

Abstract Submitted
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Thermoelectric power of Single Walled Carbon Nanotubes at the Ballistic Conduction Limit YURI M. ZUEV, Applied Physics Department, Columbia University, PHILIP KIM, Physics Department, Columbia University — Thermoelectric power (TEP) measurements of single walled carbon nanotubes (SWNTs) with low electrical contact resistance are reported. TEP was measured in-situ using a microfabricated heater and thermometers. High quality Ohmic contact to the SWNT was achieved with Pd electrodes. TEP measurements are sensitive to the change in conductivity, and therefore provide a complementary method for probing the electronic band structure of SWNTs. Deviations of the low temperature TEP gate dependence from the semiclassical Mott relation allows us to gain insight into the quantum transport regime in this one dimensional conductor. Modulation of TEP as a function of applied gate voltage will be discussed in connection with the shell filling effects and Fabri-Perot oscillations observed in electrical conductance.

Yuri M. Zuev
Applied Physics Department, Columbia University

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