

Abstract Submitted
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Design and Characterization of Silicon Cantilevers for Use as Force and Torque Sensors¹ MICHELLE CHABOT, University of San Diego — Using custom-designed cantilevers can significantly improve the sensitivity of many novel measurement techniques such as magnetic force microscopy and micro-torque magnetometry. We have designed custom cantilevers with these specific measurement techniques in mind and fabricated them using standard semiconductor techniques. These cantilevers were characterized in order to determine their sensitivities at room temperature when implemented as either force or torque sensors. The sensitivities far exceed those of commercially available cantilevers. Extensive finite element modeling was performed to predict specific cantilever characteristics such as resonance frequency and mode shapes.

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