

Inventing &
Innovating in
Technology for
Humanity
(IITH)

Brochure 2023

ARIIA #7
(NATIONAL)

NIRF #14
(NATIONAL - OVERALL)

QS #581-600
(GLOBAL - OVERALL)

NIRF #9
(NATIONAL - ENGINEERING)

NIRF #12
(NATIONAL - RESEARCH)

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Dear Friends,

I wish and hope that you are having a blissful and delightful year, with a flourishing and substantive expedition in the robust networking environment of IITH.

As we elegantly entered our fifteenth year (Crystal year), the IITH has grown by leaps and bounds thanks to the hard work and perseverance of all our faculty, students, and staff. For the seventh consecutive year, IITH has maintained its position within the Top 10 ranks among the technical institutes & has improved its Research and Overall NIRF Rankings to 12 and 14, respectively. IITH has witnessed a record 500+ placement offers made from 140+ companies during Phase 1 of campus placements this year, and we have made it to 501-550 in QS-2023 subject rankings in Physics & Astronomy, a 100+ rank jump from the previous year.

The researchers at IITH took an early lead in 6G research. Our researchers have also developed an affordable Ultra-High Performance Fiber Reinforced Concrete (UHPFRC) for bridges and other infrastructural applications. IITH researchers within InPTA paved the way to charting Interstellar 'Weather.' IITH established a ground-breaking Raindrop Research Facility (RRF) to estimate raindrop size distribution for precise rainfall prediction. Celebrating National Science Day, IITH established an 'Advanced Darksy Observatory' for multidisciplinary research.

For the first time, all the 23 IITs of the country came together for InvenTiv, a mega R&D Fair held at IIT Delhi, to showcase the technologies developed at IITs to the industry. Out of 75 selected innovations from 23 IITs, IITH exhibited 6 industry-ready technologies, ranging from Healthcare to Defense. SMC Japan, MSIL, and IITH have teamed up to research India-specific vehicle use case scenarios based on futuristic V2X (Vehicle-to-Everything) communications.

IITH celebrated the first of its kind Innovation Day (Jan 7, 2023), a day specifically dedicated to showcasing innovations of IITH to Industry and strengthening our collaboration with the industry.

IITH has an exceptional Entrepreneurial Ecosystem to support innovative startups, which has helped in supporting 125+ startups that have created 1000+ jobs and Rs 800+ Cr of revenue.

With the vision of creating competent human resources in the field of healthcare, IITH has launched MTech in Medical Device Innovation, jointly with AIG Hospitals, MTech in Ophthalmic Engineering, jointly with LVPEI and an MSc Program in Medical Physics, jointly with Basavatharakam Cancer Hospital in addition to BTech programs in Biomedical Engineering and Biotechnology & Bioinformatics. To support the Indian Semiconductor Mission, IITH has started a BTech in IC Design & Technology and MTech programs in Systems Packaging and Semiconducting Materials & Devices.

To strengthen the entrepreneurship ecosystem, IITH has started a Dual Degree (for the BTech students of IITH), an MTech in Techno-Entrepreneurship, and a Certificate Course on Deeptech Entrepreneurship. In addition, several other programs, such as an MTech in Transport Technology, an MA in Health, Gender & Society and a certificate course in Future Wireless Communication, have also been initiated. IITH has also established a Department of Heritage Science and Technology (HST) with MTech in HST. Several academic and research collaborations have been taken up to strengthen our domestic and global relations.

IITH has exuberantly celebrated the Elan & ηVision-2023 - "Secrets of Valenrow" this Feb - one of the biggest extravaganzas of the year, E-Summit 2K22, a flagship entrepreneurship conclave by ECell, and the Milan, Championship of Champion - A 5-day inter-hostel tournament, 11th Convocation in the physical mode for the first-time post-pandemic. IITH Women Staff Team has triumphed in the Inter IIT Staff Sports Meet by bagging the Overall Championship and a total of 7 medals by IITHians.

IITH rejoiced in the decade-long journey of its first batch of Alumni by celebrating the Decennial get-together and release of its Crystal (15th) Year Logo.



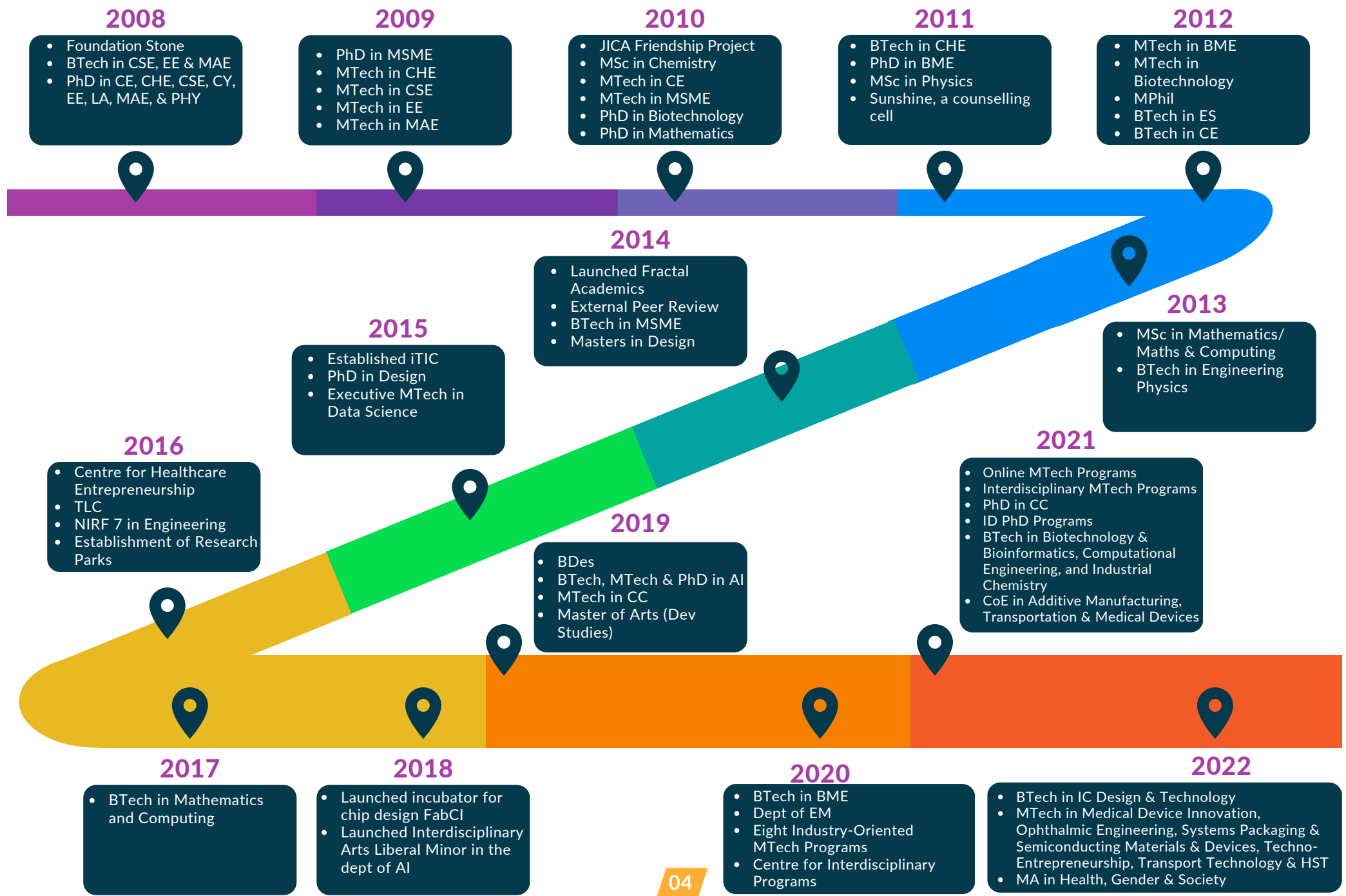
Prof B S Murty

This year brought many opportunities for us to work towards Inventing and Innovating in Technology for Humanity (IITH) collaboratively, and we utilise them with passion and dedication to the growth of the institute.

I end with a quote from Shri Rabindranath Tagore:

"Hope is a bird that can see the light when the dawn is still dark".

IITH Journey so far...

