COUMARIN DYES AND WATER: HYDROGEN-BONDING INTERACTIONS STUDIED IN A SUPERSONIC JET

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Preparation of jet-cooled molecular clusters of 7-aminocoumarin dyes with water reveal the formation of clusters which exhibit narrow-band electronic spectra with up to five water molecules on a given dye molecule. In addition, many of the clusters display the presence of multiple conformers for the 1:1 aggregate. The observance of multiple conformers was determined through electronic spectral hole-burning and differential ionization studies. These data indicate that each of the conformers are attached to a functionally different portion of the dye and that these differences show widely varying electronic properties.