



Einladung

Es spricht: **Michael Jetter**

Institut für Halbleiteroptik und Funktionelle Grenzflächen,
Universität Stuttgart, Germany

Zeit: **Montag, 23. November 2015, 15:00 Uhr**

Ort: **Otto-von-Guericke-Universität Magdeburg
Fakultät für Naturwissenschaften
Institut für Experimentelle Physik
Universitätsplatz 2, Gebäude 16 / Raum 054**

Thema: **" InGaAs-based single photon sources
for future quantum optics "**

Benefitting from a wide range of available materials semiconductor quantum dots (QDs), are generally considered flexible nanostructures with the possibility to tailor their optical properties according to the application requirements. Among many other material systems, InAs/GaAs QDs have been most intensely studied and employed for the demonstration of many quantum optical applications in a solid-state environment. Such are, e.g., the emission of single photons, two-photon interference, the creation of cascaded and entangled photons and the entanglement of QD spins. While most of the research has been carried out with QDs emitting from 880nm to 960 nm, owing to the GaAs-based growth and the availability of efficient single-photon detectors, the recent years have attracted growing attention to the wavelength range above 1 μm . This spectral domain supports the combination of QD single-photons with silicon photonic circuits and enables low-loss transmission through optical glass fibers.

In this seminar, I will present our recent results on In(Ga)As-based QDs deposited by metal-organic vapor-phase epitaxy on GaAs. Next to the basic single photon emitter properties in the usual 880 nm to 960 nm range, routes for an integrated photonic circuit with these emitters are shown. Additionally I discuss the extension of the wavelength range of the QDs to the application relevant telecom O-band and some device-oriented structures for future quantum optic devices.

Gäste sind herzlich willkommen!
Prof. Dr. Jürgen Christen