

Supplementary Materials: MA₂Cl-Induced Controlled Crystallization in Sequentially Deposited Perovskites for High-Efficiency and Stable Perovskite Solar Cells

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Table S1. Fitted EIS data of pure perovskite and MAPbCl₃-induced PSCs.

Sample	<i>R_s</i> (ohm)	<i>R_{CT}</i> (ohm)	<i>R_{REC}</i> (ohm)
Pure perovskite	30.4	99.3	425.6
MAPbCl ₃ -induced	29.7	82.9	618.5

Citation: Ma, Q.; Zhang, Y.; Lu, C.; Zhang, R.; Wang, X.; Zhang, W.; Jiang, Z. MA₂Cl-Induced Controlled Crystallization in Sequentially Deposited Perovskites for High-Efficiency and Stable Perovskite Solar Cells. *Coatings* **2023**, *13*, 1885. <https://doi.org/10.3390/coatings13111885>

Academic Editors: Alessandro Latini and Alexandre Botas

Received: 6 October 2023

Revised: 30 October 2023

Accepted: 31 October 2023

Published: 2 November 2023



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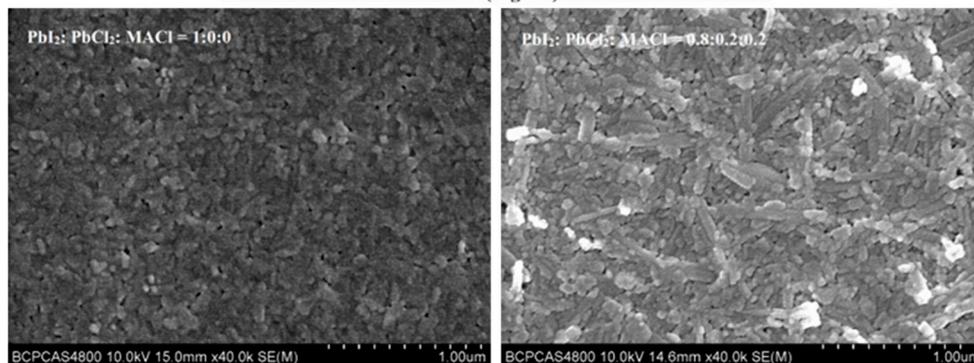
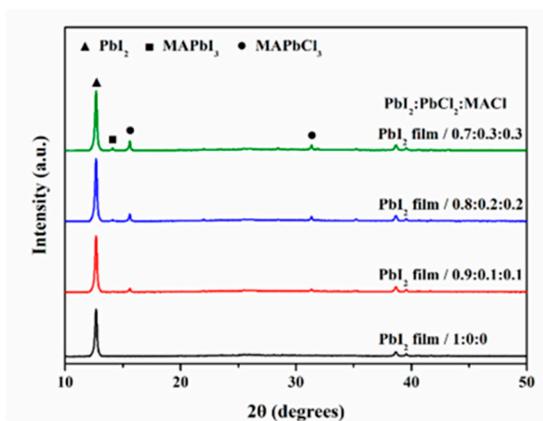


Figure S1. XRD and top-view SEM images of pure PbI₂ and PbI₂ films containing MAPbCl₃.

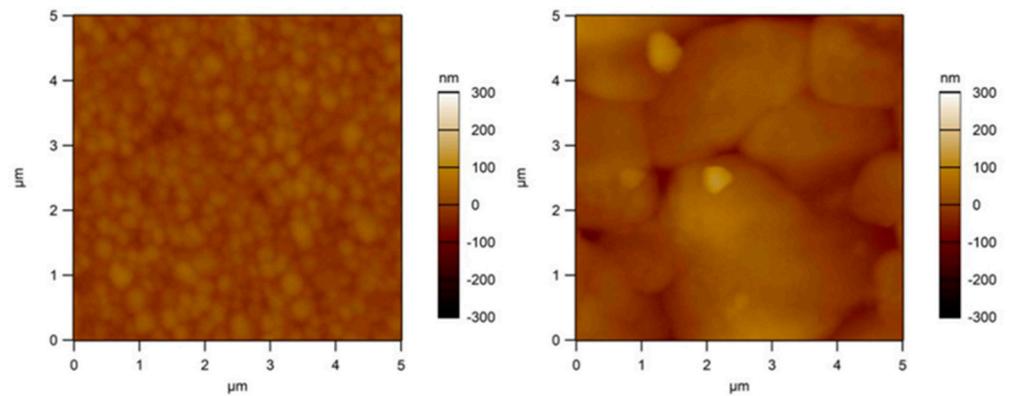


Figure S2. AFM of perovskite film prepared from a precursor solution containing $\text{PbI}_2:\text{PbCl}_2:\text{MACl}$ in 1:0:0 and 0.8:0.2:0.2 ratios.

