

HQI Special Seminar

Wednesday, November 20, 12:00 pm
Jefferson 250

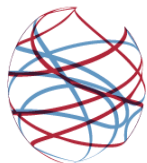
Prof. Vahid Sandoghdar

Max Planck Institute for the Science of Light

Efficiency in the Interaction of Light and Matter: From Nano-quantum Optics to Nanobiophotonics

Light-matter interaction at the nanometer scale lies at the heart of elementary optical processes such as absorption, emission or scattering. Over the past two decades, we have realized a series of experiments to investigate the interaction of single photons, single molecules and single nanoparticles. In this presentation, I will report on recent studies, where we reach unity efficiency in the coupling of single photons to single molecules and describe our efforts to exploit this for the realization of polaritonic states involving a controlled number of molecules and photons. Furthermore, I will show how the underlying mechanisms that play a central role in quantum optics, help image and track single biological nanoparticles such as viruses and small proteins with high spatial and temporal resolutions.

Guest Presentation will begin at 12:00PM
Lunch will be provided



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