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Quantum-Enhanced Thermoelectric Effects in Polycyclic Molecular Junctions[1] JOSHUA BARR, CHARLES STAFFORD, University of Arizona — We calculate the thermoelectric response of a polycyclic molecular junction including electron-electron interactions. To do this, the molecular Green's function is determined via a Lanczos-based technique and π-electron effective field theory is used to model the degrees of freedom most relevant to transport. In these junctions we find that the presence of multiple rings leads to higher order quantum interference features giving rise to dramatic enhancements of molecular thermoelectric effects, consistent with previous predictions based on Hueckel theory, which neglected electron correlations.

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