



Asia-Pacific Conference on Condensed Matter Physics 2024



Day-1: 8 th December 2024 (Sunday)			
Time	Event		
9:00-10:00	Conference Registration (Central Lecture Hall)		
10:00-10:40	Inauguration of the Conference (Felicitation by dignitaries, Lighting of lamp, welcome addresses), Venue: LT003		
10:40-11:05	High Tea		
11:05-11:50	Plenary Talk: Prof. S. M. Yusuf		
11:50-12:40	Session Chair: Prof. S.M. Yusuf	Keynote Talk: Prof. A. Srinivasan, Director, CIT Kokrajhar	
12:40-13:30		Keynote Talk: Prof. Hiroyuki Nojiri, ICC-IMR	
13:30-14:15	Lunch (Central Lecture Hall)		
	Parallel Session-A (LT-001) Session Chair: Prof. Surendra Singh	Parallel Session-B (LT-002) Session Chair: Prof. Jayakumar Balakrishnan	Parallel Session-C (LT-003) Session Chair: Prof. Saket Asthana
Theme	Plasma and Solid-State Physics	Physics of Functional Material	Emerging Area in Solid state Physics
14:15-14:45	Invited Talk: Prof. Bibhuti Bhusan Sahu IIT Delhi Title: "Advanced magnetron sputtering plasma processes for the control of growth and properties of ITO films"	Invited Talk: Prof. Somnath Chanda Roy IIT Madras	Invited Talk: Prof. Rudra Sekhar Manna IIT Tirupati Title: "Tuning phases with pressure for strongly correlated systems"
14:45-15:15	Invited Talk: Prof. Subhra Sen Gupta Shiv Nadar Institution of Eminence Title: "The Nature of Eigenstates in Disordered Quantum Many-body Systems and some Special Random Matrix Models"	Invited Talk: Prof. Jitendra Sharma Shri Mata Vaishno Devi University, Katra Title: "Luminescent Nanoparticles and Composites!"	Invited Talk: Prof. Rumi De IISER Kolkata Title: "Stick-slip motion and mechanosensitivity of migrating cells"
15:15-15:30	Participant: Dr. Rohit Soni IISER Berhampur Title: "Size Effects on Statics and Dynamics of Ferroelectric Domain Walls"	Invited Talk: Prof. Rakesh Joshi UNSW, Sydney	Invited Talk: Prof. R. B. Choudhary IIT(ISM) Dhanbad Title: "Nature-Inspired Viable Electrode Materials for Electrochemical Energy Storage Devices"
15:30-15:45	Participant: Mr. Priyanuj Rajbongshi IIT Tirupati Title: "Topological Properties in a Curved Space-Time Su-Schrieffer-Heeger Model"		
15:45-16:00	Participant: Dr. Atikur Rahman NIT Srinagar Title: "Enhancing the hot corrosion resistance of nickel-based superalloy in real service environment via hafnium oxide nano-coating"	Participant: Dr. Jagannath Sutradhar Bar Ilan University, Israel Title: "Singlet, triplet, and mixed all-to-all pairing states emerging from incoherent fermions"	Participant: Bibek Ranjan Satapathy INST Mohali
16:00-16:15	Tea Break		
16:15-17:00	Keynote Talk: Prof. Rajeev Ahuja , IIT Ropar, Title: "Computational materials science and its applications in the area of materials for energy" Session Chair: A. Srinivasan, Venue: LT003		
17:00-18:30	Young Scientist Award Talks Session Chair: Prof. Rajeev Ahuja, Venue: LT003 1. Invited Talk: Prof. Tiantian Zhang Chinese Academy of Science Title: "Catalogue of topological electronic materials and exploration of topological phonons" 2. Invited Talk: Prof. Chang Yang Kuo National Yang Ming Chiao Tung University, Taiwan Title: "Study of Néel Vector in Room Temperature Multiferroic BiFeO ₃ " 3. Invited Talk: Prof. Junzhang Ma City University of Hong Kong Title: "Discovery and Deep Investigation of Novel Quasiparticles in Various Quantum Systems"		
Day-2: 9 th December 2024 (Monday)			
Time	Event		
	Parallel Session-A (LT-001) Session Chair: Prof. Venkata Kamalakar	Parallel Session -B (LT-002) Session Chair: Prof. Saurabh Basu	Parallel Session-C (LT-003) Session Chair: Prof. Ashish Arora
Theme	Semiconductor and Related Area	Quantum Materials and Related Area	Magnetism and Strongly Correlated Electron System
9:30-10:00	Invited Talk: Prof. Pratap Sahoo NISER Bhubaneswar Title: "Defects-activated CDW and excitonic luminescence in 2D quantum materials"	Invited Talk: Prof. Ravindra Pandey Michigan Technological University, US	Invited Talk: Prof. Kaushik Ghosh INST Mohali Title: "Multifunctional 2D Material-Based Sensors and Energy Harvesting Systems"
10:00-10:30	Invited Talk: Prof. Jayakumar Balakrishnan IIT Palakkad Title: "Thermal Transport in 2D materials"	Invited Talk: Prof. Kartikeshwar Senapati NISER Bhubaneswar Title: "Signatures of non-reciprocal supercurrent transport across Nb-Pt-Ni-Pt-Nb Josephson junctions"	Invited Talk: Prof. Jyoti Prasad Borah NIT Nagaland Title: "Dipolar Interactions and Magnetic Anisotropy: Key Factors in Optimizing"



