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【101】 Quantum dots as sources of entangled photons

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Quantum dots are confined semiconductor nanostructures. The confinement leads to a discrete energy spectrum, similar to the spectrum of atoms. We use the discrete energy spectrum to create single photons and cascades of photons. Quantum dots can be epitaxially grown and thus, they are an on chip photon source. They can be embedded into p-i-n junctions and can be pumped electrically, although I will focus on optical pumping in my talk. I will show, how entangled photon pairs can be created with quantum dots in different degrees of freedom.

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