

Physikalisches Kolloquium



Thursday, 12.01.2023, 16:15, HS 100

In presence

Prof. Dr. Marcel Mudrich, Aarhus University, Denmark,
Department of Physics and Astronomy:

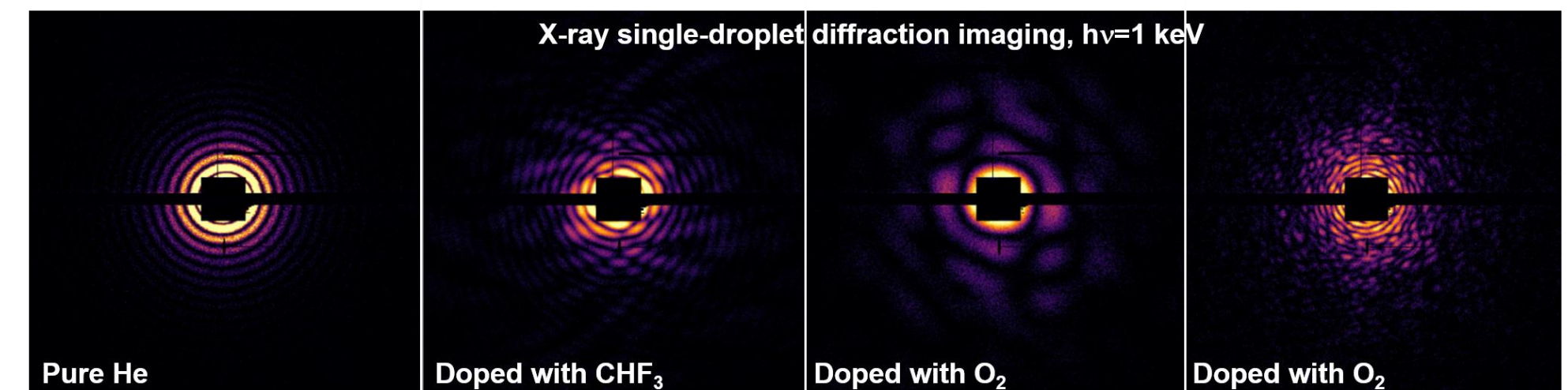
XUV spectroscopy and imaging of helium nanodroplets

Abstract

Superfluid helium nanodroplets are fascinating objects from the point of view of atomic and molecular physics, physical chemistry and condensed matter physics. Their quantum fluid properties, and their ability to pick up virtually any foreign atom or molecule, makes them ideal substrates for high-resolution spectroscopy and cold chemistry studies.

Here I will present experiments where pure and doped helium nanodroplets are irradiated with ultrafast XUV and x-ray radiation to study their internal relaxation dynamics and their interaction with foreign species when being resonantly excited or ionized. We observed various types of energy- and charge-transfer processes which may play a role in radiation damage of biological matter.

Using intense soft x-ray pulses, even the internal structure of helium droplets and of the embedded aggregates can be visualized by single-particle diffraction imaging; Owing to the peculiar aggregation mechanisms inside the droplets, an extraordinary variety of aggregate structures is observed.



All of you interested in physics are cordially invited!

Contact: Prof. Dr. Jochen Mikosch, Structural Molecular Dynamics, More Information: uni-kassel.de/go/physikalisches_kolloquium