Doctoral Seminar

Graduate Research Training Group (GRK)

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INSTITUT FÜR PHYSIK

Talks in WiSe 2021

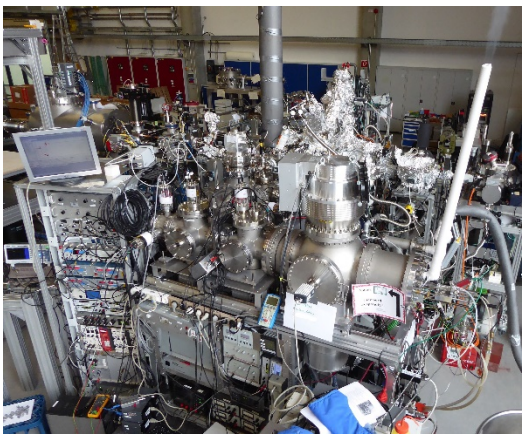
Traditio et Innovatio

Universität Rostock

11th November 2021, 3:00 pm
Norman Iwe
Clusters and Nanostructures

How to produce and study polyanionic metal clusters

Abstract: In the last few decades, metal clusters have been extensively investigated depending on the particle size with the aim of bridging the gap between the atom and the bulk. However, the influence of higher charge states on, e.g., the electronic, optical and structural properties of small metal particles is so far largely unknown. Polyanionic systems for example are characterized by a Coulomb barrier, which allows for metastable states above the vacuum level. For realizing experiments on this topic, it remains a challenge to prepare an intense molecular beam of highly negative charged species.



In my talk, I will present a setup that allows conducting measurements on size-selected clusters with a defined number of excess electrons. Key parts of the experiment are a magnetron sputtering gas aggregation source for the initial cluster production, a digital quadrupole mass filter for size selection and a three-state digital Paul trap where the upcharging process takes place. Nanosecond laser pulses are used to record photoelectron spectra that permit insights into the electronic properties and the optical response.

Talk: English
Slides: English
Location: Great Lecture Hall, HS1, Institute for Physics, Albert-Einstein Str. 24

Hybrid-Meeting: https://uni-rostock-de.zoom.us/j/67191822515?pwd=UTVJSXVPaDVLV0ZSZW9LR3NRVWF2UT09