ELECTRONIC SPECTRA AND IONIZATION POTENTIALS FOR UO AND UO_2

VASILIY V. GONCHAROV, LEONID A. KALEDIN, JIANDE HAN AND MICHAEL C. HEAVEN, *Department of Chemistry, Emory University, Atlanta, GA 30322*.

The electronic spectra and ionization potentials of UO and UO_2 are being investigated using resonantly enhanced multi-photon ionization combined with mass resolved ion detection. Several new band systems for both molecules have been observed in the near UV spectral range (330-370 nm). The ionization potentials have been probed using single- and two-photon (1+1') excitation. The spectroscopic data for UO_2 have been used to evaluate the predictions of *ab initio* and ligand field theory models. A summary of the spectroscopic results and a discussion of the electronic state assignments will be presented.