## Emergent phenomena in Quantum MATerials (E-QMAT)

October 12 - 14, 2022

Chair	Session 1 (L2-103)
Time	Speaker
9:00-10:00	Inaugural function followed by High Tea
10:00–10:45	D. D. Sarma (IISc) "In search of Quantum Spin Liquids"
10:45–11:30	<b>G. Baskaran (IMSc)</b> "Emergent Glassy Quantum Matter in Disorder free Quantum Spin Liquids"

Day 1: October 12, 2022

#### *Tea Break* (11:30-11:45)

Chair	Session 2- Parallel-I (L2-103)
Time	Speaker
11:45–12:15	Arindam Ghosh (IISc) "Thermoelectricity to probe for new phases in twisted bilayer" graphene
12:15–12:45	Saikat Ghosh (IIT Kanpur) "Tunable Classical Discrete Time Crystals"
12:45–13:00	<b>Jyoti Krishna (CSIC-UPV/EHU, San-Sebastian, Spain)</b> "Non-linear optical response of TMD Nanotubes using Wannier interpolation"

Chair	Session 2- Parallel-II (L2-104)
Time	Speaker
11:45–12:15	<b>Subhankar Bedanta (NISER)</b> "Study of Domain wall dynamics and interfacial Dzyaloshinskii-Moriya interaction in HM/FM multilayer thin film"
12:15–12:45	Suvankar Chakraverty (INST Mohali) "KTaO <sub>3</sub> —The New Kid on the Spintronics Block"
12:45–13:00	<b>Vivek Kumar (IISER Bhopal)</b> "Rashba-like spin-orbit interaction and spin texture at KTaO <sub>3</sub> from DFT calculations"

#### Lunch Break (13:00-14:30)

Chair	Session 3- Parallel-I (L2-103)
Time	Speaker
14:30–15:00	Manuel Bibes (CNRS, Paris) "Ferroelectric and multiferroic two-dimensional electron gases"
15:00–15:30	Tamalika Banerjee (Groningen) "Electronic transport as a probe of magnetic ordering in complex"
15:30–15:45	<b>Sayantika Bhowal (ETH Zurich)</b> "Hidden real-space and reciprocal-space magnetoelectric multipoles and their detection using Compton scattering"
15:45-16:00	Abhishek Nag (Paul Scherrer Institut) "Quadrupolar magnetic excitations in an isotropic spin-1 antiferromagnet"

Venue: APJ Abdul Kalam Block

Chair	Session 3- Parallel-II (L2-104)
Time	Speaker
14:30–15:00	Pratap Raychaudhuri (TIFR Mumbai) "Spectroscopic evidence of Bose Metal in Ultrathin MoGe thin film"
15:00–15:30	<b>Peayush K. Chaubey (IIT Roorkee)</b> <i>TBA</i>
15:30–15:45	<b>Tuhin K. Maji (IISc)</b> "Electrical Resistance in All-metallic Cluster of Ultra-small Silver Nanoparticles Embedded in Gold"
15:45-16:00	<b>Gourav Vaid (IISER TVM)</b> "Unity of universal parameter (alpha) in an overdoped single crystal of high temperature superconductor $Bi_2Sr_2CaCu_2O_{8+x}$ "

# *Tea & Poster Session* (16:00-18:00)

Chair	Special Evening Session (L2-103)
Time	Speaker
18:00–19:00	Elbio Dagotto (ORNL/University of Tennessee) "Surprises at intermediate coupling in electronic correlated systems: spirals, Majoranas, and pairing"
19:00–20:00	Anthony J. Leggett (University of Illinois, Urbana-Champaign) "What can we do with a quantum liquid?"

## Conference Dinner (20:00 onwards)

# Day 2: October 13, 2022

Chair	Session 1 (L2-103)
Time	Speaker
9:00-09:45	R. Ramesh (Rice University, USA) "Ultra-Low-Voltage, Beyond CMOS Microelectronics"
09:45–10:30	<b>E. V. Sampathkumaran (TIFR Mumbai)</b> "Magnetic-field induced melting of long-range magnetic order in Tb <sub>5</sub> Si <sub>3</sub> and its implications"
10:30–11:15	S. M. Yusuf (BARC) "Search for Quantum Magnetism in Low–Dimensional Spin Systems"

### *Tea Break* (11:15-11:45)

Chair	Session 2 - I (Parallel) (L2-103)
Time	Speaker
11:45–12:15	Brijesh Kumar (JNU) "Theory of Quantum Oscillations in Kondo Insulating Bulk"
12:15–12:45	Saurabh Basu (IIT Guwahati) "Higher Order Topology in a Ladder"
12:45–13:15	Sumiran Pujari (IIT Bombay) "Punctured-Chern topological invariants for semi-metallic bandstructures"

