CFEL SCIENCE

SEMINAR

12th January 2017 - 10:00 h

CFEL – Building 99, seminar room I+II (ground floor)

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The Time-Resolved Photoelectron Imaging as a Probe of Ultraviolet Relaxation Dynamics

Time-resolved photoelectron imaging (TRPEI) provides a highly-differential probe of non-adiabatic relaxation dynamics in molecules following ultraviolet excitation. Developing detailed insight into such processes is vital in understanding, for example, the “photo-protection” provided by chemical systems such as melanin and the “photo-stability” exhibited by DNA. A particular aim is to move beyond traditional structure-function relationships that often underpin mechanistic chemical interpretation, and build the case for considering a more complete structure-dynamics-function picture. Particular attention will be given to information provided by the photoelectron angular distribution, which provides an extremely sensitive probe of various non-adiabatic pathways that may (or may not) be involved in energy redistribution and relaxation. This will be illustrated using several examples of small aromatic molecules that have been implicated in playing a role in ultraviolet photo-protection within larger biological systems.

Host: Terry Mullins / CFEL Molecular Physics Seminar