Joint Annual Meeting of ÖPG and SPS 2021



Contribution ID: 218

Type: Talk

[616] Photoinduced Charge Transfer Processes

Friday, 3 September 2021 12:30 (15 minutes)

Charge-transfer processes, particularly in salt clusters, depend sensitively on the chemical environment. Studying such charge-transfer behaviour is ideally suited to gas-phase clusters, whereby the size and chemical composition can be controlled. To understand these charge-transfer processes at a molecular level, laser spectroscopic measurements in the ultraviolet and visible region are utilised, focussing on ionic salt systems. Electrospray ionization is employed producing salt clusters, which are stored in the cell of a Fourier transform ion cyclotron resonance mass spectrometer. Laser systems provide tuneable laser light in the 225–2600 nm region. For each size-selected cluster, evaporation of stoichiometric and non-stoichiometric fragments are recorded, elucidating photochemical pathways connected to charge-transfer transitions.

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Session Classification: Applied Physics and Plasma Physics

Track Classification: Applied Physics and Plasma Physics