

## TOWARD ATTO-PUMP-ATTO-PROBE SPECTROSCOPY OF ELECTRONIC DYNAMICS

WEN LI, *Department of Chemistry, Wayne State University, Detroit, MI, USA.*

Attosecond spectroscopy promises a real-time probe of electronic dynamics, such as those involved in nonsequential two-photon double ionization (NSDI) and charge migration driven by electron correlation and electronic relaxation. A XUV-pump-XUV-probe setup is considered a general method for implementing attosecond spectroscopy, similar to the pump-probe scheme that has been successfully applied in femtosecond spectroscopy. However, major technical issues need to be solved in order to carry out such experiments in attosecond time-domain.

In this talk I will discuss our effort in developing such techniques through two different routes: 1) intense high harmonic generation and 2) attosecond angular streaking. In the first approach, we achieved ion-electron coincidence detection of two-photon double ionization of an atomic system using intense XUV pulses produced through high harmonic generation. In the second approach, employing a novel attosecond angular streaking technique, we probed electron dynamics taking place in the first 500 attoseconds after pumping. These techniques will ultimately bring time-resolved spectroscopy to the attosecond domain.