A Dream Destination for Students, Academicians, Researchers & Industries

Inventing & Innovating in Technology for Humanity (IITH)

Brochure 2022

What inside?

Director's Desk

Dear Friends,

Hope you had a good year.

We have struggled with COVID-19 for more than a year now. One thing this pandemic has taught us is not to stop and wait for a better day but to continue to grow through innovative ideas despite the stumbling blocks. Classes are going on in online mode ensuring students' academic pursuit is unmarred & ever-evolving. This year has been an amazing year for IITH with Rank-7 in ATAL Innovation Ranking, Top-10 NIRF rankings among engineering institutes for the 6th consecutive time, and entering for the first time into the Top 600 in the QS World Rankings. This journey was full of excitement too and is a remarkable achievement for an institute that is just 12 years old. IITH for the first time performed better in one of the National Ranking than two of first-generation IITs. These are not just the numbers, but the reflection of the strong academic & research foundation laid by our faculty, which is being nurtured and improved year after year by our faculty and students.

In this course of time, we started leaping forward with several initiatives that would bring us close to the industry such as a semester long internship for our BTech students, industry lectures as a mandatory course for MTechs, industry-defined MTech projects, industry-oriented BTech & MTech programs, and several online MTech/MDes programs. Focusing on healthcare, we have started two BTech programs, one in Biomedical engineering and another in Biotechnology & Bioinformatics, and an MTech in Medical device innovation. With an interest to encourage interdisciplinary academics and research, we started a Centre for Interdisciplinary programs and initiated several ID MTech programs, ID PhD, and ID research projects. BTech in Computational Engineering @IITH is one of the ID BTech Programs.

With Inventing and Innovating in Technology for Humanity (IITH) as our motto, a large space for Incubation & Innovation Park and Research Park, with about 15 lakh sqft each, is being created within the next 2 months. A department for Entrepreneurship & Management has been established to strengthen the entrepreneurship ecosystem at IITH and an MTech in Techno-entrepreneurship is being started this year. A Rural Development Centre has been started to take the technological innovations of IITH to the villages. A Centre for Continuing Education has been established to upskill the needy to be job-ready in both rural and urban sectors.

To contribute significantly towards the dream of Atma Nirbhar Bharat, we established the IITH-DRDO Research Cell. IITH has been very active in various research areas such as health care, future communications, autonomous navigation, AI applications, Energy, additive manufacturing, fabless chip design, sensors & devices, climate change, to name a few.

Our international outreach has grown significantly in the past year. To encourage overseas students to carry out their research at IITH, we have recently initiated a new PhD fellowship for foreign passport holders FIRST (Fellowship for International Research Scholars in Technology). We have also initiated a special Joint Doctoral Program with Swinburne University and Deakin University in Australia and Joint Research Centre with NIMS, Japan.

Campus Development, Phase-2 is also in full swing and is expected to complete in this year. Apart from our academic & research excellence, we could accomplish the IITH Campus school project successfully which has been digitalized. Our drive to keep the campus clean & green is picking up momentum, month-on-month. We now have a Resource Recovery Plant with Bio-digestor, Electric Vehicles for Campus Commuting, monthly Plantation, and many more.

We will keep setting higher benchmarks year after year to excel in academics, research & technology development and achieve them with perseverance.

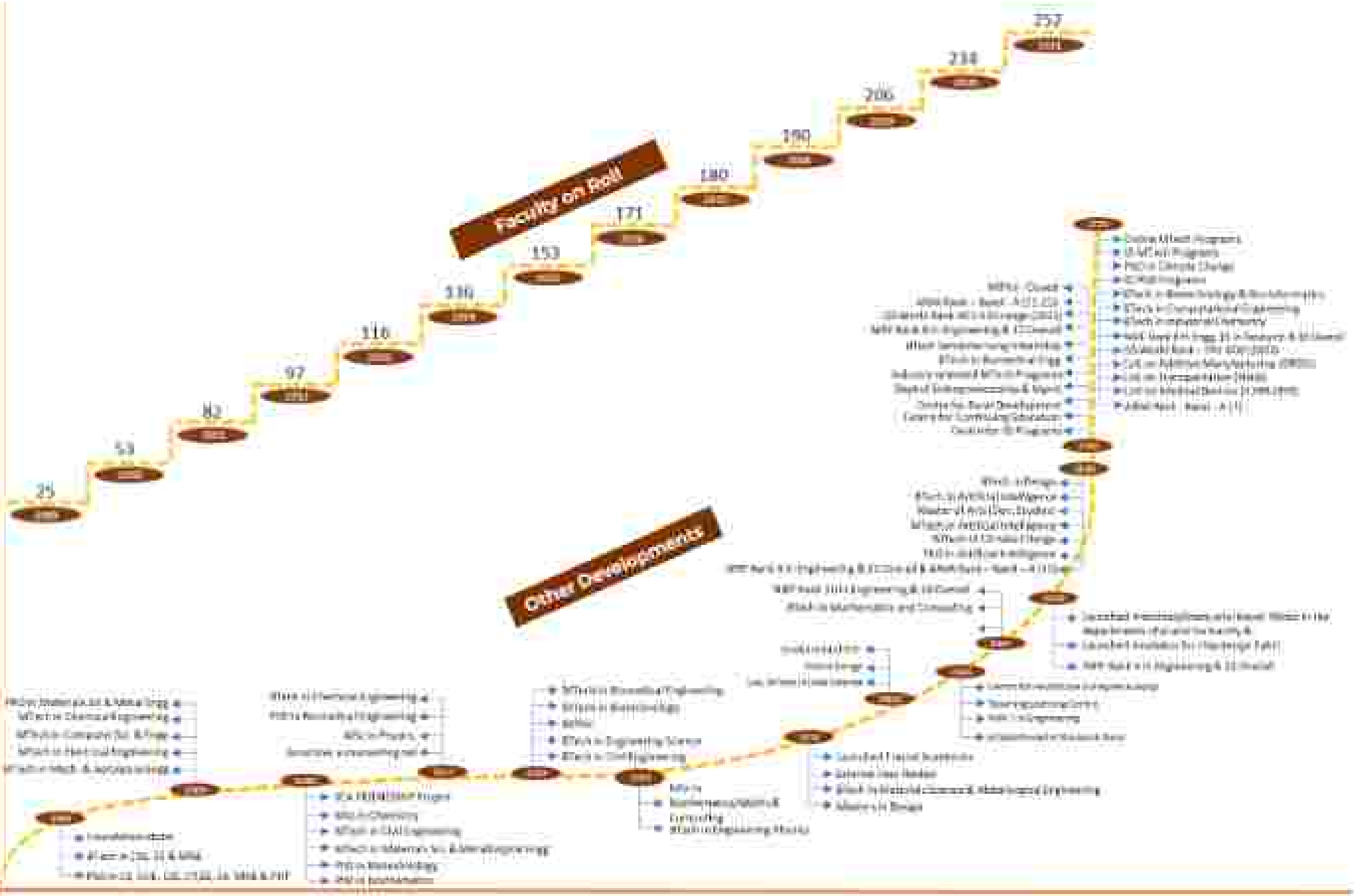
This information booklet will give you a complete overview of all our departments, centres, sections, campus overview & important activities being undertaken for the betterment of society at large.

I wish you all a wonderful year ahead.

Stay Safe & Stay healthy.

Jai Hind!!!

