

Program

FCS2018 Workshop

Lecture Venue: **Auditorium-II, Convention Centre, JNU**

Hands-on Training Venues: **AIRF and SPS, JNU, & Dept. of Chemistry, IIT Delhi**

Mechanobiology Workshop

Lecture Venue: **Seminar Room, SPS, JNU**

Hands-on Training Venue: **SPS, JNU**

(Note: The FCS2018 Workshop on Optics and Mechanobiology Workshop run parallel)

FCS2018 Workshop Program

Day-1: Monday, 12th November, 2018

8:00 – 8:45 AM	Breakfast @ JNU Cafeteria
8:15 – 9:15 AM	Registration @ Convention Centre, JNU
9:30 – 10:00 AM	Inaugural Session
10:00 – 10:30 AM	High Tea
Session-1	
10:30 – 11:15 AM	<i>FCS Fundamentals: Basic Theory</i> (Sudipta Maiti , TIFR, Mumbai)
11:15 – 12:00 AM	<i>FCS Advanced Topics</i> (Sudipta Maiti , TIFR, Mumbai)
12:00 – 1:00 PM	<i>FCCS and Other Advanced Techniques</i> (Thorsten Wohland , NUS, Singapore)
1:00 – 2:00 PM	Lunch @JNU Cafeteria
Session-2	
2:00 - 2:45 PM	<i>Introduction to Basics of Raman Spectroscopy</i> (G V Pavan Kumar , IISER Pune)
2:45 – 3:30 PM	<i>Resonance Raman Spectroscopy</i> (Jyotishman Dasgupta , TIFR, Mumbai)
3:30 – 4:15 PM	<i>Plasmon Enhanced Raman</i> (G V Pavan Kumar , IISER Pune)
4:15 – 5:00 PM	<i>Ultrafast Raman</i> (Jyotishman Dasgupta , TIFR, Mumbai)
5:00 – 5:30 PM	Tea
Session-3	
5:30 – 6:15 PM	<i>Basics of Fluorescence Imaging and Concepts of Resolution</i> (Trevor Smith , University of Melbourne)
6:15 – 7:00 PM	<i>TIRF Microscopy, Multiphoton Microscopy, Introduction to Super-Resolution Imaging</i> (Trevor Smith , University of Melbourne)
7:00 – 10:00 PM	Dinner @ JNU Cafeteria

Day-2: Tuesday, 13th November, 2018

8:00 – 8:45 AM	Breakfast @ JNU Cafeteria
Session-4	
9:00 – 9:45 AM	<i>Basics of Time-Resolved Fluorescence and Instrumentation: TCSPC</i> (Trevor Smith , University of Melbourne)
9:45 – 10:30 AM	<i>Time-Resolved Fluorescence: UPC</i> (Anindya Datta , IIT Bombay)
10:30 – 11:15 AM	<i>Time-Resolved Fluorescence: Data Analysis</i> (Anindya Datta , IIT Bombay)
11:15 –12:00 AM	Tea
Session-5	
12:00 - 1:00 PM	<i>Structured Illumination Microscopy</i> (Trevor Smith , University of Melbourne)
1:00 – 2:00 PM	Lunch @ JNU Cafeteria
2:00 – 6:00 PM	Hands-on Training Session at AIRF, SPS and IITD
6:00 – 6:30 PM	Evening Tea
6:30 – 8:30 PM	Tutorial Session - I
8:30 – 10:00 PM	Dinner @ JNU Cafeteria

Day-3: Wednesday, 14th November, 2018

8:00 – 8:45 AM	Breakfast @ JNU Cafeteria
Session-6	
9:00 – 9:45 AM	<i>Confocal FCS Data Analysis</i> (Thorsten Wohland , NUS, Singapore)
9:45 – 10:30 AM	<i>Imaging FCS Data Analysis</i> (Thorsten Wohland , NUS, Singapore)
10:30 – 12:30 AM	Poster Session and Tea
Session-7	
12:30 - 1:15 PM	<i>Super-Resolution Imaging: Single Particle Tracking, PALM/STORM</i> (Gilad Haran , Weizmann Institute of Science, Israel)
1:15 – 2:00 PM	Lunch @ JNU Cafeteria
2:00 – 6:00 PM	Hands-on Training Session at AIRF, SPS and IITD
6:00 – 6:30 PM	Evening Tea
6:30 – 8:30 PM	Tutorial Session - II
8:30 – 10:00 PM	Dinner @ JNU Cafeteria

