

**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**

2:00pm –5:00 pm	Registration Begins
5:00pm –5: 30pm	Tea

11th MARCH 2015 – Wednesday

SESSION - 1

08:00am – 09:00am	Registration
09:00am – 11:00am	Inauguration
1. PRESENTATION OF BOUQUET AND VANDANA	09:00am
2. WELCOME ADDRESS BY PRESIDENT	- Shri Hari babu Srivastava (Director LASTEC, DRDO) 09:05am
3. INTRODUCTORY REMARKS	- Prof. Man Mohan (Convener CDAMOP-2015) 09:15am
4. CHIEF-ADVISOR	-- Prof. Nicholas Bigelow (Univ. of Rochester, U.S.A.) 09:25am
5. HEAD OF DEPARTMENT	-- Prof. Amitabha Mukherjee, 09:35am
6. VICE CHANCELLOR	– Padam Shri Prof. Dinesh singh 09:40am
7. ADDRESS BY CHIEF GUEST & GUEST OF HONOUR	09:50am

8. INAUGURAL TALK	– Prof. Kohzo Hakuta	10:30am
	“Quantum Photonics with Optical Nanofibres”	
9. Vote of Thanks	-- Prof. I. M. Kapahy	11:00am
11:10am – 12:00noon		High Tea

11 March 2015- Wednesday
SESSION – 2

Chairperson	Man Mohan/ Nickolas Bigelow	
12:00noon – 12:35pm, HALL A	Plenary Talk-1	Frank Rosmej, 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
12:35pm – 1:10pm, HALL A	Plenary Talk-2	E. K. U. Gross, Is the molecular Berry phase an artifact of the Born-Oppenheimer approximation?
1:10pm-1:45pm , HALL A	Plenary Talk-3	T. Azuma, Cooling dynamics of photo-excited negative carbon cluster ions
1:45pm-2:45pm		Lunch

11 March 2015- Wednesday
SESSION – 3

2:45pm – 4:45pm

	HALL-A	HALL-B	HALL-C	HALL-D
	Atomic Physics Session 1 (SA-1)	Laser Session 1 (SL-6)	BEC Session 1 (SB-11)	Nano Technology Session 1 (SN-16)
Chairperson	K. Blaum/W. Quint	J. Costello/Carla Figueira	Ennio Arimondo /P. K. Panigrahi	K. Hakuta/M. EI Kurdi
2:45pm- 3:15pm	AT-1, Michael Schulz <i>Role of Projectile Coherence in Atomic Fragmentation Processes</i>	L-1, Michael Meyer <i>Non-linear photoionization Dynamics in combined Intense XUV and optical Laser fields</i>	BEC-1, Peter B. Littlewood <i>Polariton Condensation and Dynamics in Solid State and Rydberg Atom Systems</i>	N-1, M. Henini <i>Development of Advanced Semiconductor Materials and Devices for Next Generation Photovoltaics: Opportunities And 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, James F. Babb <i>Molecular Processes for applications to astrophysics</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, Hiroki Nakamura <i>Development of Ab initio Semiclassical Molecular Dynamics Simulation Method</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>
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11 March 2015

4:45pm-6:30pm
7:30pm onwards

Poster – P-1 to P-50
Dinner

Tea + Poster Session -1

12 March 2015- Thursday

SESSION – 4

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

Chairperson	Hiroki Nakamura/ Klaus Blaum	
9:30am – 9:35am, HALL A	Plenary Talk-4	Joachaim Ullrich, Physical units based on fundamental constants –changing with time?
9:35 am– 10:10am, HALL A	Plenary Talk-5	N. Bigelow, Luminorefrigeration: Making and cooling ultracold polar molecules
10:10am-10:45am, HALL A	Plenary Talk-6	Alain Dubois, Multi-electronic processes in atomic and molecular collisions at intermediate impact energies
10:45am-11:30am	High Tea	

12 March 2015- Thursday
SESSION – 5

11:30am –1:00pm

	HALL-A	HALL-B	HALL-C	HALL-D
	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/Ram Gopal	M. Tsubota/B.N.Jagtap	J. Ullrich/Ravi Soni
11:30am-12:00pm	AT-5, Nigel J. Mason	L-5, Z. Harman <i>X-ray spectroscopy with highly charged ions</i>	BEC-5, Gautam Vemuri <i>Wavepacket Evolution in Tunable Waveguide Lattices</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, C. S. Unnikrishnan <i>Gravitational effects on atomic clocks, atomic matter-waves and spin, with applications</i>	N-6, Carlos Torres-Torres <i>Temporal dynamics of the nonlinear optical response exhibited by carbon nanotubes under nanosecond laser irradiation</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, Utpal Roy <i>Cigar-shaped Bose-Einstein condensate trapped in bichromatic optical lattices</i>	N-7, Pankaj Srivastava <i>Ab-initio study of coinage metal doped graphene nano ribbons (GNR's)</i>