Prof B S Murty
Director, IIT Hyderabad


Faculty on Roll
25
53
82
97
116
136
153
171
180
190
206
234
257
Other Developments

Academics

252 Full Time Faculty

3,903 Students

17 Departments

200 State-of-the-art labs

8 NIRF (Engg.)

8 QS WUR (Engg., India)

7 ARIIA (India)

600 Acre Campus

Research

9 Research & Incubation Centre

1,668 No. of Projects

679 Cr Research Funding

7,237 Publications

85,046 Citations

214 Patent Disclosures

466 PhDs Graduated

1129 Current PhD Scholars

100+ No. of Start-ups

Collaborations

40 Laboratories

46 Industries

102 Academic

83 National

105 International

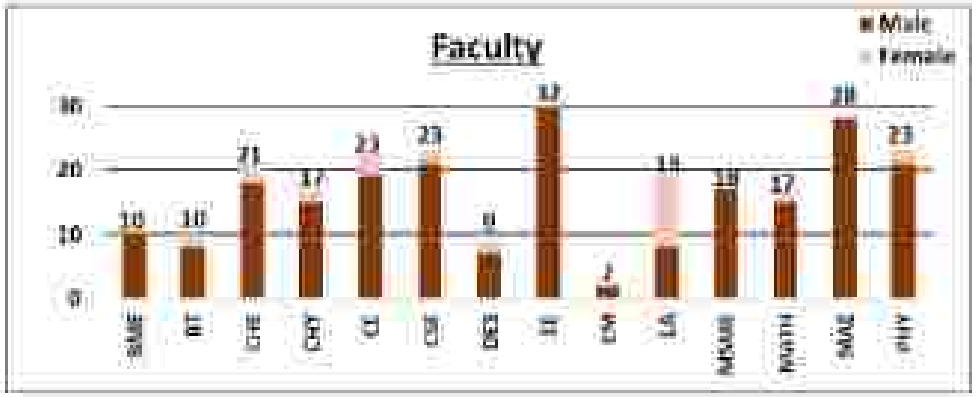
250+ Reg. companies for placement

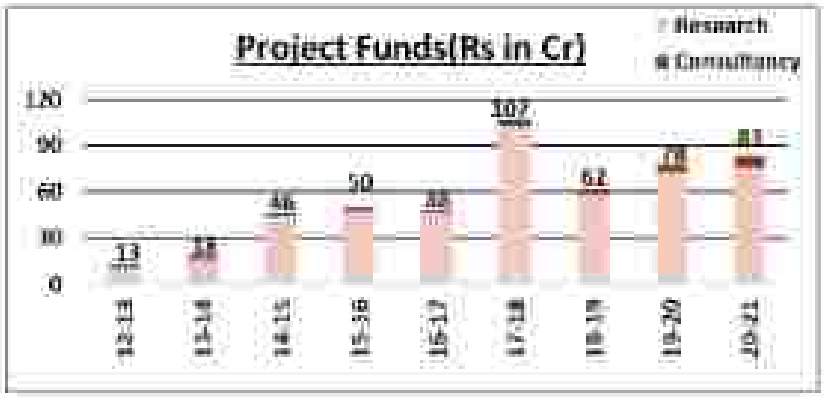
Mission

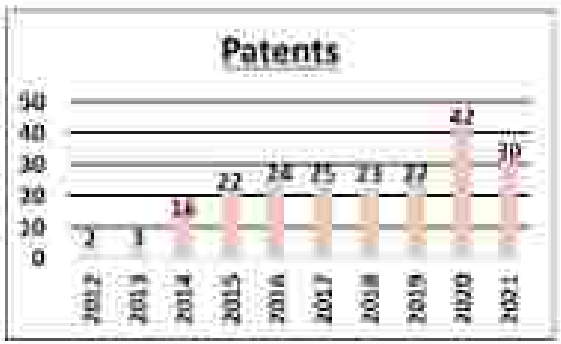
To be recognized as ideators and leaders in higher education and research, and to develop human power with creativity, technology and passion for the betterment of India and humankind.

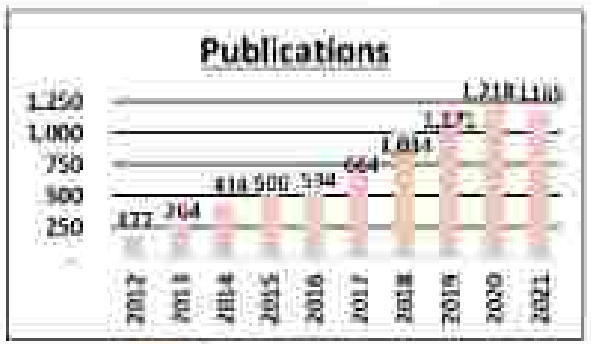
Vision

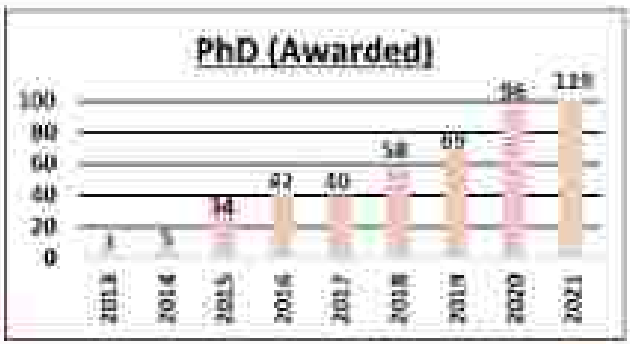
IITH will be the cradle for inventions and innovations. It will advance knowledge and scholarship to students in science, technology and liberal arts, and equip them to handle the challenges of the nation and the world in 21st century.

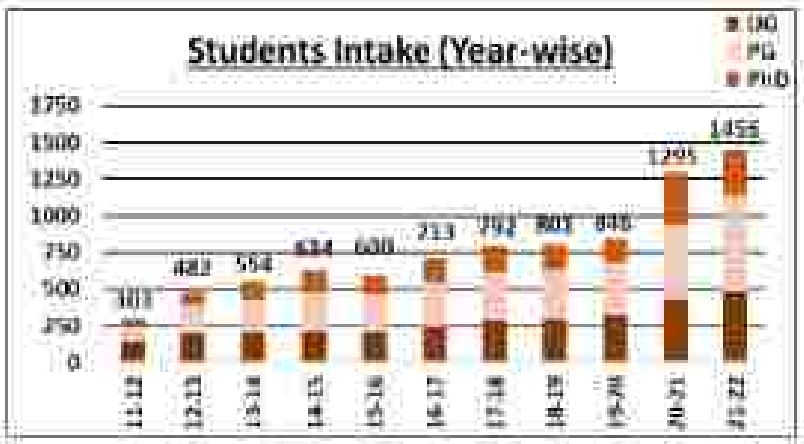


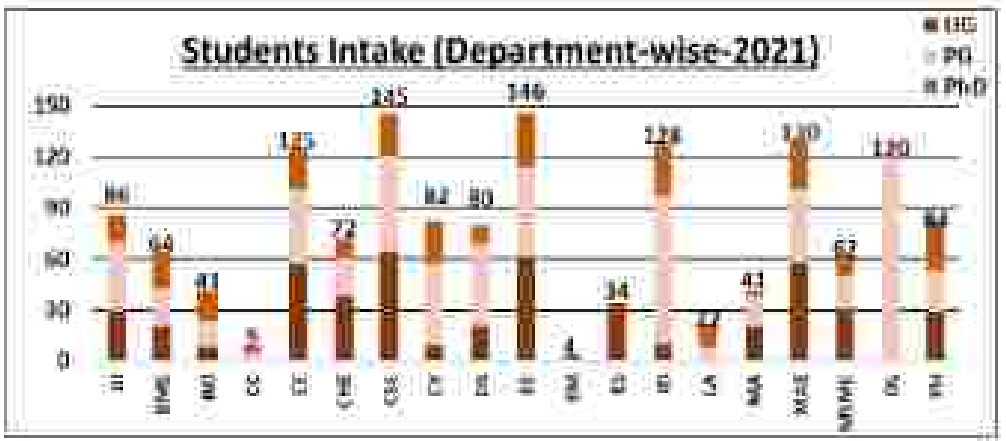












Abbreviations

- AI: Artificial Intelligence
- BME: Biomedical Engg
- BT: Biotechnology
- CC: Climate Change
- CE: Civil Engg
- CHE: Chemical Engg
- CSE: Computer Science & Engg
- CY: Chemistry
- DS: Design
- EE: Electrical Engg
- EM: Engg. Mechanics
- ES: Engg. Systems
- IT: Interdisciplinary
- MA: Mathematics
- MMAE: Mechanical and Aerospace Engg
- MSME: Materials Science & Metallurgical Engg
- OE: Online
- PH: Physics
- SM: Management