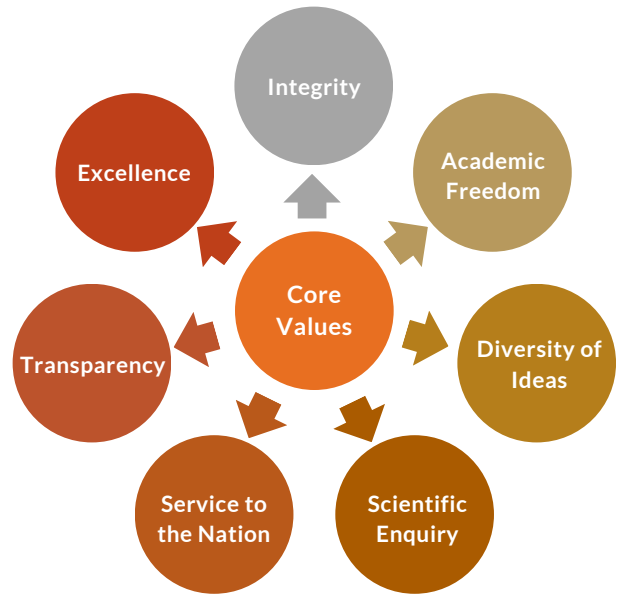


Vision

Core Values

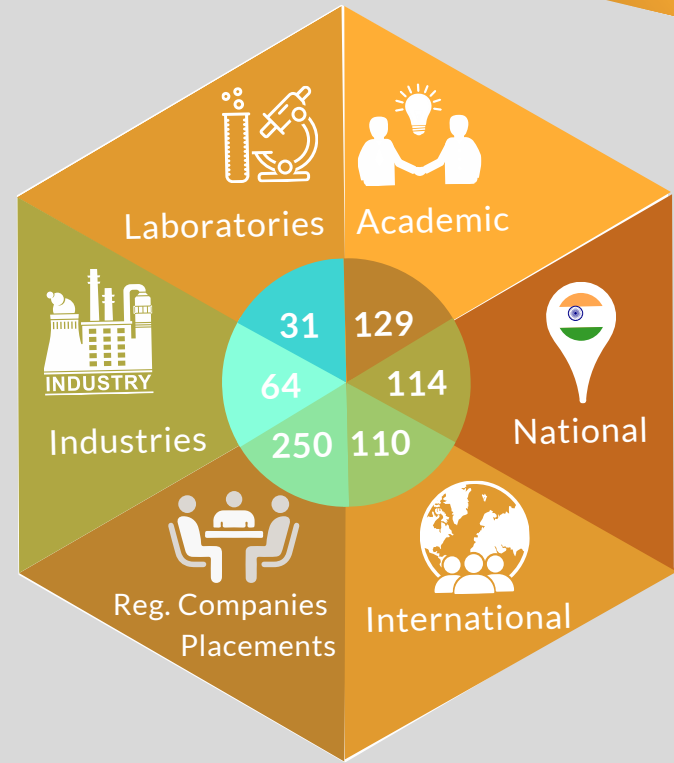
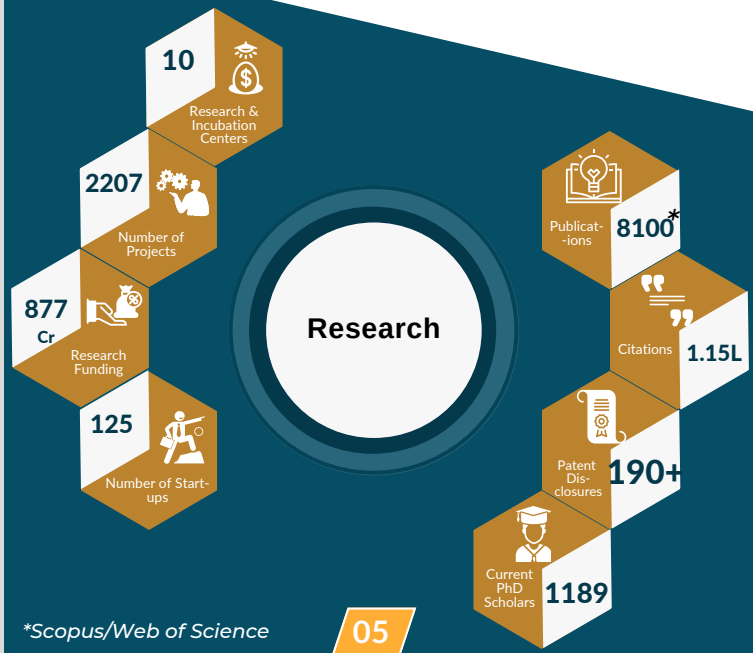
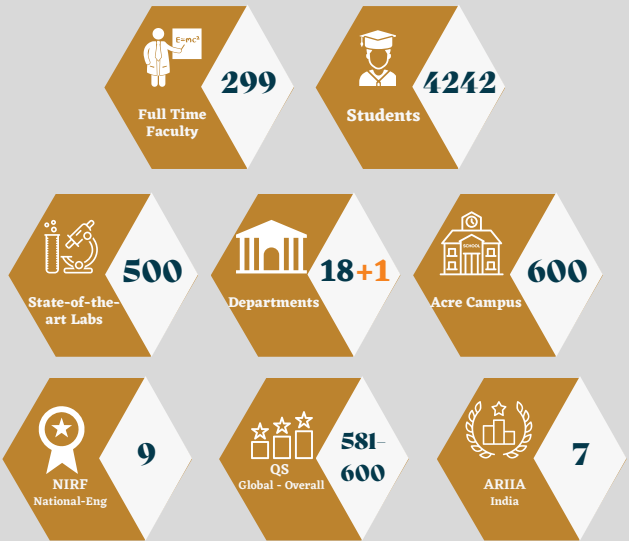
Mission

“IITH will be the cradle for inventions and innovations. It will advance knowledge and scholarship to students in science, technology and liberal arts, and equip them to handle the challenges of the nation and the world in 21st century.”



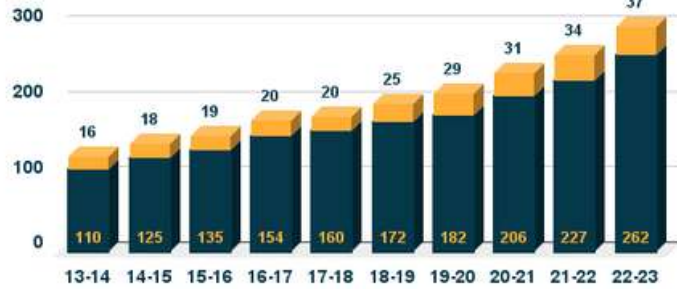
“To be recognized as Ideators and Leaders in Higher Education and Research, and to develop human power with Creativity, Technology and Passion for the betterment of India and humankind.”

Collaborations



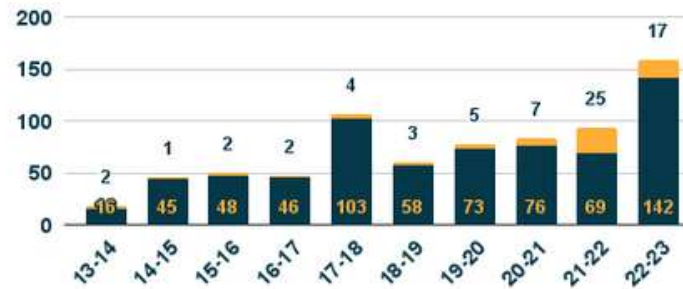
Faculty (Year Wise)

Female Male

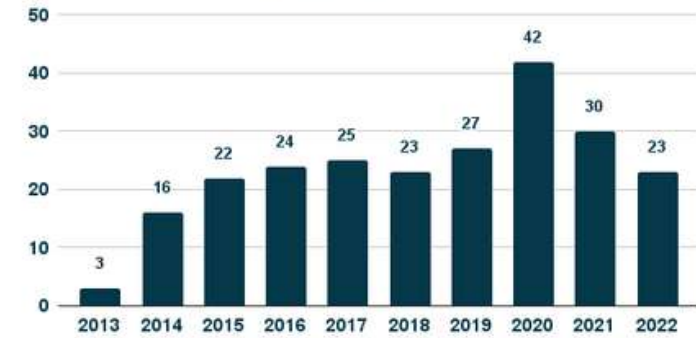


Project Funds (Rs in Cr)

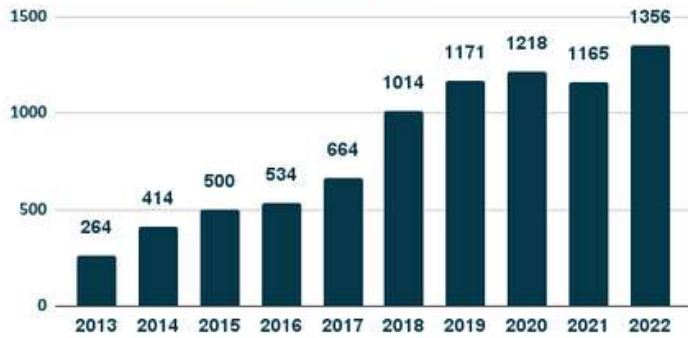
Consultancy Research



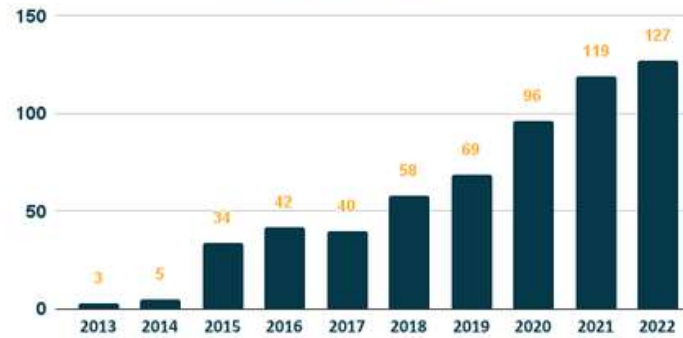
Patents



Publications



PhD (Awarded)

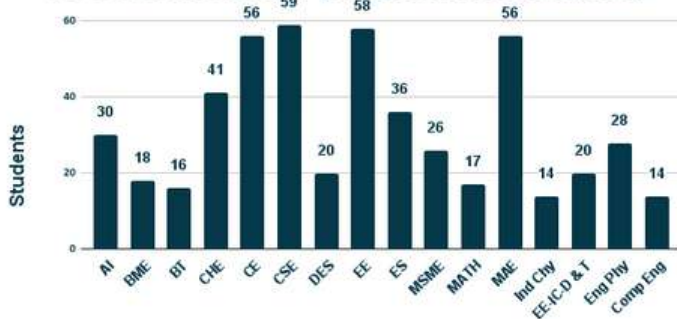


Students Intake (Year-Wise)

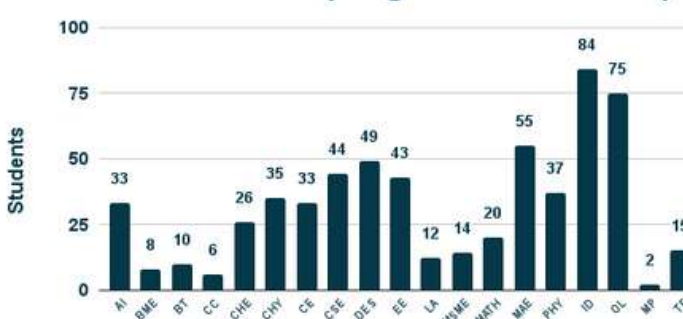
PhD PG UG



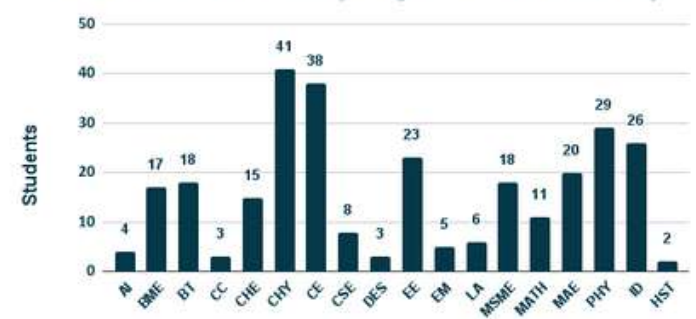
UG Students Intake (Program-Wise-2022-23)



PG Students Intake (Program-Wise-2022-23)



PhD Students Intake (Program-Wise-2022-23)



- AI: Artificial Intelligence
- BME: Biomedical Engineering
- BT: Biotechnology
- CC: Climate Change
- CHE: Chemical Engineering
- CHY: Chemistry
- CE: Civil Engineering

- Comp Eng: Computational Engineering
- CSE: Computer Science & Engineering
- DES: Design
- EE: Electrical Engineering
- EE-IC-D & T: EE-IC Design & Technology
- Eng Phy: Engineering Physics
- ES: Engineering Science

- EM: Entrepreneurship & Management
- HST: Heritage Science & Technology
- Ind Chy: Industrial Chemistry
- ID: Interdisciplinary,
- LA: Liberal Arts
- MATH: Mathematics

- MP: Medical Physics
- MSME: Materials Science & Metallurgical Eng
- MAE: Mechanical & Aerospace Engineering
- OL: Online
- PHY: Physics
- TE: Techno-Entrepreneurship

