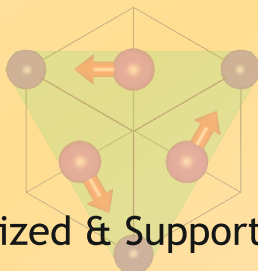
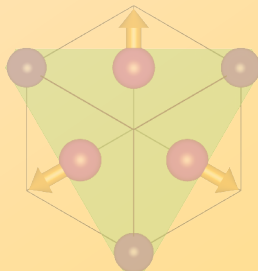


International Winter School 2024

on

“Frontiers in Materials Science”

December 02 - 06, 2024
Conference Hall, JNCASR, Bengaluru



Organized & Supported by



School of Advanced Materials
International Centre for Materials Science
Sheikh Saqr Laboratory
Jawaharlal Nehru Centre for
Advanced Scientific Research

International Winter School on Frontiers in Materials Science

December 02-06, 2024

Venue: Conference Hall

Monday, December 02, 2024

09:00 – 10:15

Registration

10:15 – 10:30

Inaugural Session

Session 1

Chair: G U Kulkarni

10:30 – 11:30

A K Cheetham

Low Cost Perovskite Formate MOFs for Environmental Applications

11:30 – 12:00

Photo Session + Tea/Coffee Break

Session 2

Chair: Sebastian C Peter

12:00 – 13:00

Priya Mahadevan

When and why do we have unconventional behavior in van der Waals bilayers?

13:00 – 14:00

Lunch Break

14:00 – 15:30

Coffee + Poster

Session 3

Chair: K N Ganesh

15:30 – 16:30

Awadhesh Narayan

Non-Linear Hall Effect in Flatlands and Chiral Crystals

16:30 – 17:30

Urmimala Maitra

Next-generation intercalation cathodes for high-energy-density Li and Na-ion batteries

Tuesday, December 03, 2024

Session 4

Chair: A Sundaresan

09:15 – 10:15

J Paul Attfield

New Materials from High Pressure

10:15 – 11:15

Ram Seshadri

When Are Oxides Metals? The Overlooked Role of Bandwidth

11:15 – 11:45

Tea/Coffee Break

Session 5

Chair: Premkumar Senguttuvan

11:45 – 12:45

Vivek Polshettiwar

Solar-Driven Plasmonic Catalysis: Hot Electron Dynamics in CO₂ Reduction

12:45 – 14:00

Lunch Break

Session 6

Chair: M Eswaramoorthy

14:00 – 15:00

Sheikh Saqr Materials Lecture

Mas Subramanian

Reimagining Inorganic Color Pigments via Trigonal Bipyramidal Coordination: Challenges and Opportunities

15:00 – 15:30

High Tea

Session 7

Chair: T Govindaraju

15:30 – 16:30

Kedar Hippalgaonkar

Symmetry, Disorder, Generative Design and Experimental Synthesis of 'Novel' Inorganic Materials

16:30 – 17:30

Naga Phani B Aetukuri

Modulation-Doping Mott Insulators

Wednesday, December 04, 2024

Session 8

Chair: Kanishka Biswas

09:15 – 10:15	Maria Ibáñez <i>Thermoelectric Materials from Solution-Processed Nanocrystals</i>
10:15 – 11:15	Emmanuel Guilmeau <i>Structure Dimensionality and Lattice Vibrations: Two Ingredients for Low Thermal Conductivity in Thermoelectric Sulfides</i>
11:15 – 11:45	<i>Tea/Coffee Break</i>
11:45 – 12:45	Abhishek Kumar <i>Borrowing the concepts from condensed matter physics for photonic applications</i>
12:45 – 14:00	<i>Lunch Break</i>
14:00 – 15:30	Coffee + Poster

Session 9

Chair: Subir K Das

15:30 – 16:30	Subi J George <i>Light-Harvesting Organic Heterostructures via Precision Supramolecular Polymerization</i>
16:30 – 17:30	Sarit S Agasti <i>Lighting up biology: advanced molecular engineering for next-gen fluorescence imaging</i>

Thursday, December 05, 2024

Session 10

Chair: Jayanta Haldar

09:15 – 10:15	Michael L Klein <i>Knots in Polymers</i>
10:15 – 11:15	Ruchi Anand <i>Synthetic Biology and Spectral Imaging as a tool for Next Generation of Biosensors</i>
11:15 – 11:45	<i>Tea/Coffee Break</i>

Session 11

Chair: N S Vidhyadhiraja

11:45 – 12:45	Balasubramanian S <i>Learning Materials Science through Machine-Learned Potentials</i>
12:45 – 14:00	<i>Lunch Break</i>
14:00 – 15:00	Oral Presentations by Students (10 min each)
15:00 – 15:30	<i>Tea/Coffee Break</i>

Session 12

Chair: Ranjani Viswanatha

15:30 – 16:30	K George Thomas <i>Probing the Exciton Dynamics in Semiconductor Nanocrystals</i>
16:30 – 17:30	R S Swathi <i>Global Optimization of Atomic and Molecular Clusters Bound to Carbon Nanostructures: A Swarm Intelligence Approach</i>

Friday, December 06, 2024

Session 13

Chair: Rajesh Ganapathy

09:15 – 10:15

K S Narayan

Selected Techniques to Investigate Processes and Stability in Hybrid Perovskite Solar Cells

10:15 – 11:15

B L V Prasad

Molecular tools for manipulating the size, size distribution and alloy formation in metal nanoparticle systems

11:15 – 11:45

Tea/Coffee Break

Session 14

Chair: Pratap Vishnoi

11:45 – 12:45

Ritu Gupta

From Single Sensor to Arrays: E-Nose Sensors for VOC Detection

12:45 – 14:00

Lunch Break

Session 15

Chair: Shobhana Narasimhan

14:00 – 15:00

Medha Dandu

Moiré matters: Tuning light-matter interactions in twisted stacks of layered materials

15:00 – 16:00

Anindya Das

Bulk thermal conductance to probe the nature of ground states in graphene and twisted bilayer graphene

16:00

Conclusion & High Tea