

INFRARED SPECTRA AND INTENSITIES OF WATER COMPLEXES WITH NITROGEN, OXYGEN AND ARGON  
IN HELIUM DROPLETS

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The infrared spectra of N<sub>2</sub>-H<sub>2</sub>O, O<sub>2</sub>-H<sub>2</sub>O and Ar-H<sub>2</sub>O complexes in superfluid He droplets were measured in the range of the stretching vibrational bands of water molecules. The infrared intensity of the anti-symmetric stretching bands in these complexes were found to be very similar to that in single H<sub>2</sub>O molecules. The spectra show that H<sub>2</sub>O in O<sub>2</sub>-H<sub>2</sub>O and Ar-H<sub>2</sub>O rotates nearly freely, whereas no indication of H<sub>2</sub>O internal rotation was observed in N<sub>2</sub>-H<sub>2</sub>O spectra. The conformation of the N<sub>2</sub>-H<sub>2</sub>O complexes was estimated from the rotational constants.

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