

**4th INTERNATIONAL CONFERENCE ON
“CURRENT DEVELOPMENTS IN ATOMIC, MOLECULAR
OPTICAL AND NANO PHYSICS WITH APPLICATIONS”**

CDAMOP-2015

MARCH 11-14, 2015

Department of Physics and Astrophysics, University of Delhi, India, 110007

Conference Link: www.cdamop.com

10th MARCH 2015 – Tuesday

Venue: Conference Centre, University of Delhi

5:00pm –6:30 pm	Registration
6:30pm-6:45 pm	High Tea

11th MARCH 2015 – Wednesday

SESSION – 1

08:00am – 09:00am	Registration	
09:00am – 11:00am	Inauguration Ceremony	
INAUGURAL TALK	- Prof. Kohzo Hakuta	10:30am
	“Quantum Photonics with Optical Nanofibres”	
11:10am – 12:00noon		High Tea

11 March 2015- Wednesday

SESSION – 2

Chairperson	Man Mohan/ N. Bigelow
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12:00noon – 12:35pm, HALL A	Plenary Talk-1	Frank Rosmej , <i>X-ray Free Electron Lasers: a new role of atomic elementary processes at the frontiers of solid matter heating and dense plasma physics on fs-time scales</i>
12:35pm – 1:10pm, HALL A	Plenary Talk-2	E. K. U. Gross , <i>Is the molecular Berry phase an artifact of the Born-Oppenheimer approximation?</i>
1:10pm-1:45pm , HALL A	Plenary Talk-3	T. Azuma , <i>Cooling dynamics of photo-excited negative carbon cluster ions</i>
1:45pm-2:45pm		Lunch

11 March 2015- Wednesday
SESSION – 3

2:45pm – 4:45pm

	HALL-A Main Auditorium	HALL-B Committee Room-1 Ground Floor	HALL-C Committee Room-4 First Floor	HALL-D Committee Room-5 First Floor
	Atomic Physics Session 1 (SA-1)	Laser Session 1 (SL-6)	BEC Session 1 (SB-11)	Nano Technology Session 1 (SN-16)
Chairperson	T. Azuma/W. Quint	Z. Harman/Carla Figueira	Frank Rosmej /P. K. Panigrahi	K. Hakuta/M. EI Kurdi
2:45pm-3:15pm	AT-1, Michael Schulz <i>Role of Projectile</i> <i>Coherence in Atomic</i> <i>Fragmentation</i> <i>Processes</i>	L-1, Michael Meyer <i>Non-linear</i> <i>photoionization</i> <i>Dynamics in</i> <i>combined</i> <i>Intense XUV and</i> <i>optical</i> <i>Laser fields</i>	BEC-1, Gautam Vemuri <i>Wavepacket Evolution in</i> <i>Tunable Waveguide</i> <i>Lattices</i>	N-1, M. Henini <i>Development of Advanced</i> <i>Semiconductor Materials</i> <i>and Devices for Next</i> <i>Generation Photovoltaics:</i> <i>Opportunities And</i> <i>Challenges</i>

3:15pm - 3:45pm	AT-2, B. N. Jagtap <i>Electronic Excited States of Dihalomethanes</i>	L-2, Uwe Morgner <i>Nonlinear optics with ultra-broadband oscillators</i>	BEC-2, Makoto Tsubota <i>Quantum Hydrodynamics and Turbulence in Atomic Bose-Einstein Condensates</i>	N-2, Ravi Soni <i>Laser Processing of Plasmonic Nanostructures</i>
3:45pm- 4:15pm	AT-3, Hiroki Nakamura <i>Development of Ab initio Semiclassical Molecular Dynamics Simulation Method</i>	L-3, Piet O. Schmidt <i>Precision spectroscopy of Ca-II isotopes by photon-recoil signal amplification</i>	BEC-3, Umakant D. Rapol <i>Experiments with Bose-Einstein Condensate of Rb atoms at IISER Pune</i>	N-3, A. John Peter <i>Electronic and optical properties of Type-II CdSe/CdTe core/shell quantum dots</i>
4:15pm- 4:45pm	AT-4, A. K. Razdan <i>Development of infrared lidar systems for standoff detection of chemical species</i>	L-4, Morten Forre <i>Nondipole ionization dynamics in atoms induced by intense XUV laser fields</i>	BEC-4, Muruganandam Paulsamy <i>Vortices in rotating dipolar Bose-Einstein condensates</i>	N-4, Purushottam Chakarborty <i>MCs_n⁺ - SIMS: An innovative ion beam approach for exact composition analysis of low-dimensional structures</i>
11 March 2015				
4:45pm-6:30pm 7:30pm onwards	Poster – P-1 to P-50 Dinner at venue		Tea + Poster Session -1	

