

Abstract Submitted  
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**Magnetic Field Effects on Mechanical Cantilevers with Deposited Thin Film Micromagnets**<sup>1</sup> ROSA ELIA CÁRDENAS, FRANCISCO MÁRQUEZ, JOHN T. MARKERT, The University of Texas at Austin, Department of Physics — We report on the techniques used to deposit magnetic material onto mechanical cantilevers. The deposition of the magnetic material, permalloy, onto the cantilevers was achieved by using a precise masking technique before mounting the cantilevers inside an electron beam evaporation chamber. This method resulted in a mechanical cantilever with a deposited micromagnet on its tip. A typical size of the resulting micromagnet is 200 nm thick by 20 microns wide by 10 microns in height. Using a laser interferometer, the driven response of the cantilevers with the deposited micromagnets are currently being studied in vacuum as a function of the external magnetic field. We will analyze the magnetic-field-dependent changes in the resonant frequencies and the quality factors of the cantilevers to determine the micromagnet net moment and anisotropy constants.

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