
Carrier processes and photostability in perovskites materials and solar cells

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Abstract

There is a growing number of studies on the carrier processes in perovskites materials and their relation with the photo-stability of perovskite cells. Here we report on a couple of experimental studies of the photo-degradation of the photoluminescence and photocurrent in perovskite materials and solar cells. Experimental characterizations as well as DFT and symmetry-based analysis of the fundamental electron scattering processes, suggest their origin to be related to the formation of localized bulk charged states, as well as surface states. The perovskite grain size is shown to play a major role for all these processes.

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