

## Novel scalable aerosol-assisted CVD route for perovskite solar cells

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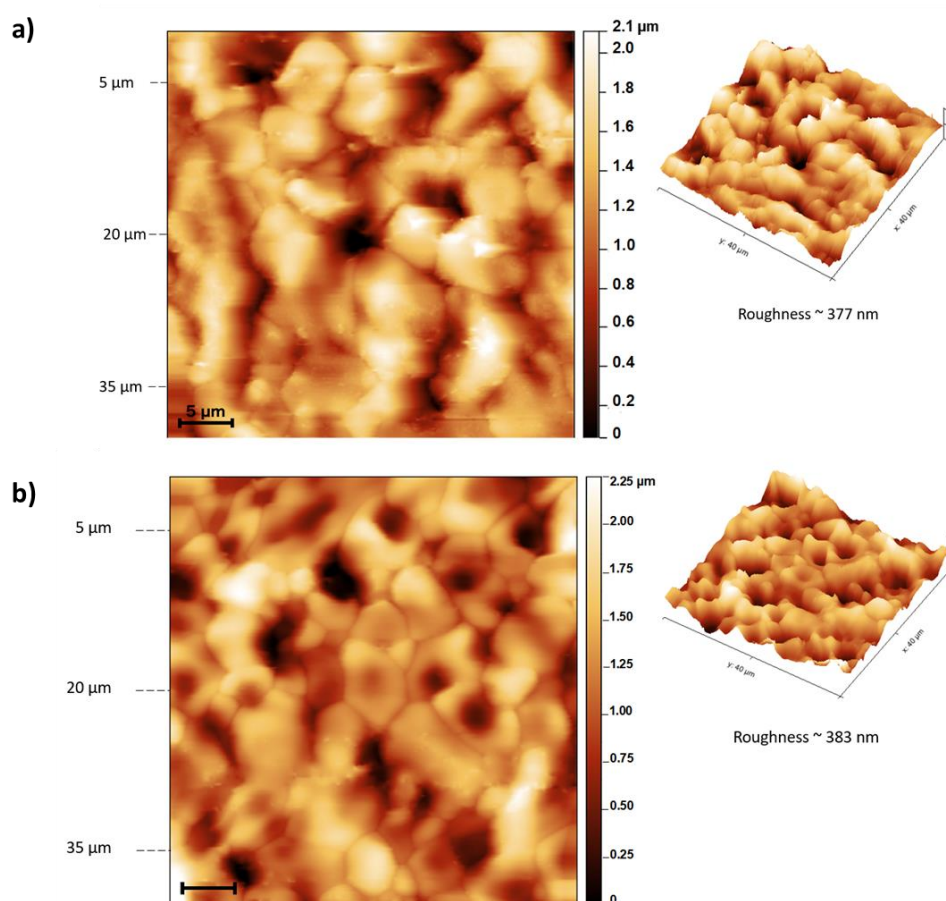
