

# **Tentative Technical Program (ICAMNOP-2023)**

**International Conference on Atomic, Molecular, Material, Nano and Optical Physics with Applications  
(ICAMNOP-2023),**

**December 20-22, 2023**

**Department of Applied Physics, Delhi Technological University, Delhi, India, 110042**

**Conference website: <https://www.icamnop.in/>**

**19<sup>th</sup> DECEMBER 2023 – Tuesday**

**5:00 pm – 6:00 Pre-registration**

**20<sup>th</sup> DECEMBER 2023 – Wednesday**

**SESSION – 1**

**Venue: B. R. Ambedkar Auditorium, Delhi Technological University, Delhi, India, 110042**

<b>08:00 am – 10:00 am</b>	<b>Registration</b>
<b>10:00 am – 10:50 am</b>	<b>Inauguration Ceremony</b>
<b>INAUGURAL TALK</b>	<b>Frank Rosmej, Sorbonne University, Paris, France</b> <i>Lowering of the ionization energy of ions in plasmas and solids</i>
<b>11:30 am – 12:00 noon</b>	<b>High Tea</b>

20<sup>th</sup> DECEMBER 2023 – Wednesday

SESSION – 2

Venue: B. R. Ambedkar Auditorium, Delhi Technological University, Delhi, India, 110042

<b>Chairperson</b>		<b>Man Mohan / Rinku Sharma</b>
<b>12:00 noon – 12:35 pm</b>	<b>Plenary Talk (PT-1)</b>	<b>D. N. Rao, University of Hyderabad, India</b> <i>Why Photonics? And why should we care?</i>
<b>12:35 pm – 1:10 pm</b>	<b>Plenary Talk (PT-2)</b>	<b>Kamlesh Awasthi, National Yang-Ming Chiao Tung University, Taiwan</b> <i>Effects of Nanosecond Pulsed electric field on cancer and normal cell</i>
<b>1:10 pm-1:45 pm</b>	<b>Plenary Talk (PT-3)</b>	<b>Yugo Nagata, Tokyo University of Science, Japan</b> <i>An energy tunable positronium beam and its application to atomic physics</i>
<b>1:45 pm-3:15 pm</b>	<b>Lunch + Poster Session I (PP 1-30)</b>	

20<sup>th</sup> DECEMBER 2023 – Wednesday

Invited talk will be of 30 min (Presentation-25 min + Discussion -5 min)

SESSION – 3

**3:15 pm – 5:15 pm**

	<b>Hall-A (Main Auditorium)</b>	<b>Hall-B (AB 3 - 107)</b>	<b>Hall-C (AB 3 - 115)</b>	<b>Hall-D (AB 3 - 116)</b>
	<b>Atomic &amp; Molecular Physics (AP &amp;MP)</b>	<b>Laser Science (LS)</b>	<b>Material Science (MS)</b>	<b>Nano Technology (NT)</b>
<b>Chairperson</b>	<b>Bidan Saha/ P D Sahare</b>	<b>Yugo Nagata / S. Veerabuthirun</b>	<b>D. N. Rao / Binay Kumar</b>	<b>Rinku Sharma/Kamlesh Awasthi</b>
<b>3:15 pm- 3:45 pm</b>	<b>AP-1 Brajesh Kumar Mani</b>	<b>LS-1 Ashish Agarwal</b>	<b>MS-1, Govind Gupta</b>	<b>NT-1, Anurag Gaur</b>

