Abstract Submitted for the SES08 Meeting of The American Physical Society

Time-resolved Photoelectron Spectroscopy and the Photoprotective Properties of Adenine NICK EVANS, University of Georgia, WILLIAM POTTER, AMANDA BRIOUILLETTE, SUSANNE ULLRICH, UGA — A system for fs time-resolved photoelectron and photoion spectroscopy has recently been developed at the University of Georgia, Department of Physics and Astronomy, in order to study the photophysical properties of isolated biomolecular building blocks. Ultrafast electronic excited state deactivation processes are observed in these chromophores and contribute to their photostability under UV radiation. Time-resolved photoelectron spectroscopy (TRPES) provides a unique tool to investigate these processes as the two dimensional data comprises both spectral and dynamic information. The spectral data allows identification of participating electronically excited states while the dynamic data allows the state's associated lifetimes to be extracted. Details of the experimental setup and technique will be presented in this talk as well as our initial results on the deactivation pathways in the DNA base adenine following excitation by wavelengths between 245 - 266 nm.

> Nick Evans University of Georgia

Date submitted: 15 Aug 2008

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