

Abstract Submitted
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The Photoprotective Properties of Adenine: Time-resolved Photoelectron Spectroscopy at different excitation wavelengths¹ SUSANNE ULLRICH, UGA, NICK L. EVANS, WILLIAM M. POTTER, AMANDA N. BROUILLETTE — The UV photostability of biomolecules is determined by their excited state electronic relaxation mechanisms. To be effective, these mechanisms must operate on ultrafast timescales in order to dominate over competing photochemical processes that potentially lead to destruction of the biomolecule. Femtosecond time-resolved photoelectron spectroscopy (TRPES) provides unique capabilities for studying photoinduced processes in small polyatomic molecules. Changes in the PES, observed as the delay between the pump and probe pulses is scanned, can be associated with electronic configurational changes during the relaxation process. Analysis based on ionization correlations allows us to extract the electronic character of the excited states in addition to their lifetimes. 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.

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