Workshop on Cavity Quantum Materials

Program Schedule

RBM Hall, Chemical Sciences Building, IISc Bengaluru

Day 1: 5th March 2026

Time	Session	Details
9.00 – 9.30	Registration	
09:30 - 10:00	Inaugural Session Chair: Akshay Singh	**Welcome address, Overview of Workshop Objectives** **Manukumara Manjappa and Anoop Thomas**
10:00 - 11:30	Tutorial Lecture I Chair: Akshay Singh	**Fundamentals and Applications of Cavity QED** **Venu Gopal Achanta (TIFR Mumbai and NPL Delhi)** *Fundamentals and applications of cavity QED*
11:30 - 12:00	Tea/Coffee Break	
12:00 - 13:30	Invited Session I Chair: Manukumara Manjappa	**Quantum Metrology with Cavity-based Systems** **i) Usha Devi (Bangalore University)** *Quantum sensing, computing, and information science* **ii) Rajesh V. Nair (IIT Ropar)** *Cavity coupled NV centers for quantum technologies*
13:30 - 14:30	Lunch Break	Note- Lunch is hosted in Ground Floor Lunch Area, Department of Physics
14:30 - 16:00	Invited Session II Chair: Anoop Thomas	**Cavity-based Quantum Applications** **i) Himadri Shekhar Dhar (IIT Bombay)** *Quantum information in spin ensemble-based cavity QED* **ii) Vibhor Singh (IISc Bangalore)** *Experiments with superconducting quantum devices*
16:00 - 16:30	Tea/Coffee Break	
16.30 – 18:00	Invited Session III Chair: Vibhor Singh	**Cavity-QED and Polaritons** **i) Jino George (IISER Mohali)** *Photophysics of 2D Exciton-Polaritons in Open Cavities* **ii) Sajal Dhara (IIT Kharagpur)** *Microcavity Polaritons in Anisotropic 2D Materials - A platform for Non-Hermitian Topology*

Day 2: 6th March 2026

Time	Session	Details
09:30 - 11:00	Tutorial Lecture II Chair: Anoop Thomas	**Polaritonic Materials & Cavity-Modified Chemistry** **Srihari Keshavamurthy (IIT Kanpur)** *Polaritonic Materials & Cavity-Modified Chemistry*
11:00 - 11:30	Tea/Coffee Break	
11:30 - 13:00	Invited Session IV Chair: Varun Raghunathan	**Cavity-engineered Quantum Emitters and Purcell effect** **i) Parinda Vasa (IIT Bombay)** *Emitters in proximity of plasmonic nano-cavities* **ii) Shailendra K Varshney (IIT Kharagpur)** *Designing Metasurfaces for High-Purcell-Enhanced Quantum Light Sources*
13:00 - 14:00	Lunch Break	Note- Lunch is hosted in Ground Floor Lunch Area, Department of Physics
14:00 - 16:15	Invited Session V Chair: Manukumara Manjappa	**Cavity-engineered Quantum Materials** **i) David Hagenmuller (CNRS France)** *TBD* **ii) Varun Raghunathan (IISc Bangalore)** *Layered Material Resonant Photonics Structures for Nonlinear Optical Applications* **iii) Kalaivanan Nagarajan (TIFR Mumbai)** *Modulating Thermal Properties of Materials through Vibrational Strong Coupling*
16:15 - 16:45	Tea/Coffee Break	
16:45 - 18:00	Open Discussion and Closing Remarks Chair: Shubhadeep Biswas	**Challenges, Opportunities, Future directions, Collaborations, and white paper (roadmap) preparation**