Asia-Pacific Conference on Condensed Matter Physics 2024



			<i>Self-Heating Efficiency for Magnetic Hyperthermia with Rare Earth-Substituted Ferrites</i>
10:30-11:00	Invited Talk: Prof. Aavek Bid IISC Bangalore Title: "Universality of quantum phase transitions in the integer and fractional quantum Hall regime"	Participant: Priya Kaith NISER Bhubaneswar Title: "Signatures of non-reciprocal supercurrent transport across Nb-Pt-Ni-Pt-Nb Josephson junctions" (15min)	Invited Talk: Prof. Saket Asthana IIT Hyderabad Title: "Cation Substitution-Driven Polar Phase Engineering for High-Energy Storage and Actuator Application in Green Ferroelectrics"
11:00-11:15	Tea Break		
	Parallel Session-A (LT-001) Session Chair: Prof. Pratap Sahoo	Parallel Session-B (LT-002) Session Chair: Prof. Kartikeshwar Senapati	Parallel Session-C (LT-003) Session Chair: Prof. Koushik Ghosh
Theme	Semiconductor and Related Area	Quantum Materials and Related Area	Magnetism and Strongly Correlated Electron System
11:15-11:45	Invited Talk: Prof. M Venkata Kamalakar UPPSALA University, Sweden Title: "Exploration of Spin Currents and Orbital Current"	Invited Talk: Prof. Nirmal Ganguly IISER Bhopal Title: "Nonsymmorphic-symmetry-driven quantum materials for technology"	Invited Talk: Prof. Ashish Arora IISER Pune Title: "Novel high-performance differential magneto-spectroscopy techniques: results and challenges"
11:45-12:15	Invited Talk: Prof. Atindra Nath Pal SNBNCBS, Kolkata Title: "Light-matter interaction driven enhanced photo-response in 2D-0D hybrid"	Invited Talk: Prof. Udo Schwingenschlögl KAUST, Saudi Arabia Title: "Exciton Dissociation by Topological Edge States"	Invited Talk: Prof. Anil Kumar Yadav CCSU, Meerut Title: "Investigation of anisotropic superconducting properties of diagonally grown FeTxSe (T: Fe, Cr) single crystals via electrical transport measurements"
12:15-12:45	Invited Talk: Prof. Subhadeep Datta IACS, Kolkata Title: "Robustness of the Half-metallic Behavior under Disorder in Co ₂ MnAl System"	Invited Talk: Prof. Pawan Kumar Mahatma Gandhi Central University Title: "Impact of Oxygen Vacancy on Dielectric Properties of Ca and Mn co-doped Nanocrystal line Bismuth Ferrite"	Invited Talk: Prof. Sandeep Shrivastava CIT Kokrajhar, Assam Title: "Magnetic Properties of Fe-Pt-Co Ternary Alloys Thin Films"
12:45-13:00	Participant: Dr. Mrityunjay Pandey RWTH Aachen University, Germany Title: "Magneto-phonon Raman spectroscopy of Graphene (C13) encapsulated by Graphene (C12)"	Participant: Dr. Pradip Das Guru Ghasidas Vishwavidyalaya, Bilaspur Title: "Topological Nodal Line Features in NiSe Semimetal"	Invited Talk: Prof. S. K. Pandey DRDO Title: "Research opportunities in AR&DB"
13:00-13:15	Participant: Dr. Rohit Kumar IIT Bombay Title: "Hyperbolic Phonon Polariton for Molecular Sensing"	Participant: Dr. Geetika Sahu BITS Pilani Hyderabad, Telangana Title: "Growth mechanism of Colloidal MoS ₂ Quantum Dots: Influence of reaction time and precursor concentration"	