Day-4: Thursday, 15th November, 2018

8:00 – 8:45 AM	Breakfast @JNU Cafeteria
Session-7	
9:00 – 9:45 AM	<i>Time-Resolved Fluorescence Anisotropy</i> (G Krishnamoorthy , TIFR, Mumbai)
9:45 – 10:30 AM	<i>Super-Resolution Imaging: STED and SDED-FCS</i> (Jaydeep Kumar Basu , IISc Bangalore)
10:30 – 11:15 AM	<i>Single Molecule FRET Spectroscopy</i> (Gilad Haran , Weizmann Institute of Science, Israel)
11:15 – 11:45 PM	Tea
Session-8	
11:45 – 12:10 PM	<i>I&AC1: A Novel CMOS Camera for Near Video Rate Fast-FLIM</i> (David Mcloskey , Horiba)
12:10 – 12:35 PM	<i>I&AC2: Technical Challenges from the Consumer Goods Industry</i> (Kapil Krishan , Procter and Gamble)
12:35 – 1:00 PM	<i>I&AC3: Journey from a Bench Researcher to a Startup Founder- Unlearning and Learning the New Ways</i> (Aseem Mishra , KIIT)
1:00 PM – 2:00 PM	Lunch @ JNU Cafeteria
2:00 – 4:00 PM	Hands-on Training Session at AIRF, SPS and IITD
4:00 – 6:00 PM	Poster Session and Tea
6:00 – 6:45 PM	<i>Raman Instrumentation for Spectroscopy and Imaging</i> (Chandrabhas Narayana , JNCASR)
'Fluorescence Society Lectures'	
Session-9 (Chair: Supdita Maiti)	
6:45 – 7:15 PM	<i>FSL1: Understanding Microsecond Function-Related Dynamics of Proteins with Single-Molecule Fluorescence</i> (Gilad Haran , Weizmann Institute of Science, Israel)
7:15 – 7:45 PM	<i>FSL2: Photon Pressure-Induced Aggregation of Polymers from Solution</i> (Trevor Smith , University of Melbourne)
7:45 – 8:15 PM	<i>FSL3: Understanding MOFs to Topology using Raman Spectroscopy</i> (Chandrabhas Narayana , JNCASR)
8:30 – 10: 00 PM	Dinner @ JNU Cafeteria

