

Abstract Submitted
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Quantum Thermoelectrics at Carnot Efficiency¹ ERIC HOFFMANN, University of Oregon, LUND UNIVERSITY COLLABORATION — Advancements in chemical beam epitaxy growth techniques have lead to heterostructured nanowires with very sharp interfaces. With these precise growth techniques, it is possible to engineer nanowires with very specific quantum mechanical properties. Nanoscale quantum—mechanically—engineered devices have the potential to achieve what macroscale devices cannot. In particular, recent theory predicts heterostructured nanowires might be capable of transporting electrons adiabatically, ultimately leading to the creation of microscopic thermoelectric devices which operate at a higher efficiency than any macroscopic thermoelectric.

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