Major Research Areas

5G and Next Generation Communication Technologies

Additive Manufacturing

Artificial Intelligence

Bio-inspired Processes and Systems

Catalysis

Climate Change

Energy

Health Care

Integrated Computational Engineering

Nano-Technology

Sensors and Devices

Waste Management

Smart Mobility

Transportation

Rural Development

Robotics

Undergraduate

B.Tech

Duration: 4 years
Entrance: IIT-JEE (Advanced)

Departmental Programs:

- Artificial Intelligence
- Biomedical Engineering
- Biotechnology & Bioinformatics
- Chemical Engineering
- Civil Engineering
- Computer Science & Engineering
- Electrical Engineering
- Engineering Physics
- Engineering Science
- Industrial Chemistry
- Materials Science & Metallurgical Engineering
- Mathematics & Computing
- Mechanical Engineering

Interdisciplinary Programs:

- Computational Engineering

B.Des

Duration: 4 years
Entrance: U-CEED

Departmental program:

- Design

Postgraduate

MTech (2 Years Program)

Duration: 2 Years
Entrance: GATE/ Interview

Departmental Programs with Streams/Specializations:

- **Artificial Intelligence**
  - Artificial Intelligence & Machine Learning
- **Biomedical Engineering**
  - Nanomedicine & Biomaterials
  - Medical sensing, analytics & simulation
- **Biotechnology**
  - Medical Biotechnology
- **Climate Change**
- **Civil Engineering**
  - Environmental Engineering
  - Geotechnical Engineering
  - Hydraulics and Water Resources Engineering
  - Structural Engineering
- **Chemical Engineering**
- **Computer Science & Engineering**
  - Computer Science & Engineering
  - Network and Information Security
- **Electrical Engineering**
  - Communications & Signal Processing
  - Microelectronics and VLSI
  - Power Electronics and Power System
  - Systems and Control
- **Mechanical and Aerospace Engineering**
  - Aerospace Engineering
  - Integrated Design and Manufacturing
  - Mechanics and Design
  - Thermo Fluid Engineering
- **Materials Science & Metallurgical Engineering**

Interdisciplinary Programs:

- Additive Manufacturing
- Energy Science and Technology
- E-Waste Resource Engineering and Management
- Integrated Sensor Systems
- Medical Device Innovation
- Polymers and Bio Systems Engineering
- Smart Mobility

MTech (3 Years Program)

Duration: 3 Years
Entrance: GATE/Interview

Departmental Programs:

- Artificial Intelligence
- Civil Engineering
- Chemical Engineering
- Computer Science and Engineering
- Electrical Engineering
- Mechanical and Aerospace Engineering
- Integrated Sensor System

Executive MTech Data Science (EMDS)/ MTech in Data Science (MDS)

Online MTech

Duration: 4 Years (Maximum)
Entrance: Written/Interview

Specialised Programs:

- Computation Mechanics
- EV Technology
- Industrial Metallurgy
- Integrated Computational Materials Engineering
- Microelectronics and VLSI

MDes (2 Years Program)

Duration : 2 Years
Entrance: CEED

Department:

- **Design**
  - Visual Design
  - Product Design
  - Design Studies

MDes (3 Years Program)

Duration: 3 Years
Entrance CEED/ Interview

Department:

Design

MDes By Practice

Duration: 2 Years
Entrance: Written / Interview

MSc

Duration: 2 Years
Entrance: JAM

Departments:

- **Chemistry**
- **Mathematics**
  - Mathematics and Computing
- **Physics**

MA (Development Studies)

Duration: 2 Years
Entrance: Written Test & Interview

Department:

Liberal Arts

PhD

Entrance: Students with good academic background are admitted into the program through a rigorous interview

Departmental Programs:

- Artificial Intelligence
- Biomedical Engineering
- Biotechnology
- Chemical Engineering
- Chemistry
- Civil Engineering
- Climate Change
- Design
- Computer Science & Engineering
- Electrical Engineering
- Entrepreneurship & Management
- Liberal Arts
- Materials Science & Metallurgical Engineering
- Mathematics
- Mechanical & Aerospace Engineering
- Physics

Interdisciplinary Programs:

- Artificial Intelligence, machine learning & Information theory
- Energy environment & circular design
- Healthcare
- Novel materials & techniques
- Others

Distinguished Professors & Deans

Distinguished Professors

Dr Bayya Yegnanarayana

Prof Chennupati Jagadish

Prof Jan Murai

Dr Paresh Kumar Narayan

Dr Pullickel M Ajayan

Dr Saraswat V K

Dr Vidyasagar M, FRS

Prof Vijay P Singh

Deans

Dean - Academics
Prof Saptarshi Majumdar

Dean - Administration
Prof Raja Banerjee

Dean - Faculty
Prof V Kanchana

Dean - International & Alumni Relations
Prof Pinaki Prasad Bhattacharjee

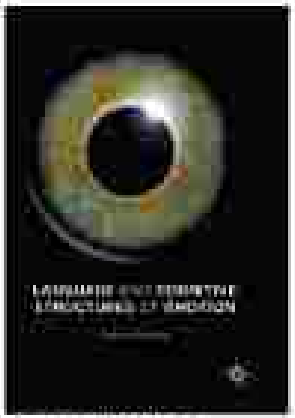
Dean - Planning
Prof K V L Subramaniam

Dean - Public & Corporate Relations
Prof C Krishna Mohan

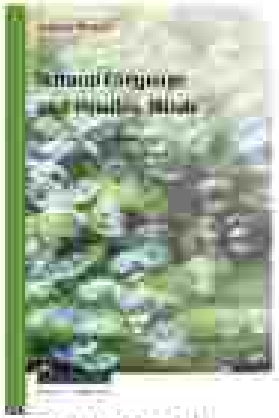
Dean - Research & Development
Prof Kiran Kumar Kuchi

Dean - Students
Prof P Rajalakshmi

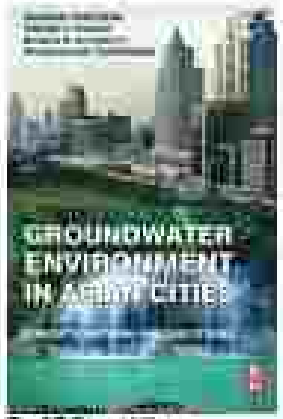
Dr Prakash Mondal
Dept of LA



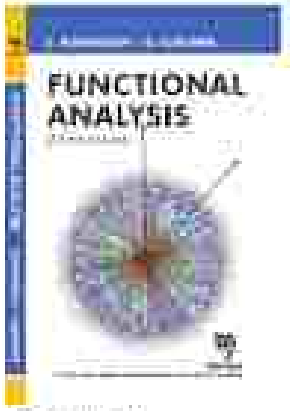
Dr Prakash Mondal
Dept of LA



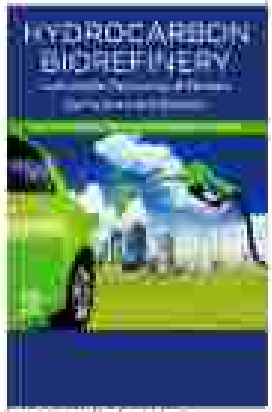
Dr Prakash Mondal
Dept of LA



Prof T Shanmughar
Dept of CE



Dr Sukumar D
Dept of MATH



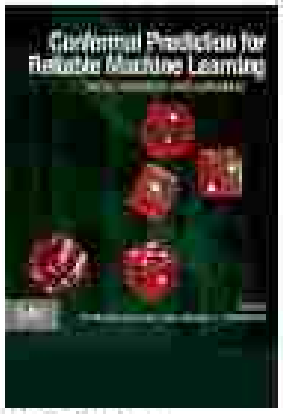
Prof Sunil K Maity
Dept of CHE

Prof B E Monty & Prof. P P
Bhattacharjee, Dept of MSME

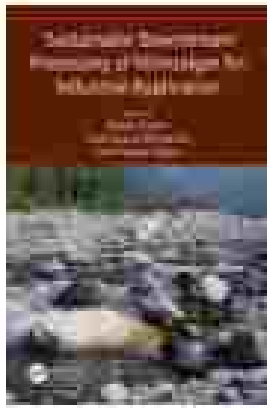
Dr Chandan Bose
Dept of LA

Dr Amitabha Majumdar
Dept of LA

Dr Amitabha Majumdar
Dept of LA



Dr Vineeth N B
Dept of CSE

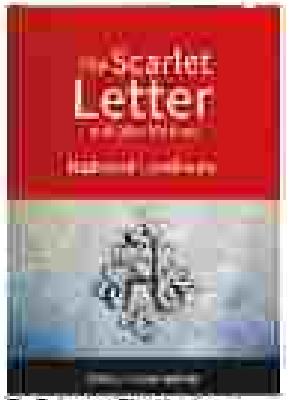


Prof Sunil K Maity
Dept of CHE

Dr Chandra Shekhar Sharma
Dr Monalika Kandelwal

Dr Falguni Pati
Dept of BME

Prof Pinaki Pal
Dept of PHY



Dr Srirupa Chatterjee
Dept of LA

Biomedical Engineering

(Estd. - 2010)