12 March 2015

1:00pm-2:30pm

Poster – P 51 – P 123

Lunch + Poster Session -2

12 March 2015- Thursday
SESSION – 6

2:30pm –4:30pm

	HALL-A Atomic Physics Session 3 (SA-3)	HALL-B Laser Session 3 (SL-8)	HALL-C BEC Session 3 (SB-13)	HALL-D Nano Technology Session 3 (SN-18)
Chairperson	A. Emmanouilidou /K. L. Baluja	Z. Harman/P. O. Schmidt	C. S. Unnikrishnan / G. Vermuri	K. Jeganathan/A. John Peter
2:30pm-3:00pm	AT-8, Theo J. M. Zouros <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>	L-8, Reinhard Kienberger <i>Time-resolving attosecond electron dynamics in solids and on surfaces</i>	BEC-8, Jose Rodrigues <i>A large MOT for ultra-cold plasma studies</i>	N-8, A. K. Shukla <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, M. Ebrahim-Zadeh <i>New Advances in Optical Parametric Oscillators</i>	BEC-9, P. K. Panigrahi <i>Solitons in Cold atoms : from strongly interacting fermionic to BEC</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</i>

				<i>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, Arup Banerjee <i>Influence of periodically modulated cavity field on the generation of atomic-squeezed states</i>	N-10, Bindiya Arora <i>Dispersion Coefficients for the Alkali-metal Atoms interacting with graphene and carbon nanotubes</i>
4:00pm-4:30pm	AT-11, C. P. Safvan <i>fragment angular distributions in ion molecule collisions</i>	L-11, Debabrata Goswami <i>Structure and Dynamics of Thermally Manipulated Materials Elucidated by Femtosecond Lasers</i>	BEC-11, Ashish Aggarwal <i>Current Developments of Atomic Clocks at NPL</i>	N -11, Bijoy Kuanr <i>Monolithic Microwave signal processing devices using magnetic nanostructures</i>

12 March 2015

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

Poster – P 124 – P 195
Cultural Program, Hall A
Dinner

Tea + Poster Session -3

13 March 2015- Friday
SESSION – 7
Conference Centre, University of Delhi, Delhi-110 007, India

Chairperson	Peter B. Littlewood/ Nigel J. Mason	
9:00am –9:35am, HALL A	Plenary Talk-7	Ennio Arimondo, Ultracold Rubidium atoms excited to Rydberg levels
9:35am – 10:10am, HALL A	Plenary Talk-8	Alex Brown, From small molecule quantum dynamics to new materials
10:10am-10:45am, HALL A	Plenary Talk-9	Carla Figueira De Morisson Faria, Orbit-based approaches for matter in strong laser fields beyond the strong-field approximation and quantum-interference applications
10:45am-11:15am	High Tea	

13 March 2015- Friday
SESSION – 8

11:15am –1:15pm

	HALL-A	HALL-B	HALL-C	HALL-D
	Atomic Physics Session 4	Application Session 1	Application Session 2	Nano Technology Session 4
	(SA-4)	(SL-9)	(SB-14)	(SN-19)
Chairperson	K. Joshipura/ E. Krishnakumar	S. N. Tiwari/S. P. Khare	A. K. Razdan/ S. C. Chopra	A. K. Shukla/P. Srivastava

<p>11:15am-11:45am</p>	<p>AT-12, Rajesh Srivastava <i>Plasma diagnostics using collisional radiative model with fully relativistic fine-structure cross-sections</i></p>	<p>A-1, Martha N. Reddy <i>Standoff detection of explosive threats using laser spectroscopy techniques</i></p>	<p>A-2, Bishwajyoti Dey <i>Dynamics and Phase Diagram of Rotating Bose-Einstein Condensates</i></p>	<p>N-12, K. Jeganathan <i>GaN and InGaN one-dimensional nano structures by chemical vapour deposition</i></p>
<p>11:45am - 12:15pm</p>	<p>AT-13, Lokesh Tribedi <i>Collective excitations in mesoscopic objects by fast ions</i></p>	<p>A-3, Govinda Raju <i>Electrical breakdown in micrometer scale gaps: Review of and suggestion for mechanisms</i></p>	<p>A-4, Subhadeep De <i>Ytterbium ion optical frequency standard</i></p>	<p>N-13, Dattatray Late (short talk) <i>Two-dimensional Composite Materials for New Generation Field Emitter Devices</i></p>
				<p>N-14, Santanu Ghosh (short talk) <i>Nanostructured Composite Materials: A New Generation Field Emission Electron Source</i></p>
<p>12:15pm-12:45pm</p>	<p>AT-14, G. Garcia <i>Modelling secondary particle tracks generated by ion beam irradiation</i></p>	<p>A-5, A. Emmanouilidou <i>Strongly-Driven Triatomic Molecules: Pathways to Formation of Highly Excited Neutral Atoms</i></p>	<p>A-6, Ram Gopal <i>Laser-Induced Chlorophyll Fluorescence: A Technique for Detection of Plant Health</i></p>	<p>N-15, Madhu Thalakulam (short talk) <i>Mesoscopic Charge Amplifiers</i></p>
				<p>N-16, Om Prakash Sinha (short talk) <i>Metal Oxide Nanostructures for</i></p>

