvik Manna has been awarded Prime Minister's Research Fellowship (PMRF), April 2022.
- Mr. Tanmay Rit has been awarded Prime Minister's Research Fellowship (PMRF), April 2022.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	-	-
ONGOING PROJECTS	16	-
COMPLETED	11	-

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	-	4	-	101

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 the 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 organisations 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 with international exposure having expertise in diverse field of civil engineering like Structural, Geotechnical, Transportation, Water resource and Environmental engineering. The CE faculty has been recognized at different platforms across the world as committee chairs/members, outstanding reviewers, 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)	14
PROFESSOR	03
ASSOCIATE PROFESSOR	00
ASSISTANT PROFESSOR GRADE II	03
ASSISTANT PROFESSOR GRADE I	08
NO. OF POST DOC FELLOWS	02

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	52	35
MTech	-	-
MSc	-	-
PhD	-	03

Notable Activities in the Department

The department has been awarded several research and industrial consultancy projects (around 52 projects) and the value in Rs. are 2.36 crores. Our dynamic faculty and students are recognized at various platforms, some of key achievements are as following.

- Prof. Manish Kumar Goyal has got the Prof. S. N. Gupta Memorial Lecture Award, Indian Society of Hydraulics, 2021 and Ranked in Top 2% scientist in list prepared by Stanford University and among the top 500 of the world's more than 42000 researchers in the in the sub-area "environmental engineering (Meteorology and Atmospheric Sciences)- 2021 and 2022.

- Dr Lalit Borana has been invited as visiting Fellow in the Hong Kong Polytechnic University.

- IIT Hyderabad chosen and invited Dr. Abhishek Rajput among 48 young stars of the country based on the accomplishments belongs to academia, scientists, and industrialist across the country in National Frontiers of Engineering Symposium NatFoE-2021, under the flagship of Indian National Academy of Engineering INAE.

- Prof. Sandeep Chaudhary awarded 1 patent on "composition for preparation of paver block utilizing rubber waste".

- Prof. Neelima Satyam has been received the CIDC Vishwakarma Academician Award 2021, from Construction Industry Development Council (Established by Planning Commission, Government of India and the Construction Industry) and overseas famous scientist project (Grant no. 2020A1414010268) from Ministry of Science and Technology, Guangdong, China for visiting Shantou University, 2020-2021

- Dr. Mohd. Farooq Azam became the National correspondent for World Glacier Monitoring Services Switzerland.

- Ms. Minu Treesa Abraham, PhD Student working under the supervision of Prof. Neelima Satyam, Department of Civil Engineering, got selected for the prestigious Humboldt fellowship for Postdocs.

- Mr. Gyanesh Patnaik, PhD Student working under the supervision of Dr. Abhishek Rajput, Department of Civil Engineering, got the best paper award at the International Conference of Structural Engineering and Construction Management (SECON'21).

R&D ACTIVITIES

The department of civil engineering having expertise in various sub streams of Civil Engineering like Structural, Geotechnical, Transportation, Water resource and Environmental engineering.

Thrust Area of focussed research and applications

- Structural Engineering
- Geotechnical Engineering
- Concrete Technology
- Impact mechanics
- Earthquake Engineering
- Environmental Engineering
- Hydrology & Water Resource Engineering
- Disaster Management
- Smart cities, Urban planning
- Municipal Solid Waste Management
- Structural Health Monitoring
- Sustainable Construction
- Water-Energy-Foodnexus
- Himalayan Glaciology

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	-	-
ONGOING PROJECTS	16	-
COMPLETED	10	-

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	1	28	37	111

Department of Computer Science and Engineering

The Department of Computer Science and Engineering (CSE) was set up in July 2009. It offers Bachelor of Technology (BTech), Master of Science by Research(MS Research), and Doctor of Philosophy (PHD) programs. The department adopts a modern approach to teaching wherein students are rendered in adequate academic freedom to innovate and learn in the process. State of the art facilities including the latest software and advanced hardware are available in various laboratories for the use in both teaching and research. This facilitates adequate implementation of major BTech projects and for verification and validation of research results. The faculty members of the department are from diverse streams and specializations. Being a part of an emerging and relatively new institute, together with extremely competent research faculty, the CSE faculty of IIT Indore offer a unique interactive platform for the students to explore the arena of fundamental and applied research.

