

## Patrons:

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- **Prof. Kamal Kishore Pant**, Director, IIT Roorkee
- **Prof. Anupam Shukla**, Director, SVNIT, Surat
- **Prof. M. K. Barua**, Director, IITRAM
- **Shri Chintamani P. Joglekar**, Registrar, IITRAM

## Conference Chair:

- **Prof. Sanjay H. Upadhyay**, Head, Centre for space science and technology, IIT Roorkee
- **Prof. Hemant B. Mehta**, Prof., Dept. of Mech. Engg., SVNIT, Surat
- **Dr. Ajit Kumar Parwani**, Asso Prof., Mech. & Aerospace Engg., IITRAM
- **Dr. PL. Ramkumar**, Asso Prof., Mech. & Aerospace Engg., IITRAM
- **Dr. Kumar Abhishek**, Asso Prof., Mech. & Aerospace Engg., IITRAM

## Convener:

- **Dr. Saurabh Yadav**, Asst Prof. Mech. and Aerospace Engg., IITRAM
- **Dr. Jagat Rath**, Asst Prof. Mech. and Aerospace Engg., IITRAM
- **Dr. Ajit Kumar**, Asst Prof. Mech. and Aerospace Engg., IITRAM
- **Dr. Vipul M. Patel**, Asst Prof. Dept. of Mech. Engg., SVNIT, Surat

## General Secretary:

- **Dr. Dileep Gupta**, Asso Prof, Mech. and Aerospace Engg., IITRAM
- **Dr. Sumit Tripathi**, Asst Prof, Mech. and Aerospace Engg., IITRAM
- **Dr. Kamlesh Joshi**, Asst Prof, Mech. and Aerospace Engg., IITRAM

## Theme of the conference :

We are inviting for full paper article submission related to but not limited to the topics listed below. The paper will go through a rigorous review process by the submission committee and the authors will be notified.

## Special Theme:

- Defense Technology
- Climate change and Sustainability
- Industry 4.0
- Robotics and Automation
- Artificial intelligence
- Machine Learning
- IOT
- Instrumentation and Control

## Thermal and Fluid Sciences:

- Green Manufacturing
- Aerodynamics
- Renewable energy
- Computational Fluid Dynamics
- Carbon-dioxide Capture and Sequestration

- Energy and Thermofluids
- Fluid Dynamics
- Fuels and Combustion
- Heat and Mass Transfer
- Internal Combustion Engines
- Refrigeration and air-conditioning
- Building Energy Efficiency

## Manufacturing and Material Infrastructure:

- Green Manufacturing
- Material processing and characterization
- Manufacturing Techniques
- Rapid Prototyping
- Polymers and composites

## Infrastructure Planning and Design:

- Applied Mechanics
- Bio-mechanics
- Computer aided engineering design
- Finite element analysis
- Industrial Tribology
- Machine Design
- Fracture Mechanics
- Dynamics and Vibration
- Industrial Engineering and optimization

## Important Dates:

- **Full Paper Submission Deadline** : 30/09/2024
- **Notification of Acceptance** : 30/11/2024
- **Registration Opens** : 30/11/2024
- **Registration Deadline** : 15/12/2024
- **Conference Dates** : 10/01/2025 to 12/01/2025

## Registration:

Category	Regular Registration
Student (Indian)	Rs. 3500/-
Other Indian Delegates	Rs. 4000/-
Foreign Delegates	USD 100
For Registration:	<a href="http://www.iitram.ac.in">http://www.iitram.ac.in</a>

## Publication:

Papers presented at this conference are to be published as a proceedings book volume in Springer.



# 5<sup>th</sup> International Conference on RECENT ADVANCES IN MECHANICAL INFRASTRUCTURE (ICRAM - 2025)

10 - 12 January, 2025



Organized by  
Department of Mechanical and Aerospace Engineering  
**Institute of Infrastructure, Technology,  
Research and Management (IITRAM)**

(An Autonomous University established by Government of Gujarat)  
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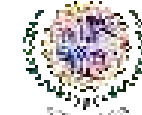
In collaboration with

Centre for Space Science  
and Technology



Indian Institute of  
Technology Roorkee, Roorkee

Department of  
Mechanical Engineering



Sardar Vallabhbhai National  
Institute of Technology, Surat

### About IITRAM:

Institute of Infrastructure Technology Research and Management (IITRAM) is an autonomous state university located in Ahmedabad, Gujarat, India. Established in 2013, IITRAM aims to provide high-quality education and research in the field of infrastructure engineering and management. IITRAM offers undergraduate, postgraduate, and doctoral programs in various disciplines of engineering, such as civil, mechanical, electrical, and computer science. IITRAM also collaborates with industry and academia to foster innovation and skill development in the infrastructure sector. IITRAM has established five Centers of Excellence (CoEs) funded by the Government of Gujarat, namely: Siemens CoE, Advanced Defense Technologies CoE, Artificial Intelligence and Machine Learning CoE, Drone Technology CoE, and Aerospace and Defense CoE. These CoEs provide state-of-the-art facilities and training in various domains of engineering, such as product lifecycle management, automation, mechatronics, additive manufacturing, radar systems, missile technology, UAVs, computer vision, natural language processing, data analytics, aerodynamics, propulsion, structures, materials, etc. IITRAM is ranked at #201 in India and #2 in Ahmedabad for B. Tech by NIRF ranking 2020.

### About CSST, IIT Roorkee

The Centre for Space Sciences and Technology (CSST) at IIT Roorkee is established to elevate the institute's reputation in space science and technology by conducting pioneering research with specific goals in developing innovative systems, mechanisms, and proof-of-concept designs. By fostering academic growth, training and developing human resources, entrepreneurship, and innovation in space science and technology, the Centre will play a pivotal role in shaping the nation's revolutionary technological landscape.

