

Abstract Submitted
for the DAMOP08 Meeting of
The American Physical Society

Towards femtosecond time-resolved XUV photoionization studies of Helium nanodroplets OLIVER GESSNER, OLEG KORNILOV, CHIA WANG, ANDREW HEALY, Lawrence Berkeley National Laboratory, Berkeley CA, USA, MATHEW LEONARD, CHUNTE PENG, STEPHEN LEONE, DANIEL NEUMARK, Lawrence Berkeley National Laboratory and University of California, Berkeley CA, USA — Helium II nanodroplets constitute a unique cryogenic matrix for the creation, isolation and spectroscopy of regular and exotic species, such as free radicals and molecules in high-spin states. The droplets readily pick up atoms and molecules but interact only very weakly with the respective dopants due to their superfluid nature. We are currently setting up a high-order harmonic generation-based femtosecond XUV-pump, IR-probe experiment to study the photoionization dynamics of pure and doped Helium nanodroplets close to the atomic Helium IP (24.6 eV) in real-time. Using Velocity-Map Imaging (VMI) photoelectron spectroscopy we will monitor the photoionization dynamics of the droplets, of the dopants in the droplet environment, and the charge- and energy-transfer mechanisms between droplets and dopants.

Oliver Gessner
Lawrence Berkeley Laboratory

Date submitted: 31 Jan 2008

Electronic form version 1.4