Academic Programs

The Department of CSE offers Bachelor of Technology (BTech), Master of Science by Research (MS Research), and Doctor of Philosophy (PHD) programs. A total of 35 PHD, 15 MS Research and 463 B. Tech students have graduated from the Department of CSE until July 2022. Currently, the department has 28 PHD, 20 MS Research and 240 BTech students.

NUMBER OF FACULTY MEMBERS: (Assistant/Associate/ Full Professors)	14
PROFESSOR	03
ASSOCIATE PROFESSOR	00
ASSISTANT PROFESSOR GRADE II	03
ASSISTANT PROFESSOR GRADE I	08
NO. OF POST DOC FELLOWS	02

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	82	83
PhD	-	5
MS	12	8

R&D Activities

Current CSE faculty members and students focus on a wide range of emerging research areas. These include
- Networking, Network Security, System Security, Cloud Computing, Cloud Security, Dependable Systems & Network Management, and Enterprise Management.
- Embedded Systems (Cyber-physical Systems, Internet-of-Things, Wireless Sensor Networks, etc.), their Formal Verification (Model Checking, Abstract Interpretation, Program Transformation & Generation, Program Analysis) and Semantics-based Emulation of Languages & Systems.
- Algorithms and Theoretical Computer Science, Algorithmic Graph Theory, Computational Complexity.
- Computational Science & Engineering, Numerical Linear Algebra, Numerical Analysis and Optimization
- Big Data Analytics, Soft Computing, Computational Intelligence, Artificial Intelligence, Learning Algorithms, Neural Networks, Genetic Algorithms, Evolutionary Approaches, and Game Artificial Intelligence (AI)..
- Pattern Recognition, Computer Vision, Image Processing, Biometrics, Human-Computer Interaction, Machine

Learning, and Deep Learning

- Hardware Security, Side Channel Analysis Attacks on Cryptographic Implementations, Security Aspects in Emerging VLSI Technologies, Security of Hardware Accelerator and Machine Learning for VLSI.
- CAD-VLSI, EDA, High-Level Synthesis, IP core Security, Hardware Trojan, Fault Security, Digital Watermark in Digital Chip, Optimization of Hardware Accelerators, and Design Automation.
- Service-Oriented Systems, Dynamic Systems, Geographically Distributed Development Environments, Agile Techniques, Software-as-a-Service and Wireless Sensor Networks.
- Natural Language Processing, Social Network Analysis, Information Retrieval, and Data Mining.
- Autonomous vehicles, Certification framework for Safety Assurance in Autonomous Vehicles.

Notable Activities in the Department

1. THE World University Rankings 2022: Indian Institute of Technology Indore ranked 201–250 globally and 2nd in India.
2. A total of 35 PHD, 15 MS Research and 463 B. Tech students have graduated from the Department of CSE until July 2022.
3. Miten Shah and team secured 1st ranked among 22 other IITs for Inter IIT Tech Meet 10.0 problem statement "Blue Yonder's Next-Gen Optimized Delivery Ecosystem".
4. Graduating student, Mr. Kasturi Ajit Sharma, of CSE receives The Institute Silver Medal in the 2021 Convocation of IIT Indore.
5. Sarthak Jain secured 1st position in Bruteforce 3.0 Cybersecurity Hackathon organized by HackerEarth.
6. Prof. Aruna Tiwari is appointed as a Woman Independent Director on the board in M.P. Paschim Kshetra Vidyut Vitaran Company Limited in Jan 2022.
7. Dr. Anirban Sengupta is elected Fellow of IETE in 2022.
8. Dr. Anirban Sengupta is Featured in 'Stanford University's Top 2% Scientists as well as in 'Stanford University's Top 0.27% Scientists in Computer hardware and architecture area' in 2021.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	6	-
ONGOING PROJECTS	14	-
COMPLETED	3	-

