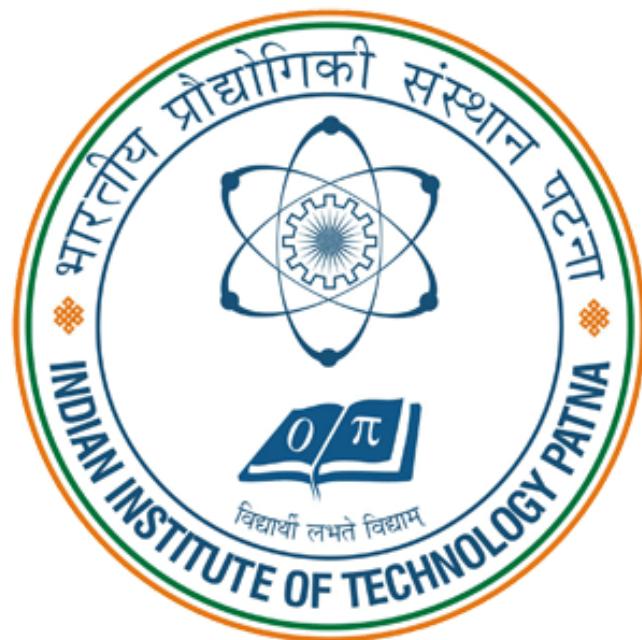




Indian Institute
of Technology Patna
भारतीय प्रौद्योगिकी संस्थान पटना

**VIDYAARTHEE
LAVATHEY
VIDYAAM**

M.TECH
MECHANICAL ENGINEERING



Placement Brochure (2020-21)

A House of Knowledge

PLACEMENT PROCEDURE



ABOUT
US

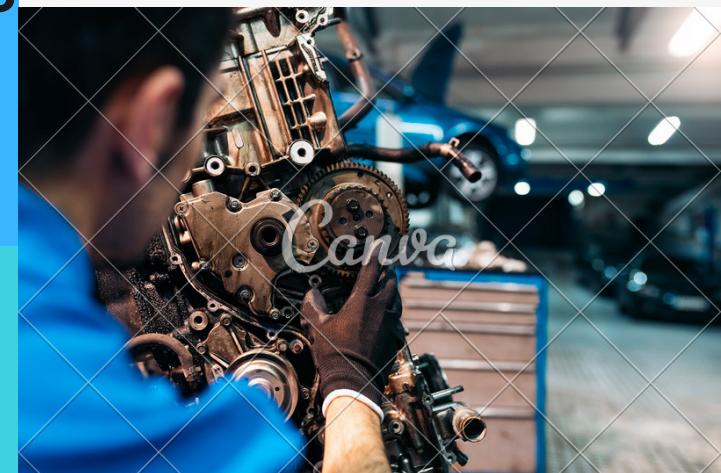
STUDENT
ACTIVITIES

ACADEMICS

HOD's
MESSAGE



PAST
RECRUITERS



CONTACT US

HOD'S MESSAGE

Dear Recruiters,

The Department of Mechanical Engineering facilitates not only the academic but the overall development of the student. Students are known throughout India for their enthusiastic participation in professional organizations and events such as BAJA, SUPRA SAEINDIA, ROBOCON.

Masters programme in Fluids & Thermal and Manufacturing was started in 2014 & 2016 respectively with an aim to provide a platform for innovative research and quality education. Consequently, the program has gained popularity and has become one of the most successful masters' degree programs at IIT Patna.

We revise our curriculum according to the need of today's research and industry applications. The primary focus of our curriculum is to convey technical know-how to students, promote their problem-solving skills and innovation of new technologies.

The department lays great emphasis on research and development. The department works in collaboration with well-known research institutes, industry partners, and government agencies.

Looking forward to seeing you at our campus.

