

Enhanced efficiency in perovskite solar cells by eliminating electron contact barrier between the metal electrode and electron transport layer

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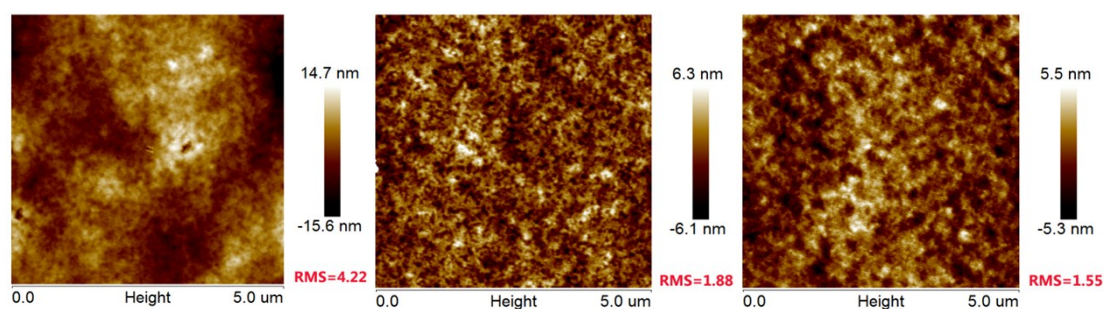


Figure S1 . The AFM images of (a) perovskite/PCBM film, (b) perovskite/PCBM/BC film, (c) perovskite/PCBM/BCB film

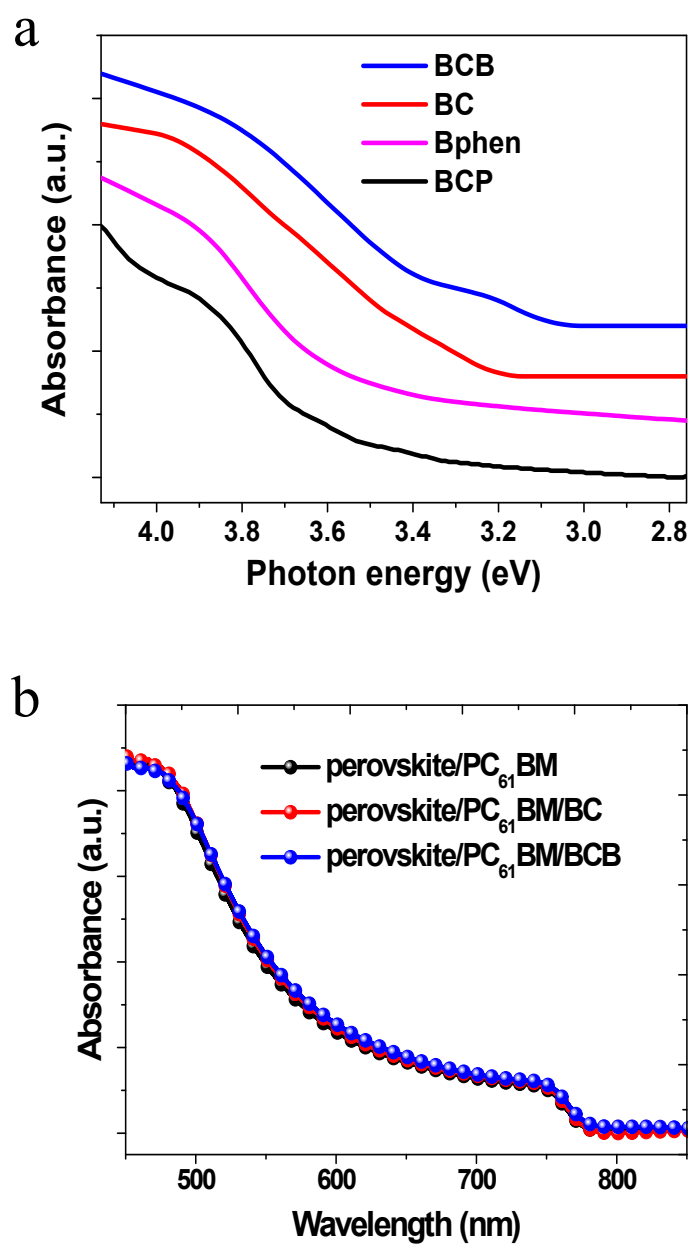


Figure S2 . (a) The UV-Vis absorption spectra of BCP, Bphen, BC and BCB films. (b) The UV-Vis absorption spectra of PSCs based on BC or BCB.