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	4	5	14	30

Department of Electrical Engineering

The department of electrical engineering at IIT Indore was established in the year 2009. Over the years the Department has grown significantly in terms of its faculty strength and research activities. Presently the department has seventeen faculty members and two DST INSPIRE faculties. The department is presently engaged at conducting cutting edge research in the interdisciplinary area(s) of Power electronics, power systems, Integration of renewable energy sources, smart grid, VLSI design, nanotechnology and nanoelectronics, communications systems and networking, wireless communications, image processing, signal processing and RF-microwave. The department of EE strives for promoting internal and external collaborations. The department aims to play an active role in propelling India in its growth trajectory through innovative inter–disciplinary research and imparting quality education through its academic programs at undergraduate and postgraduate levels.

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 of Electrical Engineering (EE) at IIT Indore has been a major center for both academic and research programs in various specializations. The department presently offers an undergraduate program, one MS(Res) program and two MTech programs in (i) Communications and Signal Processing, (ii) VLSI Design and Nanoelectronics and a PHD program. The department has graduated 104 PHD students since its inception. Our past PHD students have been absorbed in other IITs as well. Around 73 more students are presently pursuing their PhD from the department. One international student also joined the department.

NUMBER OF FACULTY MEMBERS	17
PROFESSOR	9
ASSOCIATE PROFESSOR	3
ASSISTANT PROFESSOR GRADE II	3
ASSISTANT PROFESSOR GRADE I	2
DST INSPIRE FELLOWS	2
NO. OF POST DOC FELLOWS	2

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	85	65
M. Tech. CSP	15	13
M. Tech. VDN	15	10
MS (Res)	10	-
Ph.D.	13	11

R&D Activities

The department of electrical engineering has a strong foothold in research and development and has been actively engaged in securing and implementing projects funded by external funding agencies. Needless to mention that the department has secured a high-value project of INR 1.4 crores approximately under DST-Nano mission and another high-value project under the DST-FIST worth INR 2.3 crores has been running in the department. Besides, this in the academic year (AY) 2021-22 the department has been awarded ten new research projects, twenty new research projects are at present under execution and close to ten additional projects have been successfully completed. The projects were funded by DST, SERB, CSIR, DRDO, ISRO etc. Faculty members of the department published ~72 journal papers, yet another indicator of the quality of research work pursued by the department of electrical engineering. As another outcome of the cutting-edge research undertaken at the department three patents have been filed and four additional were awarded in the AY 2021-22.

Notable Activities in the Department

The faculty members of EE strive to instill analytical and practical skills in the students. This is systematically achieved by incorporating various sub-components as a part of the regular course learning and evaluation, industry-relevant projects, field trips and real-time assignments that would substantially benefit in understanding and utilization of concepts. In addition to that, students of various categories have been supported to attend numerous conferences, competitions, and winning laurels. An interdisciplinary approach followed by EE faculty members has emerged, taking up some of these engineering problems as projects and internships that our students have successfully solved. This has resulted in collaborations with the industry for sponsored research. Through our industry outreach activities, the department has also been instrumental in getting some consultancy projects.

Some of the notable achievements by the department's faculty members during the AY 2021-22, are as given below:

- Prof. Ram Bilas Pachori ranked #22 in India among Top Scientists for 2022 in the field of Computer Science by Research.com.
- Prof. Ram Bilas Pachori received IETE - Prof SVC Aiya Memorial Award, September, 2021.
- Prof. Prabhat K Upadhyay was awarded Nokia Foundation Fellowship, 2022.
- Dr. Saptarshi Ghosh secured Motohisa Kanda Award (2022), Young Scientist Award from URSI (2022).
- Prof. Ram Bilas Pachori and Dr. Saptarshi Ghosh were listed in the world's top 2% scientists in the study carried out by J. Bass and others at Elsevier BV and Stanford University in October, 2021.
- Prof. Shaibal Mukherjee became the associate editor of IEEE Sensors journal, he also backed the adjunct
- Associate Professor at RMIT University, Melbourne, Australia. He has also been awarded IETE fellow, 2022.
- One of our PHD student Mr. Narendra Vishvakarma was awarded PMRF fellowship in the AY 2021-22.
- Prof. Trapti Jain became the IEI and IETE fellow, 2021, she is also the vice-chair of IEEE PES and founding chair of IEEE MP section (PES) chapter, 2022.
- Prof. Vivek Kanhangad vice president of IEEE biometrics council.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	10	0
ONGOING PROJECTS	20	1
COMPLETED	10	1

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	0	7	37	72

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.

