

Abstract Submitted
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Pb-based Nanomaterials for Thermoelectric Application BED
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of Mechanical Engineering, MIT, MILDRED S. DRESSELHAUS, Department of
Physics and Department of Electrical Engineering, MIT — PbTe, PbSe, PbSeTe,
and PbSnTe nanocrystals having sizes in the range of ~ 5 -50 nm have been synthe-
sized using a simple hydrothermal method. As-prepared nanopowder was processed
using P²C device, and samples with almost 100 percent density and small grain
sizes were achieved. The thermoelectric properties of such samples have been in-
vestigated. Lower values of thermal conductivity were obtained from the samples
prepared from nanomaterials. For further enhancement of the thermoelectric prop-
erties, the nanocrystals were doped with different elements, for example Ag, Cu, Eu,
Bi, Sb, etc., and their thermoelectric properties have been studied.

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