



ICTFSD 2024

2nd International Conference on Thermo-Fluids and System Design

Supported by the Science and Engineering Research Board (SERB), Government of India



04-05 April
2024



Department of Mechanical Engineering
Birla Institute of Technology
Mesra, Ranchi-835215, Jharkhand

About 2nd ICTFSD 2024

The Department of Mechanical Engineering at Birla Institute of Technology Mesra, in the waterfall city of Ranchi, India is organizing the Second International Conference on Thermo-Fluids and System Design (ICTFSD 2024) from **04 – 05 April 2024**, supported by the **Science & Engineering Research Board (SERB)**, Govt. of India. The conference is multidisciplinary that will serve as a platform to exchange innovative ideas, and experiences among the participants from around the globe. The eminent experts from the top universities will deliver (keynote) lectures covering the broader scope that would be beneficial for the participants from academics, industry (including R&D), and scientists from various organizations. The 2nd ICTFSD 2024 covers a broad spectrum related to fluid flow, heat transfer, energy engineering, materials engineering, mechanical design and process optimization in science and engineering. The conference will be held in physical mode at the lush green campus of BIT Mesra and only the foreign participants may present their work in online mode.

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Publications

Extended versions of selected papers in Category 1 with high research potential in relevant fields will be selected for peer review and subsequent publication in special issues of the following SCI/SCIE indexed reputed international journals. Papers presented in Category 2 will be published as book chapter in national publisher.

1. Journal of Enhanced Heat Transfer, Begell House publications ([Link to homepage](#))



Note: Selected papers from category 1A (Thermal-Fluid Engineering) will be published in this journal.

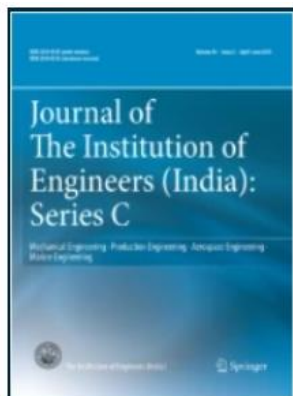
2. Journal of The Institution of Engineers (India): Series D, Springer ([Link to homepage](#))



Note: Selected papers from category 1B (System Design and Material Characterisation) will be published in this journal.

[Conference website](#)

3. Journal of The Institution of Engineers (India): Series C, Springer ([Link to homepage](#))



Note: Selected papers from category 1A (Thermal-Fluid Engineering) are likely to be published in this journal.

4. Journal of Physics: Conference Series, IOP Publishing ([Link to homepage](#))



Note: Selected papers from categories 1A (Thermal-Fluid Engineering) and 1B (System Design and Material Characterisation) will be published in this conference proceedings. There is an Article Processing Charge of **Rs 10,000 (USD 120 for foreign participants)**.

The updates and other new announcements related to the publications will be shared only on the conference website; hence, kindly keep visiting the same.

Key Features

- ❖ A common platform for Academia-Industry people to participate and interact from all over the world
- ❖ Keynote lectures on Thermal Engineering, Fluid Dynamics, Matallurgy, Mechanical Design, and Energy Engineering by eminent speakers from around the globe
- ❖ Papers submitted would be peer-reviewed by international as well as national scientific communities to ensure high-quality papers
- ❖ All the papers accepted for oral presentation in Category 1 will be published in reputed Conference proceedings and will be indexed in **SCOPUS / WoS** database
- ❖ Good quality papers in relevant fields will be selected for publication in special issues of **SCI/SCIE** indexed reputed international journals
- ❖ Papers accepted for presentation in Category 2 will be considered for publication as book chapter proceedings in national publisher.

Conference Theme

We welcome original and unpublished work in the field of (but not limited to):

[Conference website](#)

