

INTERNATIONAL CONFERENCE ON CELLULAR & MOLECULAR ELECTRON TOMOGRAPHY and 2ND WORKSHOP ON ELECTRON TOMOGRAPHY OF BIOLOGICAL SPECIMENS

NEW DELHI, INDIA
<https://saifaiims.com>

Workshop: 17-20, April 2023
Conference :21-22, April 2023



THEME OF THE CONFERENCE

- ❖ *Recent advances in Electron Tomography in biological & biomedical field.*
- ❖ *In-situ architecture of the macromolecular assembly in cells*
- ❖ *Latest developments in sub-tomogram classification and averaging*
- ❖ *Cryo-ET in disease diagnostics & healthcare*

HIGHLIGHTS OF WORKSHOP

- ❖ *Sample Preparation (Plunge freezing, High-Pressure Freezing, CEMOVIS etc*
- ❖ *Screening and Tilt-Series acquisition on 200/300KV Cryo-TEM*
- ❖ *Data processing with IMOD , eTOMO and other software*
- ❖ *Sub tomogram averaging, reconstruction and segmentation*

Organized by

Electron Microscope Facility
Department of Anatomy
AIIMS, New Delhi

Overview of the International Conference: Electron Tomography (ET) with 3D image reconstruction (RT & Cryo) showed the potential to revolutionize biology and life science as a powerful tool for in situ macromolecular structure determination from their projections recorded at several angles. This can investigate the macromolecular complexes in the context of the cell or tissue in native environments with atomic-scale resolution in their spatial relationships and interactions with cells or tissues. Cryo-ET is now rapidly developing a diagnostic and research tool that enables structural biologists to determine the structure of proteins in their native cellular environment to sub-nanometer resolution. The upcoming two days of International conferences on **Molecular and Cellular Electron Tomography (MCET-2023)** will explore the potential of cryo-ET in the biomedical, biological, and diagnostics fields.

Overview of Workshop (Electron Tomography of Biological Specimen): We are organizing a four-day workshop and training program that will focus on providing introductory knowledge of Electron Tomography (RT and Cryo), hands-on for sample preparation using plunge freezing, cryo-ultramicrotomy, or cryo-focused ion- beam, glow discharge, growing cells on grids, transfer of grid to the EM, and handling, tilt series data collection, and processing with IMOD and eTomo software. The workshop will be planned with theoretical/methodological lectures and hands-on practical sessions simultaneously. This training is scheduled for capacity-building and improvement of research for the Indian researchers, post-docs, faculties, scientists, and R&D industries working in the relevant area.

About EMF: The Electron Microscopy Facility (EMF) was established in the year 1971 in the Department of Anatomy, All India Institute of Medical Science (AIIMS), serving as a nodal center for excellence in biological electron microscopy for disease diagnostics/ ultrastructural imaging to help more than 1900 research laboratories (registered with EMF) across India to foster their research for electron microscopy imaging. We have regularly providing training for scientific investigators and technicians for biological electron microscopy since 1986.

Selection Criteria for Workshop: This workshop accommodates a maximum of 12-15 participants. Participants require to submit a small write-up explaining the statement of purpose regarding the importance of electron tomography in their research. The applicants must substantiate the relevance of attending the training program to their current research project or interest.

Selection Criteria for Conference: The conference is open to all with an elementary knowledge of biological electron microscopy, SPA, or Electron tomography (RT/cryo-ET).

