**In-situ XRD**

To develop high performance electrode materials for rechargeable batteries, understanding of the underlying mechanisms is necessary. One important technique to investigate structural evolution of the active materials during charge-discharge is X-ray diffraction. While ex-situ measurement provides high quality data for phase identification, it requires multiple samples preparation and post-treatment of those samples prior to the measurement that might alter certain structure and cause incorrect analysis. On the contrary, in-situ x-ray diffraction offers an opportunity to characterize structure of the electrode through real time charge-discharge cycling of a battery. This session will compare between two modes and explore a change in a battery’s electrode structure via in-situ XRD measurement.

