

COLLOQUIUM

High quality solid-state spin-photon



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Optically active spins confined in solids, such as semiconductors and diamond, provide interesting and rich physical systems. Their inherently mesoscopic nature leads to a multitude of dynamics within the solid state environment of spins, charges, vibrations and light. While the quantum optics has provided the toolbox for advanced spectroscopic investigations for these interaction mechanisms, it has also offer solution possibilities for their detrimental effects for the realisation of operational quantum devices. Implementing a high level of control on these constituents and their interactions with each other creates exciting opportunities for realizing stationary and flying qubits within the context of spin-based quantum information science. In this talk, I will provide a snapshot of the progress and challenges for quantum optically interconnected solid-state spins, as well as first steps towards hybrid quantum devices involving other physical systems.



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11⁰⁰ - 12⁰⁰



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