	<i>High Precision Relativistic Coupled-Cluster Calculations for Atomic Clock Applications</i>	<i>National Plan for generation and dissemination of IST for telecommunications and information technology</i>	<i>Nanomaterials for Electronic, Magnetic and Optic Applications</i>	<i>Fabrication of energy conversion and storage devices</i>
<b>3:45 pm - 4:15 pm</b>	<b>AP-2, Asawari D Rath</b>  <i>Unlocking the potential of selective photoionization: Enriching Lu-176 from lab scale to large scale</i>	<b>LS-2 Kamal P. Singh</b>  <i>Ultrathin attosecond delay lines for probing non-adiabatic attosecond dynamics</i>	<b>MS-2, Sunita Srivastav</b>  <i>Engineering Quantum Dots for their surface Properties</i>	<b>NT-2, Anjana Dogra</b>  <i>Buffer layer impact on 2DEG at LaAlO<sub>3</sub>/SrTiO<sub>3</sub> oxide interface</i>
<b>4:15 pm- 4:45 pm</b>	<b>AP-3, Lokesh Tribedi</b>  <i>Collective excitations in large molecules, nanoparticle and radio-sensitization</i>	<b>LS-3, Alike Khare</b>  <i>Versatility of Pulsed Laser Ablation at Solid-Liquid Interface for Synthesis of Nanoparticles &amp; Some of the Applications</i>	<b>MS-3, Prof. A. S. Rao</b>  <i>Rare-earth doped materials for photonics application</i>	<b>NT-3, Sumalay Roy</b>  <i>Structural investigations of Bismuth thin films and ultrathin layers synthesized with different approaches</i>
<b>4:45 pm- 5:15 pm</b>	<b>AP-4, Dhananjay Nandi</b>  <i>Dissociative Electron Attachment to Tri-atomic Molecules Probed by Velocity Slice Imaging Technique</i>	<b>LS-4, Nilratan Das</b>  <i>Detection of Biomolecules in Aerosol form by Optical methodology- an Overview</i>	<b>MS-4, Mukhtiyar Singh</b>  <i>A first-principles study of topological quantum phase transition in rare-earth mononictides</i>	<b>NT-4, Sunil Rohila</b>  <i>A study on doped nano ferrites</i>

**20th DECEMBER 2023 – Wednesday**

**5:15 pm-6:45 pm**

**6:45 pm-7:30 pm**

**7:30 pm-9:00 pm**

**Tea + Poster Session II (PP 31 – 60)**

**Cultural Programme**

**Dinner**

21<sup>th</sup> DECEMBER 2023- Thursday

SESSION – 4

Venue: B. R. Ambedkar Auditorium, Delhi Technological University, Delhi, India, 110042

<b>Chairperson</b>	<b>Dhananjay Nandi / S. C. Sharma</b>	
<b>9:30 am-10:05 am</b>	<b>Plenary Talk (PT-4)</b>	<b>Tetsutarou Oishi, Tohoku University, Japan</b> <i>Spectroscopic observation of high-Z multiple charged ions in the visible, VUV, EUV, and X-ray wavelength ranges in high-temperature fusion plasma experiments</i>
<b>10:05 am-10:40 am</b>	<b>Plenary Talk (PT-5)</b>	<b>Andrey Surzhykov FPM, Phys.-Techn. Bundesanstalt, Germany</b> <i>Structured light and its applications in atomic physics</i>
<b>10:40 am-11:15 am</b>	<b>Plenary Talk (PT-6)</b>	<b>Bidhan C. Saha, Chair at Florida A &amp; M University</b> <i>Lepton Impact Collisions at <math>1\text{ eV} &lt; E &lt; 1\text{ GeV}</math>: Application of a Hybrid Theory</i>
<b>11:15 am-11:45 am</b>	<b>High Tea</b>	

21<sup>th</sup> DECEMBER 2023- Thursday

Invited talk will be of 30 min (Presentation-25 min + Discussion -5 min)

SESSION – 5

11:45 am –1:15 pm

	<b>Hall-A (Main Auditorium)</b>	<b>Hall-B (AB 3 - 107)</b>	<b>Hall-C (AB 3 - 115)</b>	<b>Hall-D (AB 3 - 116)</b>
	<b>Atomic &amp; Molecular Physics (AP &amp;MP)</b>	<b>Bose Eienstein Condensate (BE)</b>	<b>Material Science (MS)</b>	<b>Nano Technology (NT)</b>
<b>Chairperson</b>	<b>Rajesh Srivastava / Chetan Limbachiya</b>	<b>Nil Ratan Das / Ashish Agarwal</b>	<b>Kamal P. Singh / Yashashchandra Dwivedi</b>	<b>Abir De Sarkar / Awnish Kumar</b>

