

Semiconductor quantum dots as photon source for photonic quantum computing and current challenges

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Semiconductor quantum dots have been shown to be near ideal sources of single photons, when embedded into resonator structures. They have also been used to generate entangled photon pairs and highly entangled photonic states, so-called cluster states. These cluster states are a resource state for measurement based photonic quantum computers.

I will introduce measurement-based quantum computing, the current status of cluster state generation and challenges on the device level that have consequences for the performance and upscaling of photonic quantum computers with quantum dots as photon source.

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