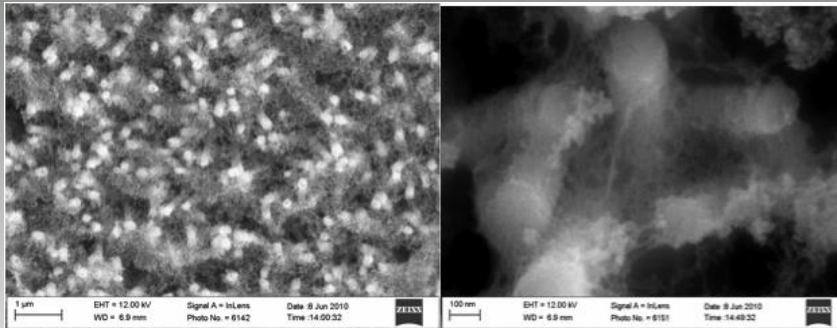


Phonon Depletion in Thermoelectric Nanostructures

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Nanocomposite thermoelectric materials offer the hope of high efficiency materials through independent optimization of a materials electrical and thermal properties.



Successful fabrication of high Seebeck coefficient ZnO nanowires embedded in an aerogel matrix has been achieved. The nanocomposite decreases the thermal conductivity of ZnO nanowires by more than a factor of ten and has the potential to produce thermoelectric figures of merit greater than three.

