



Sonderforschungsbereich 631
Festkörperbasierte Quanteninformationsverarbeitung



SEMINARANKÜNDIGUNG

Dienstag, 02. November 2010

17:15 Uhr

WSI, Seminarraum S 101

“Imaging particle plasmons using optical and electron microscopy”

Abstract:

Surface plasmons, the workhorse of plasmonics, allow to bridge between the micrometer and nanometer length scales of conventional optics and nanodevices. This is achieved by binding or converting light to coherent electron charge oscillations confined to the surface of metallic nanoparticles (MNPs). When optical emitters, such as molecules or quantum dots, are placed in the vicinity of MNPs, they couple strongly to the evanescent fields of the surface plasmons and the light-matter coupling becomes significantly enhanced. In this talk I will first present a simulation approach for plasmonic nanoparticles which is based on the boundary element method approach. In addition, a number of powerful methods for the investigation of plasmonic fields and light-matter coupling with nanometer resolution will be discussed. Experimental and simulation results will be presented for molecule-MNP couplings, electron microscopy imaging of particle plasmons, and third harmonic generation (THG) of MNPs.

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