Seminarankündigung

Dienstag, 9. Mai 2017
13:15 Uhr

WSI, Seminarraum S 101

“Why I am optimistic about semiconductor quantum dot based entangled photon sources”

Entangled photon sources are playing a crucial role in photonic quantum information science. Self-assembled semiconductor quantum dots (QDs) are among the most promising sources for the on-demand generation of entangled photons. However, to date these sources are far from being ideal and several critical challenges need to be solved for practical applications.

In this talk I will review our recent efforts in developing a QD-based entangled photon source with the best possible performances. A large ensemble of as-grown entangled photon emitters can be obtained with a yield close to 100% and high entanglement fidelity (up to 0.9). The wavelength mismatching between different sources can be solved by using a unique strain tuning technique developed in our group. The superior properties of these sources, combined with the demonstrations of electrical injection and on-chip integration, will eventually make the semiconductor QDs an ideal entangled photon source for the practical quantum applications.

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