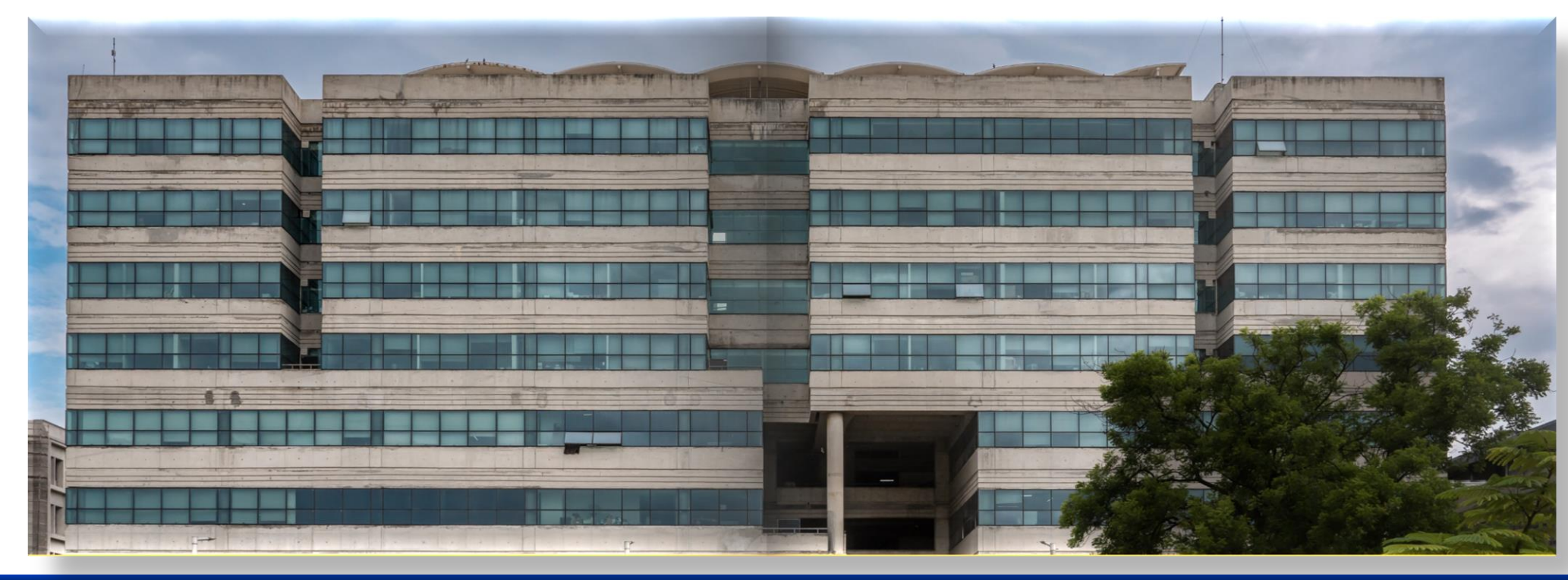


MAE-IC 2024

MAE-Industry Connect 2024



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad



IIT Hyderabad at Glance

Academic Area

International Guest House (MCC)

Convention Center (MCC)

NIRF #3 (National: Innovation)

NIRF #8 (National: Engineering)

NIRF #15 (National: Research)

NIRF #12 (National: Overall)

QS #681-690 (World Ranking)

