Supporting Information

Two-terminal perovskite/perovskite tandem solar cell

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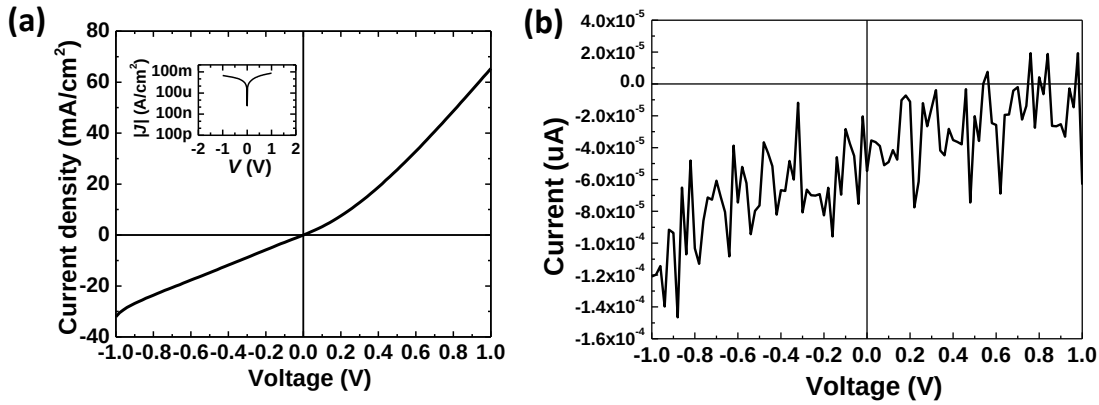

Fig. S1 *J-V* characteristics of the devices based on pure PCBM with the structures shown in the insets of Fig. 3: (a) the current flows vertically across the film; (b) the current flows in parallel with the substrate.

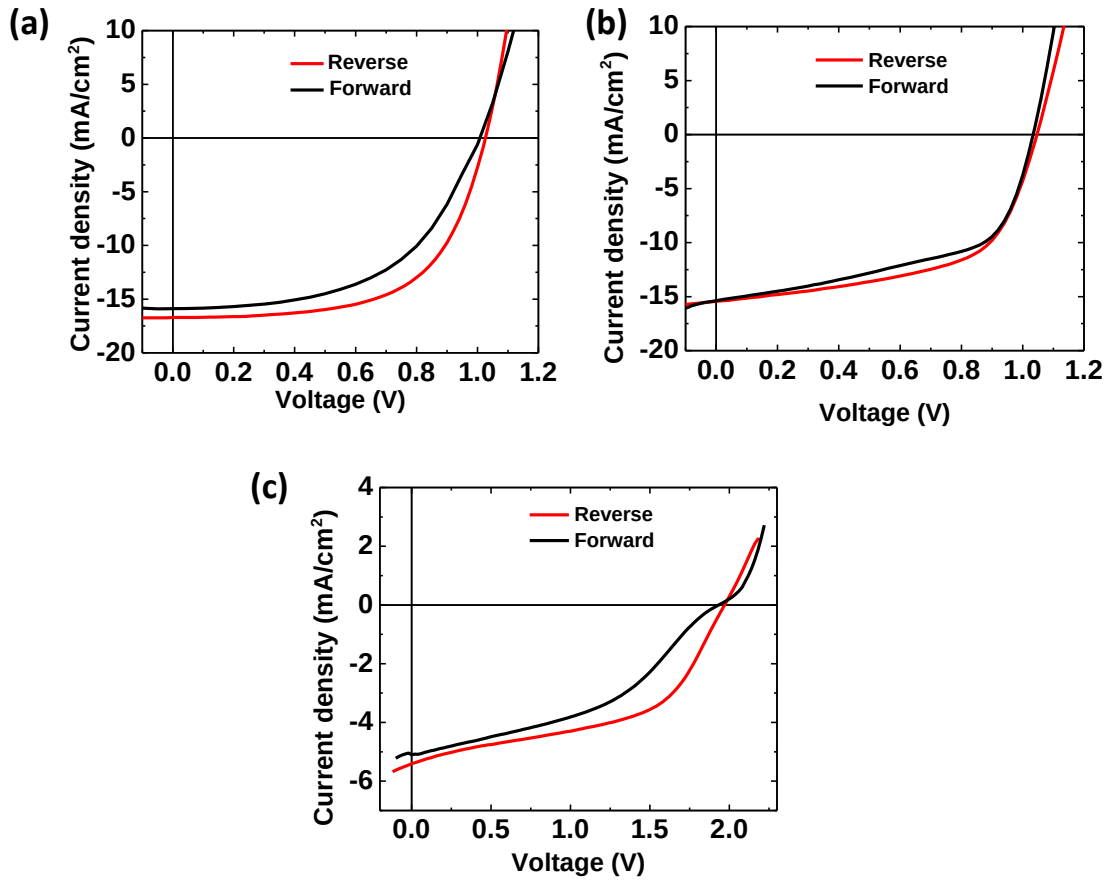

Fig. S2 *J-V* characteristics of the devices based on the structure: (a) glass/FTO/c-TiO_2 /m-TiO_2/$MAPbI_3$/spiro-OMeTAD/hc-PEDOT:PSS; (b) glass/ITO/PEI/PCBM:PEI/$MAPbI_3$ /spiro-OMeTAD/hc-PEDOT:PSS; (c) as-prepared perovskite/perovskite tandem device, measured in both reverse and forward directions to test their hysteresis effects.

Table S1 Device performance of perovskite single and tandem cells summarized from Fig. S2.

The top subcell (ITO/PEI/PCBM:PEI/$CH_3NH_3PbI_3$/spiro-OMeTAD/*hc*-PEDOT:PSS)				
	*V*oc (V)	*J*sc (mA/cm^2)	FF	PCE (%)
Reverse	1.05	15.44	0.58	9.40
Forward	1.03	15.40	0.55	8.72

The bottom subcell (FTO/c-TiO_2/m-TiO_2/$CH_3NH_3PbI_3$/spiro-OMeTAD/*hc*-PEDOT:PSS)				
	*V*oc (V)	*J*sc (mA/cm^2)	FF	PCE (%)
Reverse	1.03	16.71	0.61	10.50
Forward	1.01	15.89	0.54	8.67

The as-prepared perovskite tandem cell				
	*V*oc (V)	*J*sc (mA/cm^2)	FF	PCE (%)
Reverse	1.97	5.4	0.50	5.32
Forward	1.93	5.1	0.42	4.13