



International Society on
Optics Within Life Sciences



Day 4. 21st November (Thursday)

Time	Room A (LH 31)	Room B (LH 22)	Room C (LH 32)	Room D (LH 33)
	Chair: M. Ravikanth <i>IIT Bombay</i>	Chair: Sreelaja Nair <i>IIT Bombay</i>	Chair: Anindya Datta <i>IIT Bombay</i>	Chair: R. B. Sunoj <i>IIT Bombay</i>
Session 4.1 09:00 - 10:40	Soumit Sankar Mandal <i>IISER Tirupati</i> Cren7: Insights into an Extremophile Protein's Structural and Functional Attributes	Padmaja Prasad Mishra <i>Saha Institute of Nuclear Physics, Kolkata</i> Emergence of Dynamic G-Tetraplex Scaffold: Uncovering Low Salt-Induced Conformational Heterogeneity	R. J. Dwayne Miller <i>University of Toronto</i> Mapping Atomic Motions with Ultrabright Electrons: Fundamental Space-Time Limits to Imaging Chemistry and Biology	Maria Andrea Mroginski <i>Technische Universität Berlin</i> Hydrogen Bonding and Non-covalent Electric Field Effects in the Photoconversion of Phytochrome
	Saptarshi Mukherjee <i>IISER Bhopal</i> Designing an Artificial Light Harvesting System and Monitoring Conformational Dynamics of i-motif DNA Using Förster Resonance Energy Transfer	Laura C Zanetti-Domingues <i>UKRI-STFC</i> (Cryo-)vEM and (cryo-) CLEM at the CLF Octopus Facility	Donatas Zigmantas <i>Lund University, Sweden</i> Mapping Energy Transfer in Photosynthetic Bacteria in vivo	Biswarup Pathak <i>IIT Indore</i> Artificially Intelligent Nanopores for High-Throughput DNA Sequencing
	Tushar Kanti Mukherjee <i>IIT Indore</i> Biomolecular Condensation of Trypsin Prevents Autolysis and Promotes Ca ²⁺ -Mediated Activation of Esterase Activity	Marisa Martin Fernandez <i>UKRI-STFC Rutherford Appleton Laboratory</i> Drug-resistant EGFR Mutations Promote Lung Cancer by Stabilizing Interfaces in Ligand-free Kinase-active EGFR Oligomers	David M. Jonas <i>University of Colorado Boulder</i> Generalized Einstein Relations between Absorption and Emission: A Theory of Fluorescence, Excited State Thermodynamics, and Extreme Stokes Shifts	Ravindra Venkatramani <i>TIFR Mumbai</i> The Optical Properties of Charged Amino Acids: New Avenues for Label-Free UV-Visible Spectroscopy of Biomolecules
	Shashi Thutupalli <i>NCBS, Bangalore</i> Using FCS to Uncover a Two-Component Molecular Motor driven by a GTPase Cycle	Kaushik Pal <i>IIT Tirupati</i> Role of pN Level Molecular Tension in Immune Cell Pathogen Interactions	Jyotishman Dasgupta <i>TIFR Mumbai</i> Ultrafast Charge Transfer Chemistry in Metalloproteins and Biomimetic Nanocages	Amber Jain <i>IIT Bombay</i> Energy Transfer in Molecular Wires: New Insights
10:40 - 11:10	Tea Break, Ground Floor Cafeteria			
	Fluorescence Methods (FM)	Probes in Biology (PB)	Ultrafast Spectroscopy (UFS)	Single Molecule Spectroscopy (SMS)
	Super Resolution Methods (SR)	Bio-imaging in Cells (BiC)	SERS & Raman (S&R)	Theory & Modelling (T&M)