10
Full Time Faculty

23
PhDs Graduated

216
Publications

54
ID Projects

39.6 Cr
Project Funding

Major Equipment:

- In-vivo Micro CT
- CRYO-SEM
- In-vivo Optical Imaging System
- Envisiontec 3D Bioplotter
- Flow Cytometer, HPLC
- Neuroimaging and Neuromodulation Suite
- Motion Tracker Suite
- Laser Coupled Microscope
- Autolab Sample Profiler
- Fluorescent Microscope
- Bioreactor
- Fiber Processor

Research 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
- Macroencapsulation device for diabetes treatment
- On-chip Alzheimer's drug screening through regaining of Tau protein
- 3D primed microfluidic device for anti-cancer drug testing on patient-specific cancer cells

3D Bio-plotter

For more details, visit: http://bme.iith.ac.in/

Major Equipment:

- Ion Channel Assay System
- Bench-top Ultracentrifuge Optima MAX-XP
- Fast Protein Liquid Chromatography System
- Flow Cytometer
- HPLC (Analytical And Preparative)
- Oligosynthesizer
- Mosquito Robotic Liquid Handling System
- Advanced Isothermal Titration Calorimeter
- Fast Protein Liquid Chromatography
- Microcools Thermocipheresis

Research 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
- Molecule to fight neurological disease
- Amyotrophic lateral sclerosis (ALS)
- Bioinformatics web-tool development

10
Full Time Faculty

16
PhDs Graduated

113
Publications

29
IID Projects

12.4 Cr
Project Funding

For more details, visit: https://biotech.iith.ac.in/

Chemical Engineering

(Estd.: 2009)

21 Full Time Faculty | 47 PhDs Graduated | 635 Publications | 88 RD Projects | 33.3 Cr Project Funding

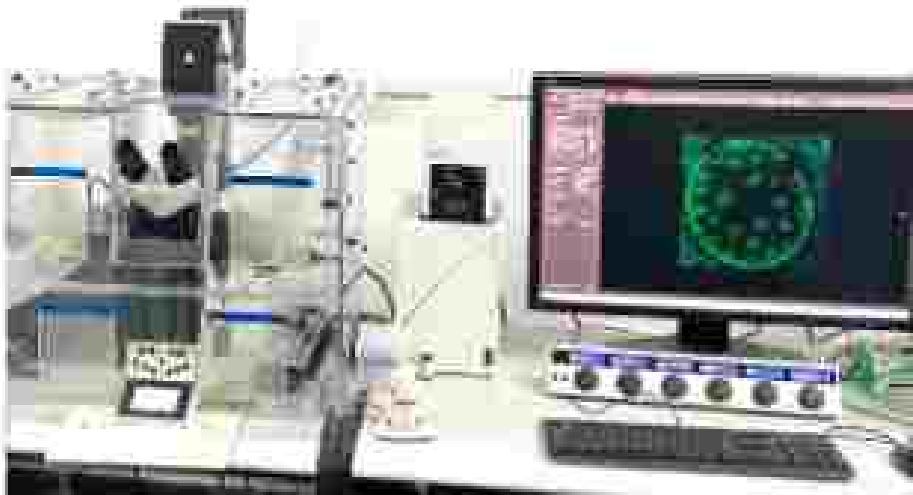
Major Equipment:

- Optical Tweezers
- Small Angle X-ray Scattering (SAXS)
- Maskless Lithography System
- Atomic Force Microscopy AFM
- Powder XRD
- Laiss Spll Confocal Microscopy
- Particle image velocimetry (PIV) Set-Up
- Scanning Electrochemical Microscope (SECM)
- Flow Cytometer
- LC-MS

Research Highlights:

- Live cell imaging: Disease model, 3D printed device, and Drug discovery
- MetalH2O2 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

Particle image velocimetry (PIV) Set Up



For more details, visit: https://che.iith.ac.in/

Major Equipment:

- Multimode AFM (Bruker)
- Bruker D8 SCXRD
- Electron Spin Resonance Spectroscopy
- 600 MHZ NMR (Nuclear Magnetic Resonance Spectroscopy)
- 400 MHZ NMR (Nuclear Magnetic Resonance Spectroscopy)
- High Resolution Mass
- Powder XRD
- Compact Raman Microscope
- RIGAKU Single Crystal X-RAY Diffractometer

Research 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)

For more details, visit: https://chemistry.iith.ac.in/

Civil Engineering

(Estd.: 2009)

23	50	763	736	83.6 Cr
Full Time Faculty	PhDs Graduated	Publications	RD Projects	Funding

Major Equipment:

- MTS Actuator Systems
- ICP MS
- Cyclic Simple Shear Apparatus
- Dynamic Actuator System
- Repeated Load Triaxial Apparatus for MR
- Seismic Shake Table
- 250kN Flexure Testing Machine
- 3000 KN Compression Testing Machine
- 300 KN Flexure Testing Machine
- Centrifuge Machine

Research 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 neurotoxicants in marine predators
- Mercury in Dental Amalgam, Online Recall, and the Minamata Convention on Mercury

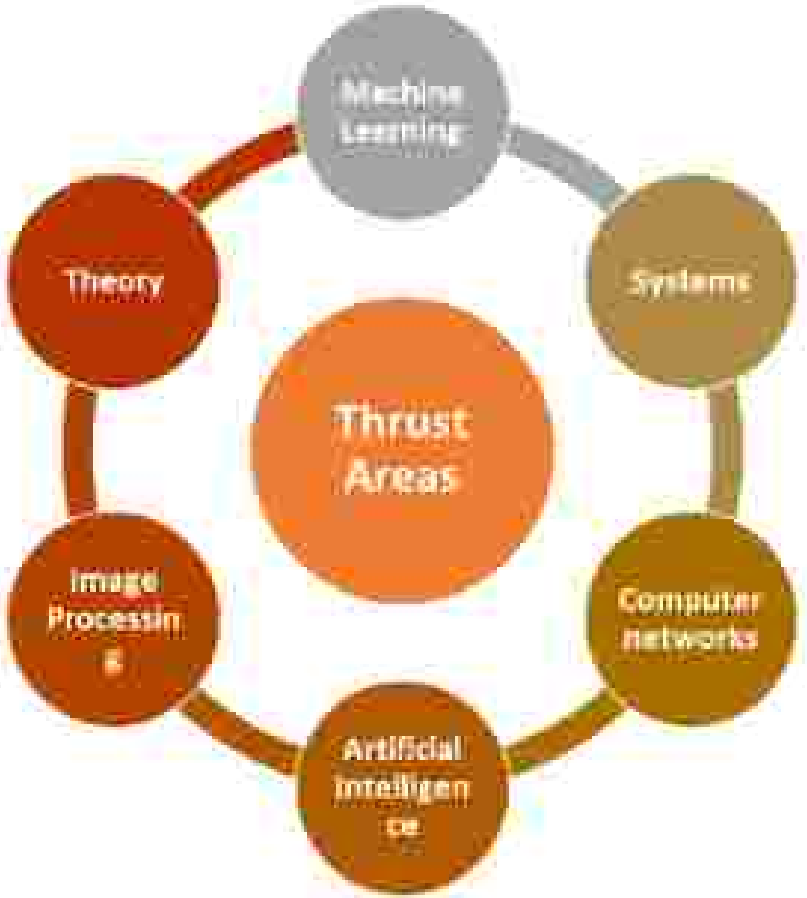
For more details, visit: https://civil.iith.ac.in/