5G & Next
Generation
Communication
Technologies



Additive
Manufacturing



Artificial
Intelligence



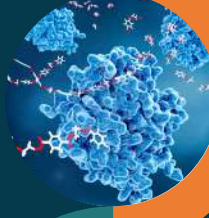
Smart mobility



Rural
Development



Catalysis



Climate
Change



Energy



Health Care



Autonomous
Navigation



Integrated
Computational
Engineering



Nano-
Technology



Sensors and
Devices



Waste
Management



Transportation



Under Graduate Programs



- Artificial Intelligence
- Biomedical Engineering
- Biotechnology & Bioinformatics
- Chemical Engineering
- Civil Engineering
- Computer Science and Engineering
- Electrical Engineering
- Engineering Science
- Engineering Physics
- IC Design & Technology
- Industrial Chemistry
- Materials Science & Metallurgical Engineering
- Mechanical & Aerospace Engineering
- Mathematics & Computing
- Computational Engineering (Interdisciplinary)

Bachelors of Design (BDes)



Post Graduate Programs



Regular MTech/MDes

Artificial Intelligence

- Artificial Intelligence

Biomedical Engineering

- Biomedical Engineering
- Medical Sensing, Analytics & Simulation
- Nanomedicine & Biomaterials

Biotechnology

- Medical Biotechnology

Climate Change

- Climate Change

Civil Engineering

- Structural Engineering
- Environmental Engineering

- Hydraulic & Water Resource Engineering
- Geotechnical Engineering
- Transportation Engineering

Chemical Engineering

- Chemical Engineering

Computer Science and Engineering

- Computer Science & Engineering
- Network & Information Security

Design

- Visual Design
- Product Design
- Interaction Design
- Design Studies

Electrical Engineering

- Communications and Signal Processing
- Microelectronics and VLSI
- Power Electronics and Power Systems
- Systems and Control

Entrepreneurship and Management

- Techno Entrepreneurship

Materials Science & Metallurgical Engineering

- Materials Science & Metallurgical Engineering
- Semiconductor Materials and Devices

Mechanical & Aerospace Engineering

- Mechanics and Design
- Integrated Design and Manufacturing
- Thermo-Fluid Engineering
- Aerospace Engineering

Center for Interdisciplinary Programs

- Additive Manufacturing
- Energy Science and Technology
- E-Waste Resource and Engineering Management
- Integrated Circuits and Microsystems Packaging
- Integrated Sensor System
- Medical Device Innovation
- Polymers and Biosystems Engineering
- Smart Mobility
- Ophthalmic Engineering
- Sustainable Engineering
- Quantum & Solid State Devices

Master of Arts

- Developmental Studies
- Health, Gender & Society

Master of Science

- Chemistry
- Mathematics
- Physics
- Medical Physics



Online MTech/MDes Programs

(With an Exit option of Executive MTech)

- Data Science
- MDes by Practice
- Microelectronics and VLSI
- Communications and Signal Processing
- Power Electronics and Power Systems
- Heritage Science & Technology
- Computational Mechanics
- Industrial Metallurgy
- Integrated Computational Materials Engineering
- EV Technology

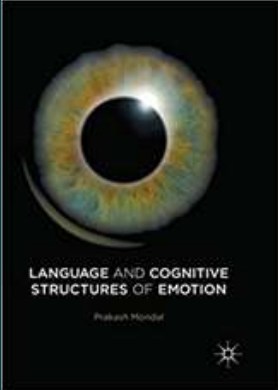
Regular PhD Disciplines

- Artificial Intelligence
- Biomedical Engineering
- Biotechnology
- Chemical Engineering
- Civil Engineering
- Climate Change
- Computer Science and Engineering
- Electrical Engineering
- Heritage Science and Technology
- Materials Science and Metallurgical Engineering
- Mechanical and Aerospace Engineering
- Chemistry
- Physics
- Mathematics & Computing
- Liberal Arts
- Design
- Engineering Science
- Entrepreneurship & Management
- Center for Interdisciplinary Programs

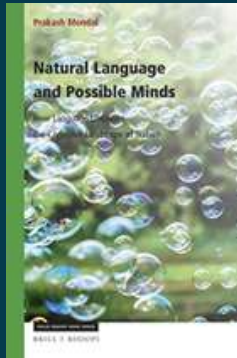




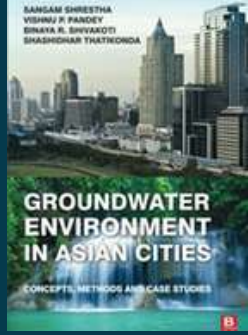
Dr Prakash Mondal
Dept of LA



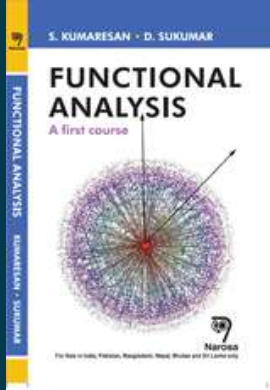
Dr Prakash Mondal
Dept of LA



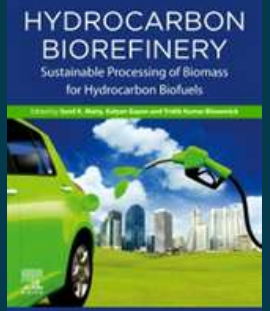
Dr Prakash Mondal
Dept of LA



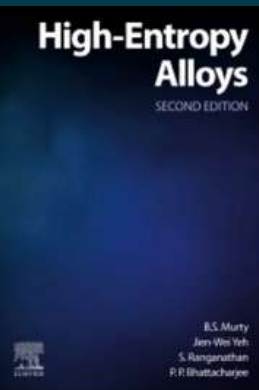
Prof T Shashidhar
Dept of CE



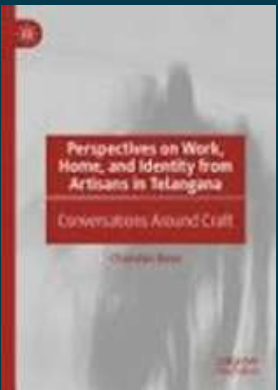
Dr Sukumar D
Dept of MATH



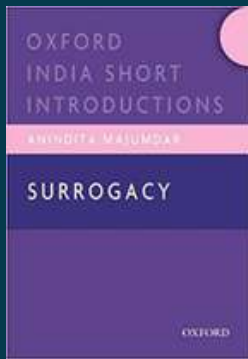
Prof Sunil K Maity
Dept of CHE



Prof B S Murty & Prof P P
Bhattacharjee, Dept of MSME



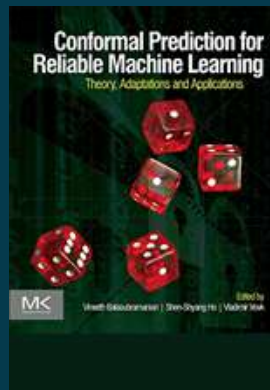
Dr Chandan Bose
Dept of LA



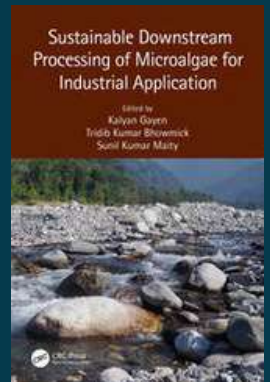
Dr Anindita Majumdar
Dept of LA



Dr Anindita Majumdar
Dept of LA



Dr Vineeth N B
Dept of CSE



Prof Sunil K Maity
Dept of CHE



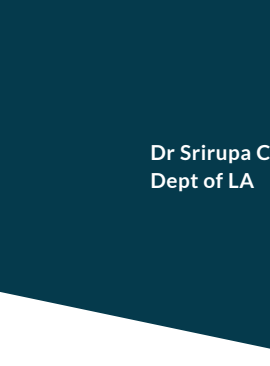
Dr Chandra Shekhar Sharma
Dept of CHE
Dr Mudrika Khandelwal
Dept of MSME



Dr Falguni Pati, Dept of BME



Prof Prem Pal, Dept of PHY



Dr Srirupa Chatterjee
Dept of LA

Distinguished Professors



Dr Bayya Vegnanarayana
 Professor, IIT Hyderabad,
 Microsoft Chair, & INSA Senior Scientist,
 India



Prof Chennupati Jagadish
 Head of Semiconductor Optoelectronics &
 Nanotechnology group, Australian
 National University, Canberra, Australia



Prof Christopher C Berndt
 Professor, Dept of Mechanical Eng &
 Product Design Eng, Swinburne University
 of Technology, Australia



Prof Jun Murai
 Professor & Dean of Graduate School of
 Media and Governance
 Keio University, Japan



Prof J N Reddy
 Professor, Mechanical Engineering
 Texas A&M University,
 United States



Prof Nobuhiro Tsuji
 Graduate School of Engineering
 Kyoto University,
 Japan



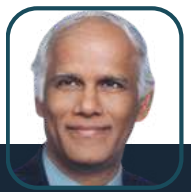
Dr Pulickel M Ajayan
 Benjamin M & Mary Greenwood Anderson
 Professor of Engineering
 Rice University, United States



Dr Paresh Kumar Narayan
 Professor, Monash Business School
 Monash University,
 Australia



Prof Rohini M Godbole
 Professor
 IISc Bangalore,
 India



Prof Rao R Tummala
 Distinguished & an Endowed Chair
 Professor, Georgia Institute of
 Technology, Atlanta, United States



Dr Rao Surampalli
 President and CEO of Global Institute for
 Energy, Environment & Sustainability,
 Lenexa, Kansas, United States



Dr Saraswat V K
 Member - NITI Ayog,
 India



Prof Seeram Ramakrishna
 Materials, Mechanical Engineering,
 National University of Singapore,
 Singapore



Prof Vidyasagar M
 SERB - National Science Chair,
 India



Prof Vijay P Singh
 Regents Professor
 Texas A&M University,
 United States



Prof Saptarshi Majumdar
Dean (Academics)



Prof Ranjith Ramadurai
Dean (Administration)



Dr Mudrika Khandelwal
Dean (Alumni & Corporate
Relations)



Prof Kanchana V
Dean (Faculty)



Prof S Surya Kumar
Dean (Innovation,
Translation & Startups)



Prof Tarun Kanti Panda
Dean (International
Relations)



Prof K V L Subramaniam
Dean (Planning)



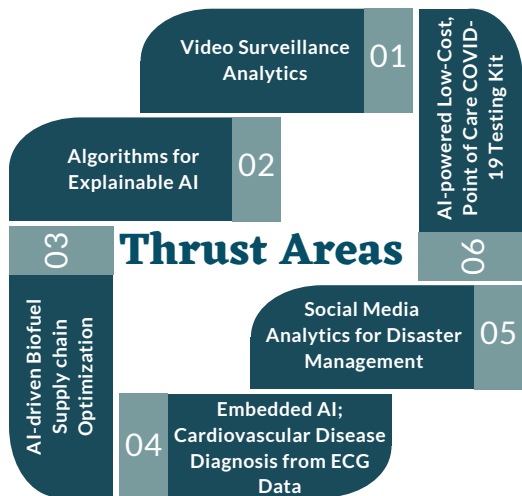
**Prof Chandrashekhar
Sharma**
Dean (Sponsored Research &
Consultancy)



Prof K Venkatasubbaiah
Dean (Students)



Dr Debraj Bhattacharyya
Associate Dean (Planning)



Highlights

- Publications in ICML, NeurIPS, CVPR, ICCV, ICIP, ICASSP, IEEE Transactions: Signal Processing, Image Processing, CSVT;
- Patents and Transfer of Technology;
- Large sponsored projects and Industry Consultancy
- Projects and Application Domains

Major Facilities

- The Department hosts India's first and only NVIDIA AI Technology Centre (NVAITC).



