

## Measurement of Mobility-Lifetime products in MAPbI<sub>3</sub> films

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Photovoltaic solar cells operate under steady-state conditions that are established during charge carrier excitation and recombination. However, hitherto no model of the steady-state recombination scenario in the Halide Perovskites has been proposed. Here we present such a model that is based on a single type of recombination center, which is deduced from our measurements of the illumination intensity-dependence of the photoconductivity and the ambipolar diffusion length in those materials. We find that the dominant recombination mechanism is trap-mediated via a recombination level lying close to mid-gap. We also find that under steady-state illumination conditions MAPbI<sub>3</sub> is ambipolar, with hole and electron diffusion lengths of ~800 and 350 nm, respectively.