Major Equipment:

- Server and Switches
- 15 Rack Mount Servers
- 500 TB Storage System
- Workstations
- HPC cluster
- Computer server
- DGX-1
- DGX-2
- DGX A100
- DGX-1

Research 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



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

9	1	32	4	10.9 Cr
Full Time Faculty	PhDs Graduated	Publications	RD Projects	Project Funding

New Specializations at MDes program:

- Product Design
- Interaction Design
- Visual Design

Labs:

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

Highlights:

- Organized National Design Challenge with collaboration with Wacom India, Wacom Design Challenge 2020
- Designed Logo for MDMS, ICMR
- Ph.D. Student Prigabrata Rautray Won the East ten start-up award at 20th Annual HYSEA Award for Scratchh Air
- Film Title: Save Our Species (short animation film), Directed by Delwyn Jude Remedios
- Animation by B.Des Batch 2015-2020, Official Selection at ScopTrik International Film Festival, Slovenia and Poland, 2020, Official Selection at Nature Without Borders International Film Festival, Delaware and Berkeley, 2020
- Film Title: Ek Cup Chaha (One Cup Tea), Award: Honorable Jury Mention Award at 5th Cine Film Festival, Meerut 2020, Department of Design Student: Sumit Yempalla, Project Guide: Delwyn Jude Remedios
- 1st Prize in Illustration Contest, Create Happiness With Nature, 2020
- Virtual Convocation 2020 (Planning, Execution)

For more details, visit: https://design.iith.ac.in/.

Major Equipment:

- Microscope Based Fluorescence Lifetime System
- CRESTEC CABL-9500C Electron Beam Lithography
- Silicon Etch System Using XeF2
- Mask Aligner
- PECVD System
- Semi-Conductor Device Analyzer
- Electron Beam Evaporation Systems
- Deep Reactive Ion Etching, Reactive Ion Etching
- Light Field Display
- Emagestim Simulator

Research Highlights:

- Enabled Open-Source VLSI on Android Platform
- Initiated 6G research in the area of convergence between 5G and Sensors
- Musscope: An On-chip Miniature Microscope
- COVIHOME - India First Electronics Rapid COVID-19 RNA Test kit
- Perception-based Image Quality Evaluator (PIQE)
- Multiple Channel Photovoltaic
- Simulator
- Drone-based sensing for agriculture
- OSASE Controller FOR the PV System

For more details, visit: https://ee.iith.ac.in/

2
Full Time Faculty

2
Publications

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. Currently, we are moving away from this paradigm of producing employable students ready for the job market to creating entrepreneurs who can become self-employed and create employment for others. As a part of an institute that promotes innovation and interdisciplinary, the E&M department has tremendous potential to become a pioneer in the area of entrepreneurial education and research.

Highlights:

Executive Development Program

IITH, 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.

For more details, visit: https://em.iith.ac.in/

Research 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
- Moms' 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

Paintings made around the theme 'Stay at Home' & 'Social Distancing' during COVID-19! A Study by Dr Chandan Bose

19
Full Time Faculty

21
PhDs Graduated

242
Publications

26
RD Projects

7.8 Cr
Project Funding

For more details, visit: https://ba.iith.ac.in/

Mathematics

(Estd. - 2009)

17
Full Time Faculty

17
PhDs Graduated

198
Publications

15
RD Projects

13.3 Cr
Project Funding

Research 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 c^* and Lip0(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
- Sparse approximations with prior support constraint and application to interior reconstruction in Tomography
- Vector bundles over projective varieties

A schematic representation of N interacting population groups with different infection spread rates among each group by Prof C P Vyasarayani & Group

For more details, visit: https://math.iith.ac.in/

Major Equipment:

- Transmission Electron Microscope With Accessories Model JEM-2100(HR)
- Small 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
- PPMS (Dynacool-9 Cryogenic Measurement System)
- Atomic Force Microscopy
- JEOL Jib 4700F FIB-SEM & JEOL F 200 Cold FEG-TEM

Research 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
- Discrete Dislocation Dynamics (DDD) modeling of particle-strengthened alloys
- Surface hardening of titanium through in situ formed intermetallic compounds (IMC) by gas metal arc weld (GMAW) deposition of Ni

For more details, visit: https://msme.iith.ac.in/

Mechanical & Aerospace Engineering

(Estd. - 2009)

28	42	590	139	43.9 Cr
Full Time Faculty	PhDs Graduated	Publications	RD Projects	Funding

Major Equipment:

- Tektronix Tristocan System
- Polytec Micro System Analyzer
- High-Speed PIV
- Velocity And Scalar Diagnostics Laser System
- Phase Doppler Particle Analyzer
- Optical IC Engine
- 100 KN Fatigue Machine
- 250 KN Fatigue Machine
- Drop Weight Impact Test
- Universal Servo Hydraulic Forming Press (Ammo. Capacity 100KN)

Research Highlights:

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

For more details, visit: https://mae.iith.ac.in/

Major Equipment:

- Vibrating Sample Magnetometer
- Multimodal Scanning Probe Microscope
- Ultra-high Sensitive Moke Magnetometer
- Sputtering System
- Photoluminescence Spectrometer
- XRD
- Teravolt Laser
- Cryofree Optical Cryostat
- Brillouin Light Scattering
- Telescope

Research Highlights:

- 1st detection of Electromagnetic counterpart to Gravitational Wave transient
- High-resolution imaging in the lab and Cancer Therapy using proton sources
- Mimicking brain functionalities such as learning rules
- Mathematical code that produces the web mixing matrices at 4-loops
- Low-cost eco-friendly solar cell devices using KumKum Dye

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

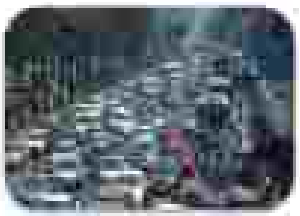
Virtual Department - Artificial Intelligence

(Estd. - 2019)

The Department of Artificial Intelligence (AI) at IIITH's mission is to produce students with a holistic understanding of the theory and practice of AI and enable them to become leaders in the AI industry and academia nationally and internationally. It provides an ecosystem for pedagogy and research in AI, encompassing foundational, applied, and interdisciplinary perspectives in the field. The department has expertise in various coheresn, including machine/deep learning, computer vision, natural language processing, speech understanding, signal processing, robotics, and embedded AI. Includes faculty at the intersection of AI and IoT, AI and wireless networks, and AI and design. It hosts India's first and only NVIDIA AI Technology Centre (NVAITC) and seeks to meet the pressing demands of the nation in this critical area.

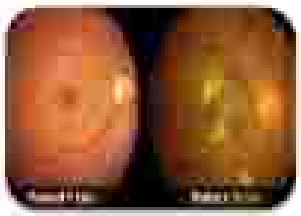
Research Highlights:

- 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



Security and Surveillance

Agriculture



Healthcare

E-Commerce

Astronomy and Aerospace

Fraud Analytics

Climate Change

Smart Transport

For more details, visit: https://ai.iiith.ac.in/

Climate Change

(Estd. - 2019)

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 to 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 frontal academics program. The curriculum involves core courses, elective courses, seminar talks by the experts of various disciplines, focus group discussions, field visits, and research thesis.

For more details, visit: https://cc.iith.ac.in/

Engineering Science

(Estd. - 2012)

The Department of Engineering Science is established to manage 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. In the last 2 years (4 semesters) the student then specializes in any field of his / her choice – specialization is completely open. It could be any branch of engineering – BioTech, Biomed, Chemical, Civil, Computer Science, and Engineering, Electrical, Mechanical, Material Science, – Chemistry, Design, Economics, Mathematics, Physics or Psychology, etc. Note, however, that the number of students moving into a particular branch is limited to 10% of the strength of the batch.

