Department of Mechanical Engineering

Indian Institute of Technology Indore

Khandwa Road, Simrol Indore 453 552

Madhya Pradesh, India

PhD Program in Department of Mechanical Engineering

These great sayings cue the Department of Mechanical Engineering in putting a wholesome effort in instilling the worth of knowledge among the students. The department 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 caliber, sincere and research-oriented students for admission to the PhD Program. Candidates are strongly advised to visit the profiles of the faculty members at http://me.iiti.ac.in/ before applying for the PhD Program. The vacancies are available in the following areas:

Sr. No.	Specialization	Research Areas
1	**Design Engineering** **(Dr. Krishna Mohan Kumar)** **TA (Teaching Assistantship) Category** (Institute Teaching Assistantship with scholarship as per Ministry of Education (MoE)* guidelines) And **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Acoustics of Ducts and Mufflers • Industrial and Automotive Noise Control • Automotive Noise Control • Designing for Quietness
2	**Design Engineering** **(Dr. Indrasen Singh)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Deformation and fracture response of additive manufactured carbon fiber reinforced polymer composite materials.
3	**Design Engineering** **(Dr. Shailesh Kundalwal)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Composite structures • Micromechanics and nanomechanics • Atomistic simulations of solids • Hydrogen storage • Experimental characterization of nanostructures
4	**Design Engineering** **(Dr. Sandeep Singh)** **TA (Teaching Assistantship) Category** (Institute Teaching Assistantship with scholarship as per Ministry of Education (MoE)* guidelines) And	• Solid mechanics and design • Finite element method • Computational mechanics • Computational material science • Multiscale modelling of nanomaterials • Atomistic simulation • Finite element modelling of nanostructures

	Non-TA Category like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	
5	**Design Engineering** **(Dr. Pavan Kumar Kankar)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Vibration • Vibration and force analysis in biomechanical preparation of root canals • Fault diagnosis of mechanical components • Condition based maintenance • Machine learning • Signal processing
6	**Production Engineering** **(Dr. I. A. Palani)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Soft robotic systems • Mechatronics system Design • MEMS
7	**Production/Manufacturing/Materials /Metallurgy** **(Dr. Kazi Sabiruddin)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Surface Engineering • Thermally sprayed ceramic coatings • Tribo-mechanical applications
8	**Manufacturing Engineering** **(Dr. Ashish Rajak)** **TA (Teaching Assistantship) Category** (Institute Teaching Assistantship with scholarship as per Ministry of Education (MoE)* guidelines) And **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• High strain rate materials processing • Metal forming • Joining techniques: welding, crimping, • cladding, clinching and hemming • Powder compaction
9	**Manufacturing Engineering** **(Dr. Girish Verma)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Machining processes • Abrasive based finishing process • Ultrasonic-assisted machining process • Additive manufacturing.
10	**Manufacturing/CAD/CAM/Metallurgy/Production** **(Dr. Dan Sathiaraj)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• High Entropy Alloy • Additive manufacturing
11	**Industrial and Systems Engineering** **(Dr. Bhupesh Kumar Lad)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Smart manufacturing, • Reliability engineering, and prognostics

12	**Thermal Engineering** **(Dr. Harekrishna Yadav)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Fluid Dynamics and Heat Transfer • Fluid-Structure Interaction • Shear Flow, Supersonic Flow, Flow and Turbulence Measurement using Optical Techniques • Heat Transfer Enhancement • Renewable and Sustainable Energy.
13	**Thermal and Materials Engineering** **(Dr. Satyanarayan Patel)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Energy conversion, storage and harvesting materials • Solid State Refrigeration • Piezoelectric, Pyroelectric and ferroelectric materials • Energy Engineering
14	**Thermal Engineering** **(Dr. Ankur Miglani)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Combustion and Propulsion: Combustion of next-generation fuels (Gel and nanofluid fuels); • Heat Transfer, micro/nanofluidics: Thermal management of high-heat-flux electronics; • Soft matter: Instabilities in drying colloidal droplets
15	**Thermal Engineering** **(Dr. Santosh Kumar Sahu)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Fluid Dynamics • Heat Transfer • Thermal Science
16.	**Thermal Engineering** **(Dr. Shanmugam Dhinakaran)** **Non-TA Category** like DF/FA/IS/CT/SW/CSIR fellowship (i.e., FA Category) etc.	• Fluid Dynamics • Heat Transfer • Thermal Science

*Formerly know Ministry of Human Resource Development (MHRD)

A. Categories of Admission: TA (Teaching Assistantship)/FA (Fellowship Awardee)/ CT (College Teacher)/ SW (Sponsored without Institute scholarship)/DF (Defense Forces)/ IS (Institute Staff) and CT (College Teacher). Kindly refer to the main PhD Advertisement of the Institute available at http://academic.iiti.ac.in/phdadvt.php for more details.