13:15-15:00	Lunch Poster Session (Theme: Topological condense matter, Quantum materials, 2D material Soft condense matter, Analytical tools, Artificial intelligence, and Other emerging areas) Session Chair: Dr. A.D. Thakur and Dr. S. J. Ray Venue: Central Lecture Hall		
	Parallel Session-A (LT-001) Session Chair: Prof. Ravindra Pandey	Parallel Session-B (LT-002) Session Chair: Prof. Aavek Bid	Parallel Session-C (LT-003) Session Chair: Prof. Sandeep Shrivastava
Theme	Strongly Correlated System and Emerging Area of CMP	Energy Materials and Related Topics	Theoretical CMP and Other Emerging Area
15:00-15:30	Invited Talk: Prof. Anupam Kundu ICTS-TIFR, Bangaluru Title: "Restarting can expedite target search"	Invited Talk: Prof. Kaushik Parida IIT Roorkee Title: "Textile-based Wearable Nanogenerators for Next-generation Electronics"	Invited Talk: Prof. Saurabh Basu IIT Guwahati Title: "Quasiperiodic potential induced corner states in a quadrupolar insulator"
15:30-16:00	Invited Talk: Prof. Saroj Nandi, TIFR Hyderabad	Invited Talk: Prof. Sashi Bhushan Singh IISER Berhampur Title: "Utilizing Flexible MXene Composites for Photo- and Piezoelectric- Induced Sur-face Enhanced Raman Scattering"	Invited Talk: Prof. Siddhartha Lal, IISER Kolkata Title: "Exploring the patterns of Entanglement within Quantum Matter"
16:00-16:30	Invited Talk: Prof. Sayantan Majumder Raman Research Institute, Bengaluru Title: "Local Rigid Clusters Encode Mechanical Memories in Shear-Jammed Dense Suspensions"	Invited Talk: Prof. Debangsu Roy IIT Ropar Title: "Reconfigurable Spin Logics and High-density Multistate Memory in a Single Spin-orbit Torque Device"	Invited Talk: Prof. Akshay Singh IISC Bangaluru Title: "2D Materials for Quantum and Neuromorphic Technologies"
16:30-17:00	Invited Talk: Prof. Jatis Kumar Dash SRM University Title: "Efficient Photocatalytic Green Hydrogen"	Invited Talk: Prof. Manoj Kumar Singh University of Allahabad Title: "Crystal field induced band gap tuning with"	Participant: Dr. Chithra H. Sharma Kiel University, Germany (15min)



Asia-Pacific Conference on Condensed Matter Physics 2024



	<i>Production using Borophene based Nanostructures under Visible Light</i>	<i>enhanced energy storage in cobalt modified BiFeO₃</i>	Participant: Habeebur Rahman IIT Roorkee (15min)
17:00-17:30	Invited Talk: Prof. V. Ravi Chandra NISER Bhubaneswar <i>Title: "Resistively detected electron spin resonance and g factor in few-layered exfoliated MoS₂ devices"</i>	Participant: M. K. Jha (15min) TU, Kirtipur, Nepal	Participant: Dr. Atanu Nandy APC college, Kolkata (15min)
		Participant: Dr. Arun Kumar IISER Pune (15min)	Participant: Dr. Sambhunath Bera BML Munjal University (15min)
17:45-19:30	Cultural program		Venue: Guest House
19:30 onwards	Gala Dinner		