Artificial Intelligence

3D Bio-plotter

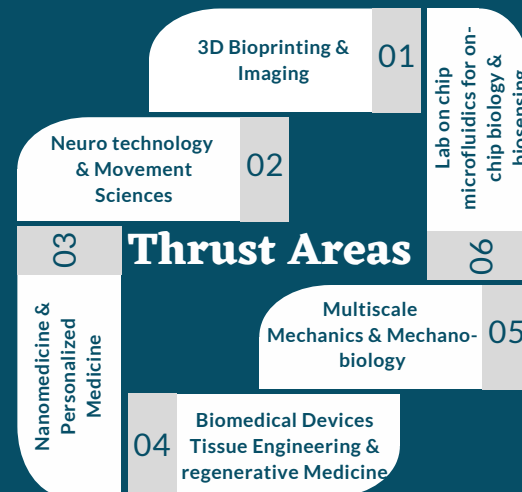


Highlights

- Virtual patient for in-silico clinical tests
- NeuroTech lab
- A Colorimetric approach for the detection of Cervical Cancer by in-situ formation of Gold nanoparticles
- Burn Wound Care Device and Kit
- Durokea Range of Hygiene Products

Major Facilities

- In-vivo Micro CT
- CRYO-SEM
- In-vivo Optical Imaging System
- Envisiontec 3D Bioplotter
- Flow Cytometer, HPLC



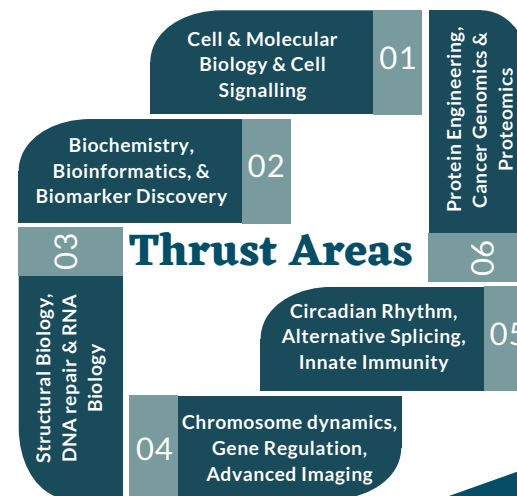


Highlights

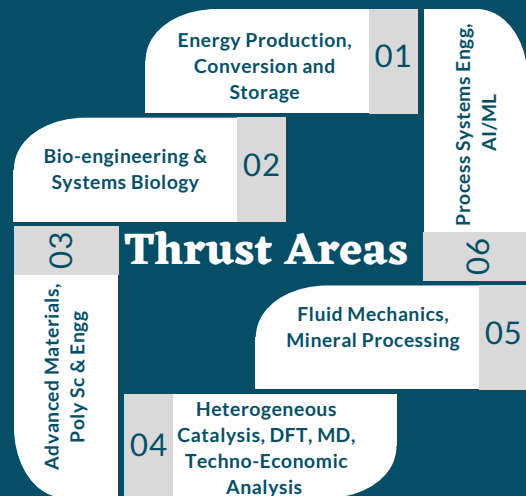
- Understanding mechanism of DNA repair
- Characterization of E. coli Wzi protein for the treatment of multidrug-resistant Gram-negative bacterial
- Structure of DNA-binding protein from Trypanosoma causal agent of sleeping sickness
- Development of Zebrafish Model and Investigation of Pathological Mechanisms
- Understanding mechanism of HIV infection
- Discovery of chemicals to enhance the sperm motility

Major Facilities

- Ion Channel Assay System
- Bench-top Ultracentrifuge Optima MAX-XD
- Fast Protein Liquid Chromatography System
- Flow Cytometer
- HPLC (Analytical And Preparative)



Gel Doc



Highlights

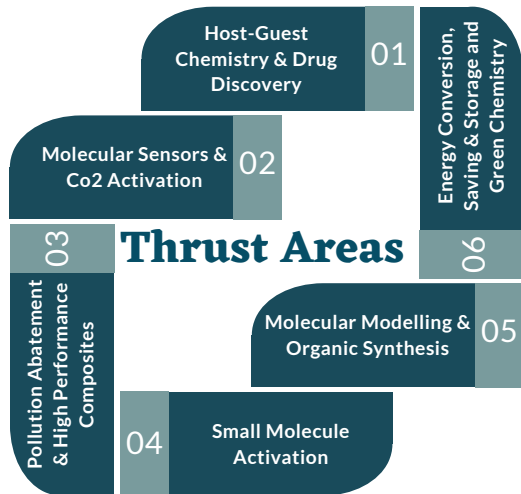
- Live cell imaging: Disease model, 3D printed device, and Drug discovery
- Metal-CO2 Battery Technology for India's Mars Mission
- Measuring NGM particle dynamics inside DMC using PEPT
- Efficient conversion of wind to power in uncertain environments using AI
- Predicting atherosclerosis sites using CFD

Major Facilities

- Optical Tweezers
- Small Angle X-ray Scattering (SAXS)
- Maskless Lithography System
- Atomic Force Microscopy AFM
- Powder XRD



Particle Image Velocimetry (PIV Set Up)



Highlights

- Developed a low-cost chemical route to recycle graphite anodes for Lithium-ion batteries
- Bioinspired Molecular Catalysts for Carbon Dioxide Reduction
- Ring-Opening Polymerization of Cyclic Esters (Research highlight from TKP Group)

Major Facilities

- Multimode AFM (Bruker)
- Bruker D8 SCXRD
- Electron Spin Resonance Spectroscopy
- 600 MHZ NMR (Nuclear Magnetic Resonance Spectroscopy)
- 400 MHZ NMR (Nuclear Magnetic Resonance Spectroscopy)



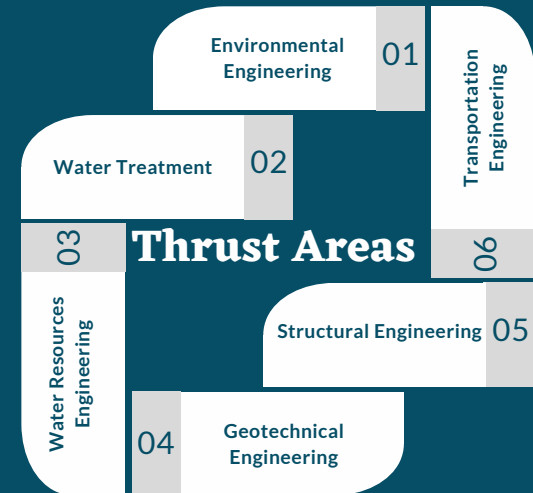
Electron Spin Resonance Spectroscopy

Highlights

- Portable Assault Bridge
- Meta-Barrier for the Laser Interferometric Gravitational Observatory (LIGO) India
- Law of the wall predicts the mean-velocity profile in a turbulent wall-bound flow
- Climate Change & Overfishing increase neurotoxins in marine predators.
- Mercury in Dental Amalgam, Online Retail, and the Minamata Convention on Mercury

Major Facilities

- MTS Actuator Systems
- ICP MS
- Cyclic Simple Shear Apparatus
- Dynamic Actuator System
- Repeated Load Triaxial Apparatus for MR



TOC-TN Analyzer

25 Full time Faculty

43 PhDs Graduated

759 Publications

149 SRC Projects

72 Cr Project Funding

For more details, visit: <https://cse.iith.ac.in/>

650 TF High Performance Computational Facility

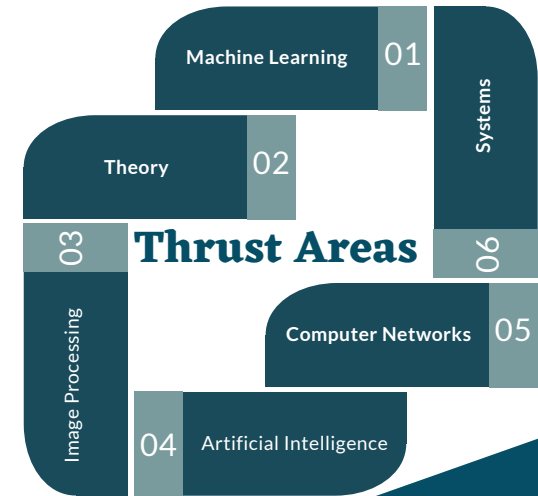


Highlights

- Fraud analytics – live data science and analytics project implemented for the Telangana government
- Techniques for Faster Multi-Core Programming
- Coding Schemes for Communication
- IITH MEC (Multi-Access Edge Computing) Platform Integrated with 5G Core

Major Facilities

- Server and Switches
- 15 Rack Mount Servers
- 500 TB Storage System
- Workstations
- HPC cluster



01 Participatory & Collaborative Design

02 Professional Ethics/Sustainability

Crowd Sourced Design

03 Product Systems and Services

Thrust Areas

06

05 Wellness

04 Design and Education

Highlights

- Organized National Design Challenge with collaboration w Wacom India, Wacom Design Challenge 2020
- Designed Logo for MDMS, ICMR
- PhD Student Priyabrata Rautray Won the Best ten start-up award at 28th Annual HYSEA Award for Swatchh Air

Labs:

- AV Lab
- Rapid Prototyping Lab
- Perfect binding and Print Lab
- IoT Lab
- Mix Reality Lab
- photography lab



Haption 6DOF Haptic Device

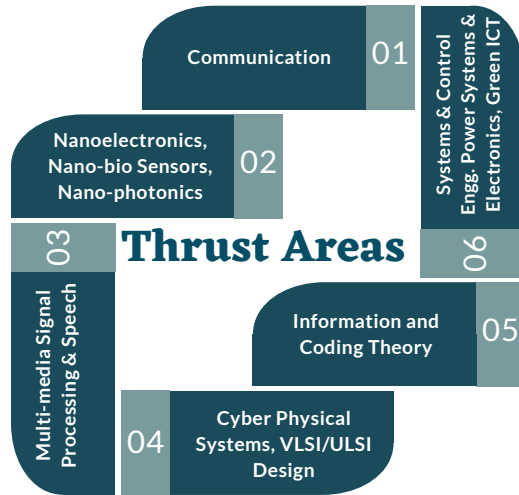
10 Full time Faculty

03 PhDs Graduated

48 Publications

10 SRC Projects

13 Cr Project Funding



Highlights

- Enabled Open-Source VLSI on Android Platform
- Initiated 6G research in the area of convergence between 5G and Satcom
- Muscope: An On-chip Miniature Microscope
- COVIHOME - India First Electronics Rapid COVID-19 RNA Test kit
- Perception-based Image Quality Evaluator (PIQE)

Major Facilities

- Microscope Based Fluorescence Lifetime System
- CRESTEC CABL-9500C Electron Beam Lithography
- Silicon Etch System Using XEF2
- Mask Aligner
- PECVD System



Plasma Asher

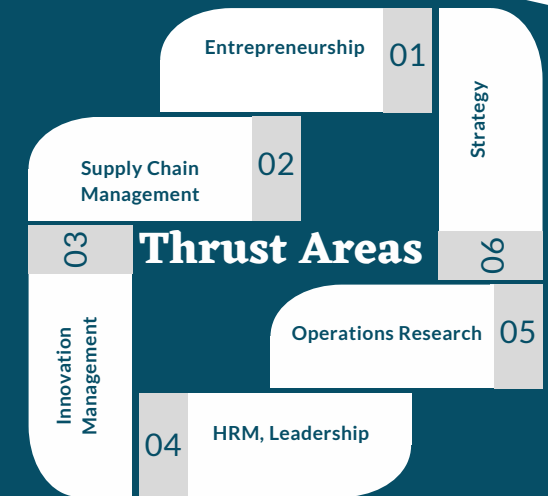
Highlights

Executive Development Program: Dept. of Entrepreneurship, in collaboration with Business Design Labs, offers a unique action-learning program on Business Model Innovation for Business Leaders, Entrepreneurs, and Intrapreneurs.