12 March 2015- Thursday

SESSION – 4

Conference Centre, University of Delhi, Delhi-110 007, India

Chairperson	Hiroki Nakamura/ Klaus Blaum
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9:00am – 9:35am, HALL A	Plenary Talk-4	N. Bigelow, <i>Luminorefrigeration: Making and cooling ultracold polar molecules</i>
9:35 am– 10:10am, HALL A	Plenary Talk-5	Carla Figueira De Morisson Faria, <i>Orbit-based approaches for matter in strong laser fields beyond the strong-field approximation and quantum- interference applications</i>
10:10am-10:45am, HALL A	Plenary Talk-6	Alain Dubois, <i>Multi-electronic processes in atomic and molecular collisions at intermediate impact energies</i>
10:45am-11:30am		Tea

**12 March 2015- Thursday
SESSION – 5**

11:30am –1:00pm

	HALL-A Main Auditorium	HALL-B Committee Room-1 Ground Floor	HALL-C Committee Room-4 First Floor	HALL-D Committee Room-5 First Floor
	Atomic Physics Session 2 (SA-2)	Laser Session 2 (SL-7)	BEC Session 2 (SB-12)	Nano Technology Session 2 (SN-17)
Chairperson	Michael Schulz/Lokesh Tribedi	M. Meyer/A. Razdan	M. Tsubota/B. N. Jagtap	J. Ullrich/Ravi Soni
11:30am-12:00pm	AT-5, Nigel J. Mason <i>New Directions in Electron Scattering</i>	L-5, Z. Harman <i>X-ray spectroscopy with highly charged ions</i>	BEC-5, C. S. Unnikrishnan <i>Gravitational effects on atomic clocks, atomic matter-waves and spin, with applications</i>	N-5, M. EI Kurdi <i>Tensile strained germanium cavities for silicon photonics</i>

12:00pm - 12:30pm	AT-6, Klaus Blaum <i>Fundamental tests of nature and a high-precision measurement of the atomic mass of the electron</i>	L-6, John Costello <i>Following laser plasma stagnation layers in real time: formation, properties and potential applications</i>	BEC-6, Utpal Roy <i>Cigar-shaped Bose-Einstein condensate trapped in bichromatic optical lattices</i>	N-6, K. Jeganathan <i>GaN and InGaN one-dimensional nano structures by chemical vapour deposition</i>
12:30pm-1:00pm	AT-7, Wolfgang Quint <i>Precision Tests of Quantum Electrodynamics with Highly Charged Ions</i>	L-7, Christopher Smeenk <i>Electronic imaging on the molecular length and time scale via laser tunneling</i>	BEC-7, Jose Rodrigues <i>A large MOT for ultra-cold plasma studies</i>	N-7, Pankaj Srivastava <i>Ab-initio study of coinage metal doped graphene nano ribbons (GNR's)</i>
12 March 2015 1:00pm-1:05pm 1:05pm-2:30pm				
		Sponsor Lecture		
		Poster – P 51 – P 125		Lunch + Poster Session -2

12 March 2015- Thursday
SESSION – 6

2:30pm –4:30pm

	HALL-A Main Auditorium	HALL-B Committee Room-1 Ground Floor	HALL-C Committee Room-4 First Floor	HALL-D Committee Room-5 First Floor
	Atomic Physics Session 3 (SA-3)	Laser Session 3 (SL-8)	BEC Session 3 (SB-13)	Nano Technology Session 3 (SN-18)
Chairperson	A. Emmanouilidou /K. L. Baluja	John Costello/P. O. Schmidt	C. S. Unnikrishnan / G. Vemuri	Ram Gopal/ K. Jeganathan
2:30pm-	AT-8, Theo J. M. Zouros	L-8, Reinhard	BEC-8, P. K. Panigrahi	N-8, A. K. Shukla

