Speaker

Prof. Julien Chauchat
IGE, France

Prof. Julien Chauchat is now holding the post of Senior Researcher at INRAE (*National Research Institute for Agriculture, Food and Environment*) working within the IGE (*Institute for Environmental Geosciences*) at Grenoble, France. Previously, he served as an Associate professor at LEGI (*Laboratoire des Ecoulements Geophysiques et Industriels*) for the last 15 years. His research interests are related to the modeling particulate geophysical flows using a two-phase flow approach.

Speaker

Prof. Rajendra K. Ray
IIT Mandi

Prof. Rajendra K. Ray is a Professor & Chairperson of the School of Mathematical & Statistical Science (SMSS) at IIT Mandi (HP). Prof. Ray has earned his PhD from IIT Guwahati and was postdoc fellow at IISc Bangalore and at University Paris Est., France. He has more than 15 years of research and teaching experience and has guided several PhD scholars. He also received several funded research projects. His research work is related to Numerical Methods for PDEs, CFD and Heat Transfer, Mathematical Image Processing, and PINNs.

Speaker

Prof. Dhiraj V. Patil
IIT Dharwad

Prof. Dhiraj V. Patil is an associate professor at Dept. of Mechanical, Materials and Aerospace Engineering (MMAE) and Dean (Faculty welfare) at IIT Dharwad (KA). Prof. Patil has earned his PhD from IISc Bangalore and has carried out postdoctoral research at JNCASR Bangalore, City College of New York, and The University of Edinburgh UK. He has more than 14 years of research and teaching experience and secured several project funds for research. His research interests are in particle based simulations such as discrete element method, lattice Boltzmann method, turbulence, multiphase flow, vortex dynamics, and FSI.

SPARC sponsored **5-Day Workshop** on

"Two-Phase Flow Modelling and Sediment Transport using OpenFOAM"

23rd to 27st February 2026

About the workshop

This workshop is conducted under the SPARC project entitled "3D two-phase numerical modelling for sediment transport". Our primary objective is to discuss the theoretical and computational/experimental aspect of two-phase flow modelling and Sediment Transport with some recent developments in this field. Experts from India and France will deliver lectures covering both foundational concepts and recent advancements in various topics. There will be a strong computational lab component using *OpenFOAM* with hands-on experience to solve basic two-phase flow problems, so that the participants can get exposure to *OpenFOAM* and can start working on these topics after returning back to their respective institutes. Overall, this workshop gives a unique opportunity to learn theoretical aspects of two-phase flow and Sediment Transport modelling, and hands-on experience on *OpenFOAM* software and its practical applications, from recognized national and international experts.

Workshop Contents

- Introduction to multi-phase flow systems & Governing equations
- Physics of droplets and Heat transfer
- Basics of (spatial and temporal) discretization (1D & 2D): Finite Difference Method (FDM), Finite Volume Method (FVM)
- Higher-Order Compact schemes for 2D and 3D Fluid flow problems
- Numerical modelling for two-fluid approach
- Population balanced model in Multiphase flow problems
- Turbulence modelling and turbulence particle interactions in sediment transport problems
- Granular rheology in bed-load transport
- Application to sand transport under waves: sheet-flow and vortex ripples
- Hands-on experience with OpenFOAM and its applications to two-phase flow problems

Who should apply/attend

- Faculty members, Research scientists, and Industry professionals involved or interested in Computational Fluid Dynamics (CFD) techniques for Multiphase flows, Sediment Transport modeling, and hands-on experience on OpenFOAM.
- Post-Doctorate Scholars, Research scholars, and postgraduate students working on or interested in CFD for multiphase flow, and hands-on experience on OpenFOAM.

Speaker

Prof. Gaurav Bhutani
IIT Mandi

Prof. Gaurav Bhutani is an assistant professor in the School of Mechanical and Materials Engineering (SMME) at IIT Mandi (HP). Prof. Bhutani has obtained his PhD from Imperial College London, London. He has more than 9 years of research and teaching experience. His research interest lies in Multiphase flow, Granular flows, rheology and geophysical modelling, etc.

Speaker

Prof. Parmod Kumar
IIT Mandi

Prof. Parmod Kumar is an Associate Professor in the School of Mechanical and Materials Engineering (SMME) at IIT Mandi (HP). Prof. Kumar has completed his PhD from IIT Roorkee. He has more than 8 years of research and teaching experience. His research interest lies in two-phase flow and Heat Transfer, Computational Fluid Dynamics, etc.

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Contact:

For any other information please contact
Email ID: tfmst2026@gmail.com

Registration

This workshop is in offline mode. Limited seats are available, so early registration is encouraged. Interested individuals are requested to make the applicable payment and fill in the Google form by accessing the QR code below to complete the registration. **Last date for registration is ~~February 10, 2026~~ February 15, 2026.**

Participant	Fee (₹)	GST (₹)	Total (₹)
Students (UG/PG/PhD Scholars)	2500/-	450/-	2950/-
Faculty/Research scientist	4000/-	720/-	4720/-
Industry professional	6000/-	1080/-	7080/-

Registration fee includes Welcome Kit, Food during workshop, Free wifi access, Participation Certificate, and access to Institute Computer Lab.

Click "Registration" or scan the corresponding QR code.

Registration

Accommodation

On-campus sharing basis accommodation is available (**from 22nd to 28th Feb 2026**) on **separate payment** basis subject to the prior request in the registration form and approval from the Organizing committee. There are two types of accommodation (sharing basis) available:

- Hostel accommodation: **Rs.350** per day
- Guest House accommodation: **Rs.750** per day

Accommodation charges can be paid after submitting the Registration Form and getting approval from the organizing committee. Accommodation will be provided on a first-come, first-serve basis.

About IIT MANDI

IIT Mandi, established in 2009, located in the Kamand valley of Mandi district, Himachal Pradesh. The Institute's primary objective is to achieve global recognition in education and research by fostering receptive learning environment, creating knowledge, and promoting scientific breakthroughs and innovative technologies. With a holistic research approach, the institute collaborates in thrust areas like Sustainable Physical Infrastructure, Cyber-Physical Systems, Green Mobility, Precision Agri-Tech, and Affordable and Clean Energy. The Institute has been awarded "Excellence in Creating Employment and Entrepreneurship Honor" at the FICCI Higher Education Excellence Award 2025.