Invited Speakers

<p>Prof. Partha Ghosal Scientist G & Head-Electron Microscopy DMRL, Hyderabad</p>		<p>Dr. Partha Pratim Datta Associate Professor Dept of Biological Sciences (DBS), IISER, Kolkata</p>	
<p>Dr. Manidipa Banerjee <i>Professor, School of Biological Sciences, IIT Delhi</i></p>		<p>Dr. Saikat Chowdhury CSIR-Centre for Cellular and Molecular Biology (CCMB) Hyderabad - 500 007, India</p>	
<p>Dr. Vidya Mangala Prasad Assistant Professor Indian Institute of Science, Bangalore, Karnataka</p>		<p>Dr. Tofayel Ahmad Associate Professor Saha Institute of Nuclear Physics (SINP) Kolkata, India</p>	
<p>Dr. Somnath Dutta Assistant Professor, Molecular Biophysics Unit Indian Institute of Science, Bengaluru</p>		<p>Dr. Debnath Ghoshal, Department of Biochemistry & Molecular Biology, University of Melbourne, Australia</p>	
<p>Dr. Vineet Chaudhary Assistant Professor, Dept. of Biotechnology, AIIMS, New Delhi</p>		<p>Dr. Digvijay Singh University of California, San Diego, USA</p>	
<p>Dr. Ramanathan Natesh Associate Professor IISER Thiruvananthapuram</p>		<p>Dr. Gayathri Pananghat Associate Professor, Biology IISER Pune</p>	
<p>Dr. Appu Kumar Singh, Assistant Professor Dept of Biological Sciences & Bioengineering (BSBE) IIT-Kanpur</p>		<p>Dr. Saikat Chakraborty, Research Scientist, Department of Molecular Structural Biology, Max Planck Institute of Biochemistry, Martinsried, Munich, Germany</p>	
<p>Dr. Ramanujan Srinivasan Reader - F Biological Sciences, NISER Bhubaneswar</p>		<p>Dr. Dilip Kumar Assistant Professor, Trivedi School of BioSciences, Ashoka University, NCR P.O. Rai, Sonapat, Haryana</p>	
<p>Dr. Smarajit Polley Assistant Professor, Biophysics Bose Institute Kolkata</p>			
<p>Hands-On Training Support</p>			
<p>Shikha Chaudhary, AIIMS, New Delhi</p>	<p>Sania Yashmin AIIMS, New Delhi</p>		
<p>Dr. Ravi Prakash, AIIMS, New Delhi</p>	<p>Srishty Raman, AIIMS, New Delhi</p>		
<p>Thermo Fisher Scientific Representative</p>	<p>Zeiss India Representative</p>		
<p>Leica India Representative</p>			

Registration process for Workshop and Conference:

The complete application form must contain the following details- (1) Name (2) Age (3) Department and University/Institute Postal address (4) e-mail ID (5) mobile no. (6) Educational qualifications from graduation onward indicating a year of passing (7) Present affiliation & research experience in brief (8) letter of recommendation from the present employer/research supervisor (for Ph.D. candidates) (9) write-up of present work/research interest including a statement of purpose regarding the importance of electron tomography in your research.

Point number 08 and 09 is not required for conference participants

The complete application form may be sent to emfdbtsahaj@gmail.com or directly apply through the google form at this link (https://docs.google.com/forms/d/e/1FAIpQLSerhrTHT4k3JopxiaWLBnvR6-GQc_f2wqi2h-rIDy18sp6PFQ/viewform?usp=sf_link) or available on <https://saifaiims.com> before **Feb 28th, 2023**.

Only, the finally selected candidates will be informed by email on 10th March 2023, and they must deposit/transfer the nonrefundable registration fee before 31st March 2023.

Registration Fee:

Participants for	Workshop	Conference	Workshop & Conference
For Student	2000 INR	1000 INR	2500 INR
For PhD/ Post Doc	3000 INR	1500 INR	4000 INR
For Faculty & Scientist	4000 INR	2000 INR	5000 INR
For Industry	10000 INR	5000 INR	13000 INR

(Registration fee includes workshop fee, workshop materials, catering during the day including lunch)

NOTE: The course fee does not include **boarding**. Participants are advised to **arrange for boarding well ahead of the conference**.

Organising Committee:

Electron Microscope Facility, Department of Anatomy, All India Institute of Medical Sciences, New Delhi (AIIMS), Tel: +91-011-26593568; 26549121 & 27; emfdbtsahaj@gmail.com

Dr. Subhash C Yadav (Additional Professor)

Dr. Ravi Prakash (Scientist)

Dr. Prabhakar Singh (Asst. Professor)

Prof. T. C. Nag (Professor)

Advisory Committee:

Dr. Garima Gupta, Department of Biotechnology, Govt. of India
Prof A. Shariff, Head of the Department, Anatomy, AIIMS, New Delhi
Prof. Manidipa Banerjee, Kusuma School of Biological Sciences, IIT, Delhi
Prof. Suneel Kateriya, School of Biotechnology, JNU, New Delhi
Dr. Gopaljee Jha, NIPGR, New Delhi
Dr. C. V. Srikanth, RCB, Faridabad
Dr. N K Prasanna, Senior Scientist, CSIR-NIScPR, New Delhi