

Abstract Submitted
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Building a quantum interface between microwave and optical photons¹ A. VAINSENER, G. PEAIRS, K.J. SATZINGER, UC Santa Barbara, A.N. CLELAND, University of Chicago — In previous work², we have shown that optomechanical resonators fabricated out of piezoelectric materials may provide a means for coherent transduction between microwave and optical frequency photons. Electrical microwave signals are efficiently converted to microwave phonons, and these phonons in turn modulate the optical response of an optomechanical crystal. In this talk, we will describe new designs we are pursuing in this same direction, with simplified fabrication and a predicted much greater electrical-to-optical coupling strength. We will outline the current device design, simulations, fabrication, and preliminary measurements.

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²Bochmann, et al. *Nature Physics* **9**, 712 (2013)

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