

## **Ultrafast Electron Crystallography**

Ahmed Zewail, California Institute of Technology, Pasadena, CA,  
USA. E-mail: [zewail@caltech.edu](mailto:zewail@caltech.edu)

In this talk, we will overview recent advances in crystallography bringing in the dimension of time in what we term ultrafast electron crystallography (UEC). The new approach make it possible to record frames of diffraction at different times and with resolution reaching the picosecond-femtosecond time scale. Examples will be given to recent studies of crystals, interfaces, and macromolecular structures. We will also compare with studies of isolated molecular systems. UEC promises to be a powerful advancement for many applications and we will conclude by highlighting some of the new directions.

**Keywords:** **ultrafast crystallography, interfaces, macromolecules**