

Better thermoelectricity using nanostructures

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Abstract

The A thermoelectric (TE) generator produces electricity from waste heat or temperature gradient as among the cleanest form of energy. Its best performance can be achieved using efficient TE materials with high figure of merit ZT = $(S2\sigma/\kappa)$ T, where S is the TE voltage, σ is the electrical conductivity, κ is the thermal conductivity and T is the temperature. Nano structuring a TE material decouples its naturally coupled S, σ , and κ parameters to achieve a better or record ZT. Record ZT materials are generally toxic materials, requiring search for less toxic materials. We shall discuss some of these aspects in brief in this talk.

Biography

Gunadhor S Okram did his PhD from Indian Institute of Technology, Bombay (1995), India. He worked at several research institutes including National Institute of Materials Science, Tsukuba, Japan (1996-98) as STA Fellow before joining UGC-DAE Consortium for Scientific Research, Indore, MP, and India as Scientist D in 2001. He is now Scientist G, and has guided 4 PhD, 6 MPhil, 4 M Tech, 54 MSc and 5 BSc project students. Dr. Okram delivered over 80 invited lectures including keynote address at different national and international conferences, reviewed several reputed journal papers, and published over 143 peer-reviewed (reputed) journal papers and 116 conference proceeding presentations with 1783 times citations with h-index of 23 in Google Scholar.

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