

Electron Transport in Individual Nanostructures

Zhixian Zhou

Department of Physics and Astronomy
Wayne State University

Understanding the fundamental physical properties of individual nano scale materials is an essential and fundamental part of the research in nanoscience, since these nanostructures are not only potential building blocks of nanotechnology but also provide unique opportunities for studying a wealth of quantum mechanical phenomena. We have investigated various one-dimensional and quasi one-dimensional nanoscale materials employing state-of-the-art nanofabrication techniques and electrical transport measurements for a wide temperature range. As two examples, I will present and discuss our experimental results on *in situ* fabricated individual single wall carbon nanotube devices and individual superconducting nanowires of NbSe₂. If time permits, I will also briefly discuss the fabrication and electrical transport studies of quasi 2D crystals extracted from bulk single crystals, and show some of our preliminary results on quasi 2D crystal devices of TiS₂.

Website: <http://www.clas.wayne.edu/unit-faculty-detail.asp?FacultyID=1379>