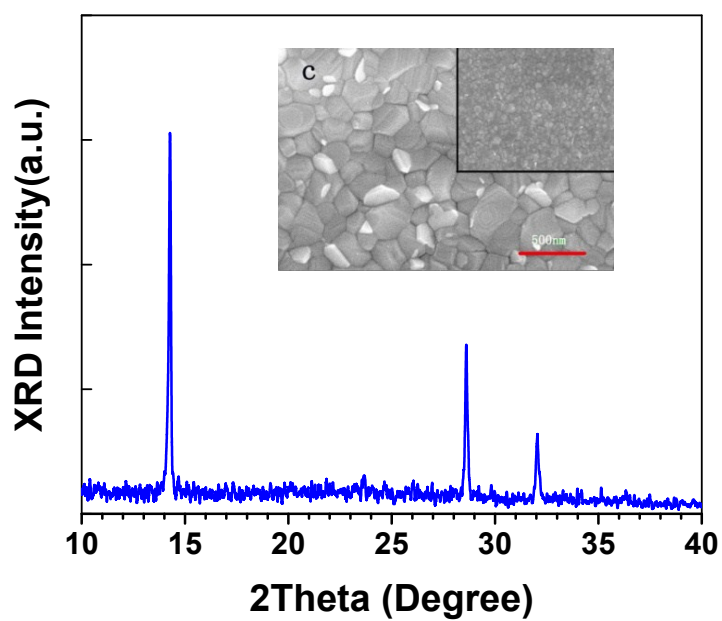


Figure S3. The XRD and SEM of the perovskite film prepared in this work.

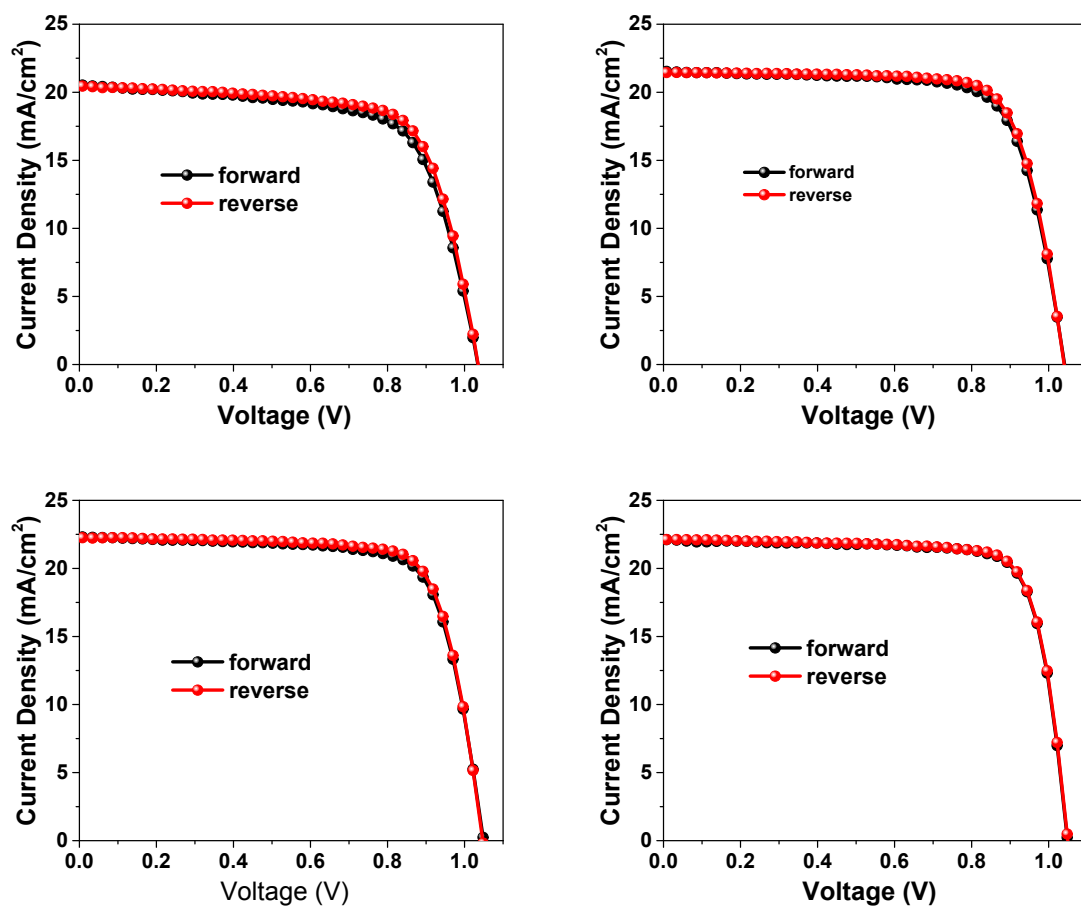


Figure S4 . The J-V curves of PSCs based on different IML measured in different voltage scan directions.