3:00pm	<i>High resolution auger projectile electron spectroscopy of li-like ions produced by electron capture of he-like ions in collisions with gaseous target</i>	Kienberger <i>Time-resolving attosecond electron dynamics in solids and on surfaces</i>	<i>Solitons in Cold atoms : from strongly interacting fermionic to BEC</i>	<i>Raman and Photoluminescence Studies of the silicon nanostructures</i>
3:00pm - 3:30pm	AT-9, Chetan Limbachiya <i>Electron interactions with molecules over wide energy range (0.1 ev - 5000 ev)</i>	L-9, Martha N. Reddy <i>Standoff detection of explosive threats using laser spectroscopy techniques</i>	BEC-9, Arup Banerjee <i>Influence of periodically modulated cavity field on the generation of atomic-squeezed states</i>	N-9, Suresh C. Sharma <i>Role of Plasma and Doping Elements on the Growth and Field Emission Properties of Metallic Carbon Nanotube (CNT) tip placed over Cylindrical surface</i>
3:30pm-4:00pm	AT-10, Tapan Nandi <i>Influence of strong force on electromagnetic interactions</i>	L-10, Aleksander Simonsen <i>Two-photon double ionization of Helium from the $1s2s^{1,3}, s$ states</i>	BEC-10, Ashish Aggarwal <i>Current Developments of Atomic Clocks at NPL</i>	N-10, Bijoy Kuanr <i>Monolithic Microwave signal processing devices using magnetic nanostructures</i>
4:00pm-4:30pm	AT-11, C. P. Safvan <i>fragment angular distributions in ion molecule collisions</i>	L-11, Supriya Rai <i>Phenomenological study of frequency upshift during laser induced breakdown in large band gap dielectrics</i>	BEC-11, Bishwajyoti Dey <i>Dynamics and Phase Diagram of Rotating Bose-Einstein Condensates</i>	N -11, Rajeev N Kini <i>Ultrafast dynamics in the semiconductor alloy, GaAs._xBi_x</i>

12 March 2015

4:30pm-6:00pm
6:00pm-7:00pm

Poster – P 126 – P 200
Cultural Program, Hall A

Tea + Poster Session -3

7:00pm onwards Dinner at venue

13 March 2015- Friday

SESSION – 7

Conference Centre, University of Delhi, Delhi-110 007, India

Chairperson	Alain Dubois / Nigel J. Mason	
9:00am –9:35am, HALL A	Plenary Talk-7	Ennio Arimondo, <i>Ultracold Rubidium atoms excited to Rydberg levels</i>
9:35am – 10:10am, HALL A	Plenary Talk-8	Joachaim Ullrich, <i>Physical units based on fundamental constants –changing with time?</i>
10:10am-10:45am, HALL A	Plenary Talk-9	Alex Brown, <i>From small molecule quantum dynamics to new materials</i>
10:45am-11:15am		Tea

13 March 2015- Friday

SESSION – 8

11:15am –1:15pm

	HALL-A Main Auditorium	HALL-B Committee Room-1 Ground Floor	HALL-C Committee Room-4 First Floor	HALL-D Committee Room-5 First Floor
	Atomic Physics Session 4	Application Session 1	Application Session 2	Nano Technology Session 4

	(SA-4)	(SAP-9)	(SAP-14)	(SN-19)
Chairperson	K. Joshipura/ E. Krishnakumar	S. N. Tiwary/S. P. Khare	S. C. Chopra/A. John Peter	Purushottam Chakraborty/P. Srivastava
11:15am-11:45am	AT-12, Bobby Antony <i>Electron scattering by Carbonyl Fluoride</i>	A-1, A. Emmanouilidou <i>Strongly-Driven Triatomic Molecules: Pathways to Formation of Highly Excited Neutral Atoms</i>	A-2, Ramazi Lomsadze <i>Precision measurements of inelastic processes realized in collisions of alkali metal ions with atoms of rare gases</i>	N-12, Carlos Torres-Torres <i>Temporal dynamics of the nonlinear optical response exhibited by carbon nanotubes under nanosecond laser irradiation</i>
11:45am - 12:15pm	AT-13, Lokesh Tribedi <i>Collective excitations in mesoscopic objects by fast ions</i>	A-3, Govinda Raju <i>Electrical breakdown in micrometer scale gaps: Review of and suggestion for mechanisms</i>	A-4, Ram Gopal <i>Laser-Induced Chlorophyll Fluorescence: A Technique for Detection of Plant Health</i>	N-13, Dattatray Late <i>Two-dimensional Composite Materials for New Generation Field Emitter Devices</i>
12:15pm-12:45pm	AT-14, G. Garcia <i>Modelling secondary particle tracks generated by ion beam irradiation</i>	A-5, T. Rajgopala Rao <i>Accurate quantum-mechanical calculations for the O + O₂ exchange reaction</i>	A-6, Subhadeep De <i>Ytterbium ion optical frequency standard</i>	N-14, Madhu Thalakulam <i>Mesoscopic Charge Amplifiers</i>

