

## Effect of incorporated inorganic nanoparticles on the performance of organic solar cells

*Tuesday, 20 June 2017 14:36 (1 minute)*

Organic solar cells have attracted increased attention due to their advantages in tunable characteristics, low-cost manufacturing processes and flexibility, which opens up a promising alternative for conventional photovoltaics. Recently the most widely investigated bulk heterojunction donor-acceptor system of P3HT:PCBM was doped with iron oxide nanoparticles, resulting in an increase of efficiency.[1] Based on this approach, we investigate the effect of doping P3HT:PCBM active layers with alternative inorganic nanoparticles. We study the influence of different inorganic nanoparticle concentrations on current density-voltage characteristics and the absorbance. These optoelectronic properties are compared with structure information determined with scattering methods.

[1] D. M. González, V. Körstgens, Y. Yao, L. Song, G. Santoro, S. V. Roth, P. Müller-Buschbaum, *Adv. Energy Mater.* 2015, 5, 1401770.

**Primary author:** GROTT, Sebastian (TU München, Physik-Department, Lehrstuhl für Funktionelle Materialien)

**Co-authors:** OTT, Claudia (TU München, Fakultät für Chemie, Professur für Synthese und Charakterisierung innovativer Materialien); Mr HOHN, Nuri (TU München, Physik-Department, LS Funktionelle Materialien); Prof. MÜLLER-BUSCHBAUM, Peter (TU München, Physik-Department, LS Funktionelle Materialien); Prof. NILGES, Tom (TU München, Fakultät für Chemie, Professur für Synthese und Charakterisierung innovativer Materialien)

**Presenter:** GROTT, Sebastian (TU München, Physik-Department, Lehrstuhl für Funktionelle Materialien)

**Session Classification:** Poster