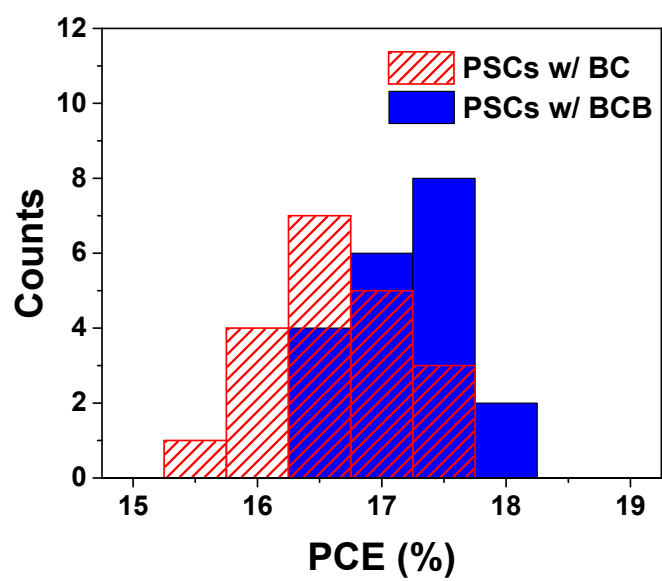


Figure S5 . Histogram of efficiencies based on 20 devices.

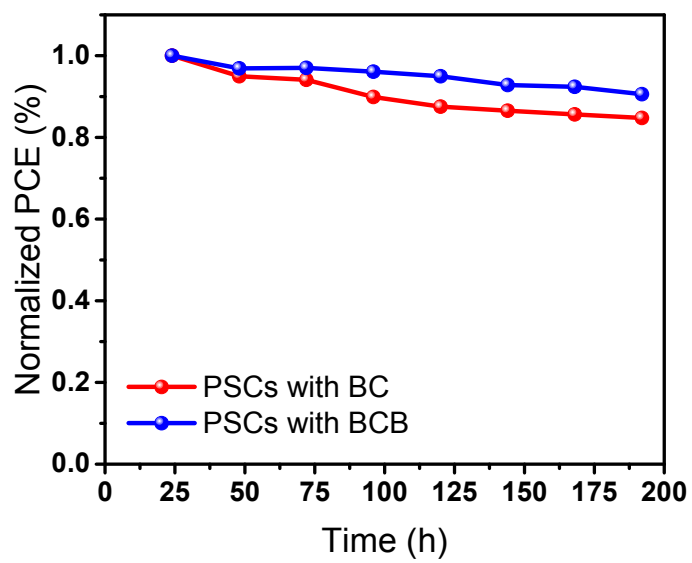


Figure S6 . Stability tests of the PSCs with BC or BCB under ambient conditions.

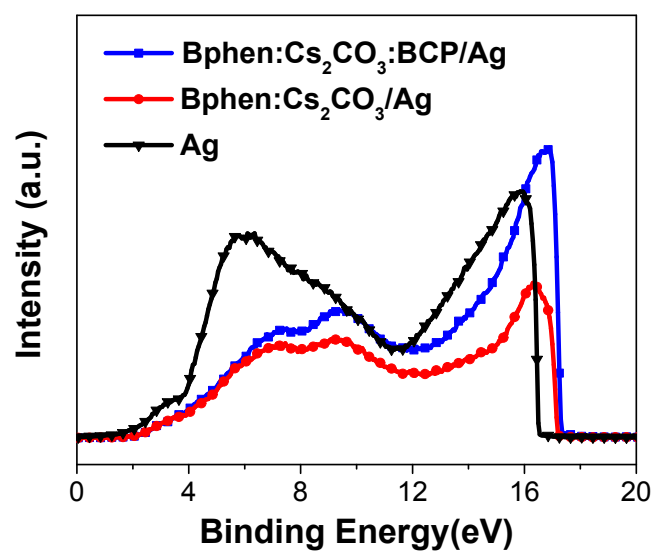


Figure S7 . The UPS spectra of Ag cathode modified with different IML.

Samples	τ_1 (ns)	τ_2 (ns)
Per/PC ₆₁ BM/BCB/Ag	10.74	160.94
Per/PC ₆₁ BM/BC/Ag	16.33	159.45
Per/PC ₆₁ BM/Ag	21.17	161.11

Table S1 . The T_1 and T_2 parameters of the Perovskite/PC₆₁BM with or without IML.