

Electronic Supplementary Information

18.1 % hysteresis-less inverted $\text{CH}_3\text{NH}_3\text{PbI}_3$ planar perovskite hybrid solar cells

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Table S1. Fitting parameter for the time-resolved photoluminescent (TRPL) decay curves of an FTO/TiO₂/MAPbI₃ film and a glass/MAPbI₃/PCBM film.

Sample	A ₁ (%)	τ ₁ (ns)	A ₂ (%)	τ ₂ (ns)	A ₃ (%)	τ ₃ (ns)	τ _{avg} (ns)
TiO ₂	56.98	0.2822	38.96	3.138	4.05	13.741	1.9400
PCBM	55.79	0.2138	41.71	2.3648	2.5	6.86	1.2770

$$\tau_{\text{avg}} = \sum_i A_i \tau_i, \text{ where } \sum_i A_i = 1$$

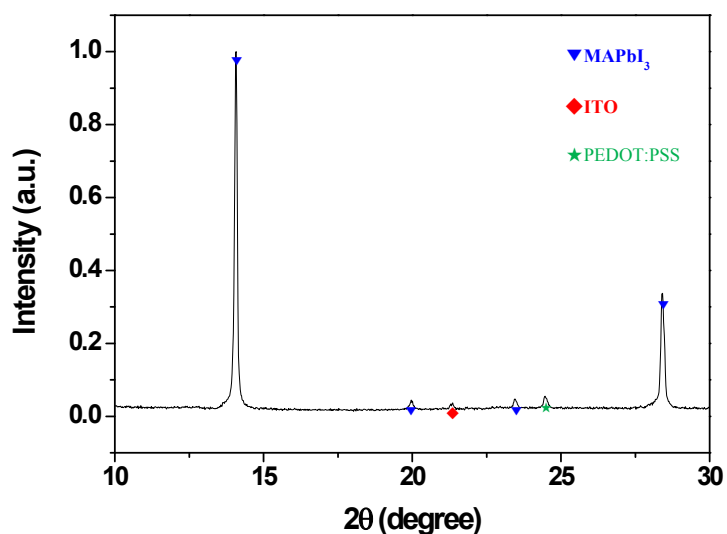


Fig. S1. XRD pattern of MAPbI₃/PEDOT:PSS/ITO substrate.

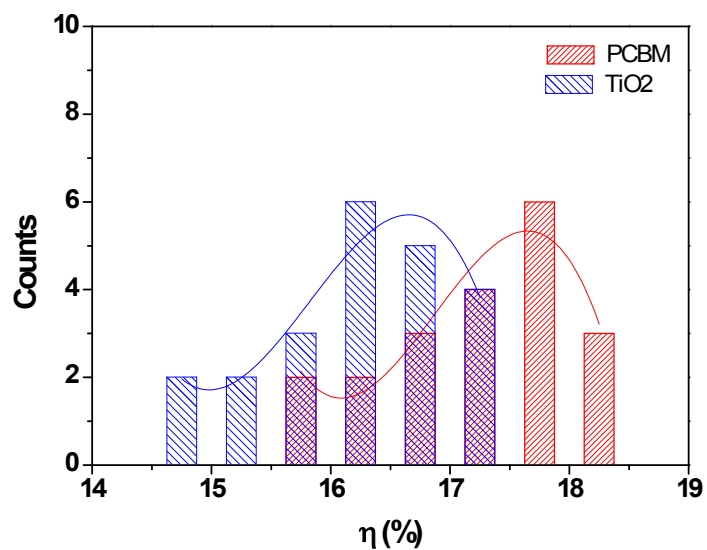


Fig. S2. The efficiency deviation of 20 samples of inverted (PCMB) and normal (TiO₂) MAPbI₃ planar perovskite hybrid solar cells.

