

Supplementary Information

Accelerated formation and improved performance of CH₃NH₃PbI₃ based perovskite solar cells via solvent coordination and anti-solvent extraction

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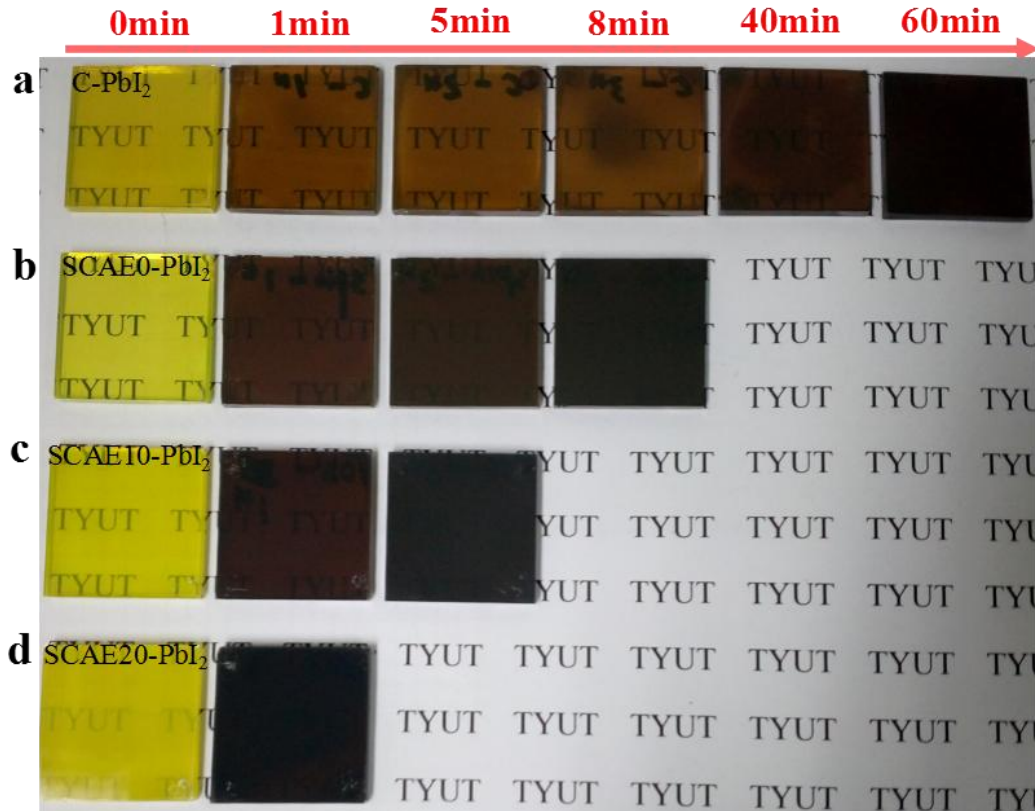


Fig. S1 The photographic images of perovskite samples converted from (a) C-PbI₂, (b) SCAE0-PbI₂, (c) SCAE10-PbI₂ and (d) SCAE20-PbI₂ films after different dipping time.

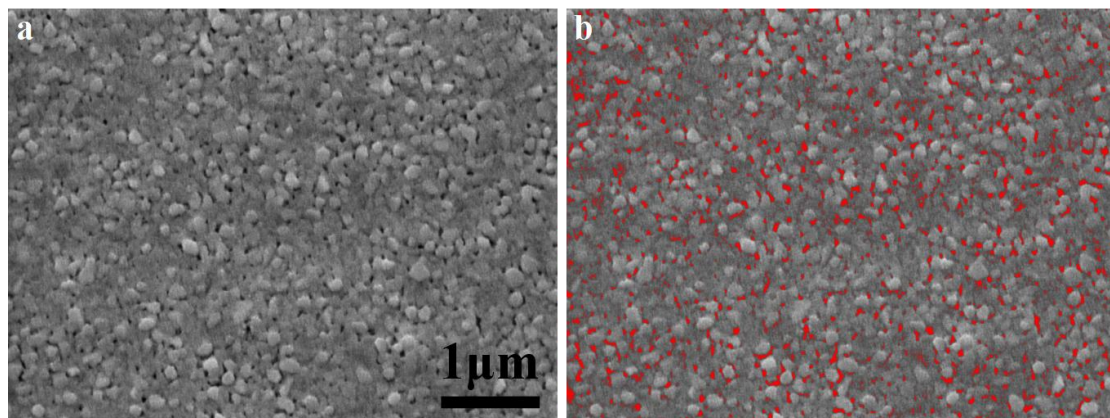


Fig. S2 (a) Surface SEM images of as-deposited PbI₂ film; (b) The analysis of area fraction of voids on the same as-deposited PbI₂ film surfaces via the ImageJ software. The red color regions indicate the voids on PbI₂ films. The fraction of voids in the PbI₂ films was estimated approximately at 5.4%.

