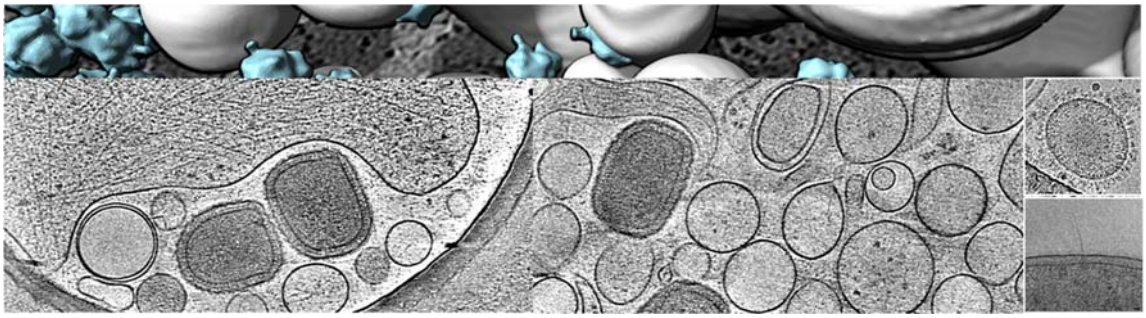
Online workshop: New Advances in CryoEM for Molecular and Cell Biology

Data: 8th Sep & 9th Sep

Participation is free but registration is required for WebEX access information

Registration link: https://cvent.me/Om2dyg



Understanding how cells, tissues and whole organisms work requires visualizing protein, membrane and organelle ultrastructure in their cellular context.

Cryo-electron tomography provides 3D snapshots of proteins or other subcellular structures at work within their functional cellular environments, allowing researchers to investigate how membranes, protein complexes and cellular organelles work together to carry out major processes in a cell. This is because cryo-ET delivers both structural information about individual proteins/membrane/organelle structure as well as their spatial arrangements within the cell in their near-native states, making it a truly unique technique. Cryo-ET has enormous potential for cell biology as it bridges the gap between light/super-resolution microscopy and near-atomic resolution techniques like single-particle analysis cryo-electron microscopy.

In the past two years, **Academia Sinica has established a state-of-the-art cryo-EM facility and proudly provides a world class platform for atomic resolution structures of purified proteins.** Recently, we are establishing our cryo-correlative light (fluorescence) and electron microscopy (CLEM) and cryo-ET for cellular ultrastructures *in situ.* On Sep 8 and 9, **Academia Sinica** and **Thermo Fisher Scientific** invite you to attend an introductory session on cryo electron tomography for cell biologists. On-line demonstration will provide you an overall workflow and practical consideration for your cryo-ET experiments including steps from sample preparation to data processing and presentation.

Currently, we have Profs. Wah Chiu (NAS elected member, S2C2 director), Werner Kühlbrandt (Director of the Max Planck Institute of Biophysic). Peijun Zhang (Director of eBIC), Yi-Wei Chang (UPenn) and Sai Li (Tsing-Hua university) to talk about their recent exciting findings. The selected talks will show you cutting-edge researches related to how cells respond to pathogenic infection, COVID-19 virus assembly inside the cell, and organelle architecture in plant cells.

Agenda				
Day 1 (Sep 8)	Time	Topic	Speaker	Affiliation
	9:30	Opening talk	Ming-Daw Tsai	Academia Sinica
	9:35	A message from the President of Material and Structure Division	John Sos	Thermofisher Scientific
	9:40	Cryo-electron tomography of cells in normal and pathological states	Wah Chiu	S2C2
	10:30	Tea break		
	10:40	In-cell structures of the rhoptry secretion system in apicomplexan parasites revealed by cryo-ET	Yi-Wei Chang	UPenn
	11:10	Cryo-electron tomography of cells in normal and pathological states	Eric Chen	Thermofisher Scientific
	12:00	Lunch Break		
	14:00	Turn on the light: Aquilos 2 with iFLM	Alex Rigot	Thermofisher Scientific
	14:30	Live Demo: Sample Vitrification	SHNNP	Thermofisher Scientific
	15:15	Tea break		
	15:30	Live Demo: Cryo-FIB milling	SHNNP	Thermofisher Scientific
	16:00	CLEM	TBA	Thermofisher Scientific
	16:30	Q&A	Joseph Ho	Academia Sinica
	17:00	TBA	Invited Speaker	TBA
	17:30	TBA	Invited Speaker	TBA

Agenda				
Day 2 (Sep 9)	Time	Topic	Speaker	Affiliation
	10:00	Opening talk	Joseph Ho	Academia Sinica
	10:10	TBA	TBA	TBA
	11:00	Town Hall meeting	Joseph Ho	Academia Sinica
	12:00	Lunch Break		
	14:00	Live Demo: Tomography Data collection	SHNNP	Thermofisher Scientific
	14:50	Live Demo: Tomography data 3D reconstruction	SHNNP	Thermofisher Scientific
	15:40	Tea Break		
	16:00	Live Demo: Amira	Jaguar Li	Thermofisher Scientific
	16:45	Tea break		
	17:00	Electron cryo-tomography of energy-converting membrane systems	Werner Kühlbrandt	Max Planck Institute of Biophysics
	17:30	TBA	Invited Speaker	TBA
	18:00	Q&A and wrap up	Joseph Ho	Academia Sinica