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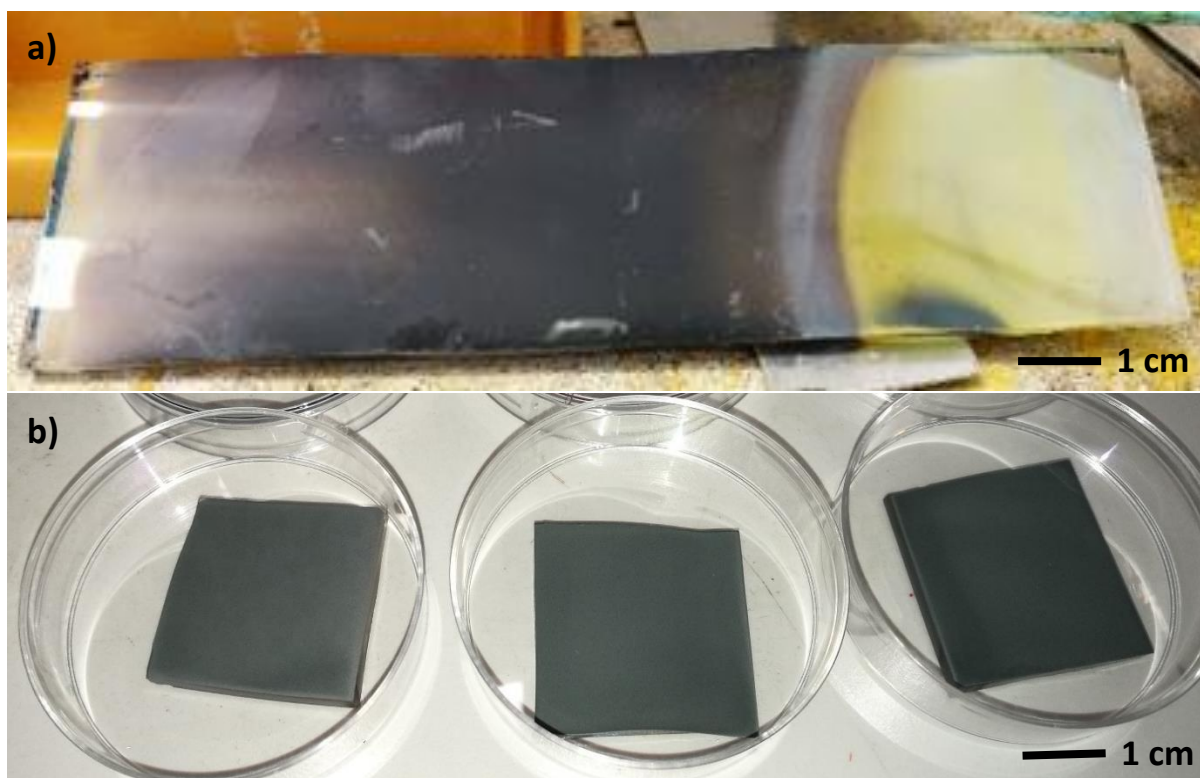
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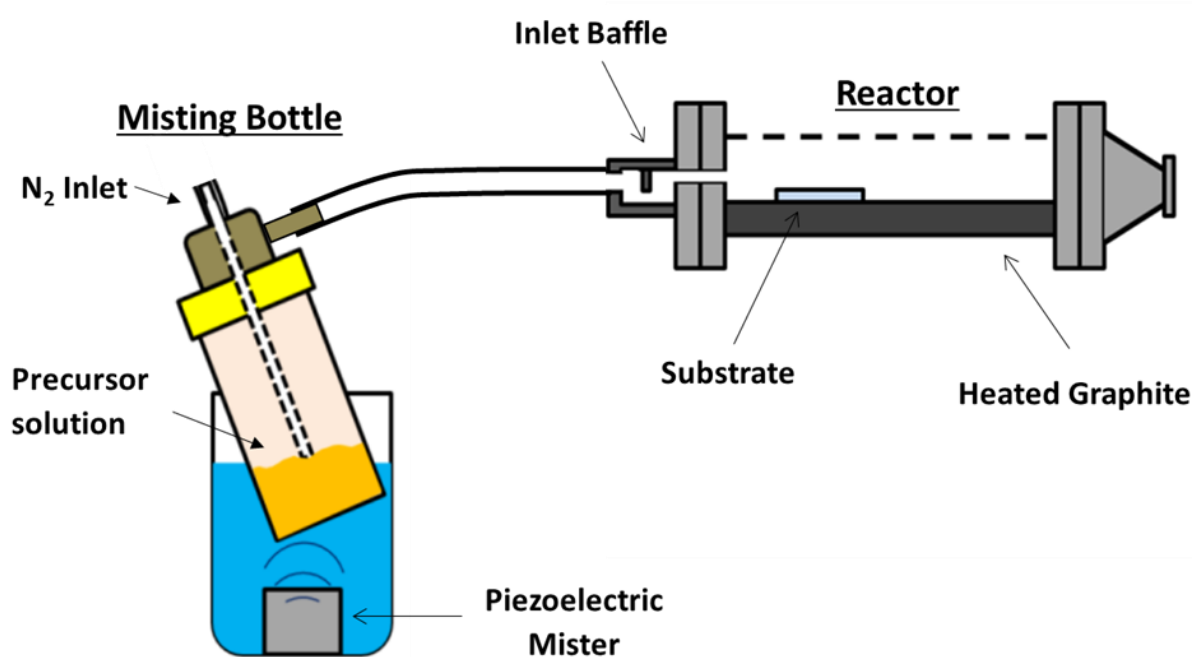
### Supplementary Information



