



24th National Conference on
ATOMIC AND MOLECULAR PHYSICS
NCAMP 2025



08-11 January 2025 | Venue: IIT(ISM) Dhanbad

Organized by :

Department of Physics, IIT(ISM) Dhanbad

Programme Schedule

Day 1 (08-01-2025 Wednesday)

08:00 – 10:00	Registration / Breakfast Venue: Penman Quadrangle	14:00 – 16:00	Poster Session 1 P1 - Th1-3,7,9 with Tea / Coffee Venue: Penman Quadrangle (Entry Side)
10:00 – 11:00	Inauguration Venue: Penman Auditorium	16:00 – 17:30	Golden Jubilee Session Chairperson: President ISAMP Venue: Penman Auditorium
11:00 – 11:30	Tea / Coffee Venue: Penman Quadrangle	17:30 – 18:00	Break
11:30 – 13:00	Technical Session 1 Chairperson: Prof. K. N. Joshipura Venue: Penman Auditorium	18:00 – 20:00	Cultural Program Venue: Penman Auditorium Mitti ki Khushbu - Celebrating Indian culture and music with MARIKUL
11:30 – 12:15	Keynote Address By: Prof. Nigel Mason, University of Kent, UK Title: Atomic, Molecular and Optical Physics. Legacy and Opportunity	20:00 – 22:00	Golden Jubilee Dinner Venue: Scolomin Club
12:15 – 13:00	Keynote Address By: Prof. M Krishnamurthy, TIFR Hyderabad Title: Compact laser-based particle accelerators		
13:00 – 14:00	Lunch Venue: Penman Quadrangle		

Day 2 (09-01-2025 Thursday)

08:00 – 09:00	Breakfast Venue: Penman Quadrangle
09:00 – 10:45	Technical Session 2 Chairperson: Prof. Rajesh Srivastava Venue: Penman Auditorium
09:00 – 09:45	Keynote Address By: Prof. Jonathan Tennyson, University College London Title: ExoMol: molecular line lists for exoplanet and other hot atmospheres
09:45-10:15	Invited Talk By: Prof. Bhas Bapat, IISER Pune Title: Charged Particle Spectrometry at the Earth–Sun Lagrange Point
10:15 – 10:45	Invited Talk By: Prof. Vaibhav Prabhudesai, TIFR Mumbai Title: Unexplored aspects of electron molecule collision
10:45 – 11:15	Tea / Coffee Venue: Raman Hall

11:15 – 13:00	Technical Session 3a (Parallel) Chairperson: Prof. K. P. Subramanian Venue: Raman Hall	Technical Session 3b (Parallel) Chairperson: Prof. Aparna Shastri Venue: JC Bose Hall
11:15 – 11:45	Young Scientist Invited Talk By: Dr. Nabanita Deb, IACS, Kolkata <i>Title: Cold Chemistry: Probing quantum effects in the investigation of atom – molecule interactions at cold conditions</i>	Young Scientist Invited Talk By: Dr. Arnab Khan, IISER Bhopal <i>Title: Revealing a Dynamic Isotope Effect in Nucleophilic Substitution Reaction</i>
11:45 – 12:15	Young Scientist Invited Talk By: Dr. Jobin Jose, IIT Patna <i>Title: Elucidating the Real and Momentum Space Electron Diffraction pattern in electron scattering</i>	Young Scientist Invited Talk By: Dr. Diksha Garg, IUAC Delhi <i>Title: Ultrafast dynamics of fluorene initiated by highly intense laser fields</i>
12:15 – 12:45	Invited Talk By: Prof. Chetan Iimbachiya, MSU Baroda <i>Title: Molecular processes driven by electron and positron interactions</i>	Invited Talk By: Prof. S Sunil Kumar, IISER Tirupati <i>Title: Suppression of collision-induced dissociation of molecular ions in a supersonically expanding gas</i>
12:45 – 13:00	Lightening Talk By: Dr. Dhanoj Gupta, VIT, Vellore <i>Title: Study of ion dynamics in an electrostatic ion beam trap</i>	Lightening Talk By: Dr. Kalyan Chakrabarti, SCC, Kolkata <i>Title: Electron collision calculations on molecules in fusion edge plasmas and injected impurities in fusion devices</i>

