

Abstract Submitted
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Ideal Torsional Strength of (n,0) Carbon Nanotubes ELIF ERTEKIN, D.C. CHRZAN, University of California, Berkeley and Lawrence Berkeley National Laboratories — The torsional stiffness and ideal torsional strengths of zig-zag carbon nanotubes are computed using an *ab initio* electronic structure total energy technique coupled with a scaling form. Predicted stiffnesses are in good agreement with experimentally measured stiffnesses taken from the literature. The ideal torsional strengths of multiwall nanotubes are predicted to exceed those of equivalently sized iron rods. This research was supported by the Department of Energy, Basic Energy Sciences under the Office of Science under contract DE-AC03-76SF00098, and, in part, by the National Science Foundation under grant DMR-0304629.

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