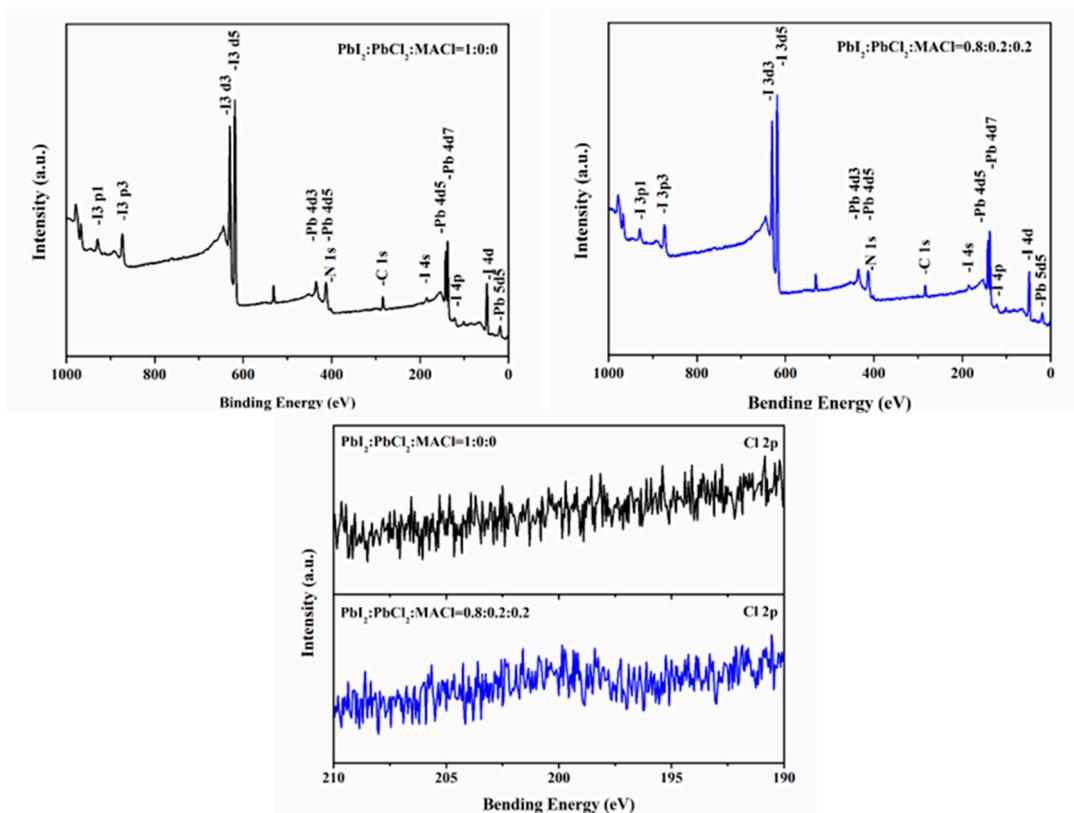


Figure S3. XPS spectra of perovskite film prepared from a precursor solution containing $\text{PbI}_2:\text{PbCl}_2:\text{MACl}$ in 1:0:0 and 0.8:0.2:0.2 ratios.

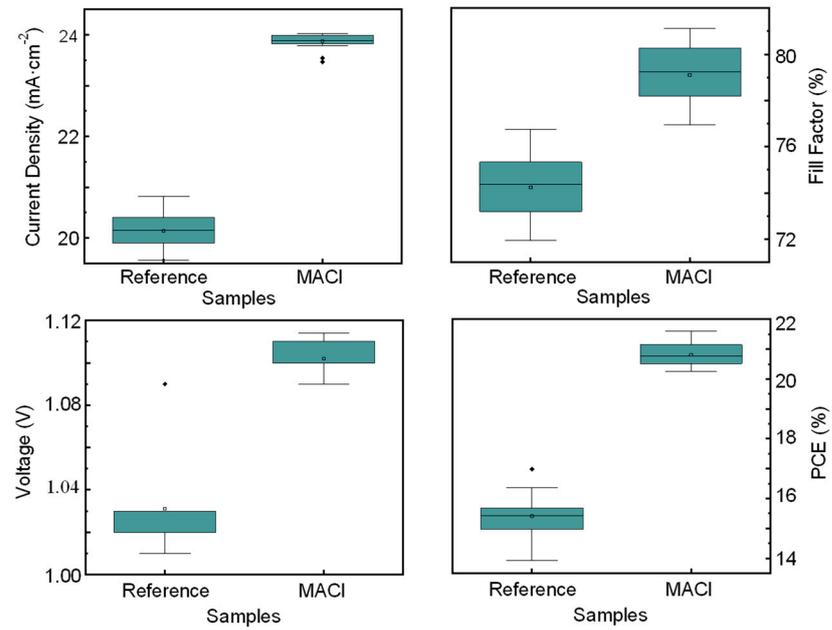


Figure S4. Distribution of photovoltaic parameters of perovskite solar cells.

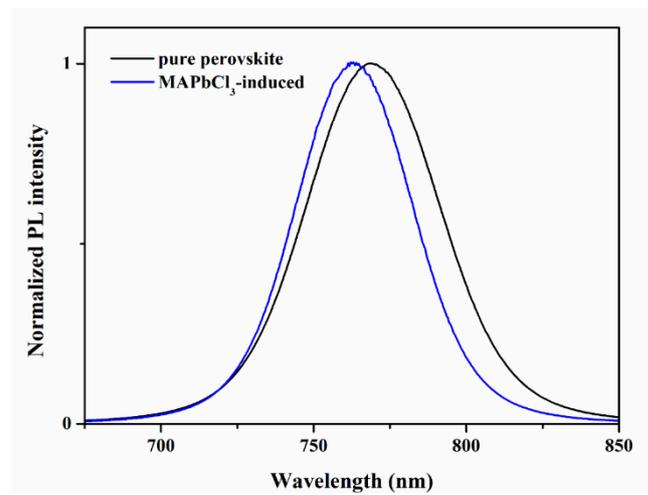


Figure S5. Normalized steady-state PL spectra of pure perovskite and MAPbCl₃- induced films.