Season's greetings and warm regards,

Dr. Mohd. Kaleem Khan
Head, Department of Mechanical Engineering



DR. MOHD. KALEEM KHAN
HEAD OF DEPARTMENT

**MECHANICAL
ENGINEERING**

ABOUT US

Since its inception in 2008, the department has been advancing towards the frontiers in the field of Mechanical Engineering. Presently the department is offering B.tech, M.Tech, and PhD. degrees. Such activities are aptly supported by 16 state-of-the-art research cum teaching laboratories. Significant no. of patents and publications in various top multidisciplinary journals is evidence of the flourishing research environment in the department.

Our aim is to engage in the frontiers of the field and channelize the state of art knowledge to train personnel who can solve problems of relevance to the society at large. The department lays great emphasis on research and development.

The department has close interaction with industry and research institute agencies including Aeronautics Research Development Board (ARDB), Defense Research Development Organization (DRDO), Board of Research in Nuclear Science (BRNS), Department of Science and Technology (DST), Indian Space Research Organization (ISRO) and research labs have been set up in the department in collaboration with industry and government agencies.



**STRENGTH
(Batch 2021-22)**

M.TECH : 16

Manufacturing

- Advanced Engineering Mathematics
- Advanced Engineering Software Lab
- Metal Cutting & Analysis
- Metal Forming & Analysis
- Advanced Manufacturing Processes

LABS

MANUFACTURING LAB I

MANUFACTURING LAB II

COURSE STRUCTURE

ELECTIVES

- Composite Materials : Mechanics, Processing and Testing
- Vehicle Dynamics and Multi-body Systems
- Robotics: Advanced Concepts & Analysis
- Wear & Lubrication of Machine Components
- Renewable and Non-Conventional Energy sources
- Science, Technology and Society
- Nano Material and Nanoscience
- Electro-Magnetism

Thermo-fluids

- Advanced Engineering Mathematics
- Advanced Engineering Software Lab
- Advanced Fluid Mechanics
- Advanced Heat Transfer

LABS

THERMO-FLUID\$ LAB-I

THERMO-FLUIDS LAB-II

Ongoing M.Tech Projects

MANUFACTURING

- Particle scale modeling of the Ti alloy additively manufactured components using laser metal sintering technique.
- Selective laser melting (in collaboration with IIT Hyderabad and DRDO).
- Functionally graded composite structures using friction stir processing (in collaboration with Dr. Abhay Sharma, University of Leuven, Belgium).
- Development and performance analysis of micro-electro discharge grinding.
- Study on Effect of Interlayer in Friction Welding for Dissimilar Steels

THERMO-FLUIDS

- Thermal storage systems using solar air heaters- performance evaluation.
- Analysis of Wilson plot for shell and coil heat exchanger.
- Microchemical heat sink for high heat dissipation in electronic devices.
- Flow boiling with ionic liquids.
- Acoustic control of pool boiling.
- Numerical simulation of global and local instabilities in collapsible tube.

LAB Facilities

Dynamics and
Vibrations
Laboratory

Fire Research
Laboratory

Heat and Mass
Transfer
Laboratory

Advanced
Manufacturing
Laboratory

Measurement
and Process
Analysis
Laboratory

Mechanical
Workshop

Dynamics and
Vibrations
Laboratory

Fire Research
Laboratory

**Instrumentation
and Control
Laboratory**

I. C. Engine
Laboratory

Metrology
Laboratory

Robotics and
Automation
Laboratory

CAD/CAM
Laboratory

Material
Testing
Laboratory

Thermal and
Fluid Transport
Laboratory

Fluid Mechanics
and Machinery
Laboratory

Sustainable
Energy Research
Laboratory

Computational
Fluid Dynamics
Laboratory



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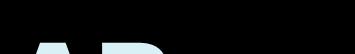
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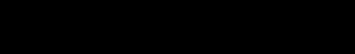
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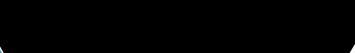
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SPONSORED PROJECTS AND RESEARCH SPONSORS

