

Physikalisches Kolloquium



Thursday, 08.02.2018, 17:15, HS 100
Reception with coffee & cookies 16:45
 (For university staff: please bring your own cup for sustainability reasons)

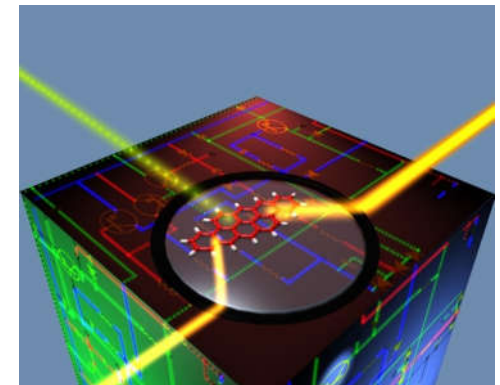
Prof. Dr. Stephan Götzinger, Max-Planck-Institut für die
 Physik des Lichts, Erlangen:

CINSaT Colloquium: Efficient generation and manipulation of photons with single molecules

Abstract

Novel concepts aiming at an efficient processing of information require a strong and controlled coupling of single photons with single atomic quantum systems. In this talk I will first give an introduction into the efficient generation of single photons using planar dielectric antennas. These antennas serve to direct the emission from an arbitrarily oriented single quantum emitter with >99% efficiency towards a collection optics.

In the second part of the talk I will discuss our efforts towards the realization of quantum networks and present experiments where photons and single solid state emitters strongly interact. A single molecule can amplify a weak laser beam and generate nonlinear effects like three-photon amplification and four-wave mixing. In order to achieve an even stronger interaction we have started to implement various approaches including waveguides and microcavities.



All of you interested in physics are cordially invited!