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

Minimum Educational Qualifications (MEQs) and Qualifying Examination (QE) for Indian applicants*	Minimum Educational Qualifications (MEQs) and Qualifying Examination (QE) for International applicants
B.Tech. Mechanical Engineering, Metallurgy, Automobile Engg; Marine Engineering; Ceramic Engineering; Materials Engineering, Manufacturing Engineering, Industrial	➢ **MEQ:** Masters' degree in the **Mechanical Engineering** or any other related field of Engineering (with first division as defined by

Engineering, Reliability Engineering Production Engineering, Materials Science Engineering, Aerospace Engineering, Chemical Engineering or any other related field of Mechanical Engineering **and** **Masters' degree** in the Mechanical Engineering/ Technology/ Metallurgy Department/ 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, Manufacturing Engineering, Industrial Engineering, Production Engineering, Reliability Engineering, Machine Design, CAD/CAM/Metallurgy, Materials Science or any other related field of engineering (with first division as defined by the awarding Institute/ University) and GATE qualification OR Four-year Bachelors' degree **OR** five-year integrated degree in the **Mechanical Engineering** or any other related field of Engineering (with first division as defined by the awarding Institute/ University) **AND** valid GATE qualification, *Candidates with B.E./ B.Tech/ M.E/ M.Tech in Control system/Mechatronics/ Electronics and Instrumentation/Electrical/Robotics/Autotronics/ Instrumentation and control, Electronics and Instrumentation are eligible.	the awarding Institute/ University) ➢ **QE:** Valid TOEFL/IELTS OR equivalent qualification **OR** Valid GATE qualification

C. Eligibility for International Students: Please refer to 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 and soft - copy of the application along with a recent photograph, self-attested relevant certificates and Statement of Purpose (SOP) to the DPGC Convener of ME Department latest by 4 June, 2021.

D. Last date of online application (for Indian as well as International Students)**:** 4 June 2021

Last date of Online Application through http://academic.iiti.ac.in:8080/nregistration.jsp (for both Indian and	4 June 2021

International Applicants)	
Shortlisted candidate intimated	Second week of June 2021
Last date of receiving recommendations of two referees (to be sent by referees to admission-me@iiti.ac.in) (for both Indian and International Applicants)	Second week of June 2021
Date of Online Interview (both Indian and International Applicants)	Second week of June 2021
Interview Schedule & Mode	
Online interviews for the PhD admission would be conducted on Second week of June 2021 through the Google Meet platform. A detailed schedule regarding the interview will be intimated to the eligible/shortlisted candidates later.	

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). This will generate a unique application number for each applicant.

[2] Application Fee:

- Indian Applicants: 100/- Indian Rupees (non-refundable) to be paid through Online .
- International Applicants: US $ 30 (non-refundable) through RTGS. Kindly refer to the main PhD Advertisement of the Institute at http://academic.iiti.ac.in/phdadvt.php for more details about the payment procedure and course fee structure.

Please refer to the main PhD Advertisement of the Institute for more details.

[3] Applications must be submitted online before the date mentioned above.

[4] There is no need to send hard copies of the application form and supporting documents through POST or COURIER.

[5] Mere fulfilling of the eligibility criteria will not entitle any applicant for being called written test/interview. The Institute/department reserves its rights to set higher norms for short-listing and call limited number of candidates for the written test/interview.

[6] The shortlisted applicants will be called for a written test/interview via email only so mention your email id carefully.

[7] The shortlisted candidates must arrange recommendation letters (in the given format only) at least two referees well before appearing for a written test/interview. A sample of the recommendation letter is provided in Word format, which can be downloaded for further use. Only shortlisted candidate letters of recommendation must be sent by referees to admission-me@iiti.ac.in.

[8] The shortlisted candidates must submit a statement of purpose explaining why they would like to pursue the PhD in the specific area (200 to 300 words) well before appearing for a written test/interview.