<b>11:45 am-12:15 pm</b>	<b>AP-5, Lalita Sharma</b> <i>Atomic-structures and electron collisions with impurity ions of fusion plasma interest</i>	<b>BE 1, Reji Philip</b> <i>Mult diagnostic investigations of laser-produced plasma from tungsten</i>	<b>MS-5, Narendra Jakhar</b> <i>Investigation of Structural, Optical and Electronic Properties of Nb doped BaSnO3 Perovskites</i>	<b>NT-5, Ashima Bagaria</b> <i>MoS2 Nanoflower-Indocyanine Green Composite for Enhanced Optical Imaging Capabilities</i>
<b>12:15 pm -12:45 pm</b>	<b>AP-6, P. C. Minaxi Vinodkumar</b> <i>Unveiling Electron Dynamics: Dissociative Trapped Ultracold Atoms and Avenue to Quantum Technology Electron Attachment in the Realm of Low Energy Phenomena</i>	<b>BE 2, Utpal Roy</b> <i>Trapped Ultracold Atoms and Avenue to Quantum Technology</i>	<b>MS-6, Ashish Kumar</b> <i>Utilizing Wide Bandgap Materials for Thermoelectric Applications in High Temperatures</i>	<b>NT-6, Mukesh Kumar</b> <i>Wafer scale growth 2D MoS2 and its heterostructures for Photodetector and sensor applications</i>
<b>12:45 pm-1:15 pm</b>	<b>AP-7 Tapan Nandi</b> <i>Role of projectile charge state inside the solid target in heavy-ion collisions</i>	<b>BE-3, Nila Krishnakumar</b> <i>Microfabrication Technology for scalable Trapped Ion Quantum Computer</i>	<b>MS-7, Manika Khanuja</b> <i>Advancements in Nano technological Approaches for Environmental Sustainability</i>	<b>NT-6, Hirdyesh Mishra</b> <i>Photophysics and Excitation Energy Transfer/Migration in Fluorescent Organic Semiconducting Molecules</i>
<b>21<sup>st</sup> DECEMBER 2023- Thursday</b>				
<b>1:15 pm-2:45 pm</b>		<b>Lunch + Poster Session III (PP 61 – 90)</b>		

**21<sup>th</sup> DECEMBER 2023- Thursday**  
**Invited talk will be of 30 min (Presentation-25 min + Discussion -5 min)**

**SESSION – 6**

**2:45 pm –4:45 pm**

	<b>Hall-A (Main Auditorium)</b>  <b>Atomic &amp; Molecular Physics (AP &amp;MP)</b>	<b>Hall-B (AB 3 - 107)</b>  <b>Laser Science (LS)</b>	<b>Hall-C (AB 3 - 115)</b>  <b>Material Science (MS)</b>	<b>Hall-D (AB 3 - 116)</b>  <b>Nano Technology (NT)</b>
<b>Chairperson</b>	<b>P. C. Minaxi Vinodkumar / Somorendro Singh</b>	<b>Anil K. Malik/ Piyush Sinha</b>	<b>M. S. Mehata / Manika Khanuja</b>	<b>Rishu Chaujar/ /Richa Sharma</b>
<b>2:45 pm- 3:15 pm</b>	<b>AP-8, C.P. Safvan</b>  <i>Dynamics of three body dissociation in ion molecule collision</i>	<b>LS-5, P.D. Sahare</b>  <i>Dosimetry of high-energy radiations using luminescence techniques and nanophosphor materials</i>	<b>MS-8, Mahesh Kumar</b>  <i>2D transition metal dichalcogenides for Gas Sensors</i>	<b>NT-8, Sunil Singh Kushvaha</b>  <i>Integration of 2D materials with GaN-based semiconductors for enhanced photodetectors and PEC water-splitting applications</i>
<b>3:15 pm - 3:45 pm</b>	<b>AP-9, Chetan Limbachiya</b>  <i>Interaction of charged particles with molecules</i>	<b>LS-6, A K Shukla</b>  <i>Optical studies of nanoparticles</i>	<b>MS-9, Awnish Kumar</b>  <i>Role of hot electrons defining the luminescence mechanisms in ZnO thin films.</i>	<b>NT-9, Saurabh K. Sengar</b>  <i>Gas phase synthesis technique for the formation of size-controlled metal, alloy and metal-carbon (core-shell) nanoparticles</i>
<b>3:45 pm- 4:15 pm</b>	<b>AP-10, R K Shukla</b>  <i>Hydrothermal Synthesis Of Pure and Vanadium Doped MoS2 and its</i>	<b>LS-7, Anchal Srivastava</b>  <i>Growth and Study of c-axis oriented vertically aligned ZnO based nanorods</i>	<b>MS-10, Monika Tomer</b>  <i>Lamb wave devices: A potential sensing platform</i>	<b>NT-10, Rakesh Kalal</b>  <i>Propulsion System Materials and Thermal Characterization</i>