Thermal-Fluid Engineering

- ❖ Advances in Experimental Characterization
- ❖ Aeroacoustics
- ❖ Aerospace Engineering and Applications
- ❖ Atmospheric Science and Technology
- ❖ Biofuels and Internal Combustion Engines
- ❖ Biological Heat Transfer/ Fluid Flow
- ❖ Chemical Engineering Heat and Mass Transfer
- ❖ Computational Fluid Dynamics
- ❖ Conjugate Heat Transfer with Applications
- ❖ Cryogenics
- ❖ Energy Management / Energy Systems
- ❖ Environmental Engineering
- ❖ Experimental methods /tools in Thermal-Fluid Engineering
- ❖ Fluid Mechanics / Dynamics
- ❖ Fluid-Structure Interaction
- ❖ Fuel Cells
- ❖ Gas Turbine Heat Transfer and Dynamics
- ❖ Heat and Mass transfer in Biomedical devices
- ❖ Heat and Mass Transfer in Extreme environments
- ❖ Heat Transfer in Multiphase Flow Systems
- ❖ Heat Transfer in Non-Newtonian Fluid Flow
- ❖ High-Speed Flows; Shock waves
- ❖ Hydrokinetic Turbines
- ❖ Hydrogen technologies
- ❖ Melting and Solidification
- ❖ Micro-/ Nano-fluidics and Life Science Applications
- ❖ Multi-Phase Flow and Heat Transfer
- ❖ Multi-Physics Modelling
- ❖ Nuclear Power Plants and Equipment
- ❖ Numerical Methods in Fluid Flow and Heat Transfer Problems
- ❖ Ocean Engineering
- ❖ Phase Change; Multiphase Flow
- ❖ Power Stations and Energy
- ❖ Propulsion and Emissions
- ❖ Renewable Energy
- ❖ Single / Multi-objective Optimization of Thermo-Fluid Systems

- ❖ Solar Energy Engineering and Applications
- ❖ Thermal Barrier Coatings; Thermal spraying
- ❖ Thermal Power and Fluid Engineering
- ❖ Transport Phenomena in Porous Media
- ❖ Ventilators, Fans, and Air-Conditioners
- ❖ Wave Propagation in Fluids
- ❖ Wind power and Energy
- ❖ Wind Turbines and Other Power Generation Systems

Mechanical Design & Material Characterization

- ❖ Absorption and Adsorption
- ❖ Alloying
- ❖ Analysis and Modelling of Composites
- ❖ Crystal Structures and Slip Phenomenon
- ❖ Dislocation Energy and Movement
- ❖ Interface Materials and Challenges
- ❖ Mechatronics
- ❖ Metal Heating and Annealing
- ❖ Novel Materials
- ❖ Phase Boundaries and Mechanisms
- ❖ Phase Diagrams and Kinetics
- ❖ Physical Metallurgy
- ❖ Polymers in Science and Technology
- ❖ Precipitate Hardening and Heat Treatment
- ❖ Reverse Engineering
- ❖ Safety and Reliability of the Systems
- ❖ Shear Stresses and Yielding in Metals
- ❖ Smart Materials
- ❖ Stress Field
- ❖ Sustainability and Renewable Energy in Design
- ❖ System Modelling and Simulation
- ❖ System Optimization
- ❖ Systems Technology & Policy
- ❖ Thermal Fatigue
- ❖ Wave Propagation in Solids
- ❖ Wear Mechanisms

Who Should Attend?

- ❖ People from Academics (Universities/ Institutes)
- ❖ Research Scholars, Scientists and Researchers from different Organizations
- ❖ Members of various professional bodies, manufacturers, plant owners, operators, etc.
- ❖ Flow Analysts, Thermal engineers, Material Experts and Design Engineers

Benefits of Attending

- ❖ Increased awareness among people from academia and scientific community related to recent trends in Thermo-Fluid Engineering, Mechanical Design and Smart Materials
- ❖ Interaction and building relations with scientific community globally
- ❖ Publications in reputed conference proceedings and international Journals

[Conference website](#)

Important Dates:

Full-length paper submission:	Closes 15 th March 2024
Registration:	Closes 20 th March 2024
Conference Date:	04-05 April 2024

Kindly visit the conference website (see bottom of page) for latest updates on publications, keynote speakers, paper submission, conference registration and all other details related to the conference.

