Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Characterization of SiC nanowires obtained from carbon black powder MONIKA WIELIGOR, T. W. ZERDA, Texas Christian University — SiC nanowires were obtained by a reaction between vapor silicon and carbon black powder in vacuum at 1200oC. Their structures and properties were studied using X-ray diffraction, high resolution transmission microscopy, HRTEM, and Raman scattering techniques. We show that diameter of sintered nanowires depends on carbon black grade and its history of thermal treatment. SiC nanowires of diameter as small as 10 nm were obtained from graphitized furnace carbon blacks. Chemical composition of nanowires was similar for all samples, but concentration of structural defects varied and depended on carbon black surface properties and surface morphology. Stacking faults and twins dislocations were observed in all specimens and characterized by HRTEM, X-ray diffraction, and Raman spectroscopy.

Monika Wieligor
Texas Christian University

Date submitted: 21 Nov 2008 Electronic form version 1.4