

## Hybrid thermoelectrics based on polymer-nanoparticle composites

*Tuesday, 16 June 2015 16:40 (0 minutes)*

Thermoelectrics present a promising alternative to conventional solar cell technology energy generation. A temperature gradient applied along the thermoelectric material induces an electrical voltage, which is transformed into electrical power.

Although thermoelectrics have already reached high conversion efficiencies, limited and expensive raw materials and cost- and energy-intensive processing have limited the widespread application.

Therefore, we investigate the possibilities of using conductive polymers, processed with standard thin film fabrication methods like spin-coating, and the influence of introduced nanoparticles on the thermoelectric properties. Polymers show several advantages regarding availability, environmental aspects and facile fabrication into thin films. The promising electrical properties of the polymer blend PEDOT:PSS has been heavily investigated in literature. We mix silicon nanoparticles into the film and investigate the properties of the hybrid film.

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**Session Classification:** Poster Session