

8th. PSSI-PLASMA SCHOLARS COLLOQUIUM (PSC-2020)



(October 8-9, 2020)



PROGRAMME –SCHEDULE (DAY-1)

Day-1; Session-1: 8th. October, 2020 (9.30 am – 1.05 pm)

<u>Topic: Basic Plasma Experiments and Simulations</u>		
<u>Chairperson: Dr. Pintu Bandopadhaya</u>		
	9.30 am - 9.45 am	Opening Session
INV-1	9.45 am - 10.20 am (30+5 mins)	Speaker: Dr. Sudeep Bhattacharjee, IIT Kanpur Title: Confinement, diffusion, and adiabaticity in a tabletop magnetic dipole plasma: unraveling surprises via experiments
OL1-1 – OL1-11	10.20 am - 1.05 pm (12+3 mins for each oral presentation)	OL1-1: Cross-field charge particle transport inside a void created by an obstacle inserted in a magnetized plasma column, Satadal Das, IPR OL1-2: Probing Ne ECR plasma to study the gas mixing and anomalous effect, Puneeta Tripathi, IUAC, New Delhi OL1-3: Electrical conductivity of a plasma confined in a dipole magnetic field: systematic experiments and theory, A. Nanda, IIT Kanpur OL1-4: Floating potential fluctuations in atmospheric pressure micro-plasma jets, D. Behmani, IIT Kanpur OL1-5: Comparative study of plasma antenna and monopole metal antenna, Manisha Jha, IPR OL1-6: Magnetic field effects on 13.56 MHz capacitive coupled radio-frequency sheaths, S. Binwal, Jamia Millia Islamia, Delhi OL1-7: Does the fate of 2D incompressible high Reynolds number turbulence depend on initial conditions? : A revisit! Shishir Biswas, IPR OL1-8: Study on ion re-circulation and potential well structure in an inertial electrostatic confinement fusion device using 2D-3V PIC simulation, D. Bhattacharjee, CPP-IPR OL1-9: Molecular dynamics simulation of collisional cooling of He and its binary mixtures with Ne, Ar, Kr and Xe for creating strongly coupled cryo plasmas, S. S. Mishra, IIT Kanpur OL1-10: Effects of flow Velocity and Density of Dust Layers on the Kelvin-Helmholtz Instability in Strongly Coupled Dusty Plasma: Molecular Dynamic Study, Bivash Dolai, Guru Ghasidas Vishwavidyalaya, Bilaspur OL1-11: Simulation Study of Planar Anode Micro Hollow Cathode Discharge Using Dielectric Layer, Khushboo Meena, CEERI, Pilani
<u>LUNCH BREAK: 1.05 pm - 2.00 pm</u>		

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PROGRAMME –SCHEDULE (DAY-1)

Day-1; Session-2: 8th. October, 2020 (2.00 pm – 5.05 pm)

<u>Topic: Fusion Science and Technology</u> <u>Chairperson: Dr. Mainak Bandopadhaya</u>		
INV-2	2.00 pm - 2.35 pm (30+5 mins)	Speaker: Dr. Joydeep Ghosh, IPR Title: Recent Advances in Aditya-U Tokamak
OL2-1 – OL2-10	2.35 pm - 5.05 pm (12+3 mins for each oral presentation)	OL2-1: Impact of Energetic Particles in the First-Wall Erosion in Fusion Power Reactors, P. N. Maya, IPR OL2-2: Disruptions study in Aditya-U Tokamak, Suman Dolui, IPR OL2-3: Simulation of runaway electron generation in fusion grade tokamak and suppression by impurity injection, Ansh Patel, PDP, Gandhinagar OL2-4: Simultaneous measurement of thermal conductivity and thermal diffusivity of ceramic pebble bed using transient hot-wire technique, Harsh Patel, IPR OL2-5: A DDPM-DEM-CFD flow characteristic analysis of pebble bed for fusion blanket, Chirag Sedani, IPR OL2-6: Initial results of Laser Heated Emissive Probes operated in cold condition in Aditya-U tokamak , A. Karnik, VIT Chennai OL2-7: Evidence Of Non-local Transport in ADITYA-U Tokamak, T. Macwan, IPR OL2-8: Parametric Study of SMBI CD Nozzle for ADITYA-U Tokamak, K. Singh, IPR OL2-9: Study of Sawtooth Induced Heat Pulse Propagation in the ADITYA Tokamak, S. Patel, PDP, Gandhinagar OL2-10: Calculation of Toroidal and Poloidal Rotation in Aditya-U Tokamak, A. Kumar, IPR
Adjourn for the Day-1 of PSC-2020		

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PROGRAMME –SCHEDULE (Day-2)

Day-2; Session-3: 9th. October, 2020 (10.00 am – 1.05 pm)