[9] Only shortlisted candidate will be asked to submit PDF of the application form along with the scanned copies of the fee payment receipt and self-attested copies of supporting documents (10th marksheet, 12th marksheet, B.Tech degree mark sheets and certificate, GATE score card, Master's degree mark sheets and certificate, Caste Certificate, if applicable and all other relevant certificates) in the mentioned order (all combined into a single PDF file) to admission-me@iiti.ac.in within the online application deadline.

[10] SW category candidates must have NOC, experience certificate, last three months' salary slips, and Employer's PAN card and along with above documents. If a candidate is shortlisted, he has to submit it immediately.

[11] Candidates who are Fellowship Awardees from the funding agencies such as CSIR, UGC, DST etc., are highly encouraged to apply under FA category. Such candidates should send a copy of the letter of the fellowship award along with their applications.

[12] GATE qualification is not compulsory for DF/IS/CT/SW category candidates.

[13] Instructions numbers [7], [8], [9], [10] and [11] are applied to the shortlisted candidate only. Follow them carefully; otherwise candidate will not be allowed to appear for a written test/interview. The candidate should submit all documents ([7], [8], [9], [10] and [11]) at or before the time of the written test/interview to be scheduled in the first week of June 2021 in online mode.

[14] No interim correspondence whatsoever will be entertained from applicants regarding conduct and result of the selection process and reasons for not being called for interview or selection.

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

admission-me@iiti.ac.in

For any further queries, please contact: PhD Admission Cell, Indian Institute of Technology Indore, Indore-453552, Indore, Madhya Pradesh, India. Email: phdadmission@iiti.ac.in	For queries specific to the Department, emails can be sent to 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. Krishna Mohan Kumar Dr. K. M. Kumar is an Assistant Professor in the department of Mechanical Engineering at Indian Institute of Technology Indore. He received his B. Tech degree in Mechanical Engineering from Jalpaiguri Government Engineering College, in 2010 and M. Tech degree in Mechanical Engineering with Machine Design specialization from Indian Institute of Technology Guwahati, in 2012. He was awarded Ph.D. degree from Indian Institute of Science in 2019 for his thesis entitled "Direct Estimation of Acoustic Source Characteristics of the Internal Combustion Engine Exhaust System and Analysis of Complex Muffler Configurations." During his Ph.D., he has worked as project assistant on 5 industrial consultancy projects related to design and analysis of automotive and DG set silencers/mufflers. After his Ph.D. thesis submission, he worked on 3 industrial consultancy projects as co-consultant with Prof. M. L. Munjal of Indian Institute of Science, Bengaluru. In 2018-19, Dr. Kumar delivered lectures as a co-instructor with Prof. Munjal on Acoustics of Ducts and Mufflers and Industrial Noise Control to train the practicing engineers of Faurecia Clean Mobility Centre, Bengaluru. He has published several papers in peer-reviewed international journals as well as conferences. His research interests are: Acoustics of Ducts and Mufflers; Automotive Noise and Vibration Control; Industrial Noise and Vibration Control; and Designing for Quietness.

Dr. Indrasen received B.Tech degree in mechanical engineering in 2004 from NIT, Allahabad, India. Subsequently, he joined the position of scientist at ARDE, Pune, a premier laboratory of DRDO, where he worked with design team of mechanical fuzes for various ammunitions. In 2007, he moved to PTC software (india) Pvt. Ltd., Pune and work there for 3 years as a software developer. He joined Phd in the department of mechanical engineering at IISc, Bangalore in Aug 2010. His PhD work focused on understanding fracture and deformation response of metallic glasses and nanoglasses. In Oct, 2016, He joined post-doctoral position at NUS, Singapore. He received gold medal for best Phd Thesis from IISc in 2017. Since April 2017, he is working as assistant professor at IIT, Indore. His research interest lies in the area of mechanical behaviour of materials. Some specific research areas are: Finite element methods, Crystal plasticity, Computational Fracture Mechanics, Piezoelectric materials, metallic glass and nanoglass, composite materials.

