Abstract:
In this talk I will compare different approaches to making "Molecular Movies". The aim is to capture molecular dynamics such as bond breaking, internal conversion and isomerization in real time using ultrafast laser pulses. Many different techniques provide windows on these dynamics, but there is no single approach that provides a complete picture. I will compare strong field ionization, time-resolved photoelectron spectroscopy and ultrafast electron diffraction as probes of internal conversion and dissociation. I will compare all three techniques with ab initio calculations of the dynamics in order to highlight their strengths and weaknesses.