12:45pm-1:15pm	AT-15, Rajesh Srivastava <i>Plasma diagnostics using collisional radiative model with fully relativistic fine-structure cross-sections</i>	A-7, Dhananjay Nandi <i>Dissociative Electron Attachment to Carbon Monoxide probed by Velocity Slice Imaging</i>	A-8, Sanjeev Varshney <i>Fusion Plasma Diagnostics by means of Atomic Emissions in X-ray range</i>	N-15, Santanu Ghosh <i>Nanostructured Composite Materials: A New Generation Field Emission Electron Source</i>
13 March 2015				
1:15pm-2:45pm	Poster : P 201 – P 275			Lunch + Poster Session -4

13 March 2015- Friday
SESSION – 9

2:45pm –4:15pm

	HALL-A Main Auditorium	HALL-B Committee Room-1 Ground Floor	HALL-C Committee Room-4 First Floor	HALL-D Committee Room-5 First Floor
	Atomic Physics Session 5 (SA-5)	Application Session 3 (SAP-10)	Application Session 4 (SAP-15)	Nano Technology Session 5 (SN-20)
Chairperson	Uwe Morgner/Tapan Nandi	Govinda Raju/C. P. Safvan	Rajesh Srivastava/Suresh C. Sharma	Mohamed Henini/A.K.Shukla
2:45pm-3:15pm	AT-16, Yashpal Singh <i>Relativistic many-body calculations for electric dipole moments in ^{129}Xe, ^{199}Hg, ^{223}Rn, ^{225}Ra and ^{171}Yb atoms</i>	A-9, E. Krishna Kumar <i>New insights into low energy electron-molecule scattering through negative ion momentum imaging</i>	A-10, Madhusmita Das <i>Effect of Debye plasma on hydrogenic photoionization cross section</i>	N-16, Rajesh Punia <i>Investigation of optical properties of bismuth zinc vanadate glassy system by unconventional Spectroscopic</i>

				<i>Ellipsometry</i>
	AT-17, Pardeep Kumar <i>Weak measurement of temporal separation of slow light pulses in atomic vapours</i>		A-11, Sulagana Dutta <i>Realization of negative refractive index using spontaneously generated coherence</i>	
3:15pm - 3:45pm	AT-18, Rahla Nagma <i>Cross-Sections for electron scattering from Carbon disulphide</i>	A-12, Abhishek Kumar Mishra <i>CO₂ absorption and conversion to fuels on copper oxides: ADFT(D)+U study</i>	A-13, Ajay Nath <i>Matter-wave solitons in negative temperature</i>	N-17, Om Prakash Sinha <i>Metal Oxide Nanostructures for Efficient Organic Light Emitting Diodes</i>
	AT-19, Hitesh Rahangdale <i>Subshell Resolved L-shell ionization studies of high-Z elements by electron impact</i>	A-14, Seema Vats <i>On the comparison of stability of Sr, Al, Zn doped YBCO in water for various concentrations</i>	A-15, Sourav Kundu <i>Localization phenomenon in a DNA double-helix structure</i>	N-18, Kriti Batra <i>Photo-excitation and ionization of weakly confined atoms in magnetic fields</i>
3:45pm- 4:15pm	AT-20, Subhas Ghosal <i>Quantum mechanical rate coefficient of formation & destruction of HD molecule at ultracold temperatures: its importance in interstellar cooling</i>	A-16, Lokesh Mishra <i>Simulation studies on the interplay of various parameters governing the output power of CW high power fibre laser source in MOPA configuration</i>	A-17, Aswarim Rath <i>Ionization Dynamics in XFEL Induced Explosion of Sucrose Nano-particles Monitored concurrently by Split-and-Delay and CDI Techniques at FLASH</i>	N-19, Shilpi Shital <i>Scattering from different nanostructures used in dye sensitized solar cells and their effect on device performance</i>
	AT-21, Jivesh Kaushal <i>Correlation channels in sequential double ionisation</i>	A-18, Sugam Kumar <i>Design and set up of a penning trap experiment for the study of ions in extreme laser fields</i>	A-19, Roopali Kukreja <i>X-ray imaging of spin injection in Cu layer of nano spintronics devices</i>	N-20, Rajesh V. Nair <i>Light transport in nano photonic structures with gain</i>

13 March 2015

4:15pm-4:30pm

4:30pm-5:30pm

7:30pm onwards

Concluding Remarks, Hall A

Poster – P 275 – P 356

Banquet Dinner at DRDO

**Dromi Guest House, Lucknow Road,
Timarpur**

Tea +Poster Session -5