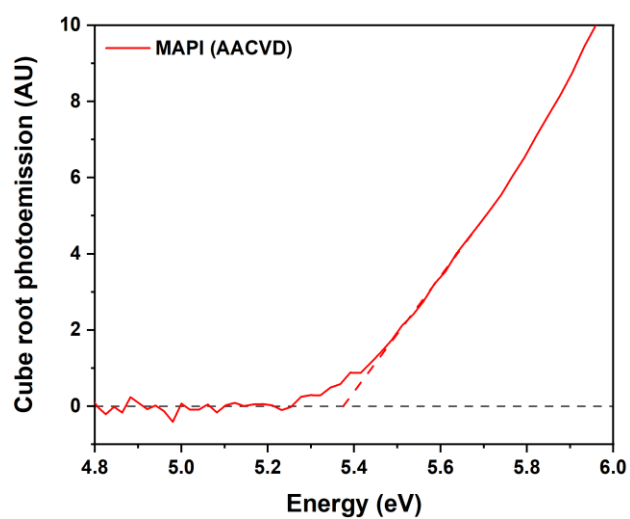
**Figure S1.** Atomic force microscopy images of two AACVD MAPI films. Measurements, show a film R.M.S. roughness of 377 nm for sample a) and 383 nm for sample b).



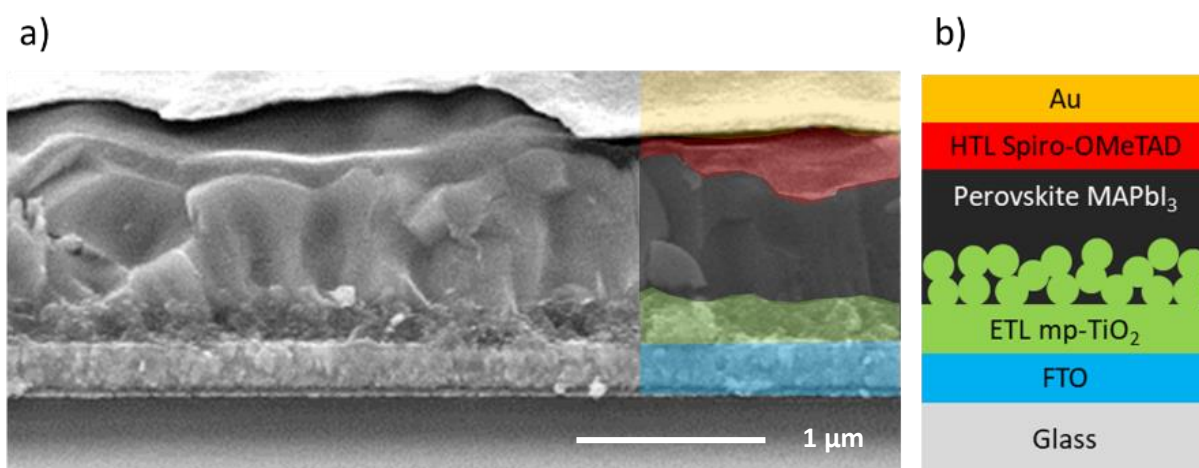
**Figure S2.** Photographs of MAPI films deposited via AACVD. a) Shows a 14 cm x 7 cm substrate (maximum size) coated with MAPI via our AACVD method. b) Three 2.5 cm x 2.5 cm substrates coated with MAPI, using our AACVD method.



