

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Transport properties of pristine and doped graphene POOJA PUNEET, RAMAKRISHNA PODILA, Department of Physics and Astronomy, Clemson University, Clemson SC 29634, LUCIANA OLIVEIRA, Department of Materials Science and Engineering, Clemson University, Clemson SC 29634, TERRY TRITT, APPARAO RAO, Department of Physics and Astronomy, Clemson University, Clemson SC 29634 — Graphene has attracted a lot of attention for various applications recently. Chemically exfoliated graphene is one of the best methods to prepare good quality and large amount of few-layer graphene sheets. We prepared pristine and doped graphene using chemical exfoliation through high energy tip sonication technique. The exfoliated graphene was later sintered for studying thermoelectric properties. The thermopower of these samples exhibits valleys, tentatively assigned to phonon drag, which shift towards higher temperature upon vacuum annealing and electron doping. Such a similar behavior was previously observed in doped carbon nanotubes. The effects of vacuum annealing and doping upon the fundamental behavior of thermoelectric power and thermal conduction of graphene will be presented.

Pooja Puneet
Department of Physics and Astronomy, Clemson University, Clemson SC

Date submitted: 11 Nov 2011

Electronic form version 1.4