



Asian Chemical Biology Initiative

ACBI Meeting 2022
September 14 to 18, 2022

Indian Institute of Science Education and Research
(IISER), Pune and Zuri White Sands, Goa, India



Wednesday, September 14, 2022

**Venue: Pandit Madan Mohan Malaviya Seminar Hall
Guest House, IISER Pune**

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| 08:30 – 09:00 | Registration |
| 09:15 – 09:30 | Inauguration |
| Session 1 Chairperson: Prof. Jayant Udgaonkar, Director IISER Pune | |
| 09:30 – 10:00 | IL1: Prof. Sandeep Verma , Secretary of SERB and Professor at IIT Kanpur Peptide-based palette in chemical neuroscience and structured materials |
| 10:00 – 10:20 | IL2: Prof. Siddhesh Kamat , IISER Pune A metabolomics approach towards enzyme function annotation |
| 10:20 – 10:40 | IL3: Prof. Dhanasekaran Shanmugam , National Chemical Laboratory (NCL) Pune Chemo-genetic phenotyping of apicoplast mediated delayed death in <i>Toxoplasma gondii</i> |
| 10:40 – 11:00 | IL4: Prof. Karishma Kaushik , Savitribai Phule Pune University Adding a new dimension: Multi-level structure and organization of mixed-species <i>Pseudomonas aeruginosa</i> and <i>Staphylococcus aureus</i> biofilms in a 4-D wound microenvironment |
| 11:00 – 11:30 | High TEA |
| Session 2 Chairperson: Prof. M. Jayakannan, IISER Pune | |
| 11:30 – 11:50 | IL5: Prof. Sun Choi , Ewha Womans University, Seoul, Korea Comprehensive computational studies of adenosine receptor for the elucidation of mechanism of action and drug discovery |
| 11:50 – 12:10 | IL6: Prof. Young-Tae Chang , POSTECH, Korea Universal strategy for live cell distinction by fluorescent imaging probe |
| 12:10 – 12:30 | IL7: Prof. H. N. Gopi , IISER Pune Attenuating the A β ₄₂ aggregation and its cytotoxicity by designed hybrid peptide foldamers |
| 12:30 – 12:50 | IL8: Prof. Ankona Datta , Tata Institute of Fundamental Research (TIFR, Mumbai) Chemical tools for tracking autophagy |
| 12:50 – 13:00 | Dr. Ajit K Sharma , Royal Society of Chemistry |
| 13:00 – 16:30 | Lunch followed by Students' poster session (including tea and coffee break) |
| Session 3 Chairperson: Prof. Srinivas Hotha, IISER Pune | |
| 16:30 – 16:50 | IL9: Prof. Pinaki Talukdar , IISER Pune Artificial ion transport as a tool to target cancer |

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| 16:50 – 17:10 | IL10: Dr. Janesh Kumar , CSIR-CCMB Hyderabad Emerging insights into functions and modulation of kainate receptors |
| 17:10 – 17:30 | IL11: Dr. Amrita Hazra , IISER Pune Engineering the biosynthesis of unnatural vitamin B2 analogs-probing the molecular basis of nucleobase specificity |
| 17:30 – 17:40 | Dr. Anindita Adak , Solution Scientist Merck Synthia™- A retrosynthetic software by Merck |
| 17:40 – 17:45 | Closing remarks and vote of thanks |
| 19:30 – 22:00 | Dinner |



