

Self Assembled On-Chip Fabry-Perot Microcavities for Integrated Atom Optics

James Maldaner

University of Alberta

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This poster outlines the fabrication of on-chip dome-shaped Fabry-Perot microcavities and the current efforts to allow for their use in quantum -optics applications. While the viability of using these microcavities has been previously studied the details of application have yet to be determined. The accessibility of the cavity to an atom is extremely import for cQED applications, and to ensure the maximum coupling of the two systems the microcavities must be tuned to picometer levels. These challenges have potential solutions using FIB milling and temperature control respectively. A Cobra etch and a piezoelectric control layer have been proposed as possible solutions as well, and these methods are currently being developed.