

PHYSICS IN-HOUSE
SYMPOSIUM - 2025
31st Oct – 1st Nov, 2025



IIT PALAKKAD

The Department of Physics, IIT Palakkad, annually hosts an In-house Symposium showcasing research by faculty and students.

*Celebrating Frontiers in Physics
— Integrating the Scales of
Nature*

Invited speakers



Mandar Deshmukh

TIFR, MUMBAI

*Area of Research: Condensed Matter Physics
and Materials Science at the Nanoscale*



Soumya Bera

IIT Bombay, Mumbai

*Area of Research: Quantum Aspects of
Condensed Matter Theory*



SCHEDULE

DAY 1

31/10/2025 Friday

Venue: Saraswati A01-007 2.00 PM - 6.00 PM

Chair: Soham Manni

Mandar Deshmukh (2:00 - 3:05 PM)	One-atom-thick materials for physics and technology
Ajeesh Omanakuttan (3:05 - 3:30 PM)	Pressure tuning of quantum materials

Tea Break
(3.30 - 3.55 PM)

Chair: Jayakumar Balakrishnan

Aswathi S (3:55 - 4:20 PM)	Interface-controlled thermal transport in monolayer molybdenum disulfide
Reshna Elsa Philip (4:20 - 4:45 PM)	Disorder mediated fully compensated ferrimagnetic spin-gapless semiconducting behaviour in Cr ₃ Al Heusler alloy
Muhammed Anees (4:45 - 5:00 PM)	Exploring magnetism in topological insulator BiTe by Mn doping
Gayathri V (5:00 - 5:15 PM)	Exotic phenomea in Kagome Lattice
Greeshma R (5.15 - 5:30 PM)	Synthesis and characterization of TaTe ₂
Sathishkumar M (5:30 - 5:45 PM)	Electron doping in single crystalline BaBiO ₃ : BaBiO _{3-x} F _x
Souvik Kumar Rana (5:45 - 6:00 PM)	Structural anomaly and electronic correlation in TiTe ₂ single crystal

DAY 2

01/11/2025 Saturday

Venue: Saraswati A01-007 9.00 AM - 5.00 PM

Chair: Kusum Dhochak

Soumya Bera (9:00 - 10:05 AM)	Interacting Anderson Insulator
Pranav U S (10:05 - 10:30 AM)	Central spin time crystals
Lakshmija N K (10:30 - 10:45 AM)	Lipkin Meshkov Glick battery
Tamizhselvan S (10:45 - 11:00 AM)	Evolution of non-permutation symmetric state with permutation symmetric Hamiltonian

Tea Break
(11.00 - 11.25 AM)

Chair: Uma Divakaran

Jithin G. Krishnan (11:25 - 11:50 AM)	Bounds on the distribution of localizable entanglement
Harikrishnan K J (11:50 AM - 12:05 PM)	Correlations and entanglement in variable-range extended Ising model
Prithvi Narayan (12:05 - 12:30 PM)	Heat transport in solvable models of quantum mechanics

Lunch
(12:30 - 2.20 PM)

Chair: Manoj Gopalakrishnan

Vishwas V (2.20 - 2:35 PM)	Probing marginal stability of an amorphous solid
Elsa Baby (2:35 - 3:00 PM)	Designing active particle sorting strategies from distribution analysis
Bibhu Ranjan Sarangi (3:00 - 3:25 PM)	Membranes, Cells and Polymers; Physics at the interface
Olivia Vincent (3:25 - 3:40 PM)	Exploring confinement-induced phenomena in passive and active systems

Tea Break
(3.40 - 04.05 PM)

Chair: Amit Kumar Pal

Indrajit Bhattacharjee (4:05 - 4:20 PM)	Directed cell movement on sharp mechanical landscapes
Ashique T (4:20 - 4:35 PM)	Impact of convective boundary mixing on black hole mass gap
Akanksha Bhardwaj (4:35 - 5:00 PM)	Non-linear Higgs <i>CP</i> violation

Vote of Thanks (5:00 PM)