FORMATION OF VAN DER WAALS COMPLEXES WITH ALKALI METAL ATOMS IN HELIUM NANODROPLETS

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Electron impact mass spectrometry and infrared spectroscopy have been used to study the complexes of alkali metal atoms with polar and nonpolar molecules. Numerous experiments have shown that, while most atoms and molecules are solvated by helium nanodroplets, alkali metal atoms are bound to the droplet surface. However, when part of a van der Waals complex, alkali metals may become solvated by the droplet. Results are presented for complexes of single sodium and lithium atoms with HCN, HF, and HCCH.