Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

XUV Pump - XUV Probe Studies of Bond Forming Processes in Polyatomic Molecules[1] NIRANJAN SHIVARAM, ELIO CHAMPENOIS, JAMES CRYAN, TRAVIS WRIGHT, CHAN-SHAN YANG, ALI BELKACEM, Chemical Sciences Division, Lawrence Berkeley Natl Lab — Extreme-ultraviolet (XUV) high-order harmonics along with strong-field femtosecond near infra-red (NIR) laser pulses have been used to perform time-resolved pump-probe studies of ionization and fragmentation dynamics in atomic and molecular systems. With the availability of high pulse energy femtosecond laser systems it is now possible to generate high-harmonics with enough flux to perform XUV pump – XUV probe experiments. Here, we use high harmonics generated from a state-of-the-art 30 mJ, 1 KHz femtosecond NIR laser system to study dissociation dynamics in Sulfur hexa-fluoride (SF6). We focus mainly on dissociation channels above the first ionization threshold where neutral molecular Fluorine (F2) is eliminated from SF6. Using photo-ion and photo-electron spectroscopy we time-resolve the formation of a chemical bond.

[1]Supported by Chemical Sciences, Geosciences and Biosciences division of BES/DOE

Niranjan Shivaram
Lawrence Berkeley Natl Lab

Date submitted: 31 Jan 2014 Electronic form version 1.4