INFRARED SPECTROSCOPIC STUDIES ON URACIL-WATER BINARY COMPLEXES IN SUPERFLUID HELIUM NANODROPLETS.

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A number of previous theoretical studies have shown that there are four primary binding sites for water molecules on uracil monomer. We have used helium nanodroplet spectroscopy to identify and characterize all four of these isomers. In particular, vibrational transition moment angles (VTMAs) have been used to aid in the assignment of the spectra to specific isomers by comparing the experimental results with the corresponding ab initio values. The VTMA is defined as the angle between the permanent electric dipole moment vector and the vibrational transition moment direction.