



Allgemeines Physikalisches Kolloquium

Donnerstag, 23.04.2015 um 16 Uhr c.t.

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Semiconductor quantum light sources for quantum information technologies

Exploiting the quantum properties of the light has the potential of enabling many new applications in the field of photonics and quantum information technology, such as secure communication, imaging and lithography techniques beyond the diffraction limit, quantum repeaters as well as photonic quantum computing. Many of these applications require the generation of on demand indistinguishable single photons or entangled photon pairs. Resonantly excited single semiconductor quantum dots are perfectly suited to fulfill these requirements. In my talk, I will discuss the fascinating physics as well as the current status of such resonantly driven semiconductor light sources. Finally, I will report on single-photon on-chip experiments on an InGaAs/GaAs/AlGaAs semiconductor platform.

