Abstract Submitted
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Nanocrystal Powered Nanomotor B.C. REGAN, S. ALONI, K. JENSEN, R.O. RITCHIE, A. ZETTL, Department of Physics, Department of Materials Science and Engineering, UC Berkeley; Materials Sciences Division, LBNL; Berkeley, CA 94720 — We have constructed and operated a nanoscale linear motor, powered by a single metal nanocrystal ram sandwiched between mechanical lever arms. Low-level electrical voltages applied to the carbon nanotube lever arms grow or shrink the nanocrystal, virtually atom-by-atom, in a controlled manner. The thermodynamic principles governing the motor operation resemble those driving frost heave, a natural solid-state linear motor.

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