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Student Volunteers

Mr. Apurba Tewari, **Mr. Vignesh D.**

Themes

- ❑ Advancing Knowledge on Climate Change and Climate Variability
- ❑ Artificial Intelligence and Machine Learning in Weather and Climate Research
- ❑ Geospatial Innovations for Monitoring and Managing Earth's Resources
- ❑ Weather, Climate, and Human Health: Risks and Resilience
- ❑ Monitoring, Mitigation, and Management or Towards Cleaner Air and Water: Challenges and Opportunities
- ❑ Nonlinear Dynamics and Chaos
- ❑ 2D and 3D Materials
- ❑ Complex Systems
- ❑ Transport Phenomena in Confined Dimensions
- ❑ Quantum Thermodynamics
- ❑ Artificial Intelligence and Machine learning applications in particle physics

Resource Persons

1. **Dr. Nadege Blond**, CNRS, France
2. **Dr. Vijay Kanawade**, The Cyprus Institute, Cyprus
3. **Dr. Filsa Bioresita**, ITS Campus, Suklilo, Indonesia
4. **Dr. Hailong Peng**, Central South University, P. R. China
5. **Prof. Yeon Soo Lee**, Catholic Univ. of Daegu, Rep. Of Korea
6. **Prof. V. Vinoj**, IIT Bhuvanewar, India
7. **Prof. Pramod Kumar**, IIT Bombay, India
8. **Dr. Atul Shrivastava**, IITM, Pune, India
9. **Prof. Prabhat K. Jaiswal**, IIT Jodhpur, India
10. **Prof. Thounaojam U. Singh**, Bennett University, India
11. **Prof. Sunita Verma**, BHU, Varanasi, India
12. **Prof. Shubha Verma**, IIT Kharagpur

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General Queries

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International Conference on the Art and Science of Simulating Complex Systems:

Challenges and Opportunities

(ASSiCS'25)

17-19 December, 2025

Organized by

Department of Physics

Birla Institute of Technology, Mesra

Ranchi-835215, Jharkhand



<https://conference.bitmesra.ac.in/assics>

About the Institute

BIT, Mesra is a “Deemed University” under Sec. 3 of the U.G.C. Act 1956. The Institute has a vision to be recognized as a world-class learning institution for Engineering, Technology, and Research. Established in 1955 by visionary philanthropist-industrialist, late Mr. B.M. Birla, it is one of the premier engineering destinations in India. The Institute offers undergraduate, postgraduate and doctoral programmes in Engineering, Technology, Sciences, Pharmacy, and Management. An unquenchable thirst for innovation and disruption, and a commitment to nurturing leaders who make a difference to the world has been the credo of BIT Mesra in the nearly seven decades of its existence. It has many firsts to its credit. It was the first in the country to establish a department dedicated to Space Engineering & Rocketry way back in 1964. First, to establish a static rocket test firing facility. It was also the first to develop a Science & Technology Entrepreneurs’ Park (BIT-STEP). The first institution to be granted autonomous status in 1972 under the UGC Act.

About the Department

Since its inception in 1955, the Department of Physics has played a pivotal role in the Institute. A gamut of very motivated, well qualified and talented faculty is actively engaged in teaching as well as research in areas of theoretical and experimental Physics and technology. The Department offers PhD in the domain of Physics, Materials Science, and Technology, MSc & IMSc in Physics, and B.E. Physics courses. The Department is well-equipped with state-of-the-art equipment and computing facilities.

About the conference

The motivation behind doing physics is to understand the laws of natural phenomena. However, one crucial bottleneck that is often faced in solving real world physical problems is the large scale and complexity of the systems in question. For example, the equations of motion obtained by using the Newton's laws of motion can be solved exactly for a two-body problem but not for a system with three or more bodies. Similarly, the solving of the Schrodinger equation in quantum mechanics for the hydrogen atom gives exact solutions. However, the same equation for atoms with more electrons and protons cannot be solved exactly. The situation becomes even more difficult in condensed matter physics where very large number of protons and electrons combine to form periodic structures. Even though in principle the Schrodinger equation describes these solids, it is not possible to solve the equations for such a large number of constituent electrons and protons with the currently available computational resources. Life, our environment, and the materials all around us are complex systems of interacting parts. A traditional approach in physics when trying to understand a system made up of many interacting parts is to break the system into smaller parts and study the behavior of each. In general, the interactions of the parts are far more complicated and important than the behavior of an individual part. In the study of complex systems, physicists are expanding the boundaries of their discipline: They are joining forces with biologists to understand life, with geologists/environmentalist to explore Earth system, atmosphere and the planets, and with engineers to study crack propagation.

Through this Conference, we will attempt to establish a scientific platform where some distinguished speakers will put their research experience into the challenges and interventions to address the complex systems associated with the Physical system and atmosphere.

Registration Fee*

Category	India	Overseas
Student	₹ 2000 (+GST)	\$100
Faculty	₹ 4000 (+GST)	\$300
Industry	₹ 5000 (+GST)	\$400

*** Regular Registration will start after the Early Bird**

Registration Deadline.

Important Dates

Abstract Submission Deadline: 31 October, 2025

Abstract Acceptance Notification: 15 November, 2025

Early Bird Registration starts: 10 November, 2025

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Publication

Selected papers will be published in a WoS/SCI indexed journals or proceedings.