Dr. Shailesh I. Kundalwal is an Associate Professor of Mechanical Engineering who specializes in Design Engineering stream. Before joining IIT Indore in 2017, he was Banting Fellow at the University of Toronto. He was awarded his M.Tech and Ph.D. degrees in Applied Mechanics from IIT Kharagpur. He proposed a novel multifunctional Fuzzy Fiber Reinforced Composite in his doctoral studies which led to a critical breakthrough in the field of hybrid nanocomposites. During three-separate international postdoctoral stints, he worked in the field of multiscale modeling of composites and nanotechnology in engineering. He founded the Applied and Theoretical Mechanics (ATOM) Laboratory at IIT Indore which undertakes research mainly in computational and experimental investigations of nanostructures. He is currently guiding 5 PhD and handling projects awarded by national funding agencies. He has authored 53 research articles (excluding conference papers and chapters) in reputed international journals. He contributes as a reviewer on several international journals and Elsevier books in the broad field of mechanics and is a member of professional bodies such as ISTAM, ASME, CSME, APS, and IEI (I). Webpage: https://www.sikundalwal.com/

Dr. Sandeep Singh received his PhD from IIT Delhi in the area of multiscale modelling of carbon nanotubes and master's in Applied Mechanics from MNNIT Allahabad. Preferred Candidates: Candidates with good knowledge of fundamentals of subjects like Mechanics of Materials, Mechanical Vibrations.

Dr. Pavan Kumar Kankar is working as an Associate Professor in Department of Mechanical Engineering. His research interests include fault diagnosis and prognosis using machine learning techniques, reliability, bio-medical signal processing and analysis of dynamical systems. He is having more than 16 years of teaching and research experience. He worked with Villanova University for effective discrimination between four kinds of common defects in gears by utilizing the method of recurrence analysis. Dr. Kankar also worked on improving theoretical model of unbalanced shaft-bearing system with researchers of Faculty of Science, University of Yaoundé, Yaoundé, Cameroon. He contributed in various projects awarded by national and international funding agencies under IMPRINT India Initiative by Ministry of Human Resource Development and India-Japan Cooperative Science Programme etc., total worth of Rs. 3.3 crore approx. Dr. Kankar has contributed to more than 100 publications which include journal papers, conference papers, books, and book chapters. He is member of International Institute of Acoustics and Vibration, USA. He is a member of various professional bodies like American Society of Mechanical Engineers, Society for Reliability and Safety (SRESA), Tribology Society of India. His work is having more than 2400 citations.

Dr. I.A. Palani is working as Associate Professor in the Department 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. Kazi Sabiruddin is an Associate Professor in the Department of Mechanical Engineering IIT Indore . He joined IIT Indore in 2011 as an assistant professor. Prior to the joining of IIT Indore he served BIT Mesra and JUET Guna. He holds a doctoral degree in Mechanical Engineering from Indian Institute of Technology Kharagpur (2009). He is an M.Tech in Production Engineering (2006, Specialization: Tool Engineering) and a B.Tech in Mechanical Engineering (2003).His research area is "Surface Engineering" with a

specialization in “thermally sprayed ceramic coatings for tribo-mechanical applications”. He also continues research in the board area of manufacturing.

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, focusing 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 designing metal crimping, clinching, forming, and welding using the Electromagnetic and Vaporizing Foil Actuator System.

Dr. Girish Verma I have completed my MTech and PhD degrees in Mechanical Engineering from Indian Institute of Technology Delhi. My PhD topic was on experimental investigations and modelling of ultrasonic assisted end milling. I have published ten journal papers and attended two all India manufacturing technology, design and research conferences. I was involved in an India-UK project related to modelling of ultrasonic assisted manufacturing processes. I have received prestigious Gandhiyan Young Technological Innovation Award. I am working as Assistant Professor in IIT Indore from Aug, 2019. I am currently working in the areas of Machining processes, Abrasive based finishing process, Ultrasonic-assisted machining process and Additive manufacturing.

Dr. Dan Sathiaraj joined as Assistant Professor in the Department of mechanical engineering at IIT Indore on November, 2019. He completed his PhD (2016) from IIT Hyderabad in the area of “Thermo-mechanical processing of High entropy alloys”. Before joining IIT Indore, Dr. Dan was worked as a postdoctoral researcher at TU Dresden, Germany during May 2017 to November 2019. His postdoctoral research was funded by prestigious Alexander Von Humboldt Foundation. His research areas of interest are micro, nano - machining of high entropy alloys, Microstructure and texture evolution during basic deformation through conventional and severe plastic deformation routes, recrystallization and grain growth behavior of these advanced high entropy alloys.