13:00 – 14:00	Lunch Venue: Penman Quadrangle	15:30 – 17:00	IYQ (International Year of Quantum Science Technology) Session Chairperson: Prof. Bobby Antony Venue: Penman Auditorium
14:00 – 15:30	Technical Session 4 Chairperson: Prof. Minaxi Vinodkumar Venue: Penman Auditorium	15:30 – 16:15	IYQ Talk By: Prof. P. K. Mohanty, IISER Kolkata <i>Title: Determinism vs reality - a quantum jump</i>
14:00 – 14:30	Invited Talk By: Prof. Bhalamurugan Sivaraman, PRL Ahmedabad <i>Title: A Simple Route to PAH formation in ISM: Is it bottom-up or top-down?</i>	16:15 – 17:00	IYQ Talk By: Prof. P. C. Deshmukh, IIT Tirupati <i>Title: Hundred years of the Quantum</i>
14:30 – 15:00	Invited Talk By: Prof. Sankar De, SINP Kolkata <i>Title: Four body dissociation pathways of diiodoacetylene induced by ion collisions</i>	17:00 – 20:00	Poster Session 2 P2 – Th-4 With tea / coffee Venue: Penman Quadrangle (Entry Side)
15:00 – 15:15	Lightening Talk By: Dr. Suvam Singh, Max Planck Institute for Nuclear Physics, Germany <i>Title: Dielectronic recombination study of Xe3+</i>	20:00 – 22:00	Dinner Venue: Penman Quadrangle
15:15 – 15:30	Lightening Talk By: Dr. Amitava Adak, IIT (ISM) Dhanbad <i>Title: Intense femtosecond laser-driven dense plasma dynamics</i>		

Day 3 (10-01-2025 Friday)

08:00 – 09:00	Breakfast Venue: Penman Quadrangle	09:30 – 10:00	Invited Talk By: Prof. Jyoti Rajput, DU <i>Title: Ion-impact ionization vs photo-ionization of methane</i>
09:00 – 11:00	Technical Session 5 Chairperson: Prof. P. C. Deshmukh Venue: Penman Auditorium	10:00 – 10:30	Invited Talk By: Prof. Dilip Angom, Manipur University <i>Title: Percolation and quench dynamics of quantum phases</i>
09:00 – 09:30	Invited Talk By: Prof. Andrey Solov'yov, MBN Research Center Germany <i>Title: Multiscale computational modelling of condensed matter systems exposed to radiation: case studies with relativistic molecular dynamics</i>	10:30 – 11:00	Invited Talk By: Prof. Bijaya K. Sahoo, PRL Ahmedabad <i>Title: Testing Atomic Many-body Methods through High-precision Calculations</i>
		11:00 – 11:15	Tea / Coffee Venue: Raman Hall

11:15 – 13:00	Technical Session 6a (Parallel) Chairperson: Prof. C.P. Safvan Venue: Raman Hall	Technical Session 6b (Parallel) Chairperson: Prof. Punita Verma Venue: JC Bose Hall
11:15 – 11:45	Invited Talk By: Prof. Deepankar Mishra , TIFR Mumbai Title: Electron capture induced processes in atoms, small molecules and dimers in collisions with highly charged ions	Invited Talk By: Dr. Aparna Shastri , BARC Mumbai Title: Spectroscopy and Dynamics of Molecules using EUV synchrotron radiation
11:45 – 12:15	Invited Talk By: Prof. Aditya H. Kelkar , IIT Kanpur Title: Ion-atom/molecule collision experiments at the 1.7MV tandemron accelerator facility, IIT Kanpur - An overview	Invited Talk By: Prof. Brajesh Kumar Mani , IIT Delhi Title: Simulation Experiments for Many-Body Systems
12:15 – 12:45	Young Scientist Invited Talk By: Prof. Achintya Kumar Dutta , IIT Bombay Title: Frozen Natural Spinors: An Efficient Framework for Cost Reduction in Relativistic Coupled Cluster Method	Young Scientist Invited Talk By: Dr. Srinivasa Prasannaa V , TCG CREST Kolkata Title: Quantum algorithms for atomic and molecular physics calculations
12:45 – 13:00	Lightening Talk By: Dr. Paresh Modak , Kansas State University, United States Title: Asymmetry parameter (β_2) as a marker of bond dissociation for CH3F	Lightening Talk By: Prof. Anil Kumar Chaudhary , University of Hyderabad Title: Study of Thermal Decomposition and Low level Detection of Explosives from Defense Test Range Soil Samples Using Photoacoustic Analyzer

