SPECTROSCOPY OF JET COOLED HYDROGEN BONDED COMPLEXES OF COUMARINS

BRIAN A. PRYOR, PETER M. ANDREWS, PHILLIP M. PALMER, and MICHAEL R. TOPP, *Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104*.

The spectroscopy of coumarin 151, 152, and 152a with some hydrogen bonded complexes have been investigated under supersonic jet conditons. Rotational Coherence experiments have been used to measure the structures of the 1:1 complexes. Molecular Mechanics and AM1 level calculations were performed and the results compared to experimental observables for each of these systems. Previous studies of coumarin 151 postulate the exsistence of a TICT state in the bare molecule. We report time domain and hole burning spectra for this case as well as for the hydrogen bonded clusters of all the mentioned species.