



Discipline of Mechanical Engineering

Indian Institute of Technology Indore

Khandwa Road, Simrol

Indore 453 552

PhD Program in Mechanical Engineering Discipline

These great sayings cue the Discipline of Mechanical Engineering in putting a wholesome effort in instilling the worth of knowledge among the students. The Discipline along with its strong faculties, on behalf of IIT Indore, an academic platform of international repute, is dedicated to the service of training and building educated minds, confident to work and excel in their respective fields in future. We invite applications from high calibre, sincere and research-oriented students for admission to the PhD Program. The vacancies are available in the following areas:

Sr. No.	Specialization	Research Areas
1	Thermal Engineering (Dr. Satyanarayan Patel) TA (Teaching Assistantship) Category (Institute Teaching Assistantship with scholarship as per MHRD guidelines)	<ul style="list-style-type: none"> • Energy conversion, storage and harvesting materials • Solid State Refrigeration • Piezoelectric, Pyroelectric and ferroelectric materials • Energy Engineering
2	Production Engineering (Dr. I.A. Palani) FA (Fellowship Awardee):** Fellowship Awardees from the funding agencies such as CSIR, UGC, NBHM, DST etc., OR JRF/ SRF project staff working in a sponsored research project under a faculty member, PI of the project, of IIT Indore. The scholarship will be as per the rules of the concerned funding agency.	<ul style="list-style-type: none"> • Soft robotic systems • Mechatronics system Design • MEMS
	(Dr. Ashish Rajak) TA (Teaching Assistantship) Category (Institute Teaching Assistantship with scholarship as per MHRD guidelines)	<ul style="list-style-type: none"> • High strain rate metal forming and joining techniques

3	Design Engineering (Dr. Krishna Mohan Kumar) TA (Teaching Assistantship) Category (Institute Teaching Assistantship with scholarship as per MHRD guidelines)	<ul style="list-style-type: none"> • Acoustics of Ducts and Mufflers • Industrial and Automotive Noise Control • Automotive Noise Control • Designing for Quietness
4	Industrial and Systems Engineering (Dr. B.K. Lad) Category: Non-TA Category like DF/ IS/ CT/ SW/ FA category	<ul style="list-style-type: none"> • Smart manufacturing, reliability engineering, and prognostics

A. Categories of Admission: Please refer the main PhD Advertisement of the Institute (<http://academic.iiti.ac.in/phdadvt.php>)

B. Eligibility for Indian Students: GATE qualification is not compulsory for DF/ IS/ CT/ SW/ FA category

Minimum Educational Qualifications (MEQs) and Qualifying Examination (QE) for Indian applicants *,#	Minimum Educational Qualifications (MEQs) and Qualifying Examination (QE) for International applicants
<p>B.Tech. Mechanical Engineering, Automobile Engg; Marine Engineering; Ceramic Engineering; Materials Engineering;</p> <p>and</p> <p>Masters' degree in the Mechanical Engineering/ Technology/ Metallurgy Discipline/ Energy Systems Engineering; Energy and environment; Energy Engineering; Automobile Engineering; Thermal Engineering; Heat Power; Energy Materials, Fluids & Thermal Engineering, Cryogenics & Vacuum Technology, Hydraulic Engineering, Material Science and Technology, Materials Engineering (with first division as defined by the awarding Institute/ University) AND GATE qualification,</p> <p>**Candidates with BE/ BTech/ M.E/ M.Tech in Mechatronics, Robotics, Instrumentation and control, Electronics and Instrumentation are eligible.</p>	<ul style="list-style-type: none"> • MEQ: Masters' degree in the Mechanical Engineering (with first division as defined by the awarding Institute/ University) • QE: Valid TOEFL/IELTS OR equivalent qualification <p>OR</p> <p>Valid GATE qualification</p>

C. Eligibility for International Students: Please refer the main PhD Advertisement of the Institute (<http://academic.iiti.ac.in/phdadvt.php>)

After submitting the application online, the eligible International candidate needs to send the signed hard - copy of the application along with recent photograph, self-attested relevant certificates and Statement of Purpose (SOP) to the DPGC Convener of ME Discipline latest by November 05, 2020.

D. Last date of online application (for Indian as well as International Students): November 05, 2020

E. Application Procedure and General Information for Indian Students:

- [1] Candidates must apply ONLINE through the website (<http://academic.iiti.ac.in:8080/nregistration.jsp>).
- [2] Application Fee: Please refer the main PhD Advertisement of the Institute.
- [3] **Candidates need NOT send the hard copy** of the submitted online application by post or courier. The candidate should submit the signed application along with all academic and relevant documents as well as recommendation letters at the time of **written test/interview to be scheduled in the second week of November 2020 in online mode.**
- [4] Mere eligibility will not vest any right on any candidate for being called for written test/interview. The decision of the Discipline in all matters will be final.
- [5] The shortlisted applicants will be called for written test/interview via email only so mention your email id carefully.
- [6] The short-listed candidates must arrange recommendation letters (in the given format only) in sealed envelopes from at least two referees well before appearing for written test. A sample of recommendation letter is provided in Word format which can be downloaded for further use.
- [7] The short-listed candidates must submit statement of purpose explaining why they would like to pursue the PhD in the specific area (200 to 300 words) well before appearing for written test/interview.
- [8] **Follow instructions numbers [3], [6] and [7] carefully otherwise candidate will not be allowed to appear for written test/interview.**