	<i>Application</i>			
<b>4:15 pm-4:45 pm</b>	<b>AP-11, Sukhamoy Bhattacharyya</b>  <i>Effect of finite boundary on the structure of two-electron atomic systems</i>	<b>LS-8, S. Veerabuthirun</b>  <i>Mobile infrared differential absorption lidar for measurement of trace chemicals present in the atmosphere</i>	<b>MS-11, Yashashchandra Dwivedi</b>  <i>Colour modulation and humidity sensing performance of organic complex inhibited nanofibers</i>	<b>NT-11, Kedar Singh</b>  <i>Quantum Dots: Optical Properties and Applications</i>
<b>21<sup>st</sup> DECEMBER 2023- Thursday</b>				
<b>4:45 pm-6:15 pm</b>	<b>Tea + Poster Session IV (PP 91-120)</b>			
<b>7:00 pm onwards</b>	<b>Dinner at DTU</b>			

**22<sup>th</sup> DECEMBER 2023- Friday**

Invited talk will be of 30 min (Presentation-25 min + Discussion -5 min)

SESSION – 7

9:30 am –11:15 am

	Hall-A (Main Auditorium)  Atomic & Molecular Physics (AP &MP)	Hall-B (AB 3 - 107)  Laser Science (LS)		Hall-C (AB 3 - 115)  Material Science (MS)	Hall-D (AB 3 - 116)  Nano Technology (NT)
<b>Chairperson</b>	<b>A.S. Rao / Anchal Srivastava</b>	<b>M. Jayasimhadri /Bharti Singh</b>		<b>N.K. Puri/Kamal Kishor</b>	<b>Vinod Singh / Amrish K. Panwar</b>
<b>9:30 am- 10:00 am</b>	<b>AP-12, Ajeet Kumar</b>  <i>Leaky fiber designs for high-power for fiber lasers</i>	<b>LS-9, Anil K. Malik</b>  <i>Negative Index Metamaterials for Photonic and Plasmonic Devices</i>		<b>MS-12 Surendra Singh Barala</b>  <i>Gamma Radiation Effects on Perovskite Oxides for Voltage Tunable Application</i>	<b>NT-12, Vinod Kumar</b>  <i>Wind turbine using low frictional ferrofluid bearing</i>
<b>10:00 am - 10:30 am</b>	<b>AP-13, Piyush Sinha</b>  A modified Binary Encounter Bethe approach for calculating direct ionization cross sections of Atoms, Ions and Molecules by Electron Impact	<b>10:00 am- 10:10 am</b>	<b>OP-1, Megha Mehta</b>	<b>MS-13, Saurabh Dalela</b>  <i>Diluted Magnetic Semiconducting Quantum Dots: Synthesis and Applications</i>	<b>NT-13 Pawan Kumar Kulriya</b>  <i>Energetic ion irradiation induced effects on multi- component alloy systems</i>
		<b>10:10 am- 10:20 am</b>	<b>OP-2, Swati Godavarthi</b>		
		<b>10:20 am- 10:30 am</b>	<b>OP-3, Amodini Mishra</b>		
<b>10:30 am- 11:00 am</b>	<b>AP-14 Jyoti Rajput</b>  Dissociation pathways of methane dication <sup>15</sup>	<b>10:30 am- 10:40 am</b>	<b>OP -4, Biplab Goswami</b>	<b>MS-14, Abir De Sarkar</b>  <i>DFT perspectives on valleytronics, piezoelectricity and flexible piezo-spintronics</i>	<b>NT-14, Marshal Dhayal</b>  <i>In-situ reduction and physicochemical characterization of gold</i>



		<b>10:40 am-10:50 am</b>	<b>OP -5, Kavita Yadav</b>	<i>in selected functional 2D materials</i>	<i>chloride within Graphene Oxide Sheets</i>
		<b>10:50 am-11:00 am</b>	<b>OP-6, Rajveer Singh</b>		
<b>11:00 am – 11:15 am</b>	<b>High Tea</b>				