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September 15 to 18, 2022

Venue: Zuri White Sands, Goa

Thursday, September 15, 2022

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| 15.30 – 16.30 | Registration |
| 16:30 – 16:45 | Inauguration and opening address by ACBI members Prof. Motonari Uesugi, Prof. Sandeep Verma and Prof. K. N. Ganesh |
| Session 1 Chairperson: Prof. Kenji Monde, Hokkaido University, Japan | |
| 16:45 – 17:10 | IL1: Prof. Motonari Uesugi , Kyoto University, Japan Self-assembling bioactive small molecules |
| 17:10 – 17:30 | IL2: Prof. Ruchi Anand , Indian Institute of Technology, Bombay Decoding origins of antibiotic resistance via deciphering the mechanism of targeting of pathogenic ribosomal methyltransferase |
| 17:30 – 17:50 | IL3: Prof. Vishal Rai , Indian Institute of Science Education and Research, Bhopal Human nature inspires precision engineering of proteins |
| 17:50 – 18:10 | IL4: Dr. Niti Kumar , Central Drug Research Institute, Lucknow Probing into unique genome and proteome maintenance pathways for design of alternative antimalarial intervention strategies |
| 18:10 – 18:20 | Dr. Ajit K Sharma , Royal Society of Chemistry |
| 19:00 – 22:00 | Dinner (Sponsored by The Royal Society of Chemistry) |

Friday, September 16, 2022

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| Session 2 Chairperson: Prof. K. N. Ganesh, Director IISER Tirupati | |
| 09:30 – 9:55 | IL5: Prof. Kenji Monde , Hokkaido University, Japan Malabaricone C, an inhibitor of SARS-CoV-2 infection, the SAR & mechanism studies |
| 09:55 – 10:20 | IL6: Dr. Souvik Maiti , Institute of Genomics and Integrative Biology, New Delhi Biophysical insight into FnCas9 Editor Linked Uniform Detection Assay (FELUDA): FELUDA-V2 |
| 10:20 – 10:40 | IL7: Prof. Harinath Chakrapani , Indian Institute of Science Education and Research, Pune Chemical tools to modulate the cellular sulfane sulfur pool |
| 10:40 – 11:00 | IL8: Prof. Ishu Saraogi , Indian Institute of Science Education and Research, Bhopal Identification of small molecules for therapeutic applications |

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| 11:00 – 11:30 | Tea Break |
| Session 3 Chairperson: Dr. Anil Kumar Mishra, INMAS Delhi | |
| 11:30 – 11:55 | IL9: Prof. Kazuya Kikuchi , Osaka University, Japan In vivo multicolor imaging with fluorescent probes revealed dynamics and function of osteoclast proton pump |
| 11:55 – 12:20 | IL10: Prof. T. Govindaraju , JNCASR Bangalore Alzheimer's disease: pathophysiology, diagnostics and therapeutics |
| 12:20 – 12:40 | IL11: Prof. Reji Varghese , Indian Institute of Science Education and Research, Thiruvananthapuram Circularly polarised luminescence enabled highly specific detection of potassium ions using DNA-based sensors |
| 12:40 – 12:50 | IL12: Prof. S. G. Srivatsan , Indian Institute of Science Education and Research, Pune Probing nucleic acid conformation and recognition using nucleoside analogs |
| 12:50 – 13:00 | Thermo Fisher Scientific |
| 13:00 – 14:30 | Lunch |
| Session 4 Chairperson: Prof. H. N. Gopi, IISER Pune | |
| 14:30 – 14:55 | IL13: Prof. Hiroki Oguri , University of Tokyo, Japan Chemo-enzymatic synthesis of tetrahydroisoquinoline alkaloids and their analogs exhibiting potent anti-cancer activities |
| 14:55 – 15:20 | IL14: Prof. Manickam Jayakannan , Indian Institute of Science Education and Research, Pune Synthetic Polymer Nanoscaffolds to Breach Blood Brain Barrier |
| 15:20 – 15:40 | IL15: Prof. Shobhna Kapoor , Indian Institute of Technology, Bombay Chasing the functions of Mycobacterium Tuberculosis Glycolipids during Infection using Chemical Proteomics and Membrane Biophysics |
| 15:40 – 15:50 | Dr. Paidi Yella Reddy , Sapala Organics Pvt. Ltd, Hyderabad A Journey Towards Large-Scale Manufacturing and Modified Phosphoramidites for Therapeutic Oligonucleotides. |
| 15:50 – 16:00 | Ms. Ruta Nachane , Cytiva India Sense and sensitivity : Screening and characterisation of fragments against WT GPCR targets using Biacore Systems. |
| 16:00 – 16:30 | Tea Break |
| Session 5 Chairperson: Prof. Sandeep Verma, Secretary SERB and Professor at IIT Kanpur | |
| 16:30 – 16:55 | IL16: Shri. Sanjeev Kumar Varshney , Adviser & Head International Cooperation, Department of Science & Technology (DST). Government of India International Scientific Cooperation and Funding Opportunities from DST |
| 16:55 – 17:30 | Building the future Chemical Biology community in Asia Prof. Motonari Uesugi, Prof. K. N. Ganesh, Prof. Sandeep Verma Followed by discussion |
| 19:30 – 22:30 | Banquet Dinner (Sponsored by American Chemical Society) |

