Light matter quantum interface based on single colour centres in diamond

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Efficient interfaces between photons and atoms are crucial for quantum networks and enable nonlinear optical devices operating at the single-photon level. In this talk I will highlight properties of single color centers at low temperatures and show that single SiV and GeV color centers in diamond are promising candidates for creating such interfaces. I will also show experiments towards realization of fully integrated, scalable nanophotonic quantum devices.