Day-3: 10th December 2024 (Tuesday)

Time	Event		
	Parallel Session -A (LT001) Session Chair: Prof. Oleg Tretiakov	Parallel Session -B (LT002) Session Chair: Prof. Srimanta Middey	Parallel Session -C (LT003) Session Chair: Prof. Debakanta Samal
Theme	Magnetism and Related Area	Semiconductor, Sensors and Thin Films	Light-Matter Interaction and Photonics
9:30-9:55	Invited Talk: Prof. Neeraj Shukla NIT Patna <i>Title: "An Overview of Ion Beam Induced Ferromagnetic Ordering in 2D Materials: Experimental and First Principles Investigations"</i>	Invited Talk: Prof. Alope Kanjilal Shiv Nadar Institute of Eminence, Delhi <i>Title: "Opportunities of ZnO@b-SiC based Memristor for Neuromorphic Computing"</i>	Invited Talk: Prof. Abhishek Kumar JNCASR, Bangalore <i>Title: "Enhancing the performance of topological photonic devices through artificial intelligence"</i>
9:55-10:20	Invited Talk: Prof. Masashi Tokunaga The University of Tokyo <i>Title: "Field-induced strongly correlated state in BiSb"</i>	Invited Talk: Prof. Archana Tiwari BHU <i>Title: "Synthesis of Cu/CuO nanoparticles using laser ablation: effect of fluence and solvents"</i>	Participant: Dr. Nilakantha Tripathy INST Mohali
10:20-10:45	Invited Talk: Prof. Rohit Ranjan Shahi CUSB, Gaya <i>Title: "Magnetic Properties of TiFeNi-Based High Entropy Alloys"</i>	Invited Talk: Prof. N. Kamaraju IISER Kolkata <i>Title: "Probing Magnetic Ordering in intrinsic magnetic topological insulator, MnBi₂Te₄ using ultrafast and THz Spectroscopy"</i>	Participant: Mrs. Neha Pandey DAU Indore
10:45-11:00	Tea Break		
11:00-11:40	Keynote Talk: Prof. Kwang-Yong, Venue: LT003		
	Parallel Session -A (LT001) Session Chair: Prof. Udo Schwingenschlög	Parallel Session -B (LT002) Session Chair: Prof. Anupam Kundu	Parallel Session -C (LT003) Session Chair: Prof. Masashi Tokunaga
Theme	Strongly Correlated System and Emerging Area of CMP	Emerging Area in CMP	Magnetism and Related Area
11:40-12:05	Invited Talk: Prof. Debakanta Samal IOP, BBSR	Invited Talk: Prof. Srimanta Middey IISR Bangalore <i>Title: "Embracing disorder in quantum materials design"</i>	Invited Talk: Prof. Niharika Mohapatra IIT BBSR
12:05-12:30	Invited Talk: Prof. Joydeep Bhattacharjee NISER Bhubaneswar <i>Title: "Distribution of Charge Centers in Matter from Geometric Phases of Electrons"</i>	Invited Talk: Prof. Tushar Kanti Dey IIT(ISM) Dhanbad <i>Title: "Frustrated magnetism in 3d and 5d-based triple perovskite materials"</i>	Invited Talk: Prof. Oleg Tretiakov University of New South Wales, Australia <i>Title: "Bimerons in Magnetic Topological Materials"</i>
12:30-12:55	Invited Talk: Prof. Surendra Singh BARC, Mumbai <i>Title: "Interface-Driven Magnetization in Isovalent Manganite Heterostructures"</i>	Invited Talk: Prof. Preeti Bhoje IIT Indore <i>Title: "Electronic Transport in two-dimensional single crystalline SnSe₂"</i>	Invited Talk: Prof. Ajay Tripathy Sikkim University, Sikkim <i>Title: "Synthesis of Cu/CuO nanoparticles using laser ablation: effect of fluence and solvents"</i>
12:55-13:20	Invited Talk: Prof. Rakesh Kr. Singh, Patna Women's College <i>Title: "Calcium Oxide nanoparticles prepared from waste Egg shell for potential applications from Semiconductor Electronics Material, Nano Medicine to Purification of water"</i>	Invited Talk: Prof. Anurag Sahay NIT Patna	Invited Talk: Prof. Samrat Mukherjee NIT Patna
	Lunch Venue: Central Lecture Hall		
13:30-15:30	Poster Session (Theme: Renewable energy, Magnetism and Superconductivity, Devices, Nano and Functional materials, and Multiferroics) Session Chair: Dr. A. D. Thakur and Dr. S. J. Ray Venue: Central Lecture Hall		
15:30-16:00	Industrial Talk: Prof. Hiroyuki Nojiri (JEOL, IOP and Quantum design) Session Chair: Dr. A. D. Thakur Venue: LT003		
16:00-16:15	Tea Break		
	Parallel Session -A (LT001) Session Chair: Prof. Neeraj Shukla	Parallel Session -B (LT002) Session Chair: Prof. Joydeep Bhattacharjee	Parallel Session -C (LT003) Session Chair: Prof. Niharika Mohapatra



