Physikalisches Institut
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Albert-Ludwigs-Universität Freiburg

QE

Quantum Efficiency Seminar und Colloquium

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Ultrafast nano-optics: watching electrons move

ABSTRACT: Probing and manipulating the motion of electrons in complex solid state, molecular or biological nanostructures in real time is a fundamental challenge in contemporary physics. It is expected that an increased understanding of the underlying microscopic processes may result in quite a number of novel applications, e.g., in optical and quantum information technology or in photovoltaics. The experimental methods allowing to visualize these complex processes, in particular time-resolved light-, x-ray and electron microscopy, are currently undergoing an extremely rapid development. In my talk, I will present recent experimental progress achieved in Oldenburg in this direction. Specifically, I will discuss the role of quantum coherence for ultrafast charge separation processes in organic solar cells and how it might become to efficiently switch plasmonic wave packets in metallic nanostructures on ultrafast time time scales. Finally I want to describe some new experimental approaches for ultrahigh space- and time-resolution light and electron microscopy

Date: **Tuesday, January 31st, 2012 16:15 pm**
Location: **Lecture Hall 1, Hermann-Herder-Str. 3, Freiburg**

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