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	Chair: Haridas Pal <i>HBNI</i>	Chair: Ishita Sengupta <i>IIT Bombay</i>	Chair: Nandita Madhavan <i>IIT Bombay</i>	Chair: Saptarshi Mukherjee <i>IISER Bhopal</i>
Session 4.2 11:10 - 13:00	Rajaram Swaminathan <i>IIT Guwahati</i> UV-Visible Spectra in Proteins arising from Charge Transfer: A useful Intrinsic Probe to investigate Changes in Protein Structure	Sukhendu Nath <i>BARC Mumbai</i> Molecular Probes for protein Oligomers and Fibrils	Achillefs Kapanidis <i>University of Oxford</i> Unlocking Gene Expression Mechanisms via Next-generation Single-molecule Imaging	Abhijit Patra <i>IISER Bhopal</i> Thermally Activated Delayed Fluorescent Probes for Elucidating Interorganelle Interactions and Time-resolved Imaging of Lysosomal Polarity
	Pradipta Purkayastha <i>IISER Kolkata</i> Exploring the Interface between DNA Structures and Fluorescent Nanomaterials	Amrita Chatterjee <i>BITS Pilani, Goa</i> Fancying 10,12-Pentacosadiynoic Acids as Multipurpose Dual-output Chemosensors	Kedar Khare <i>IIT Delhi</i> Bright-field Imaging Techniques inspired by Super-resolution Microscopy	Hirak Chakraborty <i>Sambalpur university</i> Developing Peptide-based Broad-Spectrum Fusion Inhibitors as an Antiviral Strategy
	Manab Chakravarty <i>BITS Pilani Hyderabad</i> Suitably Decorated 2,4,6-tristyrylpyrillium Salts in Detecting Crucial Biological Amines through Diverse Optical Responses	Dimpy Kalia <i>IISER Bhopal</i> Location-agnostic Site-specific Protein Bioconjugation via BHoPAL	Barun K Maity <i>Saha Institute of Nuclear Physics, Kolkata</i> Peptide-PAINT: A Transfected Docker Simplifies Live and Fixed Cell Super-resolution Imaging.	Nirmalya Bag <i>IIT Kanpur</i> Functional Transbilayer Coupling of Plasma membrane Leaflets in Live Cells Revealed by Imaging Fluorescence Correlation Spectroscopy
	Ravikrishnan Elangovan <i>IIT Delhi</i> High-precision Myosin II Step Size Measurement with Single Quantum Dot Tracking in Motility Assays	Joshy Joseph <i>CSIR-NIIST</i> Design of Fluorescent Probes for Cellular Imaging and Theranostic Applications	Koushambi Mitra <i>IIT Jodhpur</i> MitRatiNa: A Fluorescent Reporter for Measuring Mitochondrial Sodium	Kunihiko Ishii <i>RIKEN</i> Two-dimensional Fluorescence Lifetime Correlation Spectroscopy: Recent Development and Applications
13:00 - 14:00	Lunch, Second Floor Foyer & Canopy Area			
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	Chair: Sukhendu Nath <i>BARC Mumbai</i>	Chair: Samir Kumar Maji <i>IIT Bombay</i>	Chair: Rajaram Swaminathan <i>IIT Guwahati</i>	Chair: Abhijit Patra <i>IISER Bhopal</i>
Session 4.3 14:00 - 16:00	Prabhat Kumar Singh <i>BARC Mumbai</i> Fluorescence Sensors for Clinically Relevant Analytes: Harnessing Aggregation-Induced Emission for Enhanced Detection	Takakazu Nakabayashi <i>Tohoku University</i> Highly Sensitive Raman Measurements of Biomolecules in a Liquid Droplet formed by Liquid-Liquid Phase Separation	Soumyo Mukherji <i>BITS Pilani, Hyderabad</i> Bend it, Functionalise it and Sense the World Around	Cecile Fradin <i>McMaster University</i> Tracking, Photobleaching & Correlating: How to Catch Small Mobile Molecular Condensates
	Soumit Chatterjee <i>IIT ISM Dhanbad</i> Elucidation of the Role of Electronic Effect on Doubly Locked GFP Chromophore Analogues to Help Design Improved Fluorophores	Sua Myong <i>Johns Hopkins University</i> DNA Supercoiling-mediated G4/R-Loop Formation Tunes Transcription by Controlling the Access of RNA Polymerase	Aarat P Kalra <i>IIT Delhi</i> Triplet Energy Migration in the Cytoskeleton	Manoj Kumbhakar <i>BARC Mumbai</i> Probing Molecular Interaction with Single Molecule Sensitivity
	Sourav Kumar Dey <i>IIT ISM Dhanbad</i> Plug-and-play Fluorophores for Squash RNA Aptamer allow mRNA Imaging in Multiple Colors	Subhabrata Maiti <i>IISER Mohali</i> Imaging and Analysis of Biocolloidal Taxis and Catalysis in Gradient of Oilgo nucleotides	Sundar Ram Naganathan <i>TIFR Mumbai</i> Material Properties Determine the Dynamics of Tissue Shape Transitions	Debasis Das <i>TIFR Mumbai</i> Defining a Nascent Protein Conformation on the Ribosome
	Sriram Kanvah Gundimeda <i>IIT Gandhinagar</i> Small molecule Fluorescent Probes for imaging Subcellular Organelles	Bappaditya Chandra <i>St. Jude Children's Research Hospital, Memphis</i> Phase Separation by the HEY1:NCOA2 Fusion Oncoprotein Drives Transcriptional Rewiring in Mesenchymal Chondrosarcoma		
16:00 - 16:30	Tea Break, Ground Floor Cafeteria			
16:30 - 17:30	Closing Session: Awards, Planning and Feedback, Prof. B. Nag Auditorium			
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