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. The department is also working on a proposal for a core BTech program in the department.

NUMBER OF FACULTY MEMBERS	
PROFESSOR	02
ASSOCIATE PROFESSOR	04
ASSISTANT PROFESSOR GRADE II	0
ASSISTANT PROFESSOR GRADE I	10
NO. OF POST DOC FELLOWS	02

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
MSc (Mathematics)	20	12
PhD	10	5

R&D Activities

The faculty members of the department are well qualified and motivated with a strong commitment to teaching and research. This is reflected through

1. various academic events of national and international importance conducted in the department,
2. ongoing research projects sponsored by several funding agencies such as NBHM, SERB, DST, CSIR, MHRD, ICMR and
3. research publications in reputed journals.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	3	1
ONGOING PROJECTS	11	0
COMPLETED	14	0

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	04	02	05	74

DST-FIST Support:

Bhaskaracharya Mathematics Laboratory
Brahmagupta Mathematics Library

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.

Department of Mechanical Engineering

The Department of Mechanical Engineering is one of the oldest and largest departments in the Institute involving 24 full-time faculty members and over 10 full-time administrative and technical staff members. The Department offers science and engineering/technology based curriculum that focuses on imparting skills in technical education, problem solving and innovation of new technologies. The department has state-of-the-art research facilities to support the academic and research programs. One of our major objectives is to provide quality engineering education with basic and specialized engineering training for the present and emerging requirements.

Academic Programs

The Department offers various programs such as BTech, MTech, MS (Research), and PhD Programs with its additional dual degree programs (BTech+MTech), (MTech+PhD) and (MS-Research+PhD) in Mechanical Engineering. Currently, over 244 UG, 32 PG, and 56 PHD students are on a roll; also, the department hosts several postdoctoral fellows. Currently, the department offers three MTech programs: (i) Advanced Manufacturing (AY 2022 onwards), earlier Production and Industrial Engineering (AY 2013-2021) (ii) Mechanical System Design, and (iii) Thermal and Energy Systems (AY 2022 onwards). The Department has MTech and PhD students from DRDO, armed forces and other government and private organizations related to Mechanical Engineering.It also hosts international MTech students, including those from Nepal and Nigeria.

NUMBER OF FACULTY MEMBERS	24
PROFESSOR	8
ASSOCIATE PROFESSOR	5
ASSISTANT PROFESSOR GRADE II	1
ASSISTANT PROFESSOR GRADE I	10
NO. OF POST DOC FELLOWS	06

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	85	56
MTech	18	12
MS Research	04	5
PhD	10	14

R&D Activities

The Department of Mechanical Engineering has carried out several sponsored and consultancy research projects for government and private organizations like DRDO, ISRO, John Deere (India) and Simple Energy Private limited. The department has also established state-of-the-art research facilities and conducted several academic activities like STPs and FDPs for industry and academic people. Some of these are mentioned below:

1. Development of micro-plasma transferred arc (µ-PTA) wire and powder deposition processes for various meso-sized additive manufacturing (AM) of different metallic materials, knee implants from biocompatible materials, development of functionally graded materials (FGM) and shape memory materials (SMM)
2. Development of algorithm for fault detection of wind turbine gearbox.
3. Development of Lead Free Triboelectric Nanogenerators to harvest energy from vibration.
4. Development of SMA integrated jellyfish soft robotic structure for underwater robotic systems.

5. Development of light weight heat sink integrated with phase change material (PCM) for cooling applications.
6. Study of thermally sprayed ceramic coatings applied on steel substrates for tribo-mechanical and biological applications.
7. Development of Thermo-Mechanical Test Bench for Reliability Estimation of Shape Memory Alloy (SMA) Springs.
8. Study of deformation and fracture behavior of nanoglasses and nanoglass-metallic glass nano-composites.
9. Force and vibration analysis in biomechanical preparation of root canals using reciprocating endodontic file system.

