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THE CENTRE OF EXCELLENCE FOR SEMICONDUCTORS AND QUANTUM MATERIALS (CoESQM)

ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY (IUST)

INVITES YOU TO A

DISTINGUISHED LECTURE

Quantum Materials: *Real yet Surreal*

From Fundamental Quantum Physics to Real-World Possibilities





SPEAKER

Prof. N. S. Vidhyadhiraja

Professor and Chair,
Theoretical Sciences Unit (TSU)

Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru

ABSTRACT

Quantum materials exhibit remarkable emergent phenomena arising from strong electronic correlations and collective quantum effects. This lecture will explore how theoretical and computational many-body techniques reveal the fascinating behavior of these materials, connecting fundamental quantum physics with future technologies in energy, information processing, and functional devices.

RESEARCH HIGHLIGHTS

- Quantum Many-Body Theory
- Strongly Correlated Electron Systems
- Quantum Phase Transitions & Criticality
- Heavy Fermion Materials & Transition Metal Oxides
- Non-equilibrium Quantum Dynamics
- Ultrafast Relaxation Phenomena
- Neuromorphic Devices
- Materials for Energy & Sustainability

ABOUT THE SPEAKER

N.S. Vidhyadhiraja obtained his Ph.D. from the Indian Institute of Science, Bengaluru, in 2001. He then spent four years as a postdoctoral fellow at the University of Oxford, UK. In 2005, he joined the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, where he currently serves as a Professor in the Theoretical Sciences Unit. He has served as a Dean of the Fellowships and Extensions Office from 2019 to 2025. Over the years, he has held visiting positions at the University of Cincinnati, Purdue University, and the University of Louisiana.

JNCASR

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Date & Time
15 October 2026, 12:30 PM

Venue
Rumi Library, IUST

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