- Mechanical and micro-structural characterization of additive friction stirred (AFS) 3D structures made of Al 6061 t6 aluminium powder.
- Fist-2018 under DST
- Development of novel SMA bearing support and retrofit for enhanced performances and durability of rotating machinery (UAY)
- Improvement of fatigue and ductile fracture behaviour of steel and alumunium alloy specimens by application of pulsed electric current
- Establish correlation between specimen level fatigue and cornering fatigue test
- Design of asperity for textured metal surfaces to improve tribological characteristics in sliding : An in situ imaging approach
- Development of an agricultural waste based off-the-grid climate control unit for storage and agricultural produces
- Controlling the vibrational dynamics of fluid-carrying flexible tubes via acoustic irradiation.
- Development of Multi-Layered microstructure gradient functionally graded composite material using friction stir additive manufacturing.
- Technology gap analysis for combined study proposal for the following clusters : copper & bronze utensils clusters, Mahua, Vaishali, Brass & German Silver utensils cluster – Majhulia, Bettiah, Brass & Bell Metal cluster - Mahisadel, Purba, Medinipur , West Bengal.
- Particle scale modeling of the Ti alloy additively manufactured components using laser metal sintering technique- This project is in collaboration with the DRDL Lab (DRDO) Hyderabad



MHRD'S
INNOVATION CELL
(GOVERNMENT OF INDIA)



विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY



TOPIC

- A biaxial stretching device for simultaneously stretching of an elastomer sample
- Determination of whirl direction of shaft using modified full spectrum analysis of motor current signature
- Surfactant based boiling system for zero gravity
- An improved valveless micropump with dome shaped dielectric elastomer diaphragm, pumping chamber and nozzle diffuser as flow control element.
- Vibro Tactile feedback System using FSR
- An improved system of a passive exoskeleton to reduce manual effort in carrying load
- A system and method for controlling the buoyancy of an underwater submersible
- System and method for heat recovery in gasification process
- A stepped microchannel heat sink for cooling an electronic device
- An improved heat sink system for suppressing two-phase thermal and flow instabilities and a method thereof
- Curved Serpentine Flow Inverter

Indian Patent Application No.

- 985/KOL/2013
- 1026/KOL/2014
- 208/KOL/2015
- 201631041457
- 201731014654
- 201731023607
- 201831028588
- 201831011600
- 201931000706
- 201931001796
- 201931031533



**WRIGHT STATE
UNIVERSITY**



**UNIVERSITY OF
SASKATCHEWAN**



The University of Manchester



**UNIVERSITY
OF HARTFORD**

UKIERI
**UK-India Education
and Research Initiative**

LSU



**UNIVERSITY OF
SURREY**

STUDENTS ACTIVITIES

Rural Technology Development Club

Initiative by students of IIT Patna to identify the problems prevailing in the rural areas and innovate using latest technology to develop devices and address these problems.

24/7

Rural Technology Development Club

The aim of the Rural Technology Development Club (RTDC) is to identify the problems prevailing in the rural areas and to work to develop technologies and devices to address them. The Club strives to fill the technological void existing in the rural areas. Keeping this in mind, the team regularly surveys different villages to understand the problems faced by the rural populace.

यूनिका
Dramatics Club
IIT Patna



AS OUR
KEY SPONSOR

Entrepreneurship Club
The Entrepreneurship Club at IIT Patna was setup with the vision to create a gelling point for aspiring entrepreneurs at the institute. The club's mission is to educate the students about the nuances involved in business and entrepreneurship and to prepare them to undertake the journey from the genesis of an idea to its successful business implementation.

The Club regularly hosts guest lectures by distinguished personalities from the industry and academia, in addition to organising various business and marketing competitions round the year.

