

A modified sequential deposition route for high-performance carbon-based perovskite solar cells under atmosphere condition

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Figure S1. Photograph of PbI₂ films with (left) and without DMSO (right)

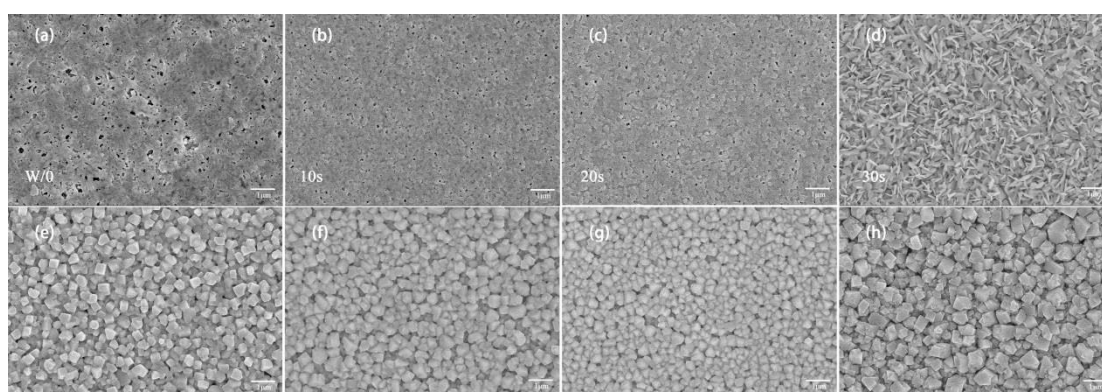


Figure S2. SEM top view images of PbI₂ films prepared under different exposure time from (b)–(f) 10s to 30s, and corresponding MAPbI₃ films (f)–(h), respectively.

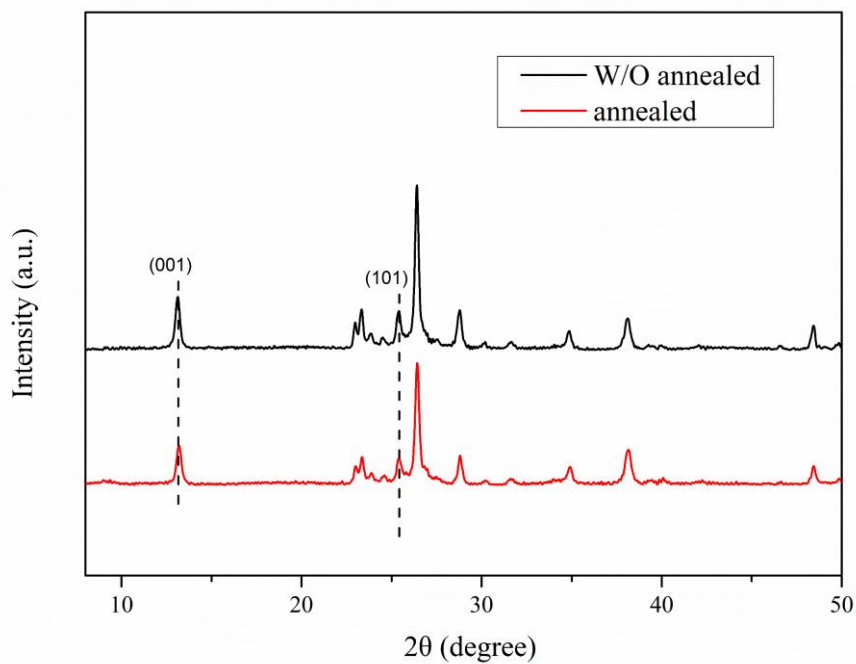


Figure S3. XRD patterns of corresponding MAPbI₃ films without (black line) and with annealing (red line).

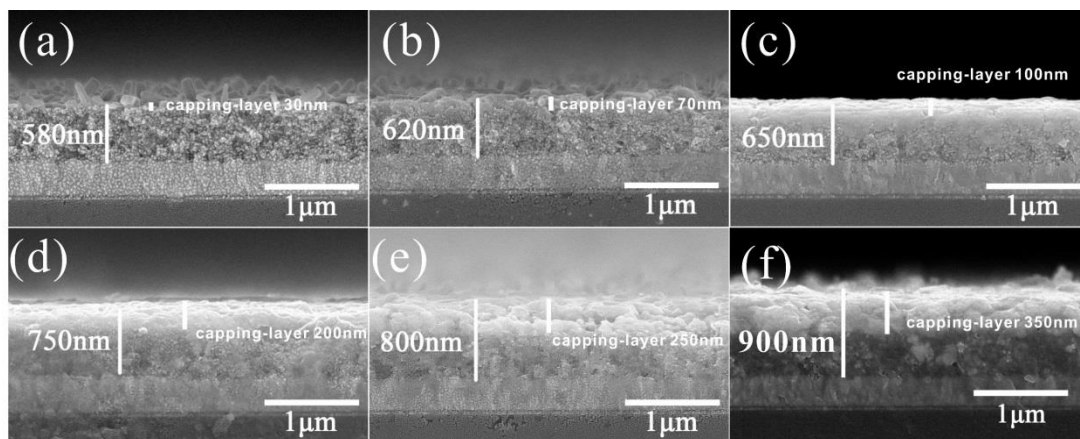


Figure S4. Cross-sectional SEM images of PbI₂ films prepared under different spin-coating speeds from (a)–(f) 6000 r.p.m. to 1000 r.p.m..

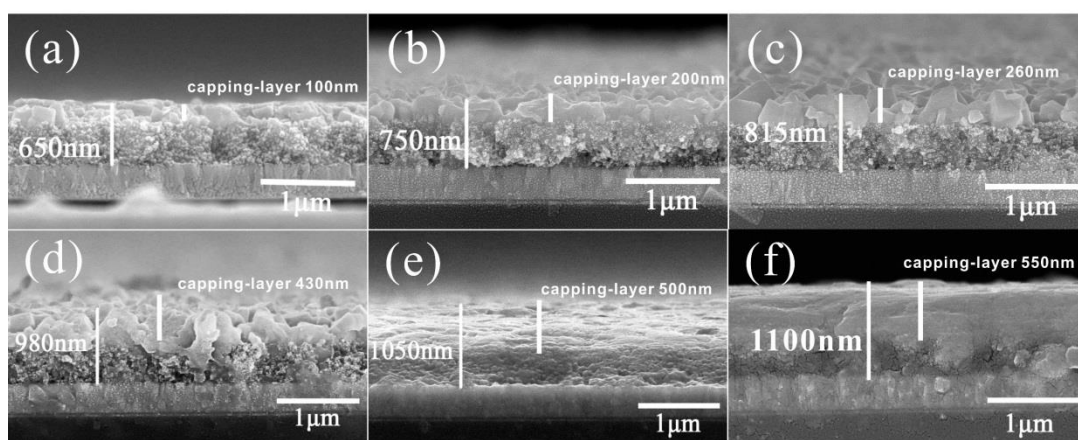


Figure S5. Cross-sectional SEM images of MAPbI₃ films corresponding PbI₂ films prepared under different spin-coating speeds from (a)–(f) 6000 r.p.m. to 1000 r.p.m..