Certificate course on Deeptech Entrepreneurship: The Department of Entrepreneurship and Management conducted a 30hr certificate course on the theme of "Deeptech Entrepreneurship" in March 2021.

Objective

The Department's main aim is to nurture entrepreneurial motivation and skills among young graduates and produce high-quality research in the areas of entrepreneurship and management. With a prime focus on entrepreneurship and management, the department has excellent potential to nurture young entrepreneurs who can contribute to the economic and social development of the country.



Business Model Innovation Course

Dr. M P Ganesh
Program Director

Ajay Parasrampuria
Lead Facilitator

Course Details
em.iith.ac.in/bmi.html

Virtual Action Learning Program
Starts 18 may 2021

Madhubani Paintings



Highlights

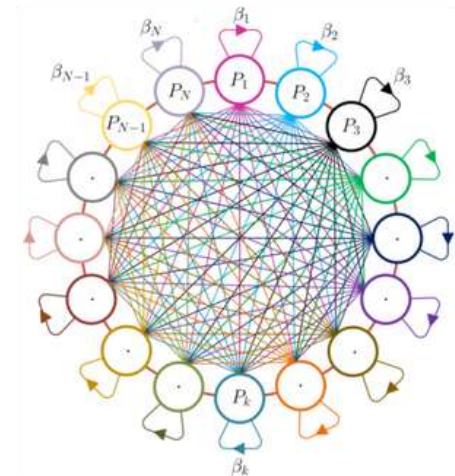
- Cool Infrastructures: Life with Heat in the Off-Grid City
- Labour Supply Chains in the Construction Industry: Circular Migrants, Contracting, and COVID-19
- Disability, family, and care in the time of COVID-19
- 3D imaging-based vein intrusion guide system for pediatric and geriatric healthcare
- Home' work in the time of COVID-19: A longitudinal qualitative study of lockdown on mothers in Hyderabad, Telangana
- Children in Between: Disruptions in the Time of COVID-19 and its aftermath
- Data Quality Assessment: During and Post Data Collection from the Indian Statistical Institute, Delhi Centre

| | | |
|----|--|---|
| 01 | Science & Tech, Urban Environments, Migration | <h3>Thrust Areas</h3> <p>Gender, Body Studies, Development Studies, Health Psychology</p> |
| 02 | Contemporary & Multiethnic American Fiction, Financial Economics | |
| 03 | Popular Culture, Theoretical Linguistics, Learning & Memory Studies | |
| 05 | The Twentieth Century, After Globalization & Media | |
| 06 | Medical Anthropology, Kinship & Family, Resilience, Cultural Pshychology | |

Highlights

- Monotone Metric Spaces in Machine Learning
- Characterizations of local rings via homological dimensions of summands of syzygy modules
- Sign changes for the product of Fourier coefficients of Hilbert modular cusp forms
- Koszul Algebras and Diagonal Subalgebras
- The effect of heat source on non-Newtonian fluid flow through a horizontal porous bed
- Some New Variants of Bishop-Phelps-Bollobas Theorem for Spaces x^* and $LipO(X)$
- Invariant subspaces for a subclass of norm attaining operators
- Development of ERT Reconstruction Algorithms for Accurate Estimation of Phase Concentration in Multi-phase flows

Schematic Representation of N interaction population groups with different infection spread rates among each group by Prof C P vyasarani & Group



| | | |
|----|--|--|
| 01 | Algebraic Geometry & Commutative Algebra | <h3>Thrust Areas</h3> <p>Theory of Non-linear PDEs</p> |
| 02 | Computational Intelligence | |
| 03 | Fluid Dynamics | |
| 05 | Number Theory & Statistics | |
| 04 | Functional Analysis | |

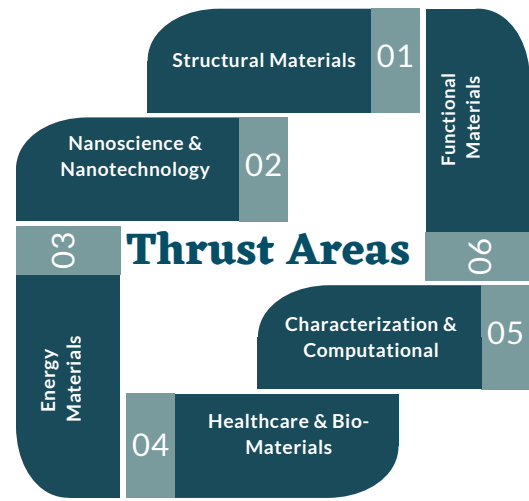
20 Full time Faculty

41 PhDs Graduated

554 Publications

85 SRC Projects

56 Cr Project Funding



Highlights

- Structural-Compositional Dual Heterogeneities by Hybrid-rolling
- Fabrication of MCAs/HEAs Thin Films and Nanowires using Electrodeposition
- Prototypes of Thin Film Sensors and Energy Harvesters
- Engineering Bacterial Cellulose for Health and Environment

Major Facilities

- Transmission Electron Microscope With Accessories Model JEM-2100(HR)
- Scale Rolling Machine
- Supra 40-field Emission Scanning Electron Microscope
- Field Emission - Scanning Electron Microscope (FE-SEM DST FIST)
- Nano-indenter (Bruker's HYSITRON TI Premier) & Thin Film XRD



Transmission Electron Microscope

Custom Designed and Developed

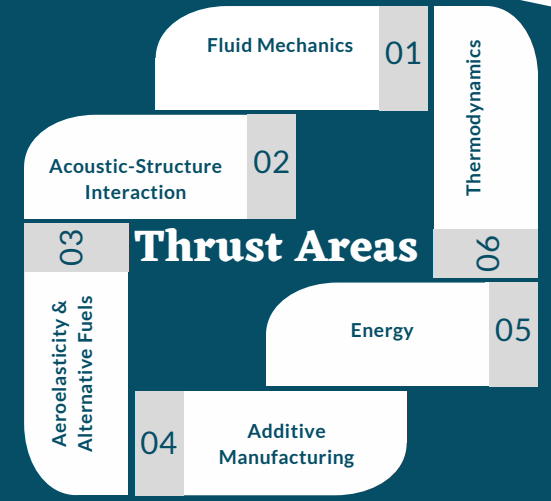


Highlights

- Development of a low-frequency passive noise control sheet absorber
- Underwater shock simulator
- Double-Sided Incremental Forming for Large Components

Major Facilities

- Tekscan Tirescan System
- Polytec Micro System Analyzer
- High-Speed PIV
- Velocity And Scalar Diagnostics Laser System
- Phase Doppler Particle Analyzer



34 Full time Faculty

63 PhDs Graduated

673 Publications

176 SRC Projects

65 Cr Projects Funding

28  Full time Faculty

40  PhDs Graduated

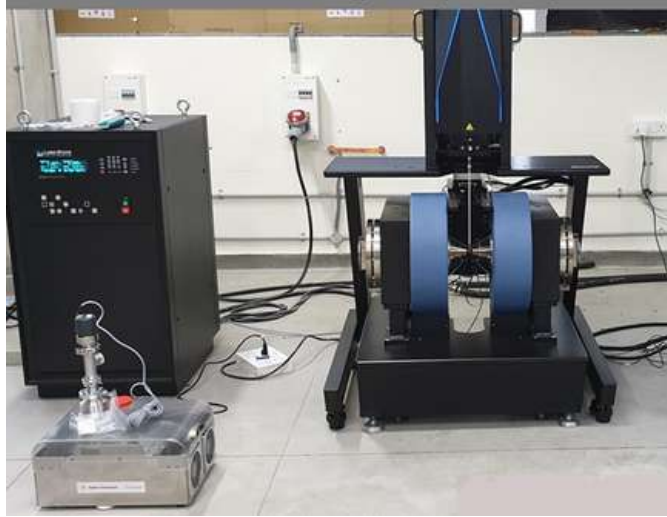
1294  Publications

77  SRC Projects

25 ^{Cr}  Projects Funding

For more details, visit: <https://physics.iith.ac.in/>

Vibrating Sample Magnetometer

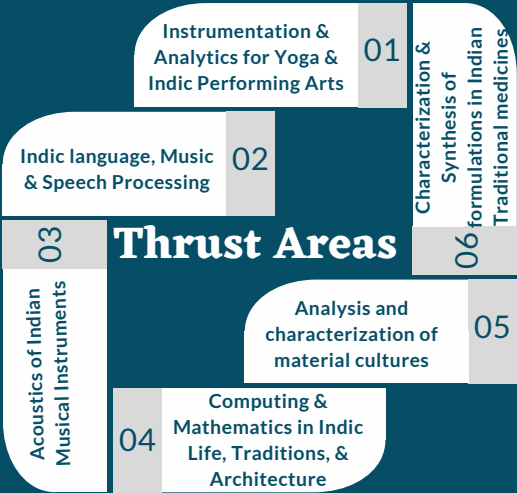
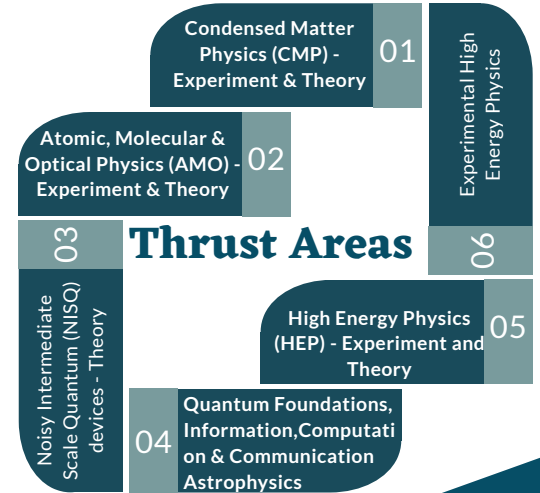


Highlights

- Finding fundamental limitations of the most widely used formalism for describing quantum devices.
- New Ultrafast fiber laser facility @ IITH. Development of next generation ultra fast laser sources for Biomedical applications. High Power Laser based Additive Manufacturing and Directed Energy applications.
- Observing and understanding black holes through NASA, ESA and ISRO space missions data.