Asia-Pacific Conference on Condensed Matter Physics 2024



Theme	Magnetism and Related Area	Ferroelectrics and Related Area	Emerging Area in Solid State Physics
16:15-16:30	Participant: Dr. Vinod Ashokan NIT Jalandhar, Punjab Title: "Many-body correlation effects in quasi one-dimensional quantum wire"	Participant: Dr. Takumi Kihara RIIS, Okayama University, Japan	Participant: Dr. Nitin Pratap Singh Jaipur National University Title: "Role of scattering processes in lattice thermal conductivity of MgB ₂ "
16:30-16:45	Invited Talk: Prof. Akhyaya Pattnaik VSSUT, Odisha	Participant Dr. M.D. Lokman Ali Pabna University of Science, Bangladesh Title: "Investigation of Grain Boundary Segregation and Short-Range Chemical Ordering in Multi Principal Element Alloy"	Participant Dr. Rakesh Kumar Sahoo Government Women's College, Sambalpur
16:45-17:00	Participant Ms. Purba Dutta IISER Bhopal Title: "Rashba-like spin splitting at the interface of Antiferromagnet-WS ₂ van der Waal Heterostructure"	Participant: Dr. Km Swati Rani Charan Singh University Meerut Title: "Photoluminescence properties of Eu ³⁺ and Dy ³⁺ doped SrCO ₃ nanophosphors synthesized by hydrothermal method"	Participant Dr. Priyanka Mitra BITS Pilani, Hyderabad Title: "Enhanced physical properties of BiFeO ₃ -modified Bi ₄ Ti ₃ O ₁₂ thin film prepared by pulsed laser deposition technique for memristor devices"
17:00-17:15	Participant: Dr. Aiswarya Priyambada KIIT BBSR	Participant: Dr. Rajendra Prasad Giri IIT(ISM) Dhanbad Title: "Unravelling the structure and dynamics of nano-bio interfaces and liquid surfaces by X-ray scattering"	Participant Dr. Bhanu Ranjan IIT Roorkee
17:15-17:30	Participant: Dr. M. D. Naiyar Perwez R.N. College, Hajipur Title: "Electron energy in nanowires and rectangular nanorods in q-deformed calculus"	Participant: Dr. Sweeti Supriya LS College, Muzaffarpur Title: "Cobalt Ferrite as a Promising Material for High-Performance Lithium-Ion Batteries"	Participant Dr. Pintu Bhattacharya L.N College, Bihar Title: "Fermi Level of Intrinsic and Extrinsic Semiconductors in q-deformed calculus"
17:30-17:45	Participant: Dr. Debika Debnath, PRL Ahmedabad Title: "Josephson diode effect in a quantum dot junction"	Participant: Dr. Jyotirekha Mallick IIT Bombay	Participant Dr. Pachineela Rambabu GGV, Koni, Bilaspur Title: "Berry curvature driven Anomalous (Hall, Nernst) effects in half-metallic FeRu-CrSi: A first principles study"

