

EINLADUNG

zum Vortrag
von

Prof. Dr. Philippe Dugourd
Laboratory for Molecule and Ion Spectroscopy,
CNRS and University of Lyon, France

über

UV spectroscopy of gas phase proteins and metal cluster-peptide hybrids

am

Dienstag, 19. Mai 2009, um 17 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Abstract:

We perform gas phase experiments on biomolecules with the objective of providing the basis to construct atomic models of functional biomolecule in action. The experimental set up integrates an electrospray ion source, an ion trap mass spectrometer and one or two tunable UV-Vis lasers. A first series of results was obtained on multiply negatively charged peptides and proteins. For polyanions, electron emission is observed after irradiation. Electron detachment yield as a function of laser wavelength and optical fingerprints of proton and radical transfers will be presented.

Metal nanoparticles are currently used as labels for optical detection and imaging of biomolecules. Due to adaptive structural and optical properties, metal-biomolecule hybrids are also very promising for new materials with potential application in nano-biotechnology. We will show that gas phase experiments can be used to determine the exact nature of the binding between a metal particle and a peptide, and the influence of the metal part on the conformation of the biomolecule. The coupling between the surface plasmon resonance of the metal moiety and the excited states of the peptide will also be discussed.

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