Spin-Photon Entanglement in Solid-State Defect Centers

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1. Extended Abstract

It is now possible to control quantum states in myriad media, from optical and microwave photons to trapped ions and atoms, low-dimensional semiconductor nanostructures, and mechanical oscillators. However, no single medium can meet all the demands for realizing quantum technologies in sensing, computing, and communication networks and interfacing them with existing classical infrastructure. It is thus crucial to develop hybrid quantum systems by merging the strengths of different media. In this presentation, we will focus on the demonstration of spin-photon entanglement in solid-state defect centers and its interfacing with other quantum systems for distributing entanglement in a quantum network1,2.

2. References
