

Abstract Submitted  
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**Bi nanobelts, nanocubes and their thermoelectric properties**  
WENZHONG WANG, SHUO CHEN, JIANYU HUANG, ZHIFENG REN, Boston College, T. HARRIS, GANG CHEN, M. DRESSELHAUS, Massachusetts Institute of Technology — Highly crystallized Bi nanobelts and monodispersed nanocubes have been synthesized via a low-temperature organic solution approach, in which sodium bismuthate was reduced by ethylene glycol in the presence of poly(vinylpyrrolidone) (PVP). By changing some experimental conditions, Bi nanobelts and nanocubes have been prepared successfully. The as-prepared Bi nanobelts are single crystal with high crystallinity. The width of the nanobelts is in the range of 50-500 nanometers and the length is up to of several tens of micrometers. The as-synthesized Bi nanocubes are highly crystallized and monodispersed with edge length of 50-60 nm. The electrical, thermal, and Seebeck properties of the as-grown nanobelts were studied by a TEM-STM probe inside a high resolution TEM. The same studies were also carried out on bulk samples made by hot-press using the nanocubes.

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