UNIVERSITÄT DUISBURG ESSEN

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# Physikalisches Kolloquium

**Mittwoch, 08.02.2017**
**17:15 Uhr**
**Hörsaal MC 122**

## Thermoelectric energy harvesting at the nanoscale

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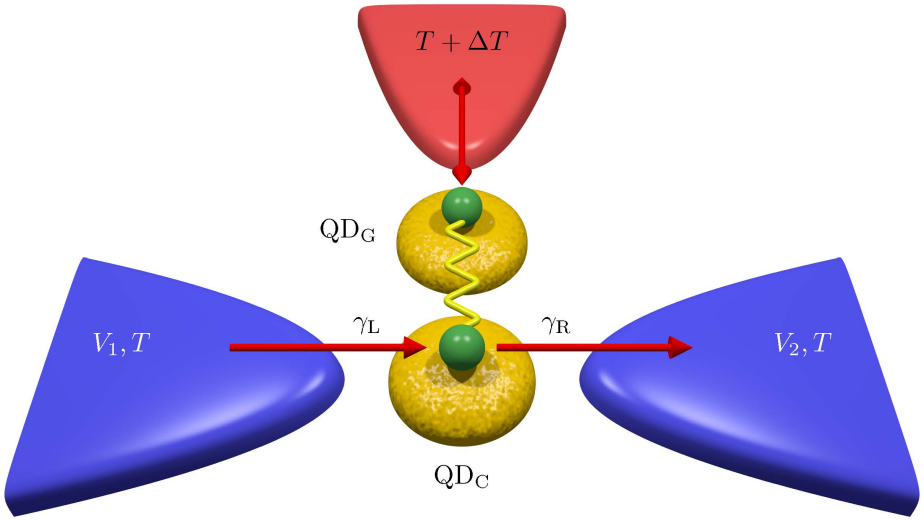


Recently, there has been a growing interest in thermoelectrics based on mesoscopic solid-state physics due potential applications in converting waste heat back into useful electricity.
A particular focus has been on energy harvesting in multi-terminal setups. Such systems allow for a crossed flow of heat and charge and enable the separation of the heat source from the actual rectifier, thus reducing leakage heat currents. Quantum dots are promising candidates for highly efficient energy harvesting because they can act as good energy filters. In this talk, I will discuss different energy harvesters based on quantum dots in the Coulomb-blockade regime, chaotic cavities and resonant-tunneling quantum dots. In addition, I will present recent work on chiral thermoelectrics with quantum Hall edge states that potentially allows for even higher efficiencies due to breaking of time-reversal symmetry.