For more details, visit: https://es.iith.ac.in/

itic

i-TIC Foundation is the Technology Business Incubator (TBI) at IITH. The focus is on creating a supportive and nourishing environment for entrepreneurs. The thrust areas at the Incubator are Artificial Intelligence, Aerospace, Telecommunication, Digital Manufacturing, Chip Design, Sensors, IT, Bio-Medical, Automotive, Advanced Materials, Energy, Flexible Electronics, and Other Emerging Technologies. A few companies that are incubated, related to ICT are SKIoT (IoT), Acaurel (Robotics), SensaHealth (Bio-Medical), Osure (Healthcare) and Skelregen (Biomaterial). i-TIC provides the necessary facilities to these startup companies, along with guidance and mentoring by the faculty members of IITH and experts from the industry, to develop a robust ecosystem for entrepreneurship. 70+ Startups supported, 3 Cr+ Funds Granted to Startups, 100 Cr+ Revenue Generated by Startups, 600+ Jobs created by the Startups, ~1.5 L SFT Incubation Space & 150+ Mentors.

To know more, visit: https://itic.iith.ac.in/

CiHE

The Foundation for the Center for Healthcare Entrepreneurship is sponsored by two IIT Bombay alumni and is focused on making universal healthcare a reality. The Center's objective is to catalyze healthcare innovation to bring about affordable solutions to address the healthcare needs of India. The Center hopes to foster entrepreneurs to deliver a pipeline of cost-efficient solutions, which are increasingly "commercialized". Housed in a 6000 sq.ft., brand new facility, the CiHE incubator offers design and 3D fabrication facilities for prototyping of solutions and devices and serves as a rapid acceleration platform for the fellows and startups. The program offers a one-year fellowship with a stipend of INR 50K per month, and ongoing exposure to health care needs through clinical immersions, local and global mentors, SME's and VC partners during training and incubation.

To know more, visit: https://cihe.iith.ac.in/

Fabless Chip Design INCUBATOR

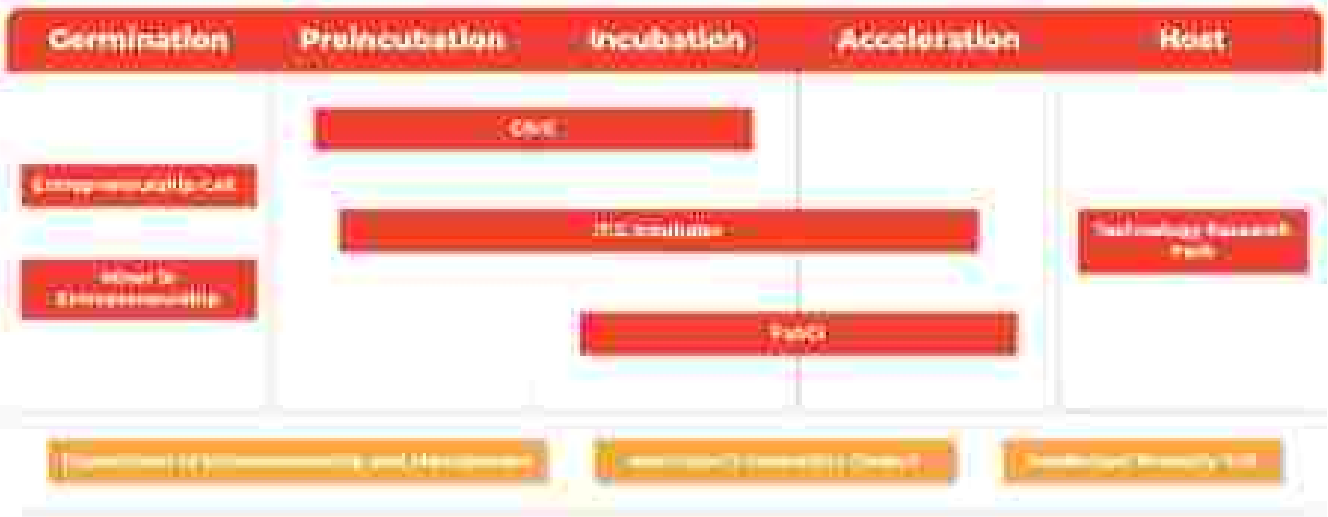
The Fabless Chip Design Incubator (FabCI) is a flagship program being executed with the support of the Ministry of Electronics and Information Technology (MEITY) and focuses on creating an ecosystem wherein these primary activities get executed for any startup in the area of chip design. The primary motivation for this unique incubator program is to provide a one-stop solution for start-ups focusing on the area of chip design. We want to help incubate multiple "Make-in-India" chip design companies. We aspire to build an ecosystem wherein the incubatees are not only provided with the relevant infrastructure hardware and software but also are handheld through the path of success with the help of mentors who are pioneers in this field. The grand vision is to leverage the design expertise that exists in India to create Indian IP and to make a mark in chip design internationally.

To know more, visit: https://fabci.iith.ac.in/

Technology Research Park

"IITH Technology Research Park" is an independent Section 8 Company, founded, promoted, and hosted by IITH, governed by a Board of distinguished academicians, faculty of IITH, and industry professionals, to inoculate the idea of innovative Entrepreneurship in collaboration with Research Development. IITH Research Park is a self-reliant team endorsed by IITH and its alumni. The IITH Research Park promotes the betterment of research and development by the institute through friendship with industry, helping in the advancement of modern ventures, and built-up economic development. The IITH Research Park assists organizations with a research target to set up an infrastructure in the park and advantage of the expertise available at IITH. Soon it will be with 1.5 L SFT Space.

To know more, visit: https://trp.iith.ac.in/



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. Other Initiatives of Rural Development at IITH are Unnat Bharat Abhiyan, National Service Scheme. Some of the main objectives of RDC are to identify the problems and needs of the rural people through direct interaction or with the help of reputed institutions/organizations/NGOs working for rural sectors, to strengthen the UBA activities conducted in the villages adopted by IITH, to help the NSS team to conduct activities in nearby villages, to facilitate the faculty/staff/students who are passionate to develop technologies to be used in the field such as agriculture, sanitation, drinking water, etc. in rural areas and to collaborate with institutions/industries interested to contribute meaningfully for the development of the rural sector.

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

Smartphone-based game to enhance hygiene practice in rural children

IITH-DRDO Cell

An MOU has been signed between the Chairman, DRDO, and the Director, IITH, on 5 July 2022 for the establishment of the DRDO-IITH research cell at the IITH campus. This Cell is an extension wing of the Research and Innovation Centre Chennai, a self-accounting unit of DRDO. The vision of this cell is to emerge as a centre of excellence in conducting scientific and applied research in directed areas of advanced technologies for defence and achieve recognition as one of the best research centres in the world. The objective of this cell is to facilitate collaborative efforts in the areas that are of interest to DRDO. This cell will work as an enabler to tap the knowledge of the collaborative directed basic research and multi-institute collaborative research in the basic and applied areas of engaging faculty and researchers at the academic institutions and technology centres and other renowned institutes in India through defined research programs and activities. An interactive engagement model will be adopted to facilitate the research community for sharing knowledge for developing technologies for emerging and future needs of defence and security. Currently, the thrust areas of this cell are the following - Advanced materials and processing, sensors, Hardware and Software of Artificial Intelligence-based missile applications, Technology for space applications, Adaptive optics and Image processing, UAVs, and Quantum Computing to name a few. In the last financial year (FY 20-21), 13 projects in these related areas were approved with a budget of 19 Crores INR, and as of date, 12 got sanctioned. Work has commenced in collaboration with various DRDO Laboratories in India.

DRDO – IITH MoU Signing Ceremony

DST NM-iCPS TiHAN

Department of Science and Technology (DST) under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), Govt. of India has sanctioned the prestigious Technology Innovation Hub to IITH in the technological vertical of Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.). DST NM-ICPS Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.) – TiHAN at IITH will be the source for fundamental knowledge and technologies (IPs, Publications, Products, Commercialization as Licensing, ToTs...) in the technology vertical of Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.).