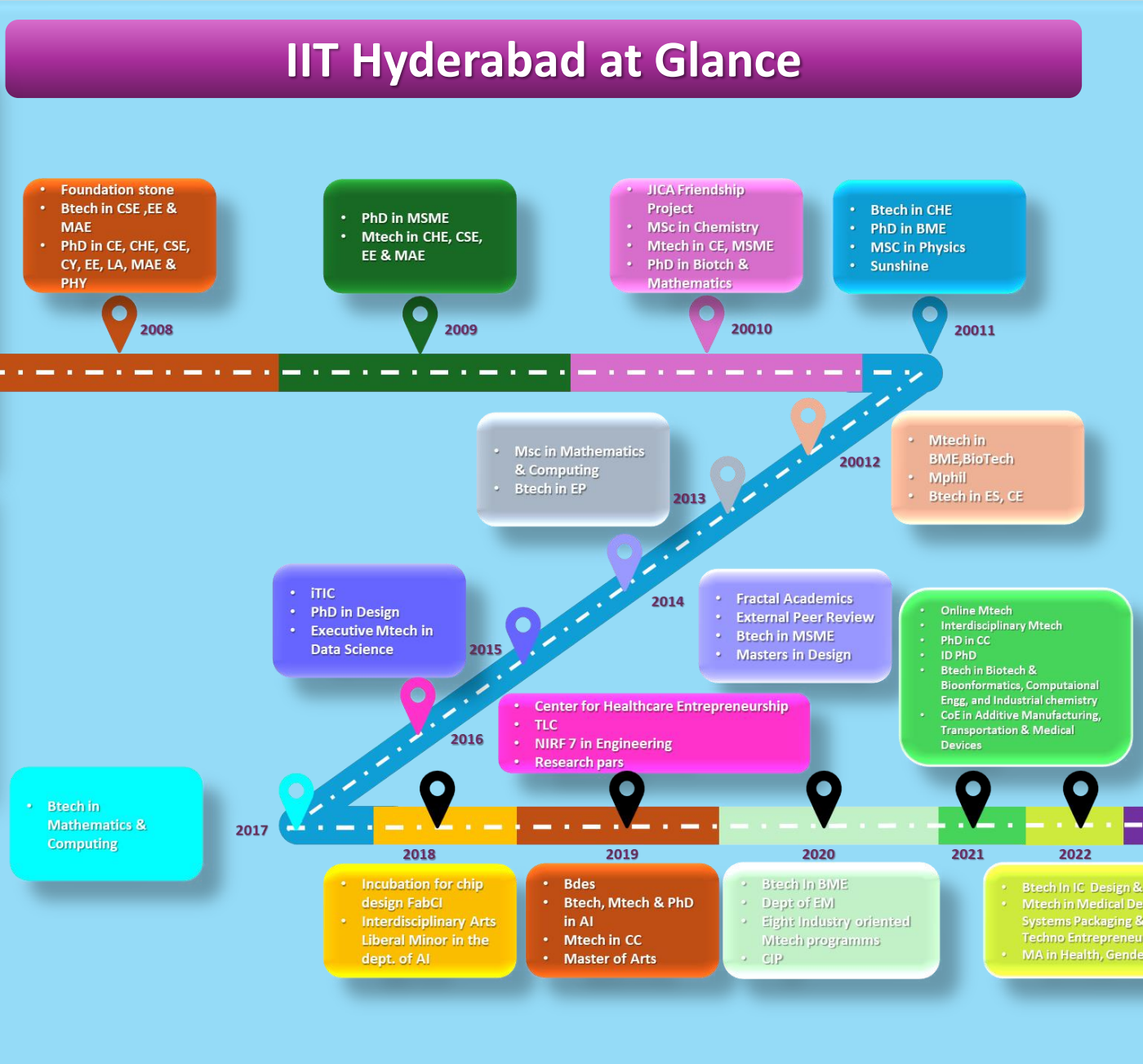
Departments #13

Visual #3

Facilities #320+

Staffs #850

Students #6350

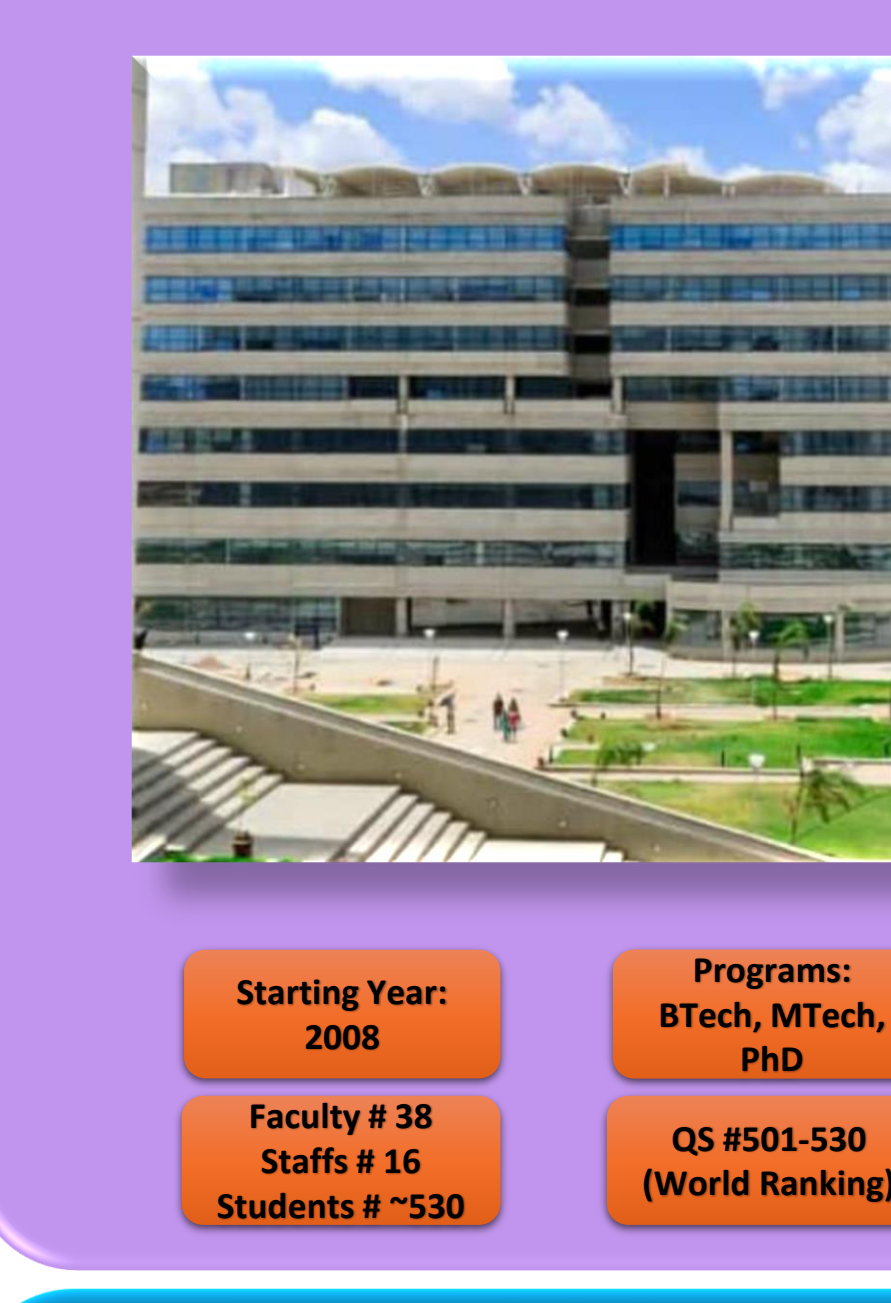


MAE at Glance

Papers & Research Output

Project Funding & Growth

Research Areas: 3D and Next Generation Communications Technologies, Additive Manufacturing, Artificial Intelligence, Bio-inspired Process and Systems, Catalysis, Climate Change, Energy, Food Security, Healthcare, Integrated Computational Engineering, Nano Technology, Sensors and Devices, Smart Mobility, Rural Development, Autonomous Navigation, Waste Management.



Mechanical & Aerospace Engineering

Integrated Design and Manufacturing: Additive manufacturing, Forming, Laser material processing, welding, Sustainable & Circular manufacturing, High speed manufacturing, Digital fabrication, smart manufacturing, Automation & Control, Virtual reality industry A.D.

Mechanics and Design: Acoustics, Fracture and fatigue, Experimental mechanics (Macro), High strain rate, Vehicle dynamics, Nonlinear dynamics, Computational mechanics, Small-scale experiments.

Thermo-Fluid Engineering: Fluid mechanics, Soft and active matter (CFD, Compressible and incompressible), Multiphase flow, Nano-Heat transfer, Combustion, Underwater oil jets, Blue wave mitigation.

Aerospace Engineering: Structures, Non-Destructive Evaluation, Aerodynamics, Propulsion, Control and guidance, Helicopter dynamics, Aero-manufacturing, Flight mechanics, Satellite, Drone.

