THE INVESTIGATION OF THE INFRARED DEPLETION SPECTRA OF THE ANILINE-NH_3 AND THE ANILINE-$N(CH_3)_3$.

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The vibrational spectra of the aniline-NH_3 and the aniline-$N(CH_3)_3$ clusters in the NH-stretching vibration region have been measured using IR-UV double resonance spectroscopy and REMPI-TOF mass spectrometry. The main interaction of these clusters have been found to be the hydrogen bond between one of the NH bonds of aniline and the lone pair electron of the nitrogen atom of NH_3 or $N(CH_3)_3$ from the analysis of the vibrational spectra. Fernandez and Bernstein [1] showed that there are several origins of the observed bands in the REMPI spectrum of the aniline-NH_3 cluster around 300nm, and assigned them to the vdW isomers. The infrared hole burning spectroscopy has shown that all of the bands observed around 300nm should be assigned to the same hydrogen-bonded cluster. The different band systems should be assigned to the hot bands of the inter molecular vibrations of the hydrogen-bonded cluster.

1)J.A.Fernandez and E.R.Bernstein, J.Chem.Phys.,106,3029-3037(1997).