Major Facilities

- Vibrating Sample Magnetometer
- MPMS
- XRD
- Terawatt Laser
- Sputtering system
- Photoluminescence Spectrometer
- Cryofree Optical Cryostat
- Brillouin Light Scattering
- Telescope



Highlights

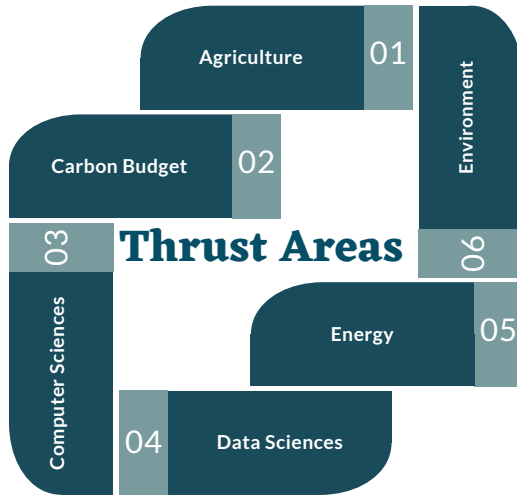
Our goals include

- Research to define the state of art in Heritage activities using science and technology
- Training of human resources engaged in Heritage areas
- Product development to help Heritage industries, entrepreneurs scale up and serve customers better

Research Facilities

- Acoustics of Music
- Yoga and performing arts measurements
- Compute clusters for Heritage computing
- Digital Visualization Labs





Highlights

- The Department of Climate Change at the IITH attempts to explore climate change by integrating academic knowledge with practical knowledge bringing scientists, engineers, practitioners, and students together.
- The key is an understanding of the strong association between the basic climate sciences, the technology & engineering solutions, and the policy.
- We, at IITH, plan to be a leading institute in the synergy among these three key areas.
- This clearly highlights the need for multi-disciplinary courses.
- We plan to achieve this with a unique curriculum taking the help of IITH's fractal academics program.
- The curriculum involves core courses, elective courses, seminar series by the experts of various disciplines, focus group discussions, field visits, and research thesis.



Visit to Indian Meteorological Dept

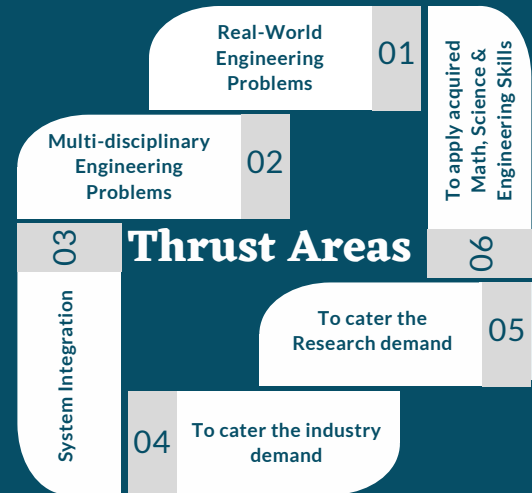
Image Compression - A Trilogy (Past, Present and Future): A study by Sharath Chandra Sheripally



Highlights

BTech in Engineering Science at IITH is a unique program being offered for the first time in India. It opens the doors to different specializations and provides a holistic engineering education. The basic structure is as follows: for the first 2 years (4 semesters) the student does basic courses in Mathematics, Physics, Chemistry, and different fields of engineering.

- Ability to apply acquired Math, Science and Engineering skills to solve real-world engineering problems.
- Ability to identify, Formulate and solve multi-disciplinary engineering problems.
- Ability to work well in inter-disciplinary teams with focus on System Integration.





Rural Development Centre

Rural Development Centre (RDC) at IITH was established in July 2020 with a vision to support Rural development initiatives of the Government through innovative technologies being developed at IITH.

To know more, visit: <https://rdc.iith.ac.in/>



DIA-COE Centre of Excellence

An MOU has been signed between the Chairman, DRDO, and the Director, IITH, on 3 July 2020 for the establishment of the DRDO-IITH research cell at the IITH campus.

This Cell is now converted into a DIA Centre of Excellence



Design Innovation Centre

Design Innovation Centre at IITH is engaged in Innovation through design and technology along with partnering institutions engaging with mutually beneficial innovation activities.

To know more, visit: <http://dic.iith.ac.in/>



Centre for Interdisciplinary Program

CIP has been created with a vision of fostering interdisciplinary studies across various disciplines at IITH. Currently, the CIP runs 1 MSc Program, 11 MTech programs across various disciplines, an Interdisciplinary PhD Program and a Joint Doctoral Program with Deakin University.

To know more, visit: <https://cip.iith.ac.in/>



DST NM-ICPS TiHAN

Dept of Science & Technology (DST) under National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), GoI has sanctioned the prestigious Technology Innovation Hub to IITH in the technological vertical of Autonomous Navigation & Data Acquisition Systems (UAVs, ROVs, etc.).

To know more, visit: <https://tihan.iith.ac.in/>



Centre for Research in AI - NVAITC & क्रिया

To support the research activities of the AI dept, क्रिया has been established with the support of JICA & Honeywell. The dept has also entered into close collaboration with NVIDIA to establish an NVIDIA Artificial Intelligence Technology Centre (NVAITC).



Centre of Excellence for Medical Devices

ICMR has sanctioned Rs. 15.2 Cr for a Centre of Excellence to IITH to foster innovation & product development in the field of Medical Devices & Diagnostics. The team is led by Prof Renu John, with Prof Sushmee, Dr Anamika, Dr Kousik, Dr Aravind, Dr Avinash, Dr Falguni & Dr Mohan as co-investigators.



Centre for Continuing Education

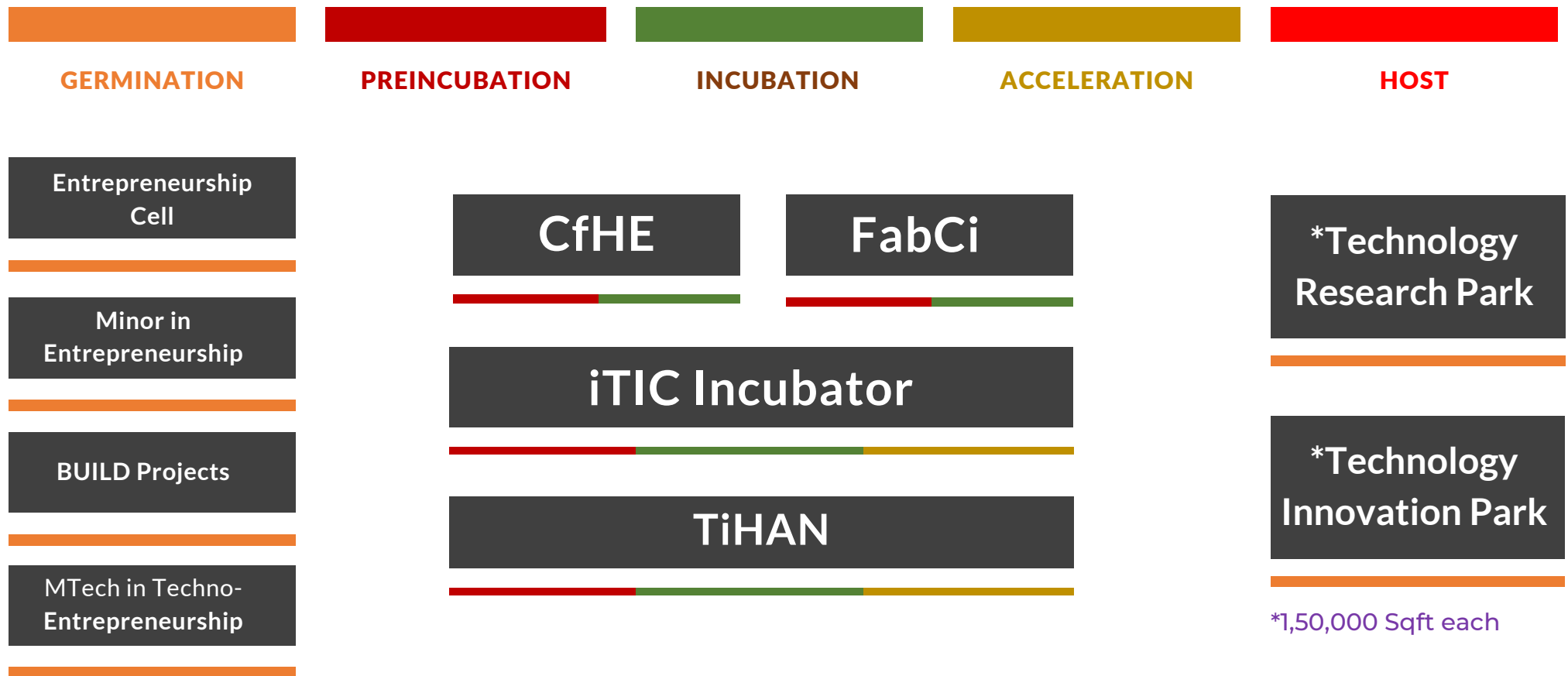
The CCE aims to conduct training programs to students, academicians, & working professionals across the country. TLC activities of IITH is mainly focused on faculty development programs aiming at advanced pedagogy & teaching effectiveness in the faculty. For details, visit: TLC: <http://tlc.iith.ac.in/> GIAN: <https://www.iith.ac.in/~gian/> TEQIP: <http://teqip.iith.ac.in/>



Transportation Research and Innovation Hub (TRI HUB)

IITH inked an MoU with the National Highways Authority of India (NHAI), Ministry of Road Transport and Highways, Govt. of India to establish a TRI HUB. This Centre of Excellence at IITH will work on contemporary and cutting-edge technologies for National Highways in India.