Team INVINCIBLES IITP makes its mark at Enduro Student India

The team, christened Team INVINCIBLES IITP, consists of 13 students from third year and 15 from second year. It is led by Sourabh Jain and has Dr Anirban Bhattacharya from the Department of Mechanical Engineering as the Faculty Advisor. The Royal Blue coloured vehicle has been tastefully named "The Queen", and performed reasonably well for a team participating for the first time

Achievements 2019:

1st in Design Validation
Overall 4th in Static Events



IIT Patna student team secured 2nd runner-up in HPVC 2017

IIT Patna's team "Alacrity" (part of Tinkerer's club@IITP) secured overall Second Runner Up position in ASME HPVC Asia Pacific 2017. HPVC is a part of ASME E-Fest Asia Pacific hosted by LNMIIT Jaipur during 3rd-5th March 2017. There were total of 41 teams which were shortlisted after Qualifier Round for the main event in November. Teams from all over the country took part which includes teams from IITs, NITs and other prestigious Institutes.

Achievements 2019:

- 3rd rank in Male sprint event 2020.
- 2nd position in Design event 2018.

DISTINGUISHED ALUMNI



Vishal Yadav

Indian Railway Service of
Mechanical Engineers (IRSME)

Ballabh Inder Kishore

Consultant NPIU, MHRD

Akshay Saxena

Startup - Robo Bionics

Luhana Prashant

Educational Consultant at
MHRD

Abhishek Subhrant

Founder, Career Self-start

Devanshu Ganatra

Revenue Director, Treebo
Hotels

Viththal Pandey

Indian Railway Store Services

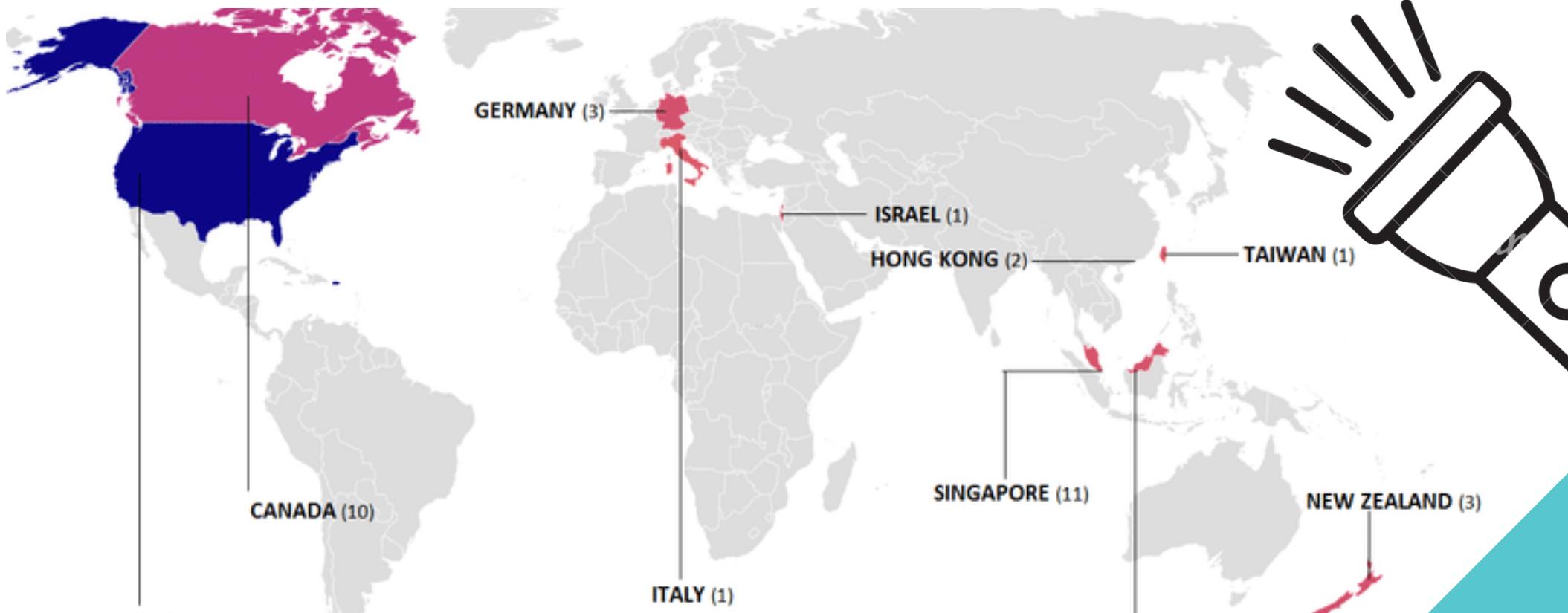
Chirag Jain

Startup - EndureAir

Arpit Bansal

Director, Toppersnotes

INTERNATIONAL EXPOSURE





PAST RECRUITERS



The
Geoffrey
Hinton
Fellowship

VE COMMERCIAL VEHICLES
A VOLVO GROUP AND EICHER MOTORS JOINT VENTURE



PLACEMENT PROCEDURE

The companies/organizations are contacted by the placement cell(which includes the authorized student representatives); after which the invitations are extended which include the relevant information and also the placement brochure.

