ELECTRONIC SPECTROSCOPY OF DIPHENYLAMINE AND ITS SOLVENT CLUSTERS

IGOR V. TRETIAKOV, JOHN R. CABLE, *Department of Chemistry and Center for Photochemical Scienes, Bowling Green State University, Bowling Green, OH 43403*; , .

The vibrationally resolved electronic spectra of diphenylamine and several isotopically subsituted derivatives were recorded using two-photon ionization under supersonic jet expansion conditions. Spectral evidence is consistent with the equivalence of the two phenyl rings which suggests a C_2 symmetry ground state in which the central nitrogen atom is in a planar configuration. Analysis of the spectrum of diphenylamine clustered with water shows that the solvent has a large influence on the chromophore structure. This contrasts with the observations obtained for diphenylamine clustered with inert gases and nitrogen.