Innovation Entrepreneurship Ecosystem @ IITH



Center for Healthcare Entrepreneurship
For Details, Visit: <https://cfhe.iith.ac.in/>
i-TIC Foundation
For Details, Visit: <https://i-tic.iith.ac.in/>

NMICPS TiHAN Foundation
For Details, Visit: <https://tihan.iith.ac.in/>

Fabless Chip Design Incubator (FabCI)
For Details, Visit: <http://fabci.iith.ac.in/>
Technology Research Park
For Details, Visit: <https://trp.iith.ac.in/>



International Relations

We are focused on building strong research collaborations with foreign universities. To accomplish this, we envisage a 4-stage process:

- Faculty interactions (visits & workshops, video-conferencing, joint proposals, co-authored papers)
- Student exchanges (PhD and MS scholars to spend 3-6 months carrying out research at collaborators' laboratories)
- Joint supervision of research scholars, serving on doctoral and master committees

IITH offers Joint Doctoral Programs with Deakin University, Australia, Swinburne University of Technology, Melbourne, Australia & NTHU Taiwan

Activities

- International Admissions and Collaborations
- Coordinate international delegation visits
- Encourage, maintain and sustain relationships with foreign universities and build new partnerships
- Promote International admissions in neighboring countries
- Promote international student exchanges (both inbound and outbound)

Visit: <https://ircell.iith.ac.in/jica.html>



Corporate Relations

Foster business engagements to conceptualize, develop & implement strategic initiatives. Regular meetings with Corporates to:

- Explore CSR opportunities, Research collaboration & funding
- Prospective recruitment for the students
- Legacy projects funding – alumni batches
- Excellence awards endowment by alumni
- Scholarships supported by alumni
- Engaging with corporates for CSR funding
- Fundraising campaign drives
- Scholarship for EWS funded by NGOs

OCS Activities

- Placements & Internship - augment the placement Internship & PPOs through the robust foundation of Corporate Relations
- Career Counselling to prepare students to make the right choice of career
- Knowledge-sharing sessions by Professionals from reputed organizations

Visit: <https://acr.iith.ac.in/>



Alumni Relations

For all our national institutes of eminence, it is a well-known fact that the Alumni have always played a key role in building the institute and its reputation. Likewise, we at IIT Hyderabad have identified the Alumni Relations office as one of the key pillars of our institute, and the office of Dean (Alumni & Corporate Relations) has recently been established.

Activities

- Alumni Engagements
- Alumni Meet & Greet @ major cities
- Foster talks by alumni
- IITH annual alumni day
- IITH monthly digest to alumni
- IITH AA engagements with students
- IITH campus access facilities

Visit: <https://acr.iith.ac.in/>



Public Relations

Public Relations Office promotes and upholds IITH reputation through strategic communication enabling comprehensive public engagement.

Facilitating a strong and comprehensive public and corporate relations resulting in higher student recruitment, industry liaison, funds for faculty research, greater visibility, and strategic investments

Activities

- IITH Brand Building
- Institute Publications (Monthly Highlights, Newsletter, Brochure, Annual Report, and Calender) and Communications
- Media Management and Public Relations
- Social Media Management
- Facilitating Photography/ Videography for Institute Research Videos and other Institute Events
- Institutional Ranking Coordination: NIRF, QS & ARIIA

Visit: <https://pr.iith.ac.in/>

Campus Facilities



- Dining Hall
- Cafeteria (Nescafe, Amul)
- Vending Machines
- Specialty Clinic
- 24X7 Hospital & Pharmacy
- Bank Services and ATM
- Recreation center
- Tinkerer's lab
- Dance Room
- Supermarket
- Sports facility
(Basketball, Football, Badminton, Gym, TT & Squash)
- Swimming pool
- Post Office
- DAV School IITH Campus
- Open Air Theatre

The General Council is an umbrella term for various bodies which not only perform representation tasks but also cater to student welfare, societies, entertainments etc. The General council strives towards the general welfare of the students.

For more details, visit: <http://gymkhana.iith.ac.in/>

General Council



Cultural Council



The Cultural Council are a motivated group of individuals who believe that a college should have its equal share of fun & frolic along with the case studies. Clubs under Cultural Council are Infocus, Behind the lens, Vibes, Rang de manch, Gesture Shuffle, LitSoc..

IITH's sports is one of the more brilliant facets of this campus life. IITH offers plenty of sports facilities, which include a common football & cricket ground, a hockey ground, a well-equipped swimming pool, floodlit courts for basketball, badminton, tennis, and multiple courts for volleyball. Facilities for indoor games like table tennis, caroms, and chess are also available.

Sports Council



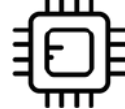
Media Council



The media council of IITH was formed in May 2014 and is a student council that helps take IITH to every individual in and outside IITH. They are involved in publicizing our institute through social media, social events, etc. The Media Council is currently engaged in various newsletters of IITH like the academic newsletter, placement newsletter with the guidance of different faculties, and PR Office of IITH.

The Sci-Tech council is headed by Science and Technology Secretary. It encompasses nine societies : AeroClub, Cepheid, Elektronica, Kludge, Infero, Lambda, Prakriti, Robotix and Torque which covers the diverse nature of science and technology. Various events are organised from time to time, starting from orientation of all these clubs.

Scitech Council



Mess Council



Mess monitoring council, also known as MMC, assists in the robust functioning of mess in coordination with mess wardens & HCU. Headed by the mess secretary, it represents the students' voice. It also regularly inspects the operations to look for various faults & ensure that food quality is maintained at IITH. It strives to ensure that all the students have enjoyable and healthy meals at their second home.



Sunshine

Sunshine: The Counselling Cell

Since its inception on January 12, 2012, Sunshine- the counselling cell at IIT-H, has been committed to helping the student community. The dedicated team of Sunshine comprises a Faculty in- Charge, two Psychological Counsellors, fifteen faculty representatives, three student heads, seven management team members and thirty-six student mentors.

For more details, visit: <http://gymkhana.iith.ac.in/>





Academic Expansion

- 5000+ Students
- 400+ Faculty
- 400+ Staff
- 20+ Departments/ Schools
- 15+ UG Programs
- 40+ PG Programs
- 15+ Online MTech Programs



Research, Innovation & Entrepreneurship

- 10,000+ Publications
- 1,50,000 Citations
- 1500+ PhD Scholars
- 800+ PhD Graduation
- 300+ Patents
- 1000 Cr+ R&D funding
- 100+ ID Projects
- 15+ Centres/CoEs
- 200+ Start-ups
- Support 10 villages



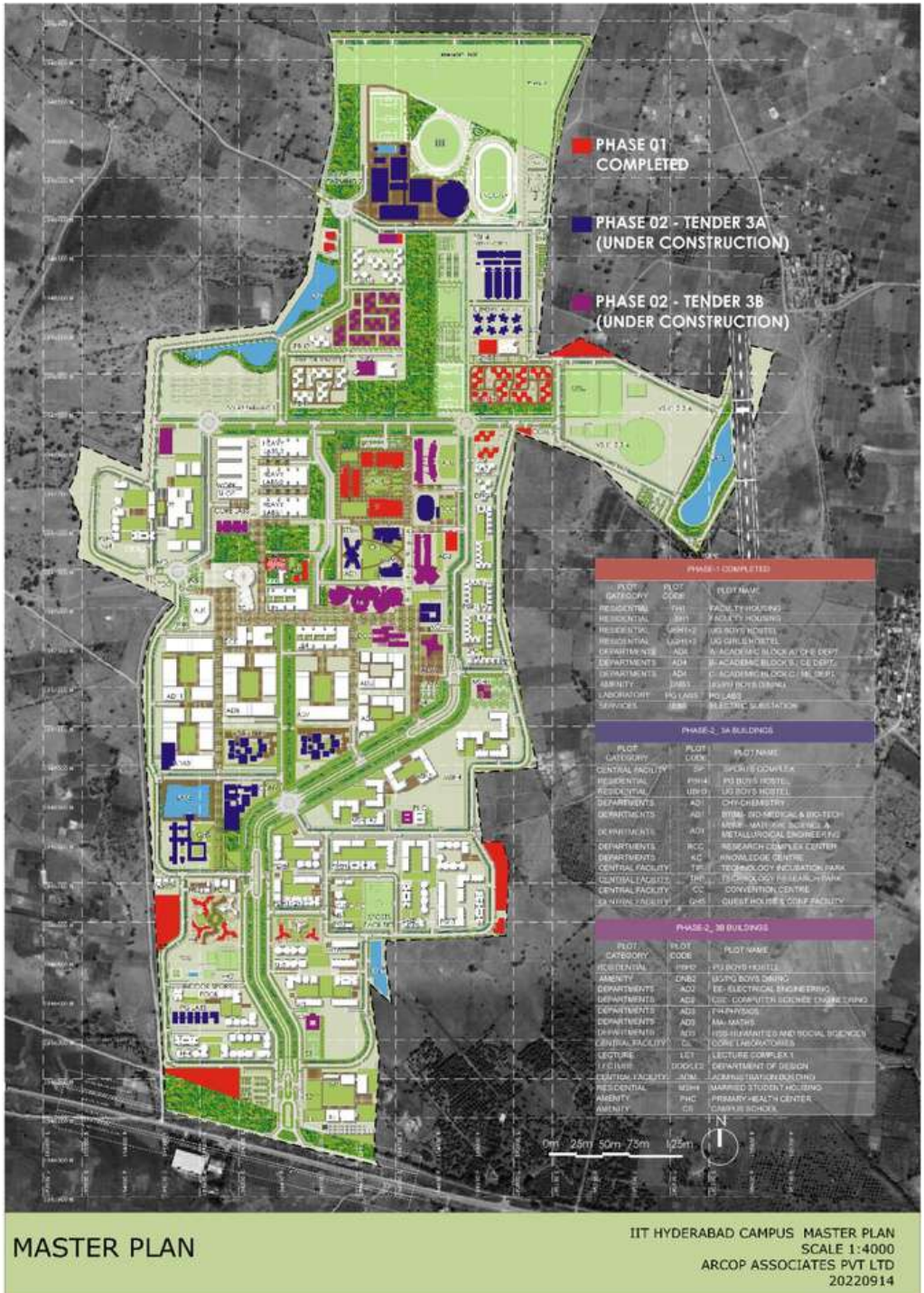
Research Focus

- Nurturing interdisciplinary research
- Promoting excellence
- Inspire inventions and innovations
- DeepTech Innovations
- Locally relevant research
- Rural Development



Campus Development:

- Green Campus
- Energy-efficient Campus
- Modularity & flexibility
- Master Plan for 20,000 Students



Faculty (Fellowship)

- Prof Kirti Chandra Sahu (CHE), Fellow of Institute of Physics (IOP), UK (2021)
- Prof Ch Subrahmanyam, Fellow of Royal Society of Chemistry (FRSC) (2020-21)
- Prof G Prabu Sankar (CHY), Fellow of Royal Society of Chemistry (FRSC), UK (2020-21)
- Prof V Kanchana (PHY), Fellow of the Royal Society of Chemistry (FRSC) (UK) (2020-21)
- Prof V Kanchana (PHY), Fellow of the Institute of Physics (UK) (2020-21)
- Prof G Prabusankar (CHY), DUO-ASEM Professor Fellowship, Germany (2020-21)
- Dr Gunjan Mehta (BME), Ramalingaswami Fellowship (2020-21)
- Prof Mahendrakumar Madhavan (CE), Fellow of ASCE's Structural Engineering Institute (SEI) (2021)
- Prof Suryanarayana (PHY), Fellow of the Telangana Academy of Sciences (2022)
- Prof Mahendrakumar Madhavan (CE), Fellow of the Institution of Civil Engineers (ICE) London (2022)
- Prof Mahendrakumar Madhavan (CE), Fellow of the American Society of Civil Engineers (ASCE) (2023)
- Prof Kirti Chandra Sahu (CHE), Fellow of the Indian Academy of Sciences (FASc) (2023)
- Prof Renu John (BME), Fellow of the Royal Society of Biology (FRSB) (2023)