Companies are given an exclusive login id in the website after they submit the filled-in job announcement forms (JAF) via email or fax.

A detailed schedule is then prepared by the placement cell for the interview rounds as required by that company. Also, the company is evaluated based on the job offer, prospects, student intake, and the like. The Placement Cell and the respective Company could also finalize and corroborate the date for the pre-placement talks if they are necessary.

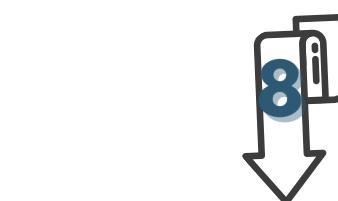
During the pre-placement talks, the speakers sent by the company would interact with the registered students and impart to them their requirements and an idea of what the companies do.

The companies visiting the campus would then conduct the rounds of the recruitment process which would include but not limited to an Online Test, Interview Round, Group Discussion and so; following the schedule as confirmed before.

After that, each student who has registered for a particular company submits his/ her resume and their relevant details so that the company could shortlist the students accordingly.

The JAFs and the entire schedule of that particular company are then made available to the students via mail, which helps the willing and eligible students to register for the same.

The companies are required to prepare and submit, with a written confirmation letter the list of students who are selected after the interview process, on the day of the interview itself.



The placement cell then receives the offer letters for the jobs of the selected students. In case a student gets a job offer, he/ she would be subject to regulations by the placement cell to be entitled to appear for further companies.

CONTACT US

Asst. Head Coordinators

M.Tech

Yashraj Asthana

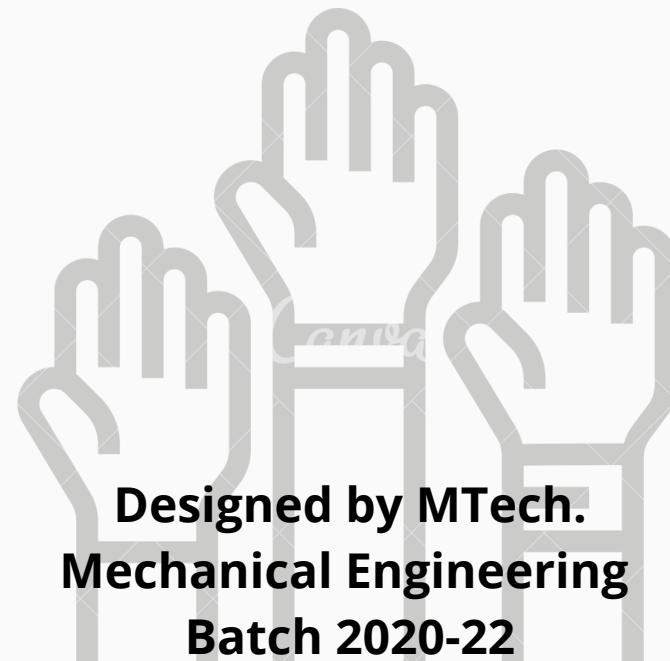
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Website: <https://www.iitp.ac.in/placement/>

Mail: tpc@iitp.ac.in