Starting Year: 2008

Programs: BTech, MTech, PhD

Faculty # 38

Staffs # 16

Students # ~530

QS #501-530 (World Ranking)

MAE at Glance

Papers & Research Output

Project Funding & Growth



Mechanics and Design

Professors: Anshu Kumar Pandey, Chandrika Prakash Venkayanti, Hanababu Alaba, Nirmalendu Khaderi, Prabhakar Kumar, Prakash Gupta, Prashant Kumar B.

Associate Professors: Ramji Manoharan, Saifan Palathingal, Sai Sridhar, Thibum G, Venkatesh B, Viswanath Chaitanya.

Thermo-Fluid Engineering

Professors: Radhakrishnan Kari, Harihar Nagaraj, Lakshmana Dora, Nandu Tevari, Niranjan Shrivastava, Nishant Dongari, Parag Kohle.

Associate Professors: Raju Banerjee, Anshu Kumar, Ranish Dey, Sachindranth, Sarwan B, Sayak Banerjee, Venkatesh B, Vishakh Swarna.

Aerospace Engineering

Professors: Chandrika Prakash, Gopinath M, Gopinath M, Iyer, Niranjan S, Venkatesh B, Venkatareddy N.

Associate Professors: Anshu Kumar, Anup Datta, Gopinath M, Suresh Kumar S, Venkata Reddy N.

Emeritus Professor: Vinodh Kumar, PhD, State University of New York at Stony Brook, USA.

Distinguished Professor: V. K. Sankar, PhD, Cornell University, Hyderabad.

Adjunct Professor: Mihir Banerjee, PhD, University of South Carolina, USA.

Adjunct Professor: Michael John Brennan, PhD, University of Southampton, UK.

Adjunct Professor: Hrishikesh Gopal, PhD, Indian Institute of Technology, Bombay.

