SPECTROSCOPIC STUDY OF THE STEPWISE SOLVATION OF $CN^- \cdot (H_2O)_n$ VIA IR-VPS

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IR Vibrational Predissociation Spectra of $CN^- \cdot (H_2O)_n$, anionic clusters, where n = 2 through 6, were obtained in the 2900 to 3900 cm^{-1} region. The vibrational frequencies of the water molecules serve as a probe of the hydrogen bonding network, which is determined by the competition of solvent-anion and solvent-solvent interactions. The size dependence of the spectral features suggests the contribution of a second binding site for n>4, and the possibility of a temperature induced proton-transfer reaction for the n=4 cluster.