

OIST Presidential Lecture 2024

Cinematic Chemistry: The Journey of Electron Microscopy from Molecular Movies to Molecular Statistics



Tue., November 19
13:30 – 15:00 B250

Sydney Brenner Lecture Theater



Recent innovations in electron microscopy, such as aberration correctors, high-speed cameras, and continuous sample rotation, allow us to analyze individual molecules like never before. This lecture introduces “cinematic chemistry,” which has emerged from the single-molecule atomic-resolution time-resolved electron microscopy (SMART-TEM). I will present examples from single-molecule thermodynamics, kinetics, and crystal growth analysis. Our recent findings demonstrate how the decay of diffraction peaks offer insights into the molecular freedom within crystals.

Prof. Eiichi Nakamura

Eiichi Nakamura is Professor Emeritus of Chemistry at the University of Tokyo and holds an endowed chair in Molecular Technology Innovation. He has pioneered the use of atomic-resolution transmission electron microscopy to study molecular motion at the single-molecule level. He has received numerous honors, including the Medal with Purple Ribbon and the Order of the Sacred Treasure.



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