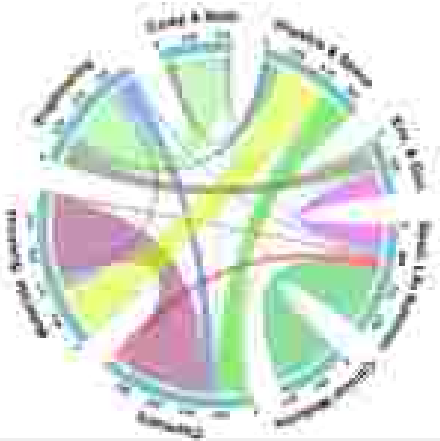
To know more, visit: https://tihan.iith.ac.in/

Test tracks for Autonomous Vehicles

Centre for Interdisciplinary Program

Center for Interdisciplinary Programs has been created with a vision of fostering interdisciplinary studies across various disciplines at IITH. We @IITH envision creating new paradigms in education integrating techniques, tools, and science from multi and cross-disciplinary expertise on the IITH campus. The Center would be a cradle for 'SEEDING' new interdisciplinary Programs bringing together experts with common interests from various branches to address the ever-evolving needs of Science, Industry, and Humanity thus shaping up new courses and unique Programs that never existed before and train human resources for tomorrow. These teams of interdisciplinary nature would act as epicenters for brainstorming and writing new grants that would emerge into new Centers of Excellence of National Importance. Currently, the CIP runs 9 MTech programs across various disciplines and an Interdisciplinary PhD Program. The center also offers support in facilitating interdisciplinary research projects.

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



Representational Illustration

Centre of Continuing Education

The Centre for Continuing Education (CCE) was established at IITH with the aim to conduct training programs to students, academicians, and working professionals across the country. The young and energetic faculty of IITH is dedicated to providing learning opportunities for the professional growth of interested participants. With a rapid rise in E-learning programs, CCE at IITH plans to conduct online programs that can facilitate the learning of working professionals by meeting their work schedules. PMMMNMTT & TLC PMMMNMTT scheme under CCE envisages developing effective and efficient teachers who are responsive to the needs of the learners (in both local and global contexts) in the competitive educational system and the diversified knowledge requirements of contemporary society. The objectives of the Teaching and Learning Centre (TLC) are to develop a discipline-specific curricular framework and evaluation methods for incorporation into workshops & short-term professional development programs.

To know more, visit:
TLC: http://tlc.iith.ac.in/
GIAN: https://www.iith.ac.in/~gian/
TEQIP: http://teqip.iith.ac.in/

Prof Richard Bathurst, during recent talk

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. The main aim of the Design Innovation Centre is to use design to the fullest to simplify the human lifestyle and to engage creative minds in innovating and experimenting with the design process and understanding its vast possibilities. IITH is one of the 20 new Design Innovation Centres. Department of Design - DIC has since been working towards the infrastructure of the ecosystem in which Designers and Engineers in academia interact with real-world problems and stakeholders to give shape to creative entrepreneurial cooperation and collaborations.

To know more, visit: https://dic.iith.ac.in/

Virtual Reality of Medak Cathedral Church

International Relations

The Office of International & Alumni Relations (IAR) at the Institute provides a comprehensive range of services and support to the international community of students, stakeholders, and invested parties from various university departments and offices. The Office of IAR also maintains and sustains Memorandums of Understanding with various international universities and industries, which has contributed to the development of the institute.

Joint PhD Programs:

IITH offers Joint Doctoral Degree Program with Swinburne University, Australia, and Deakin University, Australia. This program provides students with an exclusive opportunity to work in both the universities during their study period and earn a joint degree.

Student Exchange Program

Student Exchange Program allows short-term visits by students between the two institutions on a reciprocal basis. The visiting student must be a full-time student enrolled in a degree program in their Home Institution. The exchange program is open to full-time undergraduate and graduate students. The selection of students under both a program depends on the discretion of the home and host institutions.

Prof B S Murty (L), Director, IIT Hyderabad, during the MoU signing with Prof Kazuhiro Hashimoto, President, National Institute for Materials Science, Japan

JICA FRIENDSHIP

Ritsumeikan University, Japan

Hokkaido University, Japan

Osaka University, Japan

Foreign Internship Program

The Foreign Internship Program provides IITH students an opportunity of gaining international exposure. Under this program, the IAR office has set up the foreign internship application procedure. Students will get global exposure and research-intensive experience in their summers. For more details:

- Purdue Undergraduate Research Experience (PURE)
- Hokkaido University STEP Program
- Ritsumeikan University PBL Program

FIRST@IITH

IITH introduced the FIRST scheme for supporting bright and motivated international scholars for pursuing PhD at IITH with full financial support. The duration of the Fellowship is 4 Years. The Financial Assistance for the Fellowship is 60,000/- INR per Month & Contingency Support 1,00,000/- INR per Year.

Government-Sponsored Admissions

IITH is admitting foreign nationals into UG, PG, PhD Programmes through different Government Sponsored Agencies like ICCR Study India, ASEAN, Etc India.

To know more, visit: https://www.iith.ac.in/iar/

Alumni Relations

IITH development/ alumni office is a part of International Alumni Relations (IAR). The Alumni are the face of any institute, and they contribute a lot to the institute in some or another way. The development office streamlines the Alumni engagement activities and facilitates connections among the IITH alumni. Graduates who excel in diverse sectors, industries, and institutions. Their support, in the form of funds, mentorship, and lectures, serves as a vital contribution to the growth of various facets of the institute.

Mission

To generate substantial donations in the form of endowments for scholarships, contributions for hostel developments, support for research activities, and funds for institute advancements.

Activities

There are many activities performed by the alumni development office. A few of them are:

- Maintain proper interface between the Alumni and the institute through online and offline mode.
- Host a number of alumni reunions where they can celebrate their experience and make special fund contributions for different projects.
- Create and maintain the donation web interface for all the fund donors (Alumni/ Corporate/ NGOs) and provide them a 360-degree view of the donation.
- Maintain the dashboard and annual Fund Utilization Reports of donations to IITH, thereby providing the details of the donations, and various causes that were supported during the year.
- Create various funding opportunities and handle various campaigns, pledges, endowments, routines, etc.

Link to giving website:
https://giving.iith.ac.in/how-to-give

The Public and Corporate Relations Office (PCR) in IIT Hyderabad is headed by Prof. C. Krishna Mohan, Dean (Public and Corporate Relations). This office engages with the corporates and public in general, all over the world with a vision to foster collaboration that establishes IITH as a premier and ideal strategic partner across the globe. PCR Office has two major components: Public Relations Office (PRO) & Corporate Relations Office (CRO) with four major focus areas.

To know more, visit: https://pcr.iith.ac.in/

Opportunities to Collaborate

Office of Career Services:

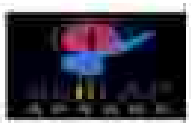
- Placements & Internship - augment the placement/internship & PPOs through the robust foundation of Corporate Relations
- Career Counselling to prepare students to make the right choice of career
- Knowledge sharing sessions by Professionals from reputed organizations

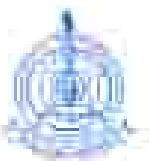
To know more, visit: https://ocs.iith.ac.in/

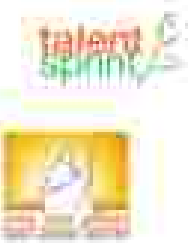
Corporate Social Responsibility:

- Foster business engagements to conceptualization, develop & implement strategic initiatives
- Regular meeting with Corporates to
  - Explore CSR opportunities
  - Research collaboration & funding
  - Prospective recruitment for the students

Other:







National Network

SAMSUNG

NICT

CPWD

talent sprint

FICCI

CDAC

nrsc

ACTION FOR INDIA

oppo

EPTRI

ICRISAT

Infotech

BHEL

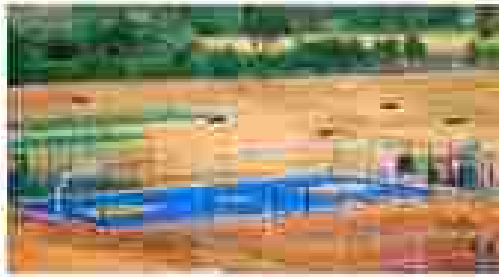
C-DOT

CYIENT

IndianOil

- 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







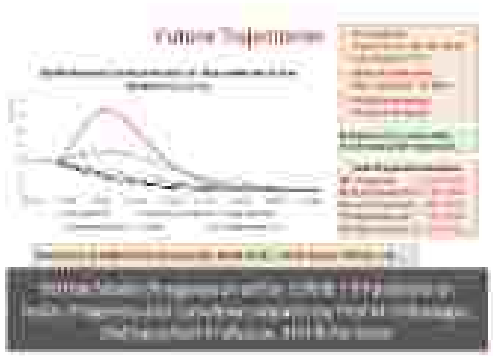


Fight aganist COVID-19

Measures during COVID-19 for Students

- Sanitizer dispensers in every hostel entries
- Frequent cleaning of common areas
- Sanitizing the lifts once in every few hours
- Restrooms cleaned twice a day
- Constant monitoring
- Isolation wards
- Packed food delivery to sick students
- 24/7 help

Research During COVID-19



General Council

The general council is an umbrella term for various bodies which not only perform representation tasks but also cater to student welfare activities, entertainment, etc. The general council is led by two general secretaries. One shall be a girl student and another a boy. Mess secretaries, transport heads, and hostel representatives constitute the rest of the council. The general council strives towards the general welfare of the students. It works towards giving students at IIITH, the best stay possible.