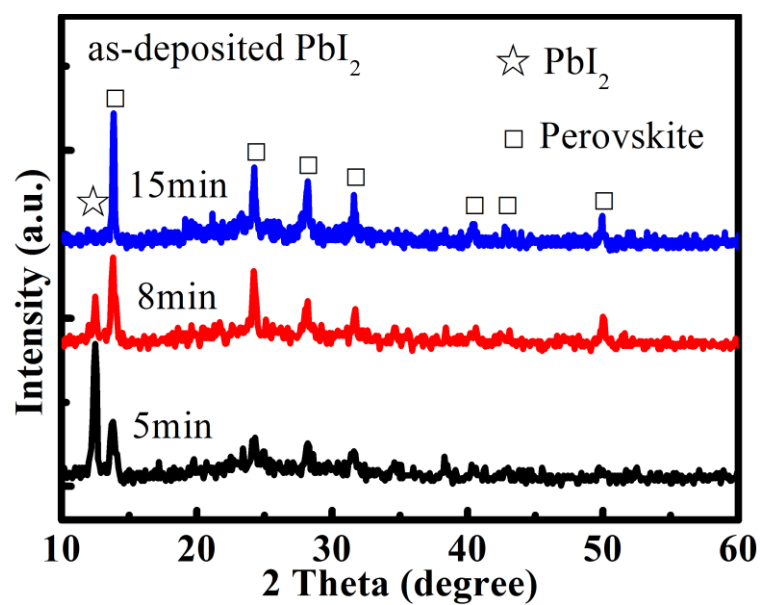


Fig. S3 The evolution of XRD patterns of the perovskite film derived from as-deposited PbI_2 film on glass.

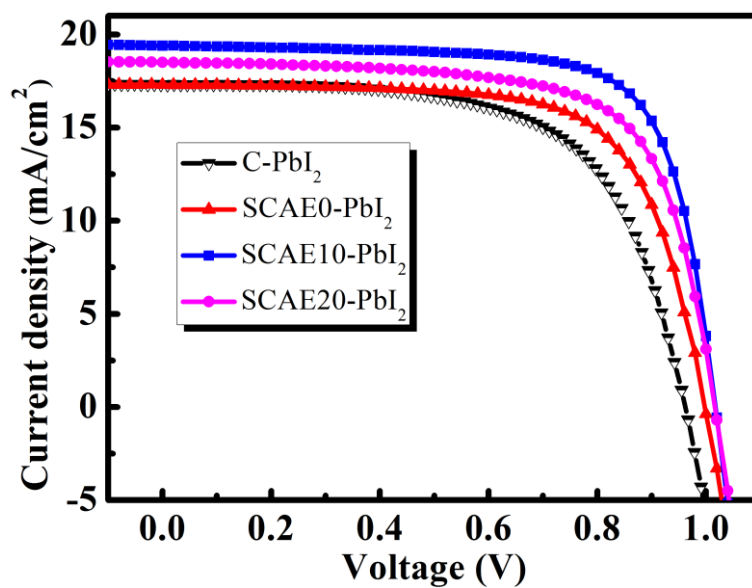


Fig. S4 The typical J - V curves of bilayered mesostructured perovskite devices based on C-PVK, SCAE0-PVK, SCAE10-PVK and SCAE20-PVK films.

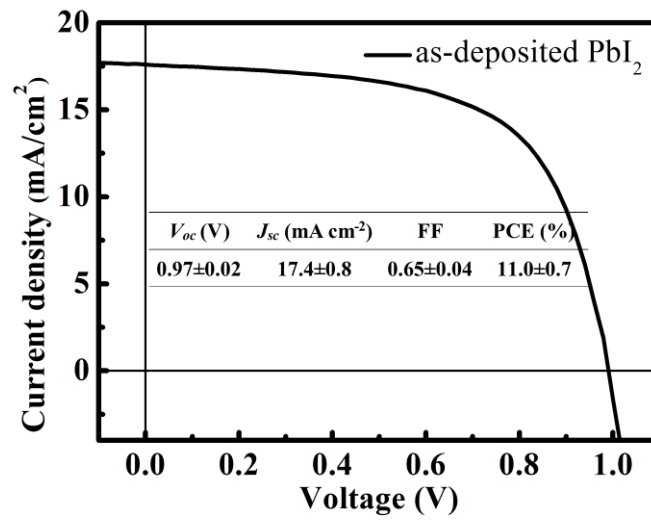


Fig. S5 Typical current density-voltage curve of the devices derived from as-deposited PbI_2 measured under AM 1.5G solar irradiation of 100 mW cm^{-2} in the reverse direction. Inset is their statistic device performance results determined from six devices.

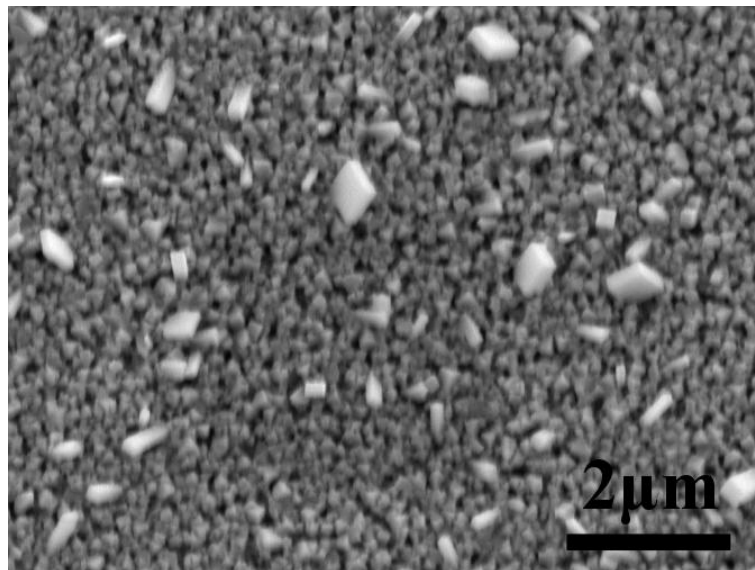


Fig. S6 Surface SEM image of the perovskite film derived from as-deposited PbI_2 .