HIGH RESOLUTION ELECTRONIC SPECTROSCOPY IN THE GAS PHASE.[a]

DAVID W. PRATT, *Department of Chemistry, University of Pittsburgh, Pittsburgh, PA 15260*.

The past few years have witnessed remarkable progress in the development of electronic spectroscopy as a high resolution technique for the study of the structures of large molecules and their complexes. This talk will review that progress, with examples taken from our own work at the University of Pittsburgh. We are now routinely recording spectra with a resolution of 10 MHz in the ultraviolet. Of particular interest are (a) the extent to which a given system is "rigid", or not; (b) the appearance of perturbations in the spectra (including those produced by external fields), and what can be learned from them; and (c) what might be going on when a resolved spectrum cannot be observed, at all. We will compare and contrast the results for several systems, in order to establish a connection between the high resolution experiment and the dynamics of chemical reactions, a likely focus of future studies in this field.

[a]Work supported by NSF (CHE-9987048).