Chair	Session 2 - II (Parallel) (L2-104)
Time	Speaker
11:45–12:15	Surendra Singh (BARC) "Interface Magnetization in Oxide Heterostructures"
12:15–12:45	<b>Debakanta Samal (IOP Bhubaneswar)</b> "Topological Electron Transport Due To Quenched Magnetic Impurity Scattering By Antiferromagnetic Proximity in SrCuO <sub>2</sub> /SrIrO <sub>3</sub> "
12:45–13:15	<b>Saikat Das (IIT Kharagpur)</b> "Observation of giant room temperature spin-orbit torque in permalloy-ferroelectric Bi <sub>2</sub> WO <sub>6</sub> heterostructures"

Lunch Break (13:15-14:30)

## Venue: APJ Abdul Kalam Block

Chair	Session 3- Parallel-I (L2-103)
Time	Speaker
14:30–15:00	P. K. Muduli (IIT Delhi) "Large spin Hall conductivity in a quantum material"
15:00–15:30	Kaushik Parida (IIT Roorkee) "Mechanical soft and high piezoelectric behaviour in organic-inorganic hybrid ferroelectrics via molecular bond weakening"
15:30–15:45	<b>Anamika Kumari (INST Mohali)</b> "A scheme to determine the carrier density distribution, potential profile, and subband quantization of a conducting interface LaVO <sub>3</sub> /SrTiO <sub>3</sub> "
15:45-16:00	<b>Showkat Hassan (HRI)</b> "Pressure-induced bandgap narrowing in Cs <sub>2</sub> AgPdCl <sub>5</sub> lead-free halide"

Chair	Session 3- Parallel-II (L2-104)
Time	Speaker
14:30–15:00	C. S. Yadav (IIT Mandi) "Shubnikov de-Haas Oscillations and ARPES Study in Transition Metal Doped Topological Insulators"
15:00–15:30	Kaushik Sen (IIT Delhi) "Quasiparticle dynamics in a ferromagnetic nodal-line semimetal"
15:30–16:00	Kaustubh Priolkar (Goa University) "Understanding Glassy State in Martensites"

Tea & Poster Session (16:00-18:00)

Day 3: October 14, 2022

Chair	Session 1 (L2-103)
Time	Speaker
9:00-09:45	T. V. Ramakrishnan (IISc) "Linear Resistivity in Metals"
09:45–10:30	Arghya Taraphder (IIT Kharagpur) "The enigmatic transition metal dichalcogenides"
10:30–11:15	Kalobraban Maiti (TIFR Mumbai) "Electron spectroscopy for the physics of quantum materials"

*Tea Break* (11:15-11:30)

Chair	Session 2 - I (Parallel) (L2-103)
Time	Speaker
11:30–12:00	Anil Jain (BARC) "Spin Correlations in Low Dimensional Quantum Magnets"
12:00–12:30	Suhas Gangadharaiah (IISER Bhopal) "Driven quantum spin chain in the presence of noise"
12:30–13:00	<b>Deepshikha Jaiswal-Nagar (IISER TVM)</b> "Experimental realization of multipartite entanglement in a uniform antiferromagnetic quantum spin chain"
13:00-13:15	Abhisek Mishra (NISER) "Spin pumping and inverse spin Hall effect in sputtered MoS2/CoFeB bilayers"
13:15-13:30	<b>Kiran Singh (NIT Jalandhar)</b> "Structural correlations in magnetoelectric property of Co <sub>4</sub> Nb <sub>2</sub> O <sub>9</sub> "

Venue: APJ Abdul Kalam Block

Chair	Session 2 - II (Parallel) (L2-104)
Time	Speaker
11:30–12:00	<b>Siddhartha Lal (IISER Kolkata)</b> "Revisiting the impurity Metal-Insulator transition at the heart of DMFT: what lies behind the veil of self-consistency?"
12:00-12:30	<b>N. S. Vidhyadhiraja (JNCASR)</b> "Steady-state dc transport through an Anderson impurity coupled to leads with spin-orbit coupling"
12:30-12:45	Vinod Asokan (NIT Jalandhar) "Correlation effects in quasi-one-dimensional electron quantum wire"
12:45-13:00	<b>Ravi Kiran (IIT Kharagpur)</b> "Investigation of electronic and optical properties in ReS <sub>2</sub> "
13:00–13:15	K. R. Abidi (University of Jyväskylä) "Electronic structure and elasticity of two-dimensional metals of group 10: A DFT study"

Lunch Break (13:30-15:00)

*Tea & Poster Session* (15:00-17:00)

	Session 3 (L2-103)
Time	
17:00–17:30	Valedictory Function

Dinner (19:30-21:30)