

Abstract Submitted
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Impact of charged impurity scattering in carbon nanotubes
RYUICHI TSUCHIKAWA, JONATHAN EDMISTON, DANIEL HELIGMAN,
MASAHIRO ISHIGAMI, Department of Physics and Nanoscience Technology Center,
University of Central Florida, XIAO GUO, ZHENGYI ZHANG, JAMES HONE,
Department of Mechanical Engineering, Columbia University — We have measured
the transport property of carbon nanotubes as a function of density of charged
impurities. Length-dependent resistance measurements were used to eliminate the
contribution from the contact resistance in our data. By knowing the exact density
of charged impurities on nanotubes, we measure the scattering cross section
of individual adsorbed charge impurity. Measurements on different nanotubes are
used to reveal the effect of pseudospin conservation on electronic transport in metallic
and semiconducting carbon nanotubes upon addition of long-range impurities
experimentally. These findings will be outlined in this talk.

Ryuichi Tsuchikawa
Department of Physics and Nanoscience Technology Center,
University of Central Florida

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