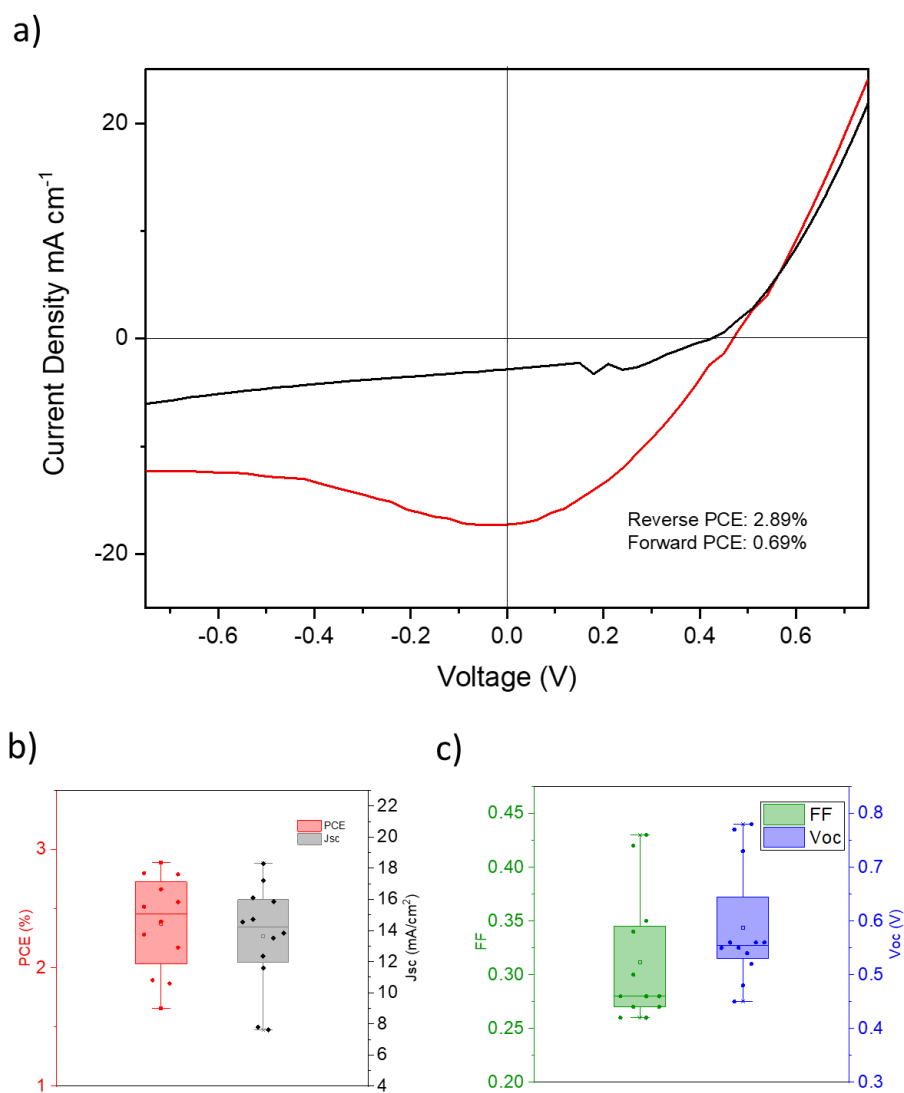
**Figure S3.** Schematic of the experimental setup for AACVD of perovskite films.



**Figure S4.** APS data with intercept showing a valence band position of 5.37 eV for the final MAPI film.



**Figure S5.** SEM cross-section of completed cell using spiro-OMeTAD (a) with corresponding schematic (b) showing n-i-p configuration used. Same comment as main paper regarding lower layers.



**Figure S6.** Performance of devices using spiro-OMeTAD HTLs, as shown in Figure S5. a) J-V Scan of champion cell (measured at 0.03 V/s). b-c) Box-plot of PCE and  $J_{sc}$  (b) and FF and  $V_{oc}$  (c) of 12 cells.