13:00 – 14:00	Lunch Venue: Penman Quadrangle	18:30 – 20:00	Cultural Program Venue: Penman Auditorium
14:00 – 15:30	ISAMP Meeting Venue: Penman Auditorium	20:00 – 22:00	Dinner Venue: Penman Quadrangle
15:30 – 18:30	Poster Session 3 P3 – Th-5,6,8 With tea / coffee Venue: Penman Quadrangle (Entry Side)		

Day 4 (11-01-2025 Saturday)

08:00 – 09:00	Breakfast Venue: Penman Quadrangle
09:00 – 10:00	Technical Session 7 Chairperson: Prof. Bijaya Sahu Venue: Penman Auditorium
09:00 – 09:30	Invited Talk By: Prof. Saikat Ghosh , IIT Kanpur Title: Quantum enhanced sensing of small fields with cold atoms
09:30 – 10:00	Invited Talk By: Prof. Sudipto Singha Roy , IIT(ISM) Dhanbad Title: Novel Phenomena in non-Hermitian Systems and Their Quantum Information-Theoretic Studies
10:00 – 11:45	BTA Session Chairperson: Prof. Jyoti Rajput Venue: Penman Auditorium
11:45 – 12:15	Tea / Coffee Venue: Raman Hall

12:15 – 13:00	Technical Session 8a (Parallel) Chairperson: Prof. Saikat Ghosh Venue: Raman Hall	Technical Session 8b (Parallel) Chairperson: Prof. Vaibhav Prabhudesai Venue: JC Bose Hall
12:15 – 12:30	Oral Presentation Talk By: Suraj Pandey, IIT Delhi Title: Fock-space perturbed relativistic coupled-cluster calculations of electric dipole polarizability and NSD-PNC in Cs	Oral Presentation Talk By: Jibak Mukherjee, TIFR Mumbai Title: Study of state selective electron capture by same velocity H^+ and H_2^+ using Cold Target Recoil Ion Momentum Spectroscopy
12:30 – 12:45	Oral Presentation Talk By: Wafikul Khan, PRL Ahmedabad Title: Formation of water ice at 200 K- result of hydrogen bonding between diols and water	Oral Presentation Talk By: Sagar Vadhel, VP & RPTP Science College Title: Low-Energy Electron Impact Dynamics on Astrochemically Relevant Molecules
12:45 – 13:00	Oral Presentation Talk By: Akash Srivastav, IISER Pune Title: Role of the projectile charge state and underlying electron-capture processes in dissociation dynamics of CO_2^{3+} created under slow ion impact	Oral Presentation Talk By: Sandeep Bajrangi Bari, IIT Kanpur Title: Fragmentation dynamics of SO_2^{2+} in collisions with energetic protons
13:00 – 14:00	Lunch Venue: Penman Quadrangle	
14:00 – 15:00	Technical Session 9a (Parallel) Chairperson: Prof. Saikat Ghosh Venue: Raman Hall	Technical Session 9b (Parallel) Chairperson: Prof. Vaibhav Prabhudesai Venue: JC Bose Hall
14:00 – 14:15	Oral Presentation Talk By: Soumya Ghosh, IISER Kolkata Title: Dissociative Electron Attachment to CH_2F_2 probed by Velocity Map Imaging	Oral Presentation Talk By: Sumit Ghosh, IUAC & IISER, Pune Title: Optical Fiber-based Distributed Acoustic Sensing
14:15 – 14:30	Oral Presentation Talk By: Vishnu P, IISER Pune Title: Combined Electron - Ion Spectrometers for state specific study of dissociation dynamics of molecular ion	Oral Presentation Talk By: Samim Akhtar, AU Title: Influence of the orbital angular momentum of light on the atomic coherent signals in Rubidium vapor cell
14:30 – 14:45	Oral Presentation Talk By: Yurekha S.P, VIT Vellore Title: Low energy electron interaction and dissociative ionization of pyridazine	Oral Presentation Talk By: Varun Deshpande, BARC Mumbai Title: On the trend of unfavorable O2 molecule absorbed structures of small yttrium oxide clusters
14:45 – 15:00	Oral Presentation Talk By: Abheek Roy, IISER Tirupati Title: Unveiling solvation driven fluorescence: Decoding fluorescein dianion's emission through experiment and theory	Oral Presentation Talk By: Palki Gakkhar, IIT Delhi Title: PRCC Calculations of Electric Dipole Polarizability in Ytterbium and Superheavy Nobelium
15:00 – 15:30	Break	
15:30 – 16:30	Valedictory Venue: Penman Auditorium	
16:30 – 17:00	Tea / Coffee Venue: Penman Quadrangle	

Good
bye