Organizing Committee

Patron: Prof. Indranil Manna, Vice Chancellor, BIT Mesra

Chief Convener: Prof. Prabal Talukdar (IIT Delhi) and Prof. Anil Kumar (DTU Delhi)

Convener: Dr. Om Prakash and Dr. Lakhbir Singh Brar

Organizing Secretary: Dr. Saurav Chakraborty and Dr. Arkadeb Mukhopadhyay

Co-Organising secretary: Dr. Sushanta Ghuku

Advisory Committee:

International

- ❖ Prof. Brian Norton, Tyndall National Institute University College Cork, Cork, Ireland
- ❖ Dr. Khairy Elsayed, Helwan University, Cairo 11718, Egypt
- ❖ Dr. Marek Wasilewski, Opole University of Technology, Opole, Poland
- ❖ Prof. Víctor Manuel Romero Medina, Universidad Del Caribe, Esquina Fraccionamiento Tabachines, Cancún, Quintana Roo, 77528, México
- ❖ Dr. Sumate Chairapat, Prince of Songkla University Hat Yai, Songkhla, Thailand
- ❖ Dr. Ashish Shukla, Epinal Way, Loughborough University, Leicestershire, UK
- ❖ Dr. Karunesh Kant, Institute Pascal-University Clermont Auvergne, Clermont-Ferrand, France
- ❖ Prof. Ahmed M Abdel-Ghany, Professor, Aswan University, Egypt
- ❖ Dr. Oraporn Bualuang, Suratthani Rajabhat University, Suratthani province, Thailand
- ❖ Dr. Shwe Myint, Technological University (Mandalay) Mandalay, Myanmar
- ❖ Dr. Jan Banout, Czech University of Life Sciences Prague, 165 21 Praha 6 - Suchdol, Czech Republic

National

- ❖ Prof. Om Prakash, Professor, NIT Patna
- ❖ Prof. Prashant Baredar, Professor, NIT Bhopal
- ❖ Dr. Anil Kumar, Associate Professor, DTU, New Delhi
- ❖ Dr. Samsher, Vice Chancellor, HBTI Kanpur
- ❖ Prof. J. L. Bhagoria, Professor, NIT Bhopal
- ❖ Dr. Om Prakash Singh, Associate Professor, IIT BHU
- ❖ Dr. Shobhana Singh, Assistant Professor, IIT Jodhpur
- ❖ Dr. P. P. Tripathy, Associate Professor, IIT Kharagpur

Past Events

The 1st International Conference on Thermo-Fluids and System Design ([link to ICTFSD 2022](#)) was a success due to a good participation from academicians and industry personnel from India and 6-7 countries from Asia, Africa and Europe. There were a number of keynote lectures delivered on latest areas in Mechanical Engineering from

[Conference website](#)

eminent personalities in India and the US, and selected high quality papers were published in special issues of several reputed international journals and proceedings.

About the Department

Since its inception in 1955, the Department of Mechanical Engineering ([link to the website](#)) has a wide reputation for the quality of teaching and research it offers. It has been awarded top grades for both teaching and research activities from independent and government bodies. The excellent laboratory facilities, modern computer clusters, systematically designed curriculum, and dedicated faculty members make this Department a dynamic place to study.

About the Institute

The Birla Institute of Technology (BIT) Mesra, Ranchi ([link to the website](#)) was founded by the Philanthropist, Industrialist Mr. B.M. Birla, in the year 1955, as part of his lifelong commitment towards building a technologically advanced and industrially strong India. The achievements of the Institute, both in terms of research and excellent standards of academic programs led to its attaining the status of a Deemed University under the UGC Act of the Government of India, in 1986, and one of the top Technical Institutes of the country today. BIT offers undergraduate, postgraduate as well as doctoral-level programs in all major branches of engineering and technology, architecture, pharmaceutical sciences as well as management. The Institute has laterally expanded through the establishment of several extension centers, both in India and abroad.

BIT Mesra Campus Connectivity and Climate

BIT Mesra is located at the outskirts of Ranchi, the capital city of Jharkhand state in India. This city has good connectivity by Air with all metropolitan cities and many other important cities of India through Birsa Munda Airport, Ranchi situated at 20 Kms from the Institute campus. This city is also well connected through the Indian Rail Network with many prominent cities of the country. Trains depart from Ranchi and Hatia Railway Stations situated within 15 to 25 km from the Institute campus. Ranchi city also has good connectivity by road with several important cities and places of tourist interest such as Water Falls nearby, Deoghar, Deori Temple, Surya Temple, Pataratu Dam, Rukka Dam, Bodh Gaya, Rajgir, Nalanda and Pawapuri etc.

Ranchi city has a pleasant weather for a significant part of the year and during April, a very pleasant weather may be experienced due to the onset of spring, amidst a very lush green scenic campus setting at the confluence of the rivers Jhumar and Suvarnarekha.

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