22<sup>th</sup> DECEMBER 2023- Friday

Invited talk will be of 30 min (Presentation-25 min + Discussion -5 min)

SESSION – 8

**11:15 am -1.30 pm**

<b>Chairperson</b>	<b>Yogita Kalra/Sarita Baghel</b>	<b>Ajeet Kumar/ Mukhtiyar Singh</b>		<b>Pawan K Tyagi/Yogendra K. Meena</b>	<b>S.C. Sharma/ Desraj Meena</b>
<b>11:15 am-11:45 am</b>	<b>AP-15, Kriti Batra</b> <i>Spectral studies of (La<sub>2</sub>O<sub>3</sub>)<sub>n</sub> molecular clusters for potential applications</i>	<b>11:15 am-11:25 am</b>	<b>OP-7, Subhasis</b>	<b>MS-15, Mohan Singh Mehata</b> <i>Excited state Dynamics of Molecules and Quantum dots</i>	<b>NT-15, Shailesh Narain Sharma</b> <i>Elucidating the Intricacies of Nucleation, Growth, and Charge Transfer Mechanism in Colloidal Semiconductor Quantum Dots and Nanoparticles via Ligand Exchange &amp; Surface Passivation for Photo-Induced Charge Separation Applications</i>
		<b>11:25 am-11:35 am</b>	<b>OP-8, Vijay Singh Meena</b>		
		<b>11:35 am-11:45 am</b>	<b>OP-9, Jitesh Kumar</b>		
<b>11:45 am-12:15 pm</b>	<b>AP-16, Deepak Kumar Swami</b>	<b>11:45 am-11:55 pm</b>	<b>OP-10, Seema Vats</b>	<b>MS-16, Siddhartha Lahon</b>	<b>NT-16, Kamlesh Kumar</b> <i>Synthesis and</i>

	<i>Charge state distribution during ion-solid collision</i>	<b>11:55 am-12:05 pm</b>	<b>OP-11, Mukesh Chandra</b>	Controlling SOI in nanowires with external parameters for spin effect FET	<i>Characterization of Novel Low-temperature Irreversible Thermochromic Materials</i>
		<b>12:05 am-12:15 pm</b>	<b>OP-12, Charu Gaur</b>		
<b>12:15 pm-12:45 pm</b>	<b>AP-17, Alok Kumar Singh Jha</b>  <i>Atomic processes in dense plasma</i>	<b>12:15 pm-12:25 pm</b>	<b>OP-13, David Joseph</b>	<b>MS-17, Amrish K Panwar</b>  <i>Development anode material for Li-ions batterie's past to future</i>	<b>NT-17, Jitendra Singh</b>  <i>Semiconductor Microsystem Materials and Devices</i>
		<b>12:25 pm-12:35 pm</b>	<b>OP-14, Ashok Kumar</b>		
		<b>12:35 pm-12:45 pm</b>	<b>OP-15, Vishal Singh</b>		
<b>12:45 pm-1:15 pm</b>	<b>AP-18, Monica Gambhir</b>  Non-linear process of EIT in quantum heterostructures in external fields	<b>12:45 pm-12:55 pm</b>	<b>OP-16, Rekha Singh</b>	<b>MS-18, Bhupendra K Sharma</b>  <i>Electronics in Flexible Format: Architecture, Design and Approach</i>	<b>NT-18, Bharti Singh</b>  <i>Microscopic investigations of resistive switching phenomenon in oxide based memristive systems</i>
		<b>12:55 pm-1:05 pm</b>	<b>OP-17, Deepali</b>		
		<b>1:05 pm-1:15 pm</b>	<b>OP-18, Manauti Chaudhari</b>		
<b>1:15 pm-1:25 pm</b>		<b>OP-19, Kumar Balwant Singh</b>			
<b>1:30 pm-3:00 pm</b>		<b>Lunch + Poster (121 to remaining)</b>			
<b>3:00 pm-3:30 pm</b>		<b>Valedictory Session</b>			
<b>3.30 pm-3.45 pm</b>		<b>High Tea</b>			