### About SVNIT Surat:

The institute was initially established as Sardar Vallabhbhai Regional College of Engineering & Technology in 1961 and it is elevated to Sardar Vallabhbhai National Institute of Technology with the status of 'Deemed University' on 4th October 2002. The Institute has been granted the status of 'Institute of National Importance' w.e.f. Aug. 15, 2007. The Sardar Vallabhbhai National Institute of Technology (SVNIT) is one of the pioneering engineering institutions of the country, which has contributed many outstanding engineers in India and abroad. It is conducting seven UG programs, nineteen PG programs, three integrated five years M.Sc. Programs, and Ph.D. program in all disciplines of

engineering and applied sciences. Special attention is given to interdisciplinary research all across departments. The institute has an excellent placement record and growing by high pace in research as well.

### About Conference:

ICRAM-2025 is the 5th International Conference on Recent Advances in Mechanical Infrastructure, which will be held in Ahmedabad, India one of the fastest-growing and most dynamic cities in India. The conference provides a forum for discussion on issues, concepts, skill development and innovations in the mechanical infrastructure sector, which is vital for the sustainable and inclusive growth of the country. The conference aims at bringing the best technical minds working in the field of mechanical engineering on a common platform to share their knowledge of technical expertise, experience, and forthcoming challenges in the development of infrastructure in the country. Moreover, it will be a wonderful opportunity for enthusiastic students and research scholars to learn from the experiences and visions of eminent scientists and innovators, as well as to witness the ongoing infrastructural development in Ahmedabad, such as the metro and road connectivity, the new town planning plans, and the real estate project. The conference is expected to include presentations on the latest research trends highlighting the important achievements and upcoming challenges in the development of the infrastructure sector pertaining to mechanical engineering. The conference invites researchers to highlight their work in any given area of mechanical engineering that relates to the overall progress of infrastructure development in the country. The conference also has a special theme that covers some of the emerging and innovative topics in the field of mechanical engineering, such as Defence Technology, Climate Change and Sustainability, Industry 4.0, Robotics and Automation, Artificial Intelligence, Machine Learning, Instrumentation and Control.

### Advisory Committee:

- Dr. Arvind Rajput, Mechanical Eng. Department, IIT Jammu
- Dr. C. Sentouh, Associate Professor, Department of Automatic Control, LAMIH-CNRS, France
- Dr. Chandramohan V. P., Associate Professor, Dept. of Mechanical Engineering, NIT, Warangal
- Dr. D. M. Kulkarni, Dean, Dept. of Mech. Engi., BITS Goa
- Dr. Filippo de Monte, Professor, University of L'Aquila, Italy
- Dr. Hemantha Kumar, Prof., Department of Mechanical Engineering, NIT, Surathkal

- Dr. Ing Johannes Kiefer, Production Engineering, University of Bremen, Germany
- Dr. Kalyana C. Veluvolu, Associate Professor, College of IT Engineering, Kyungpook National University, South Korea
- Dr. Malti Goel, Chief Executive, Climate Change Research Institute, Former Senior Scientist, Govt. of India
- Dr. Michel Fillon, CNRS Director of Research, France
- Dr. N. Ramakrishnan, Mechanical Dept., IIT Gandhinagar
- Dr. P. Ramkumar, Asst. Prof., Dept. of Mech. Eng. IIT Madras
- Dr. PMV Subbarao, Mechanical Engineering, IIT Delhi
- Dr. Prabal Talukdar, Mechanical Engineering, IIT Delhi
- Dr. Q Jane Wang, Mech. Eng., Northwestern Uni. Evanston, Chicago
- Dr. R. Venkata Rao, Former Dean, Department of Mechanical Engineering, SVNIT, Surat
- Dr. Rajeev Kukreja, Associate Professor & Head, Mech. Engineering Dept., Dr. B. R. Ambedkar, NIT, Jalandhar (Punjab)
- Dr. Ramesh Agarwal, Washington University
- Dr. Robin Hill, Honorary Professor, Department of Electrical and Electronics Engineering, University of Melbourne, Australia
- Dr. Rohin Majeti, Research Scientist, Institute of Flight Systems, German Aerospace Centre (DLR), Braunschweig, Germany
- Dr. S. P. Mehrotra, Professor, IIT, Gandhinagar
- Dr. S. S. Mahapatra, Professor, Mechanical Engineering, NIT, Rourkela
- Dr. Satish Chandra Sharma, Mech. Engineering, IIT Roorkee
- Dr. Saurav Datta, Associate Professor, Department of Mechanical Engineering, NIT, Rourkela
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- Dr. E. Rajasekar, Asso. Prof., IIT, Roorkee
- Dr. Vinod Yadav, Mechanical Engineering, NIT Bhopal
- Dr. Vivek Vitankar, Director, FluidDimensions
- Dr. Y. Qin, Associate Professor, Department of Mechanical Engineering, Beijing Institute of Technology, China
- Prof. Dr.-Ing. habil. A. C. Benim, Faculty of Mechanical and Process Engineering, Duesseldorf University of Applied Sciences
- Dr. Paritosh Chaudhuri, Dean (R&D) and Head, Fusion Blanket Division, Institute for Plasma Research, Gandhinagar
- Dr. Dheeraj Kumar Singh, Associate Professor, School of Nano Sciences, Central University of Gujarat
- Dr. Gautam Chaubey, Assistant Professor. Dept of Mech Engg, NIT Silchar
- Dr. Subhashis Ray, Professor, Technische Universität, Bergakademie, Freiberg