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Electronic Correlations and Thermoelectric Performance

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Most of the recent progress in improving thermoelectric performance has been due to a reduction of the lattice thermal conductivity. In current state of the art thermoelectric materials the lattice thermal conductivity is near its minimum value, and further improvement in ZT is likely to come from improving the power factor, which depends on the electronic structure. This presentation will discuss the possibility of using electronic correlations to enhance ZT . This work is supported by the Department of Energy, Basic Energy Sciences, Materials Sciences and Engineering Division.