For more details, visit: http://comkhana.iiith.ac.in/

Cultural Council

They are a bunch of motivated individuals who believe that a college should have its equal share of fun & frolic along with the case studies. Our is an attempt to capture the vibrant persona of the students by offering them a platform to showcase their inner musicians, dancers, actors, painters, writers, photographers, and dreamers. They as a cultural team are responsible for keeping the spirits alive on the campus by organizing the multitude of cultural activities around the year. Be it a celebration of almost every festival or frequent open-air jamming sessions they make sure that every event lasts in your memory for a lifetime. Clubs under Cultural Council are Inferno, Behind the lens, Vibes, Rang or manch, Couture Shuffle, Littles.

Sports Council

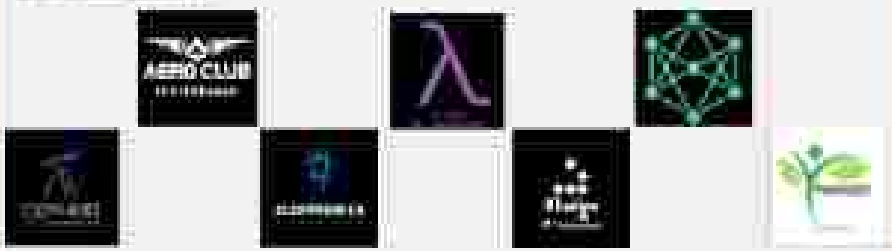
IIITH's sports is one of the most brilliant facets of this campus life. Our fiery enthusiasm and zeal are embodied in our motto, "the name on the front of a jersey is more important than the name on the back". IIITH offers plenty of sports facilities, which include a cricket football and cricket ground, 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, carrom, and chess are also available.

Media Council

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

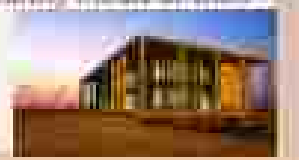
SciTechCouncil

A Science & Technology club to provide a platform to technocrats to explore their ideas and bring in new innovations. Clubs under SciTech Council:



Mess Council

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



Sunshine: The counselling cell

Committed to help the student community

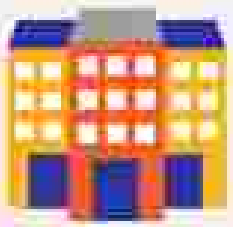
- Faculty – In-Charge: Assoc. Prof D. Sukumar
- Dept. Faculty Representatives: 18
- Professional Counsellors: 2 Females and 1 Male
- Students Team: Total 134 (SWS+ Heads+ Mentors+ Buddies)
- Open House Sessions every day (Mon-Sat)
- Counsellors are available 24*7
- Weekend Series on various Mental Health related topics relevant to the student community.
- Group Sessions for quarantine batches.
- Exciting events like Mental Health Week, Treasure Hunt, Vlogathon Competition, Happiness Week, etc.,
- Two editions of the newsletter have been launched on World Mental Health Day (October 10, 2020) and the World's Happiness Day (March 20, 2021).
- Further information on Sunshine, Counseling Cell, please visit, https://sunshine.iith.ac.in/

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



Academic Expansion:

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

Research, Innovation & Entrepreneurship:

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

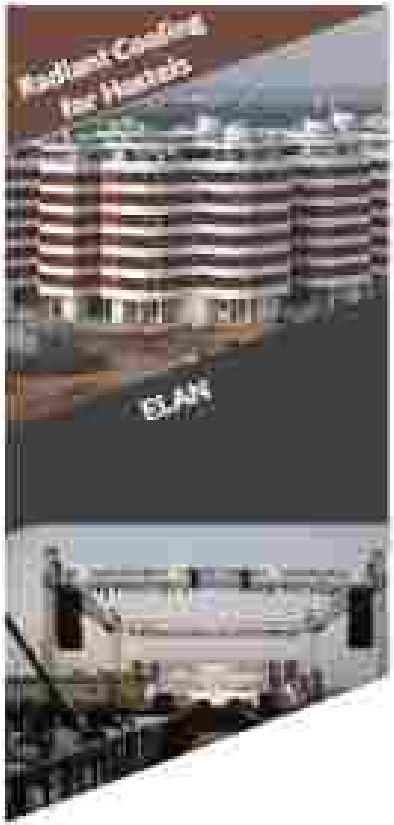
Awards & Recognitions

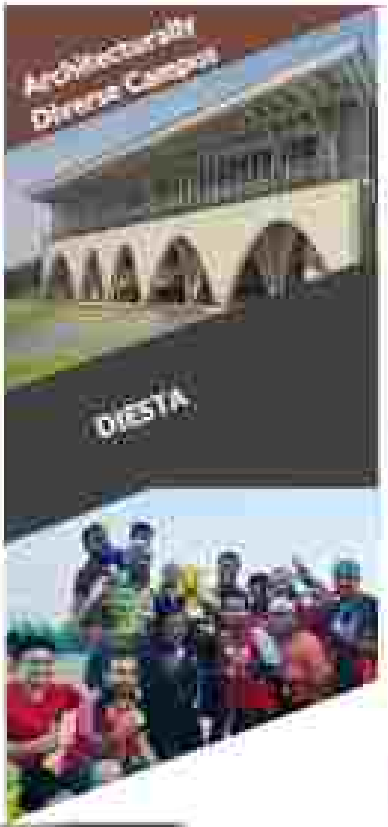
Faculty Fellowships:

- Prof. [illegible] Kumar (Civil), Fellow of the National Academy of Sciences (2022)
- Prof. [illegible] Kumar (Civil), Fellow of the Indian Academy of Sciences (2022)
- Prof. [illegible] (Civil), Fellow of Telangana Academy of Sciences (2022)
- Dr. [illegible] (Civil), Fellow, Telangana Academy of Sciences (2022)
- Dr. [illegible] (Civil), Fellow, Telangana Academy of Sciences (2022)
- Prof. [illegible] (Civil), Fellow of Institute of Physics (IOP), UK (2022)
- Prof. [illegible] (Civil), Fellow of Royal Society of Chemistry (FRSC) (2022-23)
- Prof. [illegible] (Civil), Fellow of Royal Society of Chemistry (FRSC) (2022-23)
- Prof. [illegible] (Civil), Fellow of the Royal Society of Chemistry (FRSC) (2022-23)
- Prof. [illegible] (Civil), Fellow of the Institute of Physics (UK) (2022-23)
- Prof. [illegible] (Civil), Fellow, Indian Professor-Fellowship, Germany (2022-23)
- Dr. [illegible] (Civil), Fellow, Indian Professor-Fellowship, Germany (2022-23)
- Prof. [illegible] (Civil), Fellow of Indian Structural Engineering Institute (IStE) (2022)

Faculty Other Awards:

- Dr. [illegible] (Civil), Outstanding Women in Science by Venus International Foundation (2022)
- Dr. [illegible] (Civil), IEI Young Engineer Award (2022)
- Prof. [illegible] (Civil), Bronze medal in Asian International Mathematical Olympiad (2022)
- Prof. [illegible] (Civil), Bronze medal in Asian International Mathematical Olympiad (2022)
- Prof. [illegible] (Civil), Gold medal - Asian Physics Olympiad (2022)
- Prof. [illegible] (Civil), Gold medal - Asian Physics Olympiad (2022)
- Dr





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