Notable Activities in the Department

1. Faculty members of the department have conducted 8 short term courses
2. Research activities resulting in the filing of 6 patents.
3. Started a new M. Tech program in "Thermal and Energy Systems".
4. M. Tech in Production and Industrial Engineering has been restructured to M.Tech in Advanced Manufacturing.
5. Two PhD students have been awarded SERB-OVD fellowship and one PhD student has been awarded the PMR fellowship
6. New research and testing facilities were established.
7. Received 10 grants in the form of consultancy and sponsored projects, worth more than 2 Cr.
8. Two GIAN courses were conducted by the faculty members of the Department
9. Our PhD Students visited University of Gothenburg under an exchange Program (SPARCH scheme)

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	8	2
ONGOING PROJECTS	29	2
COMPLETED	1	4

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	1	20	55	90

Department of Metallurgy Engineering and Materials Science

Established in 2016, the Department of Metallurgy Engineering and Materials Science (MEMS) focuses on carrying out interdisciplinary research in Material Science, to find solutions for intricate real-world problems that benefit the society. Presently the department has 17 core faculty members along with 4 supporting staff. Our collective goal is to understand the processing and structure of several classes of materials; and then correlate these to the properties, thus enhancing their performance. MEMS faculty members are working in research areas ranging from conventional metallurgy to modern materials science.

ACADEMIC PROGRAMS

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

NUMBER OF FACULTY MEMBERS	17
PROFESSOR	01
ASSOCIATE PROFESSOR	04
ASSITANT PROFESSOR	12
NO. OF POST DOC FELLOWS	Nil

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	167	62
MTech	27	84
MSc	Nil	Nil
PhD	38	36

R&D Activities

The key research areas are spread across structural materials (Steels, Titanium alloys, High entropy alloys, Magnesium alloys, and Composite materials), energy conversion and storage materials (Solar Cells, Supercapacitors, Li-ion batteries, etc.), functional materials (Piezoelectrics, Gels, and Shape memory alloys), and computation materials science.

Notable Activities in the Department

Recently, the department was awarded a FIST project by SERB DST India to establish Universal Testing and Spark Plasma Sintering Facility. The cost of the project was approx. 2.2 crore. The department conducted five short term courses in various fields and the faculty members also delivered several keynote and invited talks. Some of key achievements of our faculty members are mentioned below:

- Listed in World Ranking of Top 2% most Influential Scientist by Stanford University (2020 onwards every year)
- Fellow of Maharashtra Academy of Sciences 2021
- Materials Research Society of India Medal 2020.

- Outstanding Researcher in Materials Science, by Venus International Foundation, India. (July 2022)
- Listed in World Ranking of Top 2% most Influential Scientist by Stanford University (2021)
- DUO-India Professor Fellowship Award, Govt. of India and ASEM-DUO, South Korea (2020-22).
- Keynote Speaker for Plenary Session – V, 5th International Conference on "Advances in Steel, Power and Construction Technology" (ICASPCT), Organized by OP Jindal University, Raigarh (CG), India. (June 17, 2022).
- Invited as one of the honourable jurors for the selection round of Tata InnoVista, which is Tata Group's flagship annual event for recognizing and celebrating innovations of Tata companies (October 8, 2021).

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	-	-
ONGOING PROJECTS	17	-
COMPLETED	12	-

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	1	-	-	57

विद्यार्जन संसाधन केंद्र LEARNING RESOURCE CENTER

Department of Physics

The department currently has 16 faculty members with diverse specializations covering a wide spectrum of modern research topics. Being part of an institute of national importance, the Physics faculty of IIT Indore offers a unique interactive platform for the students to explore the arena of fundamental and applied research. Our curriculum is designed to give the students a taste of modern-day research in various fields of physics.

