Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Electrical Transport Properties of CdSe Nanorod Solids[1] HUGO ROMERO, MARIJA DRNDIC[2], University of Pennsylvania — Semiconductor nanorods are of great interest for fundamental research because they allow us to study how the electronic and optical properties of semiconductor nanocrystals depend on their shape. Nanorods have also attracted much attention because of their potential applications in light-emitting diodes, in low-cost photovoltaic devices, and their propensity to form liquid crystalline phases. So far, most of the studies have focused on the electrical transport in "spherical" nanocrystals, where transport mechanisms from variable-range hopping to Coulomb-glass-like behavior have been reported. Compared with nanocrystals, nanorods are expected to exhibit interesting anisotropic effects. We have chemically synthesized the CdSe nanorods and integrated them into electronic devices. Here, we report on our experimental studies of the charge transport in these CdSe nanorod solids.

[1]Supported by the ONR Young Investigator Award N000140410489, the American Chemical Society (ACS) PRF award # 41256-G10, and the startup funds at the University of Pennsylvania
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Date submitted: 27 Mar 2013 Electronic form version 1.4