Dr. Harekrishna Yadav is an Assistant Professor in the Department of Mechanical Engineering at IIT Indore where he has been a faculty member since October 2019. before joining IIT Indore, he worked as a postdoctoral fellow at Technion- Israel Institute of Technology, Israel from 2017- 2019. Prior to this, He received his Ph.D. degree from IIT Bombay in 2017, and M. Tech degree from IIT Roorkee. His research interests lie in the broad area of experimental fluid dynamics and heat transfer. His current research activity includes Fluid-Structure Interaction, Shear Flow, Flow and Turbulence Measurement using Optical Techniques, Heat Transfer Enhancement, Supersonic Flow, Renewable and Sustainable Energy.

Dr. Satyanarayan Patel obtained PhD from the Indian Institute of Technology Mandi in the year 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 2016, he awarded Alexander von Humboldt Research Fellowship for Postdoctoral Research Technische Universität (TU) Darmstadt, Germany. Their, 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. Ankur Miglani is currently working as an Assistant Professor in the Department of Mechanical Engineering at IIT Indore. Prior to that he worked as the SERB Indo-US Postdoctoral Fellow at the Cooling Technologies Research Center in the Department of Mechanical Engineering, Purdue University (with Prof. S.V. Garimella and Prof. J.A. Weibel) (2016 – 2019). His post-doc work stems from an industry-directed project (Ford R&AE, Michigan, USA) that focuses on the assessing the two-phase cooling solutions for thermal management of power-dense electronics in hybrid vehicles. His past work aimed to address the growing challenge of achieving clean, safe and efficient combustion. To this end, his first post-doc at Korea Advanced Institute of Science and Technology (KAIST; with Prof. S.W. Baek, 2016) and doctoral work at Indian Institute of Science (with Prof. S. Basu, IISc, 2015) in collaboration with Prof. R. Kumar (University of Central Florida) focused on investigating the rheological and combustion characteristics of a new-class of fuels, namely, gelled fuels and nanofuels, that are anticipated to be the primary carriers for future energy formulations. He is recipient of the SERB Indo-US postdoctoral fellowship (2016), Brain-Korea 21 postdoctoral fellowship and has recently been part of the core committee team of 8 members that led the proposal on CPS System Simulation, Modeling and Visualization and was awarded a grant of approximately INR 100 crores by DST, Govt. of India to establish a technology innovation hub (TIH) at IIT Indore. He published 40 articles in international journals and conference proceedings, which have featured in the inside front covers of the RSC Soft-Matter, covered by the Indian Express and KAIST Aerospace news and has received invitation from the Journal of Heat Transfer and Journal of Thermal Science and Engineering Applications. Currently, he actively collaborating with both academia and industry. His academic collaboration is with Purdue University, University of Central Florida and Korea Advanced Institute of Science and Technology KAIST, while industry collaboration is with Ace Chemicals and Engineering Pvt. Ltd (India), RsKissan Foods Pvt. Ltd. and Choithram Hospital (India). To this end, he has two on-going industrial consultancy projects. His interdisciplinary research lies at the cross-roads of nano/micro fluidics, combustion, and heat transfer with specific thrust on: • Combustion and Propulsion: Combustion of next-generation fuels (Gel and nanofluid fuels); Application: IC Engines, Gas Turbines, Sounding Rockets • Heat Transfer, micro/nanofluidics: Thermal management of high-heat-flux electronics; Application: Hybrid /Electric Vehicles, Data Centers, High computing clusters, Radars, Lasers • Soft matter: Instabilities in drying colloidal droplets.

Dr. Shanmugam Dhinakaran is an expert in Computational Fluid Dynamics and Heat Transfer. His research interests are in Heat transfer in Porous Media, Biofluid Mechanics and Bioheat Transfer, non-Newtonian Fluid Mechanics, Development of Higher order Numerical Schemes, Lattice Boltzmann methods.

Dr. Santosh K. Sahu is serving as an Associate Professor in the Department of Mechanical Engineering at the Indian Institute of Technology Indore, India, where he has been a faculty member since 2009. He has over 11 years (post PhD) of research experience in reactor thermal hydraulics, multi-phase flow and heat transfer, energy storage, thermal management of electronic components, jet impingement cooling, heat exchanging equipment, rarefied gas flows, quenching of hot stationary and moving surfaces, pool boiling heat transfer. He has published over 150 articles that include international indexed journals, conference proceedings, patent and book chapters. He has received the Indo-US research fellowship in Engineering Sciences and visited Purdue University as visiting scholar during September 2011-January 2012. He is Life Member of Indian Society for Heat and Mass Transfer (ISHMT) and Member of American Society of Mechanical Engineer (ASME). He is a reviewer of various international journals and books. Web: http://people.iiti.ac.in/~santosh/