				<i>Efficient Organic Light Emitting Diodes</i>
12:45pm-1:15pm	AT-15, Bobby Antony <i>Electron scattering by Carbonyl Fluoride</i>	A-7, T. Rajgopala Rao <i>Accurate quantum-mechanical calculations for the O + O₂ exchange reaction</i>	A-8, Ghanshyam Purohit <i>Charged particle impact ionization processes of biologically important molecules</i>	N-17, Rajesh Punia (short talk) <i>Investigation of optical properties of bismuth zinc vanadate glassy system by unconventional Spectroscopic Ellipsometry</i>
				N-18, Kriti Batra (short talk) <i>Photo-excitation and ionization of weakly confined atoms in magnetic fields</i>
13 March 2015				
1:15pm-2:45pm	Poster : P 196 – P 265		Lunch + Poster Session -4	

13 March 2015- Friday
SESSION – 9

2:45pm –4:15pm

	HALL-A	HALL-B	HALL-C	HALL-D
	Atomic Physics Session 5 (SA-5)	Application Session 3 (SL-10)	Application Session 4 (SB-15)	Nano Technology Session 5 (SN-20)
Chairperson	Uwe Morgner/Tapan Nandi	Govinda Raju/C. P. Safvan	Rajesh Srivastava /Debabrata Goswami	Mahamed Henini/Purushottam

				Chakarborty
2:45pm-3:15pm	AT-16, Yashpal Singh (short talk) <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, Dhananjay Nandi <i>Dissociative Electron Attachment to Carbon Monoxide probed by Velocity Slice Imaging</i>	A-10, Sanjeev Varshney <i>Fusion Plasma Diagnostics by means of Atomic Emissions in X-ray range</i>	N-19, Rajeev N Kini (short talk) <i>Ultrafast dynamics in the semiconductor alloy, $\text{GaAs}_{-x}\text{Bi}_x$</i>
	AT-17, Jivesh Kaushal (short talk) <i>Correlation channels in sequential double ionisation</i>			N-20, Roopali Kukreja (short talk) <i>X-ray imaging of spin injection in Cu layer of nano spintronics devices</i>
3:15pm - 3:45pm	AT-18, Rahla Nagma (short talk) <i>Cross-Sections for electron scattering from Carbon disulphide</i>	A-11, E. Krishna Kumar <i>New insights into low energy electron-molecule scattering through negative ion momentum imaging</i>	A-12, Madhusmita Das (short talk) <i>Effect of Debye plasma on hydrogenic photoionization cross section</i>	N-21, Shilpi Shital (short talk) <i>Scattering from different nanostructures used in dye sensitized solar cells and their effect on device performance</i>
	AT-19, Hitesh Rahangdale (short talk) <i>Subshell Resolved L-shell ionization studies of high-Z elements by electron impact</i>			A-13, Abhishek Kumar Mishra (short talk) <i>CO_2 absorption and conversion to fuels on copper oxides: ADFT(D)+U study</i>
3:45pm-4:15pm	AT-20, Subhas Ghosal (short talk) <i>Quantum mechanical rate coefficient of formation & destruction of HD molecule at ultracold temperatures: its importance in interstellar</i>	A-15, Lokesh Mishra (short talk) <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-16, Ajay Nath (short talk) <i>Matter-wave solitons in negative temperature</i>	N-23, Manoj Kumar (short talk) <i>Spin orbit interaction effect on optical absorption of quantum wire in presence of electric and magnetic fields</i>

	<i>cooling</i>			
	AT-21, Pardeep Kumar (short talk) <i>Weak measurement of temporal separation of slow light pulses in atomic vapours</i>	A-17, Sugam Kumar (short talk) <i>Design and set up of a penning trap experiment for the study of ions in extreme laser fields</i>	A-18, Sourav Kundu (short talk) <i>Localization phenomenon in a DNA double-helix structure</i>	N-24, Sunny Aggarwal (short talk) <i>New relativistic atomic data for Sulphur like copper</i>

13 March 2015

4:15pm-4:30pm

4:30pm-5:30pm

7:30pm onwards

Concluding Remarks, Hall A

Poster – P 266 – P 330

Banquet Dinner

Tea + Poster Session -5