

De-demystifying 2017 Nobel Prize in Chemistry from a structural biologist view

Wednesday, 21 March 2018 11:00 (1h 30m)

Since the year of 2013, Low temperature transmission electron microscope operated at high voltage (cryo-EM) has suddenly emerged as a powerful tool for elucidating virtually “solution” structures of many proteins to near atomic resolution, allowing for the building of PDB model directly from the cryo-EM “Coulomb Map”. However, the last year Nobel Prize has gone to three scholars that seems not to have direct contributions as to the technology breakthroughs that transformed cryo-EM. In this lecture, I will brief transverse the landscape the development of cryo-EM since 1974 to address milestones in the advance of cryo-EM including the pioneering effort by those three laureates, and the final removal of the key barriers of resolution by technology advance in (1) direct electron camera; (2) microscope automation; and (3) Bayesian-based algorithm for 3D reconstruction, despite none of the inventor of the above has been rewarded with Nobel prize.

Presenter: Dr CHANG, Wei-Hau (Academia Sinica)

Session Classification: CryoEM Workshop