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Session V01: Poster Session III 4pm-6pm CDT

4:00 PM, Thursday, June 3, 2021

Abstract: V01.00068 : An optical chip for a single atom single photon source *[← Abstract →](#)**Presenter:**Jin Zhang
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We report on progress towards a single atom, single photon source using a fiber connected optical chip. Quantum experiments with cold atoms are burdened by the complexity of the experimental apparatus. Using fiber connectorized optics and a grating MOT suitable for cooling Rb atoms we fabricate a pre-aligned device usable as a single photon source for quantum communication experiments. The device integrates a grating MOT with a single beam dipole trap produced by a fiber and GRIN lens combination. MOT atoms are loaded into the dipole trap and then used as a source of single photons which are collected by the same optical fiber. We will report on details of the fabrication of the optical chip, experimental characterization, and progress towards generating high purity single photons.

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