Thermoelectric Properties of Granular Materials\textsuperscript{1} ANDREAS GLATZ, Argonne National Laboratory, IGOR BELOBORODOV, California State University, Northridge — I will present our recent studies of thermoelectric properties of mono-phasic nanocrystalline semiconductors and metals in the weak coupling regime. The focus is in particular on the thermopower and figure of merit for temperatures less than the charging energy. I will show that the dimensionless figure of merit $ZT$, which is a measure for the performance of thermoelectric materials, has a maximum at certain temperatures and grain sizes which can be in the range of technological relevant values $ZT > 3$. The talk is based on: Phys. Rev. B 80, 245440 (2009) and EuroPhys. Lett. 87, 57009 (2009).

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