

Lehrstuhl-Seminar Lupton/Schüller

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Microsolvation in superfluid helium droplets

Molecular spectroscopy in superfluid helium droplets provides insight into both the dopant species as well as the host system. Standard spectroscopic techniques such as MW, IR, or UVvis spectroscopy show different expressions of the solvent solute interaction. In contrast to MW and IR spectroscopy UVvis spectroscopy addresses the electronic degree of freedom which is particularly sensitive to the helium environment. In this context recent work on electronic spectroscopy of organic molecules in superfluid helium will be discussed with particular emphasis on the spectroscopic signature of solvation in helium droplets. The helium environment appears to respond on the change of the electronic density distribution with high sensitivity. Empirically the spectroscopic signatures are readily rationalized. Quantitative modeling of microsolvation in superfluid helium droplets however is a challenge far from being solved.