

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Nanomechanics of prismatic noble-metal nanowires AARON KOFFORD, CRISTIAN CIOBANU, Colorado School of Mines — In the nanometer diameter regimes, nanowires have a large number of surface atoms as compared to the bulk atoms, which determines a change in the cross sectional shape of the wires with respect to predictions based on the Wulff construction. The mechanical response at this scale also change, and we present here a systematic study of mechanical properties of thin noble-metal nanowires as a function of wire diameter and wires axis orientation. Implications for the wire of metal wires in nanoelectromechanical devices are also described.

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Date submitted: 19 Nov 2006

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