*I&AC: Industry & Academia Collaboration, FSL: Fluorescence Society Lectures

Day-5: Friday, 16th November, 2018

8:00 – 8:45 AM	Breakfast @JNU Cafeteria
Session-10 (Chair: A S R Koti)	
9:00 – 9:40 AM	<i>PL: The Power of Protein Folding</i> (Julio Fernandez , Columbia University)
9:40 – 10:10 AM	<i>FSL4: Tossing Coins inside Cells</i> (Roop Malik , TIFR, Mumbai)
10:10 – 10:30 AM	<i>IL1: Chaperone acts as a Mechanical Foldase: Studied by Covalent Magnetic Tweezers, SmFRET and PETFCS Technology</i> (Shubhasis Haldar , Ashoka University)
10:30 – 10:50 AM	<i>IL2: The role of actin-spectrin periodic array in axonal mechanics</i> (Pramod Pullarkat , RRI)
10:50 – 11:10 AM	<i>IL3: Single H-bond that determines the onset of hearing loss</i> (Sabyasachi Rakshit , IISER Mohali)
11:10 – 11:30 PM	Tea
Session-11 (Chair: Souvik Maiti)	
11:30 – 12:00 AM	<i>FSL5: Super-resolution Nanoscopy Reveals Pathways for Creation and Annihilation of Nanoscale Biomembrane Domains Induced by Toxin Nanopore Formation</i> (Jaydeep K Basu , IISc Bangalore)
12:00 – 12:20 PM	<i>IL5: Unique Nanodot as a Marker to Ease the Method of Correlative Super Resolution Microscopy</i> (Chayan K Nandi , IIT Mandi)
12:20 – 12:40 PM	<i>IL6: Optical Properties of Graphene: Are many body Effects important?</i> (Subhasis Ghosh , JNU)
12:40 – 1:00 PM	<i>IL7: Controlling Chemical Reactions by Coupling to Vacuum Field</i> (Jino George , IISER Mohali)
1:00 PM – 2:00 PM	Lunch @ JNU Cafeteria
Session-12 (Chair: G Krishnamoorthy)	
2:00 – 2:20 PM	<i>IL8: Intrinsic Fluorescence from Protein Charge Transfer States: Photochemical features and Application</i> (Rajaram Swaminathan , IIT Guwahati)
2:20 – 2:40 PM	<i>IL9: Reversible Chemical Probes for Tracking Metal Ions in vivo</i> (Ankona Datta , TIFR, Mumbai)
2:40 – 3:00 PM	<i>IL10: Luminescent Metal Nanoclusters: The Next Generation Fluorophores</i> (Saptarshi Mukherjee , IISER Bhopal)
3:00 – 3:20 PM	<i>IL11: Propellerocin: A New Class of Water-soluble Solvatochromic Dye for Bio-imaging and Determination of Organelle Micropolarity</i> (Apurba Lal Koner , IISER Bhopal)
3:20 – 3:40 PM	<i>OP1: Photophysics of Soluble Fluorescent Derivatives of Poly(Phenylenevinylene)</i> (Debabrata Mandal , Calcutta University)

3:40 – 4:00 PM	<i>OP2: Conformational Mechanics of the of Hsp70 DnaK</i> (Soumit S Mandal, IISER Tirupati)
4:00 – 4:30 PM	Tea
Session-13 (Chair: Neel S. Bhavesh)	
4:30 - 4:50 pm	<i>IL12: Imaging Fluorescence Correlation Spectroscopy: A technique comes of age</i> (Thorsten Wohland , NUS)
4:50 – 5:10 pm	<i>IL13: A meso-Substituted Porphyrin Alleviates Toxicity in Neuroblastoma Cells by Facilitating a Conformational Switch in Alpha Synuclein Oligomers</i> (Krishnananda Chattopadhyay, IICB Kolkata)
5:10 – 5:30 pm	<i>IL14: Dynamics of Membrane-bound Ras1 in a Sterol Deficient Strain of Candida albicans and its Implications for Virulence of the Pathogen</i> (Sneha Sudha Komath, JNU)
5:30 – 5:50 pm	<i>IL15: Cellular and Molecular Imaging of Host-Pathogen Interactions: A Step towards Drug Discovery in a New Light</i> (Shailja Singh, JNU)
5:50 – 6:10 pm	<i>IL16: Understanding Intracellular Protein Folding</i> (Kausik Chakraborty, IGIB)
7:00 PM onwards	Banquet DINNER @IIT Delhi