Academic Programs

The department is offering MSc and PhD programs in Physics and more than 200 students have already graduated and have been consistently placed at reputed institutes across the globe. The department is in the process of establishing new academic programs such as a 2-year MS and a 4-year BS program in Physics. The department is working in close collaboration with various industries to develop the technologies to support the research and academic sectors of the country and aims to establish the center of scientific instrumentation in the near future which will be the first of its kind in India.

NUMBER OF FACULTY MEMBERS	16
PROFESSOR	7
ASSOCIATE PROFESSOR	4
ASSISTANT PROFESSOR GRADE II	1
ASSISTANT PROFESSOR GRADE I	4
NO. OF POST DOC FELLOWS	2

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	0	0
MTech	0	0
MSc	25	25
PhD	23	10

R&D Activities

Our faculty members conduct advanced research in condensed matter physics, high energy physics, statistical mechanics, complex systems, artificial intelligence, etc. Our state-of-the-art facilities provide unique research opportunities for students across all levels of educational programs such as undergraduate, graduate, postgraduate, and PhD. We consider research experience as a vital part of the education and nurturing the students to take up advanced courses and providing practical experience across the various fields of Physics. The department of Physics has already established more than 10 advanced research laboratories working on the various branches of Physics. The Department is highly collaborative and has close interaction between the different research groups within the department, within IIT Indore, and with various national and international institutions, including DAE, ISRO, DRDO, CERN, and many more.

Notable Activities in the Department

Our department is constantly achieving new heights every year. Some highlights of the achievements of our department during the last academic year are listed below:

- Prof. Sarika Jalan has been awarded the SERB POWER grant. She also became an associate editor for the journal 'Chaos'.
- Prof. Raghunath Sahoo became the Deputy Spokesperson for the ALICE-India collaboration. He was also awarded the CERN scientific associateship.
- Prof. Rajesh Kumar received "Best Research paper Award" from IIT Indore, September 2021. One of the research papers from his group was highlighted by DST.
- Prof. Sudeshna Chattopadhyay gave six invited lectures/talks/seminars at both International and National level including two invited talks at the Leibniz Universität Hannover (LUH), Germany.
- Prof. Pankaj Sagdeo was selected as a fellow of the Maharashtra academy of sciences. He was also recognized by the Wiley Journal of Raman Spectroscopy as having the highest citations for papers published in Journal of Raman spectroscopy.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	4	0
ONGOING PROJECTS	6	0
COMPLETED	8	0

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	3	-	21	115

School of Humanities and Social Sciences

The School of Humanities and Social Sciences at IIT Indore is an exciting and vibrant place of Research and pedagogy. We have 15 faculty members, and 1 visiting faculty, along with more than 40 PhD research students working on exciting projects and problems. The faculty members of the School are an eclectic mix of researchers from varied disciplines of Economics, English, History, Philosophy, Psychology and Sociology. Apart from their disciplinary affiliations each of the faculty members are engaged in their specialized areas of research and write, publish and speak about their work.

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 and project work. Our students have won prestigious national and international scholarships, fellowships and awards and we are very proud of their achievements when they are part of the school and all of our graduating students have gone on to excel themselves in their chosen careers too. Second, an MS (Research) Program. The first batch of this Program commenced from Autumn 2021.

NUMBER OF FACULTY MEMBERS	
PROFESSOR	3
ASSOCIATE PROFESSOR	2
ASSISTANT PROFESSOR GRADE II	5
ASSISTANT PROFESSOR GRADE I	5
NO. OF POST DOC FELLOWS	0

PROGRAMS	STUDENT INTAKE	DEGREE AWARDED
BTech	0	0
MTech	0	0
MSc	0	0
PhD	18	3
MS (Research)	4	0

R&D Activities

Discipline of Economics: Prof. Pritee Sharma conducted Disaster Risks Assessments due to climate change in urban areas, conducted a study on rural infrastructure and its impact of economic development, an assessment of vulnerability of the rural and urban poor to climatic and non-climatic stressors for Madhya Pradesh and an assessment of Economic Loss and Damages of NTFPs due to Forest Fires. Dr. Mohanasundari T. was awarded the RBI scholarship scheme for Faculty Members and began project work on Evaluation of Financial Performance of Farmer Producer Companies in Tamil Nadu. She also presented her project proposal on "Estimating Economic Losses and Damages of NTFPs Caused by Forest Fire in Hoshangabad Forest Division, Madhya Pradesh, India" in the 42nd RNT workshop conducted by SANDEE_ICIMOD In December 2021.

