

Challenge and Opportunity: The New Era of cryo-EM

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With recent breakthroughs of image processing algorithms and image recording devices, cryo-EM has entered a new era with atomic structures being produced on daily basis. In the first part of my talk, I will briefly introduce these exciting advancements of cryo-EM and illustrates with a few examples from my lab the exceptional ability of cryo-EM in high-resolution structural determination of various biological samples. One particularly interesting system I am currently working on is DNA replication initiation in eukaryotes. I will show that how cryo-EM contributes to the structural determination of the yeast MCM2-7 double hexamer complex, and what functional insights we could derive from these structural analyses. I will also discuss, with examples from my lab, the current bottle necks of cryo-EM method, and my personal perspective of solutions.