Saturday, September 17, 2022

| Session 6 Chairperson: Prof. Kazuya Kikuchi, Osaka University, Japan | |
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| 09:30 – 9:55 | IL17: Prof. Takeaki Ozawa , University of Tokyo, Japan Imaging and controlling G-protein coupled receptors activities in living cells |
| 09:55 – 10:20 | IL18: Prof. Eylon Yavin , The Hebrew University of Jerusalem, Israel Bright FIT-PNAs: Sensitive probes for RNA detection |
| 10:20 – 10:40 | IL19: Dr. Dhiraj Bhatia , Indian Institute of Technology, Gandhinagar DNA based programmable nanodevices to instruct biological systems |
| 10:40 – 11:00 | IL20: Prof. Jeet Kalia , Indian Institute of Science Education and Research, Bhopal A metabolic labeling-based chemoproteomic platform establishes choline metabolites as profound protein function modulators |
| 11:00 – 11:30 | Tea Break |
| Session 7 Chairperson: Prof. Meital Rechtes, The Hebrew University of Jerusalem, Israel | |
| 11:30 – 11:50 | IL21: Prof. Srinivas Hotha , Indian Institute of Science Education and Research, Pune Chemical glycan editing |
| 11:50 – 12:10 | IL22: Prof. Suvarn Kulkarni , Indian Institute of Technology, Bombay Bacterial rare sugars: what can we do with them? |
| 12:10 – 12:30 | IL23: Prof. Dimpny Kalia , Indian Institute of Science Education and Research, Bhopal Sensitive free cysteine detection and rapid protein bioconjugation via facile Michael addition-elimination reactions |
| 12:30 – 12:50 | IL24: Dr. Shailja Singh , Jawaharlal Nehru University, New Delhi Discovery and Development of medicines for Malaria: progress, challenges and recommendations |
| 13:00 – 14:15 | Lunch |
| 14:45 onwards: sightseeing, city tour and dinner | |

Sunday, September 18, 2022

| Session 8 Chairperson: Prof. Ruchi Anand, IIT Bombay | |
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| 09:00 – 09:25 | IL25: Prof. Meital Rechtes , The Hebrew University of Jerusalem, Israel Peptide-based functional assemblies and coatings |
| 09:25 – 09:45 | IL26: Dr. Sudeshna Manna , University of Utah, USA Breaking riboswitch speed limits through engineering and rational design of an RNA-based biosensor |
| 09:45 – 10:05 | IL27: Dr. N. Ayyadurai , CSIR-CLRI Building Biomaterials through Genetic Code Expansion |
| 10:05 – 10:25 | IL28: Prof. Sun Choi , Ewha Womans University, Seoul, Korea Comprehensive computational studies of adenosine receptor for the elucidation of mechanism of action and drug discovery |

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| 10:25 – 10:45 | IL29: Prof. Young-Tae Chang , POSTECH, Korea Universal strategy for live cell distinction by fluorescent imaging probe |
| 10:45 – 11:00 | Closing remarks and vote of thanks |
| 11:00 – 11:30 | Tea Break and Departure |