Discipline of English: Prof. Nirmala Menon has a SPARC project and an Electronic literature Anthology project. Dr. Ananya Ghoshal mentored four undergraduate and two postgraduate English Literature interns in IIT Indore in six short online courses. Dr. Sanchita Verma was invited to deliver lectures on the various dimensions of emerging research methodologies in humanities and social sciences by NIEPA, New Delhi and IIT Roorkee.

Discipline of Sociology: Dr. Neeraj Mishra conducted research on tribal development issues in India. Dr. Ashok Kumar M presented research papers at two international conferences in National University of Singapore (NUS), Singapore and the Coventry University, UK.

Discipline of Psychology: Dr. Sanjram Premjit Khanganba executed extensive work related to 'connecting the unconnected' emphasizing bridging digital divide. The output led to publication of a book by Springer nature on issues concerning 6G and Sustainable Development for non-urban settings. The work promotes ICT and digital transformation within the framework of community systems. Dr. Kedarmal Verma submitted project proposals to YFRSG IIT Indore, IKS 2021-2022, IBRO (International Brain Research Organization) for Young Career Award and delivered the Ek Bharat Shrestha Bharat Lecture titled "Psychology: An Introduction".

Notable Activities in the Department

Discipline of Economics: Prof. Pritee Sharma authored four research publications in reputed international journals including with Elsevier and Springer. Dr. Kalandi C. Pradhan delivered an Invited Lecture on "Importance of Crosstabulations in Social Science Research" in the Maulana Azad National Urdu University, Hyderabad. He was also invited to attend a knowledge sharing workshop in IIT Bombay, "Transforming India and Green Revolution by Research and Empowerment for Sustainable Food Supplies", Global Challenges Research Fund project, Research Council UK. Dr. Mohanasundari T was an invited speaker in "Agricultural Development-Challenges and Responses in the Post-Pandemic Era", a webinar organized by the Rural Economic Society of Taiwan. She also served as a panelist in the International Virtual Conference "Transforming Agricultural Advisory Services to Mitigate the Effects of the Pandemic or Farmers Welfare" held at the Vellore Institute of Technology.

Discipline of English: Prof. Nirmala Menon is Editor, Digital Humanities Quarterly (DHQ). Dr. Ananya Ghoshal represented South Asia and IIT Indore in the Humanities Pedagogy Conference at Stanford University. Dr. Sanchita Verma organized an SHSS seminar on: "Why During Constitution Framing was Education Deleted from Fundamental Rights" with Prof. Nalini Juneja. Dr. Aratrika Das started working on a project entitled "Ghosts, Goddesses, and Medicine from Nineteenth Century Bengal", funded by IIT Indore Young Faculty Research Seed Grant (YFRSG) Scheme.

Discipline of Sociology: Dr. Ashok Kumar M submitted a collaborative research grant application to the British Academy (BA). Dr. Akshaya Kumar delivered several Invited Lectures at: University of California, Los Angeles (UCLA) and University of Oregon in the US; Jawaharlal Nehru University, New Delhi, and IIT Tirupati in India.

Discipline of History: Dr. Shomik Dasgupta was awarded Best Teacher by IIT Indore in September 2021.

Discipline of Psychology: Dr. Sanjram Premjit Khanganba's lab developed a testing paradigm for tyre health monitoring which is related to safety critical system. This work is important for conceptualizing interface for drivers and fleet control team and has progressed into collaborative research with an industry player in India in the field.

Projects:

PROJECT	SPONSORED	CONSULTANCY
NEW PROJECTS	7	0
ONGOING PROJECTS	11	1
COMPLETED	5	1

Publications:

DETAILS	BOOKS PUBLISHED	CHAPTERS IN BOOKS	PAPERS IN CONFERENCE	PAPERS IN JOURNALS
Total	4	22	13	30

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