

# Joint CQSE and CASTS Seminar

Weekly Seminar  
Jan. 5, 2012 (Thursday)

TIME Jan. 5, 14:30  
TITLE Dynamic Imaging of molecules with ultrafast infrared lasers  
SPEAKER Prof. Chii-Dong Lin  
Department of Physics, Kansas State University  
PLACE Rm716, CCMS & New Physics Building, NTU

## Abstract

X-ray and electron diffractions are the conventional tools for determining the static structure of molecules and solids. To probe these systems undergoing structural changes, in recent years major efforts have been devoted to the construction of femtosecond sources of X-ray and electron pulses. An alternative imaging approach is to use laser-ionized bursts of coherent electron wave packets that self-interrogate the parent molecular structure. I will show how one can use photoelectron momentum spectra and high-order harmonics generated by near-infrared lasers to probe the dynamics of structural changes with sub-Angstrom spatial and few-femtosecond temporal resolutions. The basic physics behind this new method is documented in a recent topical review: C. D. Lin et al., Journal of Physics B43, 122001 (2010).