*PL: Plenary Lecture, IL: Invited Lecture, OP: Oral Presentation

Day-6: Saturday, 17th November, 2018

8:00 – 8:45 AM	Breakfast @JNU Cafeteria
Session-12 (Chair: Gilad Haran)	
9:00 – 9:20 am	<i>IL17: Structural Intricacy and Raman Signature of Protein Prior to Their Transformation into Amyloid like Fibrillar State</i> (Nakul C Maiti , IICB Kolkata)
9:20 – 9:40 am	<i>IL18: Synthesis of Dendritic Silver Nanostructures using Green Tea and its application in SERS Based Ultra-sensitive Detection of Biotic and Abiotic Contaminants</i> (Jaydeep Bhattacharyya, JNU)
9:40 – 10:00 am	<i>IL19: Internal Friction in Single Extended Protein and its Role in Folding</i> (Shivprasad Patil, IISER Pune)
10:00 – 10:20 am	<i>IL20: Probing the Structural and Dynamical Behavior of Protein at the Single Molecular Level</i> (Pratik Sen, IIT Kanpur)
10:20 – 10:40 am	<i>IL21: Osmolytes as Multifaceted additives in Modulation of Protein Aggregation Pathway</i> (Shashank Deep, IIT Delhi)

10:40 - 11:00 am	<i>IL22: RuvC exploits the Conformational Dynamics of the Holliday Junction for Catalytic Specificity</i> (Nibedita Pal , IISER Tirupati)
11:00 – 11:30 AM	Tea
Session-13 (Chair: Jaydeep K Basu)	
11:30 – 11:50 AM	<i>IL23: 2D MoSe2 Based Materials for Opto-Electronic Applications</i> (Sameer Sapra , IIT Delhi)
11:50 – 12:10 PM	<i>IL24: Highly Electron-Deficient and Electron-Rich Molecules and their Stable Radical Ions</i> (Pritam Mukhopadhyay , JNU)
12:10 – 12:40 PM	<i>IL25: Single-shot Digital Holographic Microscopy: New results, device development, and database for diagnostics</i> (Kedar Khare , IIT Delhi)
12:40 – 1:00 PM	<i>IL26: Perspective of Global and Target Analysis for Ultrafast Transient Absorption Data</i> (Prakriti R Bangal , ICT Hyderabad)
1:00 PM – 2:00 PM	Lunch @ JNU Cafeteria
Session-14 (Chair: Trevor Smith)	
2:00 – 2:20 PM	<i>IL27: Frictional Response and Viscosity Decoupling in Deep Eutectics: Experiments and Theory</i> (Ranjit Biswas , SNBNCBS Kolkata)
2:20 – 2:40 PM	<i>IL28: Sensing Across Scales: Fluorescent Biosensors and Probes for Cellular Dynamics and Protein activities</i> (Akash Gulyani , INSTEM Bangalore)
2:40 – 3:00 PM	<i>IL29: Probing Mechanism of RNA Recognition in Proteins Catalyzing Epigenetic Modifications onto RNA</i> (Ruchi Anand , IIT Bombay)
3:00 – 3:20 PM	<i>IL30: A Novel cuvette-FCS setup for Single Molecule Measurements of Protein Unfolding and early stages of Protein Aggregation</i> (Kanchan Garai , TIFR Hyderabad)
3:20 – 3:40 PM	<i>OP3: An effective Cell-mimetic Ionogels for the Drug Encapsulation</i> (Naved Anjum Malek , SVNIT Surat)
3:40 – 4:00 PM	<i>OP4: Rapid Volumetric Imaging in Cell Biology: Examples from Endosomal Trafficking and Membrane Cytoskeleton Interactions</i> (Harrison M York , University of New South Wales)
4:00 – 6:00 PM	Poster Session and Tea
Session-15 (Chair: R. Swaminathan)	
6:00 - 6:20 PM	<i>IL31: Optical Techniques for Understanding Intrinsically Disordered Proteins</i> (Sudipta Maiti , TIFR Mumbai)
6:20 – 6:40 PM	<i>IL32: Temperature Dependent Malleability of Ubiquitin and SUMOs</i> (A S R Koti , TIFR Mumbai)

6:40 – 7:00 PM	<i>IL33: Spatially-Synchronous Fluorescence Blinking in Micro-Crystals</i> (Arindam Chowdhury, IIT Bombay)
7: 00 – 7:30 PM	Ending Credits, Poster Awards, Mihir Student Chowdhury Fellowship, Feedback and Deciding the Venue for the Next FCS Meeting
7:30 – 10:00 PM	Dinner @ JNU Cafeteria