Experimental Solid Mechanics

List of Facilities: UTM-100KN, 100 KN, 250 KN; 3D-Printer; Air-coupled ultrasonic testing machine; DIC (2D and 3D); Impact testing machine; Hardness testing machine; Digital photostresscopy experimental setup machine; Optical Microscope.

Faculty: Prabhakar Kumar, Ramji Manoharan, Saifan Palathingal, Nizamuddin Khaderi Syed, Viswanath Chaitanya.

Dynamics, Vibrations, and Acoustics

List of Facilities: Acoustic camera; Advanced sound level meter; Binaural auditory headset; Experimental modal analysis; Scanning vibrometer (Piezo make); Micro analyzer (Piezo); Data acquisition system (mv); Tite scan system (Femscan); Makulot (3D Printer); Impedance Tube.

Faculty: Anshu Kumar, Prabhakar Kumar, Chandrika Prakash Venkayanti, Prashant Kumar B, Venkatesh B.

Combustion, Emission and Energy

Facilities: Flex fuel combustors; Chemiluminescence imaging; Rainbow Schlieren deflectometry; High-speed imaging; Stereo particle imaging velocimetry; Laser-induced fluorescence planar laser-induced fluorescence imaging; Laser-induced fluorescence Planar laser-induced fluorescence imaging with storage; Optical access IC engine; CRDI research engine; CDI research engine; Constant volume spray chamber; Gas chromatography; vacuum ultraviolet spectroscopy.

Faculty: Nishant Dongari, Niranjan S, Ghaisas, Parag Kohle, Raja Banerjee, Sarwanam Balasamy, Sayak Banerjee.

Material Properties and Characterization

Facilities: CMM, Coordinate measuring machine; 3D laser scanner; Form measuring station; Microhardness tester; Wear tester; Measuring microscope; Residual stress measurement system (XRD); Profile projector; Scanning electron microscope (SEM).

Faculty: Anshu Kumar, Anup Datta, Gopinath M, Suresh Kumar S, Venkata Reddy N.

Composite Structures

List of Facilities: Autoclave composite fabrication machine; Water-coupled ultrasonic testing machine; Vacuum-bagging technique; Phased-array NDT techniques; Fiber stitching machine.

Faculty: Ramji Manoharan, Sai Sridhar, Syed Nizamuddin Khaderi, Viswanath Chaitanya.

Experimental and Theoretical Fluid Mechanics

Facilities: Phase doppler particle analyzer; High-speed particle image velocimetry; Particle image velocimetry (PIV) system; KRUSI DAK255 goniometer; Nikon Triaxscope inverted fluorescence microscope; Wind tunnel.

Faculty: Badarinarayan Karthi, Harihar N, Dixit, Lakshmana D, Chandrika, Raja Banerjee, Ranish Dey.

Digital Fabrication and Hybrid Manufacturing

Facilities: Wire arc additive manufacturing system; Twin wire arc additive manufacturing system; Large area additive manufacturing system (L-DED); Powder bed fusion machine; 8 axis CNC machine for forming and machining; Pulse generator; Custom designed material testing for electro plasticity; Custom designed roll forming machine (electric pulse aided); Vertical milling machine; Burnishing set-up.

Faculty: Harish N, Dixit, Nishant Dongari, Niranjan S, Ghaisas, Raja Banerjee, Sachindranth, Behera, Sayak Banerjee, V, Eswaran, Venkatesh B.

Aerodynamics

Facilities: Submerged jet tunnel; Propeller testing facility; High speed computational wind tunnel lab.

Faculty: Mahesh M S, Lakshmana D, Chandrika, Vithnu R Unni.

Computational Solid Mechanics

List of Facilities: High-end workstations; COMSOL, Multiphysics; ABAQUS; ANSYS; Altair Hypermesh; Actran; Romax.

Computational Fluid Dynamics

Facilities: Param Seva (HPC facility); ANSYS; COMSOL; MATLAB.

Faculty: Harish N, Dixit, Nishant Dongari, Niranjan S, Ghaisas, Raja Banerjee, Sachindranth, Behera, Sayak Banerjee, V, Eswaran, Venkatesh B.

Process Mechanics and Control

Facilities: 1kW continuous wave laser (Fiber); Nanosecond pulsed lasers (Q-switched and Fiber); FS Thermal camera and pyrometers; Friction stir processing; Simulation software (Materialise, Simufact).

Faculty: Anshu Kumar, Anup Datta, Gopinath M, Suresh Kumar S, Venkata Reddy N.

Propulsion

Facilities: Metal fuel combustor; Windowed strand burner; Pyroelectric solid propellant thruster system; Thermoacoustic test rig; Test facility for drone flight and swarming; High Speed imaging facility; Particle image velocimetry (PIV); Planar laser-induced fluorescence (PLIF).

Faculty: K. Gnanaprakasam, Vithnu R Unni.