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Effect of inorganic SnIP nanoparticles on the morphology of polymer blends for photovoltaic applications

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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 increased efficiency.[1] Based on this approach, we investigate the effect of doping P3HT:PCBM active layers with inorganic SnIP nanoparticles[2]. We study the influence of different inorganic SnIP nanoparticle concentrations on the inner morphology of the polymer thin films by using grazing incidence wide angle X-ray scattering (GIWAXS). These results will be compared to the photoelectric characteristics of the corresponding organic solar cells.

[1] D. M. González, et al., *Adv. Energy Mater.* 2015, 5, 1401770.

[2] D. Pfister, et al., *Adv. Mater.* 2016, 28, 9783.

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