Erratum: Polaron absorption for photovoltaic energy conversion in a manganite-titanate *pn* heterojunction [Phys. Rev. B **85**, 165315 (2012)]

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We have to make substantial corrections to the part of the paper dealing with the impact of the high-pass filter on the photocurrent and consequently also to the determination of photocarrier diffusion lengths (Sec. III C). After publication, a new measurement of the transmission curve of the used 2.3 eV high-pass filter revealed that photon energies above 3.5 eV are also blocked, in contrast to the original transmission curve. Thus, the massive drop in the photocurrent [Fig. 6(a)] cannot be attributed unambiguously to the blanked low-energy part of the light source spectrum. Quite the contrary, newer (unpublished) measurements with a low-pass filter reveal that the contribution of excitations from photon energies lower than 2.3 eV amounts to only 2% of the total photocurrent under unfiltered illumination (Xe lamp; $T = 300$ K). Consequently, the photocarrier diffusion length as presented in Fig. 7 has to be corrected: According to the new dataset I_{SC}^{low} is exclusively generated from excitations inside the PCMO space charge region without additional inflow from the PCMO bulk. Nevertheless, transient pump probe absorption spectroscopy sets a lower limit to the lifetime of the optical excitations in the 1.5-eV polaron band of several 100 ps.^{1,2} We suggest that both the presence of the interfacial energy spike (Fig. 4) and the trapping centers, like Mn^{4+} sites³ or acceptor defects,⁴ may be detrimental to harvesting these low-energy excitations.

A precise estimate of the contribution from UV excitations in PCMO to the total photocurrent is hindered by the yet undetermined share of the STNO (including possible doped midgap states from the Mn/Ti interdiffusion). Apart from the aforementioned constraints on the carrier mobilities, the general observation of a strong UV absorption in hole-doped manganites points toward significant contributions from the PCMO, i.e., from polaronic charge-transfer excitations involving O $2p$ as initial states.⁵

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