

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Fabricating Micro-Optomechanical Resonators Using High-Stress Si_3N_4 BRIAN PEPPER, UC Santa Barbara, PETRO SONIN, University of Leiden, DIRK BOUWMEESTER, UC Santa Barbara / University of Leiden — Optomechanical systems have been highly researched as a platform for testing macroscopic quantum effects and quantum decoherence. However, the required optical and mechanical properties are difficult to achieve. Increasing the tensile stress of a device is known to correlate with higher mechanical frequency and quality factor. We discuss fabrication of monolithic optomechanical devices using dielectric mirrors and high-stress stoichiometric Si_3N_4 . We also present preliminary data on their mechanical and optical properties.

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Date submitted: 09 Nov 2012

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