Mechanical Size Separation of Zinc Oxide Nanoparticles SHI-LAH MOHAMMAD NAEM\textsuperscript{1}, Success High School, Fort Worth, TX, NOOR SUBAIH\textsuperscript{2}, 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.

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