

Abstract Submitted  
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**Fabrication and Characterization of Bi<sub>2</sub>Te<sub>3</sub> Nanoparticles for Thermoelectric Applications** YI MA, BED POUDEL, WENZHONG WANG, DEZHI WANG, ZHIFENG REN, Boston College, MA, Q. HAO, H. LEE, GANG CHEN, Massachusetts Institute of Technology — Bi<sub>2</sub>Te<sub>3</sub> nanoparticles with diameters of 10-30 nm have been successfully synthesized via a hydrothermal method. The as-prepared nanoparticles were characterized by X-ray diffractometer (XRD, Cu K $\alpha$ , Bruker AXS), field emission scanning electron microscope (SEM, JEOL-6340F) and transmission electron microscope (TEM/HRTEM, JEOL-2010F) equipped with an energy-disperse X-ray spectrometer (EDS). The densification of Bi<sub>2</sub>Te<sub>3</sub> nanopowders was conducted in two ways: plasma pressure compaction (P2C) and hot pressing. The density of the as-pressed pellet sample was about 98-99 % of theoretical density (7.7 g/cm<sup>3</sup>). The Seebeck coefficient, electrical and thermal conductivities were further investigated.

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