Faculty (Other Recognitions)

- Dr Avinash Eranki (BME), Bracco Imaging Distinguished Young Investigator Award (2020)
- Dr Gunjan Mehta (BME), Har-Govind Khorana Innovative Young Biotechnologist Award (2020-21)
- Dr Narasimha Mangadoddy (CHE), International Advisory Committee (IAC) member from India at International Mineral Processing Council (IMPC) (2020-21)
- Dr Chandra Shekhar Sharma (CHE), DST Swarna Jayanti Fellowship (Engineering Sciences) (2020)
- Dr Mudrika Khandelwal (MSME), INAE Young Engineer Award (2020)
- Dr Mudrika Khandelwal (MSME), NASI Young Scientist Platinum Jubilee Award (2020)
- Prof KVL Subramaniam, Professor (CE), G K Reddy Endowment Lecture, Institution of Engineers (India) (2020)
- Prof S Suriya Prakash (CE), Young Scientist Award from Indian Concrete Institute, India (2020)
- Prof Tarun Kanti Panda (CHY), CRSI Bronze Medal 2021 for his contribution to Chemistry (2020-21)
- Dr Vineeth N Balasubramanian (CSE), IEEE as Senior Member, IEEE.
- Prof Shiv Govind Singh (EE), INAE- Abdul Kalam Technology Innovation National Fellowship (2020-21)
- Dr Sumohana S. Channappayya (EE), IEEE Senior Member (2020-21)
- Dr Kaushik Nayak (EE), IEEE Senior Member and IEEE Electron Devices Society (2020-21)

- Dr Narasimha Kumar (MATH), KV Rao Scientific Society Research Award in the Category of Mathematics (2020-21)
- Prof Pinaki Bhattacharjee (MSME), Japan Society for the Promotion of Science (JSPS) Invitation Fellowship (2021-22)
- Dr Chandra Shekhar Sharma (CHE), 75 Scientists under 50.
- Dr Shelaka Gupta (CHE), 75 Women in STEAM (2022)
- Dr Mahendrakuma Madhavan (CE), HUDCO Design Awards (2021-22)
- Dr Ashok Kamaraj (MSME), Young Metallurgist Award (2022)
- Prof Kirti Chandra Sahu (CHE), VASVIK Industrial Research Award (2022)
- Dr Gaurav Sharma (BT), AMI Young Scientist Award-2021 by the Association of Microbiologists of India (2022)
- Prof Giridhar Madras (CHE), Best Chemistry Scientists in India Leader Award by Research.com for being ranked in the Top 10 Scientists in India in Chemistry (2022)
- Prof Shashidhar T & his Collaborators (CE), Received the "THE Award for International Collaboration of the Year 2022", which is widely recognised as the "Oscars of Higher Education in the UK by "The Global Monitoring Consortium" (2022)
- Dr Mudrika Khandelwal (MSME), Women Excellence Award (2022)
- Prof B S Murty (MSME), National Metallurgist Award (2022)
- Dr Mayur Vaidya (MSME), "DAAD Research Ambassador" for a period of three years (2022-2025)
- Dr Nagarajan Ganapathy (BME), "DAAD Research Ambassador" for a period of three years (2022-2025) (2022)
- Prof Pinaki Bhattacharjee (MSME), The ASM-IIM Visiting Lectureship award to visit USA. (2022)
- Dr Ankita Roy (DS), Prestigious National award for excellence in Publishing (2022)
- Prof Amit Acharyya (EE), Won Design & Verification Conference India 2022 Hackathon "AI on FPGA"" (2022)"
- Dr Sriyith P K (CSE), Sony Research Award 2021 (2022)
- Dr Lakshmi Prasad Natarajan (EE), INSA Young Scientist Award (Indian National Science Academy) (2023)
- Dr Mayur Vaidya (MSME), INSA Young Scientist Award (Indian National Science Academy) (2023)

Students Recognitions

- Ms Rojimol J (CE), Shastri Research Student Fellowship: Doctoral Category, (2020)
- Mr Mannaem Adinarayana (CHY), TEPP-KMU internship fellowship from KMU, Taiwan (2020)
- Ms Ruby Singh, Poulomi Polley (BME), Evonik "RESOMER" Award (2020)
- Mr Brijesh Singh Yadav (MSME), DST AWASAR Award (2020)
- Mr Narasimha Pullaguri (BT), DST AWASAR Award (2020) Mr Alok Kumar Pandey (CHE), INAE Innovative Student Projects Award (2020)
- Ms Sreya Majumdar (LA), Fulbright Nehru Doctoral Research Fellowship (2020-21)
- Ms Akila M (CHY), Swiss Government Excellence Scholarship (2020-21)

- Mr Chaitanya Devaguptapu Shastri (CSE), Indo-Canadian Student Research Fellowship (2021)
- Mr Kaushal Kumar Maurya (CSE), Suzuki Foundation Fellowship (2021)
- Mr Akash Banerjee, Ms Eti Chaudhary, and Dr Saurabh (CSE), Pinaka stands 2nd in ReachSafety-Floats, 2nd in ReachSafety-Loops, 3rd in Reach Safety-Combinations subcategories, and is placed 7th in ReachSafety category in SVCOMP (2021)
- Mr Dendi Sathya Veera Reddy (EE), IEEE ICASSP Travel Grant Award (2020-21)
- Mr Dendi Sathya Veera Reddy(EE), Qualcomm Innovation Fellowship (QIF) Super Winner (2020-21)
- Ms Parimala Kancharla (EE), Qualcomm Innovation Fellowship (QIF) Super Winner (2020-21)
- Mr Bhavanam Srinadh Reddy(EE), TCS RSC Fellowship (2020-21)
- Ms Shweta Suresh Rao Thakare (LA), Upaya and MIT D-Labs Scale-Ups Accelerator Program (2021)
- Mr Aakash Swami (MAE), DAAD-IIT Masters Sandwich Program at TU Dresden (2020-21)
- Mr Vineet Gairola (LA), Stephen Mitchell Award (2022)
- Mr Sourish Chatterjee, Mr Nitish Kumar, Mr Sanyog Sharma & Mr Akhil Kumal Donka, 1st position in IFFCO-MC Hackathon" jointly held by Mitsubishi Corporation India and NEC Corporation India (2022)
- Ms Isha Paliwal (MAE), Smart System Technology Development Award from ISAMPE under the student category by National Aerospace Laboratories (2022)
- Ms Ramya (BME), Won the Start-up Pitch Challenge at AMTECH Hyderabad on "3D Printing in Craniomaxillofacial Reconstruction" (2022)
- Mr Sayantan Ghosh (CIP), First Prize in the Rural Hackathon Organized by BioNEST of IIT Guwahati (2022)

Alumni Excellence Awards

- Dr Appina Balasubramanyam (MTech, EE, Batch - 2015 & PhD, EE, Batch - 2019), Excellence in Academics and technology development (2022)
- Mr Ayush Pateria (Btech, CSE, Batch - 2019), Promising Entrepreneur (2022)
- Ms Shweta Suresh Thakare (MA, LA, Batch - 2021), Promising Entrepreneur (2022)
- Mr Ashwin Nandapurkar (Btech, MAE, Batch - 2015), Distinguished Contribution to the Institute (2022)
- Dr Anesh Kumar Sharma (PhD, EE, Batch - 2013), Distinguished contribution to society and nation-building (2022)
- Mr Sai Kiran Wupadrasta (Btech, CSE, Batch - 2015 & EMDS, 2019), Contribution to Institute-Alumni Relations (2022)

Other Alumni Recognitions

- Dr Kapil M Gumte (PhD-2022, CHE), Appointed as an Assistant Professor in the Department of Operations and Supply Chain at the Indian Institute of Management (IIM), Jammu (2022)
- Dr Kalloor Joseph, Francis (PhD, EE), Dutch personal grant VENI and as Assistant professor position at the University of Twente (2022)
- Dr Seelam Rajasekhar Reddy (PhD-2020, MSME), Appointed as Assistant Professor position at VNIT Nagpur or NIT Nagpur (2022)
- Dr Mamidi Suresh (PhD-2020, CHE), Appointed as Assistant Professor in the Department of Chemical Engineering at NIT Agartala (2022)
- Dr Somashekara M A (Mtech-2011 & PhD-2016), Appointed as the Head of the Department, Mechanical, Materials and Aerospace Engineering (MMAE), IIT Dharwad (2022)
- Dr Sai Manikiran Garimella (PhD-2022, CHE), Appointed as an Adhoc Faculty at the Department of Chemical Engineering, National Institute of Technology, Andhra Pradesh (2022)
- Dr Illa Mani Pujitha (Dual Degree Mtech & PhD-2020, MSME), Appointed as an Assistant Professor at Department of Metallurgical and Materials Engineering National Institute of Technology, Tiruchirappalli (2022)
- Dr Baadiga Ramu (PhD-2022, CE), Appointed as an Assistant Professor at the Department of Civil and Environmental Engineering, IIT Patna (2022)
- Dr Pankaj Sahlot (Mtech-2010, MSME), Appointed as an Assistant Professor at Department of Mechanical Engineering NIT Kurukshetra (2022)
- Dr Anish Hirwe (PhD-2020, CSE), Appointed as an Assistant Professor at Department of Computer Science & Engineering IIT Palakkad (2022)
- Dr Kancharla Parimala (PhD-2022, EE(CSP)), Appointed as an Assistant Professor at School of Computing and Electrical Engineering, IIT Mandi (2022)
- Dr Murali K Rajendran (PhD-2020, EE(Micro Electronics & VLSI)), Appointed as an Assistant Professor at National Institute of Technology, Tiruchirappalli (2022)
- Ms Shweta Thakare (MA-2021, Development Studies), Her Startup GramHeet has been featured in 'Forbes Asia 100 to Watch List' (2022)
- Dr Nagaveni (PhD-2021, EE), Appointed as an Assistant Professor at IIT Dharwad (2022)
- Dr Swathi Krishna S (PhD-2018, LA), Appointed as an Assistant Professor in the School of Humanities, Social Sciences, & Management at IIT Bhubaneswar (2022)
- Dr Bhushan Praveen Jangam (PhD-2021, LA), Appointed as an Assistant Professor in the School of Management and Entrepreneurship at IIT Jodhpur (2022).

NIT: National Institute of Technology

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To know more, for regular updates please visit:



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