The candidates can contact the DPGC convener for further information on following address:

admission-me@iiti.ac.in

Faculty members and their research profiles: To gain more insight, interested applicants are encouraged to visit below Faculty Members' website who are going to recruit PhD candidates.

Dr. I.A. Palani is working as Associate Professor in the discipline of Mechanical Engineering IIT Indore. After completing his Doctorate from Indian Institute of Technology Madras, He worked as a post-doctoral research scientist in Graduate school of Information science and electrical Engineering, Kyushu University, Japan. He has developed Mechatronics and Instrumentation Lab at IIT Indore. His area of expertise includes, Mechatronics system design, soft Robotic systems laser assisted surface processing, micro-machining, Smart materials and shape memory alloys. He has published more than 100 international journal publications and he has filed 6 Indian Patents. He has executed project from different funding agencies such as DST, SERB, DAAD, JSPS, DRDO, MHRD worth 6 crores. He has closely worked with industries such as Volvo Eischer, John Deere, WABCO as technical consultant. He has strong research collaboration with University of IFW Dresden Germany, Kyushu University, Japan and Jeju University, South Korea, St Petersburg state University, Russia and Purdue University, US. He is a life member in Indian Laser Association, RRCAT Indore and Smart materials and structures, IISC Bangalore. He has received Alumni award for the year 2015 under research and innovation. He is a recipient of Kyushu university friendship scholarship and AICTE National doctoral fellowship. He is a member of SPIE, Indian Laser Association, Institute of Smart Materials and Structures. Webpage: <http://drpalaniia.webs.com/>

Dr. Satyanarayan Patel obtained PhD from the Indian Institute of Technology Mandi in the year of 2016. In the IIT Mandi his research is focused on ferroelectric and piezoelectric materials for energy storage and conversion and caloric effects for solid state refrigeration. In the 2016, he awarded Alexander von Humboldt Research Fellowship for Postdoctoral Research Technische Universität (TU) Darmstadt, Germany. There he focused on zinc oxide nanowires for piezotronics and energy harvesting applications. The main scientific goal of the project is to develop zinc oxide nanorods/nanowires for tuning the current-voltage characteristics by mechanical confinement and explore potential applications as nanogenerators for energy conversion. The key research area is solid state refrigeration, piezoelectric and pyroelectric materials for energy harvesting and storage. Webpage: <https://sites.google.com/view/satyanarayan-patel>

Dr. Ashish Rajak is an Assistant professor in the Department of Mechanical Engineering, IIT Indore, India. He worked as a Post Doctorate Researcher for more than a year in the Impulse Manufacturing Laboratory, at Ohio State University, the USA after completing his PhD. He has received his PhD degree in High Strain Rate Metal Joining and Forming Techniques from IIT Guwahati. His research area spans from materials science to manufacturing applications with a primary focus on numerical modelling and simulation on high strain rate metal forming and joining techniques. His research vision is to understand the material behaviour at high strain rate forming techniques. He works in the area of designing metal crimping, clinching, forming, and welding using the Electromagnetic and Vaporizing Foil Actuator System.

Dr. Krishna Mohan Kumar is a Mechanical Engineer. Currently, he is working as an Assistant Professor in the Department of Mechanical Engineering at IIT Indore. He received his M. Tech degree in Mechanical Engineering with Machine Design specialization from IIT Guwahati in 2012. In July 2018, he submitted his PhD thesis and defended it successfully in May 2019. He has worked on many industrial consultancy projects under the supervision of Prof. M. L. Munjal. In addition to the experience of working on R & D consultancy projects, he also has experience of teaching a three-month course as a co-instructor with Prof. M. L. Munjal on "Noise and Vibration Control" and "Acoustics of Ducts and Mufflers" for training Faurecia Clean Mobility Bengaluru Technical Centre's practising engineers. Prior to joining IIT Indore, he worked as an Assistant Professor at Maulana Azad National Institute of Technology, Bhopal, and delivered lectures on Stress and Vibration Analysis for a PG program and Machine Design for UG program for four months. After that he worked as an Assistant Professor at NIT Tiruchirappalli for three months and delivered lectures on Industrial Robotics. He has published several papers in peer-reviewed international journals as well as conferences. Currently, he is working on the parametric expressions of end-corrections of double-tuned chamber mufflers with different inlet/outlet configurations, and differential lengths of flow-reversal perforated element mufflers and hybrid concentric tube resonator mufflers.