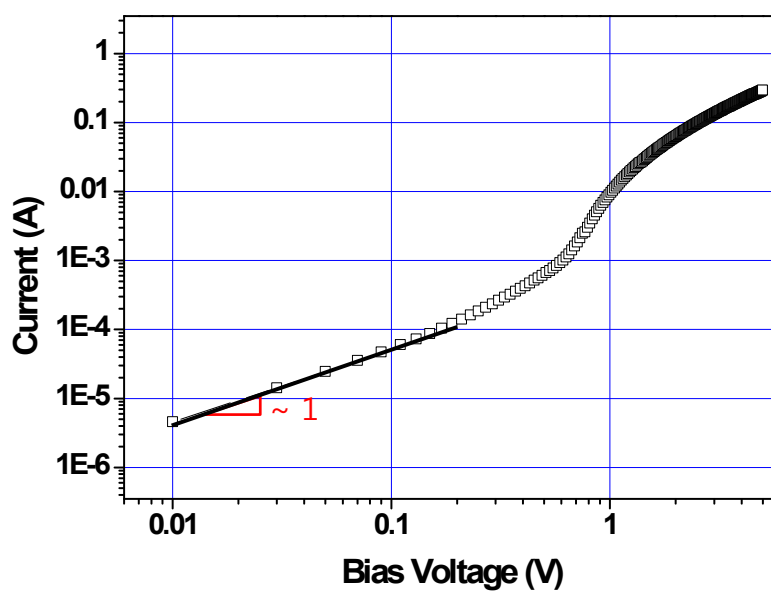


Fig. S3. Log-log plot of I-V curve for TiO₂ electron conductor.

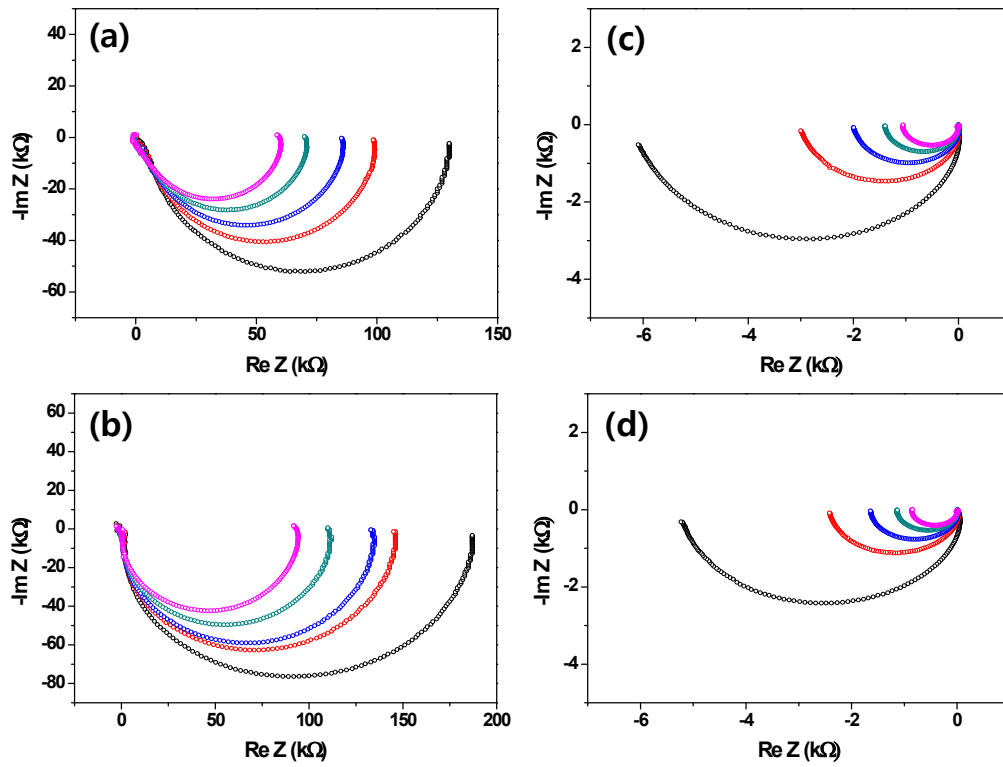


Fig. S4. IMPS (a, b) and IMVS (c, d) of inverted (a, c) and normal (b, d) MAPbI₃ planar perovskite hybrid solar cell.