

Abstract Submitted
for the TSS09 Meeting of
The American Physical Society

Mechanical Size Separation of Zinc Oxide Nanoparticles SHILAH MOHAMMAD NAEM¹, Success High School, Fort Worth, TX, NOOR SUBAH², Paul Laurence Dunbar High School, Fort Worth, TX, NABIHA YOUSUF, BELLE MARCO, MONIKA WIELIGOR, Texas Christian University, Fort Worth, TX, SHEVONDA NEWTON, Baylor University, Waco, TX, YURI M. STRZHEMECHNY, Texas Christian University, Fort Worth, TX — In recent years nanocrystalline zinc oxide (ZnO) has become an object of intense research due to many attractive properties useful for applications. Currently an important issue is to correlate the size and morphology of the ZnO nanoscale materials with their performance-defining parameters. Thus, size separation of the ZnO nanocrystals is desirable in order to help quantify this correlation. The purpose of our studies was to design and implement a simple and reproducible method of separating ZnO nanoparticles by size from polydisperse nanopowders. Our approach combined nanopore filtration, ultrasonication and vacuum suction. We analyzed our samples using electron microscopy and energy dispersive spectroscopy. It was demonstrated that after size-separation treatment the obtained distribution of particles became significantly more monodisperse with an average particle size below 10 nm.

¹participant in TCU RAPP program

²participant in TCU RAPP program

Yuri M. Strzhemechny
Texas Christian University, Fort Worth, TX

Date submitted: 27 Feb 2009

Electronic form version 1.4