		<u>Topic: Basic Plasma Theory</u>
		<u>Chairperson: Dr. N. Ramasubramanian</u>
INV-3	10.00 am - 10.35 am (30+5 mins)	<p>Speaker: Dr. R. Ganesh, IPR Title: Landau damping in an inhomogeneous collision-less plasma</p>
OL3-1 – OL3-11	10.35 am - 1.05 pm (12+3 mins for each oral presentation)	<p>OL3-1: Electron-Acoustic Solitary waves in Fermi Plasma with Two-Temperature Electrons, Ankita Dey, Lady Brabourne College, University of Calcutta</p> <p>OL3-2: Quantum Electro-static Shock Fronts in Two Component Plasma with Non-thermal Distributive Ion, Subhangi Chakraborty, JIS University, Kolkata</p> <p>OL3-3: Thermal Instability of Two-Component Plasma with Radiative Heat-Loss Functions Frictional Effect of Neutrals and Hall Current, Sachin Kaothekar, Mahakal Institute of Technology & Management, Ujjain</p> <p>OL3-4: Target Shape Effects on the Energy of Ions Accelerated in Radiation Pressure Dominant (RPD) Regime, S. Jain, University of Kota, Kota</p> <p>OL3-5: Study of slow mode solitons in a negative ion plasma with superthermal electrons, X. Mushinzimana, University of Rwanda</p> <p>OL3-6: Effect of the non-thermal electrons on ion-acoustic cnoidal wave in unmagnetized plasmas, P. C. Singhadiya, Seth RLS Govt. College, Rajasthan.</p> <p>OL3-7: Formation of shock fronts in inner magnetospheric plasma, J. Sarkar, Jadavpur University</p> <p>OL3-8: Slow and fast modulation instability and envelope soliton of ion acoustic waves in fully relativistic plasma having nonthermal electrons, Indrani Pal, Jadavpur University</p> <p>OL3-9: To Study the Growth Rates of Waves between Piezoelectric and Ferroelectric Semiconductor Using QHD Model In Quantum Plasma, Manisha Raghuvanshi, Govt. M.V.M college Shivaji nagar, Bhopal</p> <p>OL3-10: Diagnostics of Ar-CO₂ mixture plasma using CR model, N. Shukla, IIT Roorkee</p> <p>OL3-11: Large amplitude ion-acoustic compressive solitons in plasmas with positrons and superthermal electrons, S. K. Jain¹, P. C. Singhadiya² and J. K. Chawla¹, ¹Govt. College, Dholpur, Rajasthan, India-328001</p>
		<u>LUNCH BREAK: 1.05 pm - 2.00 pm</u>

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PROGRAMME –SCHEDULE (Day-2)

Day-2; Session-4: 9th. October, 2020 (2.00 am – 5.15 pm)

<u>Topic: Dusty Plasma, Laser Plasma, Plasma Applications</u>		
<u>Chairperson: Dr. Santanu Karkari</u>		
INV-4	2.00 pm - 2.35 pm (30+5 mins)	Speaker: Dr. Alphonsa Joseph, IPR Title: An Overview of Plasma Applications Developed by IPR
OL4-1 – OL4-10	2.35 pm - 5.05 pm (12+3 mins for each oral presentation)	OL4-1: Study of Arc Fluctuations of a DC Transferred Arc Plasma, S. P. Sethi, CSIR-IMMT, Bhubaneswar OL4-2: Inductive Energy Storage System with Plasma opening Switch: A review, Kanchi Sunil, BARC, Mumbai OL4-3: Role of plasma sheath in the energy management during plasma surface modification of polymer, Bivek Pradhan Sikim Manipal University OL4-4: Dynamics of dust ion acoustic waves in the Low Earth Orbital (LEO) plasma region, Siba Prasad Acharya, SINP, Kolkata OL4-5: Effect of negative charge dust on ion-acoustic dressed solitons in unmagnetized plasmas, J K Chawla, Govt. College Tonk, Rajasthan OL4-6: Effect of collision on dust-ion acoustic shock wave in dusty plasma with negative ions, Jyotirmoy Goswami, Jadavpur University. OL4-7: Equilibrium configuration of self gravitating dusty plasmas, M. Shukla, Jawaharlal Nehru College, Pasighat. OL4-8: Strong and collimated terahertz radiation by photo mixing of Hermite Cosh Gaussian lasers in collisional plasma, Sheetal Chaudhary, CCSU, Meerat OL4-9: Effect of laser pulse profile on controlling the growth of RayleighTaylor instability in radiation pressure dominant regime Krishna Kumar Soni, University of Kota, Kota OL4-10: Laser-driven radially polarized terahertz radiation generation in hot Plasma, Manendra, CCSU, Meerat
	5.05 pm - 5.15 pm	<u>Concluding Session</u>