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## **On recombination mechanisms in solar cells involving organic semiconductors**

A change of paradigm seems to be occurring in the way to study organic solar cells, specifically the introduction of the effect of band bending arisen from unintentional doping of the active materials and charge carrier delocalization, which have been commonly overlooked, have explained fundamental phenomena such as, the apparent charge density dependence of mobility and life time, charge dissociation at the heterojunction interface, and variations in charge carrier collection due to thickness and architecture changes in the cells. In this talk, we show that classical semiconductor solid state physics can describe the recombination mechanisms occurring in devices with different architecture and materials, by taking into account both, band bending and charge carrier delocalization.

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