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### **Spectroscopy of molecular clusters in He droplets**

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Molecular spectroscopic experiments in He droplets will be reviewed. Results of the recent infrared laser study of ammonia and water clusters in He droplets will be presented. Hydrogen bonding in the studied clusters causes an enhancement of the intensity of the hydrogen stretching bands. Two types of the clusters show qualitatively different size dependence of the infrared intensity per hydrogen bond. In ammonia dimers and trimers it is close to the crystal value. In water clusters it increases monotonically with cluster size being in tetramers a factor of two smaller than in the ice. Thus larger water clusters are required in order to obtain the electronic distribution in clusters, which is characteristic for the bulk ice. Study of heterogeneous clusters such as containing water and HCl molecules will also be introduced. In the second part of the talk the utility of the helium droplet technique for growth and study of large atomic and molecular clusters of up to about  $10^4$  particles is discussed. Size dependence of the spectra, allows studying the evolution of the system from single molecules to molecular solid and provides information on the structure of the large clusters formed in He droplets.