17:45-18:00

Tea Break

18:00-19:00

Evening Talk: Prof. Arun Kumar Grover (Honorary Professor, PEC)

Title: The initiation and evolution of research in physics in India since circa 1850: A comprehension

Venue: LT003 (Session Chair: Dr. Raghavan K. E.)

Day-4: 11th December 2024 (Tuesday)

Venue: Central Lecturer Hall

Time	Event		
	Parallel Session -A (LT001) Session Chair: Prof. Tusharkanti Dey	Parallel Session -B (LT002) Session Chair: Prof. Alpana Nayak	Parallel Session -C (LT001) Session Chair: Prof. Samrat Mukherjee
Theme	Strongly Correlated System	Applications of CMP	Functional Materials
9:30-10:00	Invited Talk: Prof. Ashis Nandy (NISER) Bhubaneswar	Invited Talk: Prof. Rajan Jha IIT BBSR Title: "Plasmonics and Plexcitonics Systems for Optoelectronic Applications"	Participant: Dr. Chandan Kumar Nagoya University, Japan (15min) Participant: Mr. Rohit Kumar IIT Bombay (15min)
10:00-10:30	Invited Talk: Prof. Debraj Chowdhury IIT Kharagpur Title: "Resistive transition and superconductivity in V-doped MgTi ₂ O ₄ spinel"	Invited Talk: Prof. Paramjit Kour, BITS MESRA Title: "Ultralight absorption domination green electromagnetic shielding to protect human tissues and other electronic devices"	Participant: Dr. Kumar Kaushlendra IIT Roorkee (15min) Participant: Dr. Goverdhan Reddy Turpu GGU, Bilaspur (15min)
10:30-11:00	Invited Talk: Prof. Devkumar Mahato NIT Patna Title: "Development of PZT powders and fabrication of multi-layered piezo actuators"	Participant: Mr. Mohd Zeeshan IIT Delhi (15min) Title: "Low Lattice Thermal Conductivity-Driven Promising Thermoelectric Figure of Merit in NaSrSb and NaBaSb Zintl Phases"	Participant: Mr. Atul Kumar NIT Patna (15min) Title: "Layered Perovskites type oxides for transport membrane application"
11:00-11:15	Tea Break		
	Parallel Session -A (LT001) Session Chair: Prof. Sumilan Banerjee	Parallel Session -B (LT002) Session Chair: Prof. Akhyaya Pattnaik	Parallel Session -C (LT003) Session Chair: Prof. V. Ravi Chandra



Asia-Pacific Conference on Condensed Matter Physics 2024



Theme	Ferroelectrics and Strongly Correlated System	Applications of CMP	Emerging Area of CMP
11:15-11:30	Participant: Mr. Tupan Das IIT Patna	Invited Talk: Prof. S. K. Pradhan BITS, Mesra <i>Title: "Tailoring PVDF-Based Composites with PZT and Derived PZT Fillers for Enhanced Dielectric, Ferroelectric, and Piezoelectric Performance in Advanced Sensor Applications"</i>	Participant: Dr. Sunil Kumar BRABU, Bihar
11:30-11:45	Participant: Mr. Amod Kumar IIT Patna		Participant: Mr. Indranil Maity IIT Patna
11:45-12:00	Participant: Mr. Anant Shukla IIT Patna	Participant: Mr. Gulshan Kumar IIT Patna	Participant: Mr. Subham Sahoo IIT Patna
12:00-12:15	Participant: Mr. Khasti Dutta Pandey IIT Patna	Participant: Mr. Rohit Kumar IIT Patna	
12:15-13:00	Valedictory Session, Venue: LT003		
13:00-14:00	Lunch (Central Lecture Hall)		