

Supplementary Information

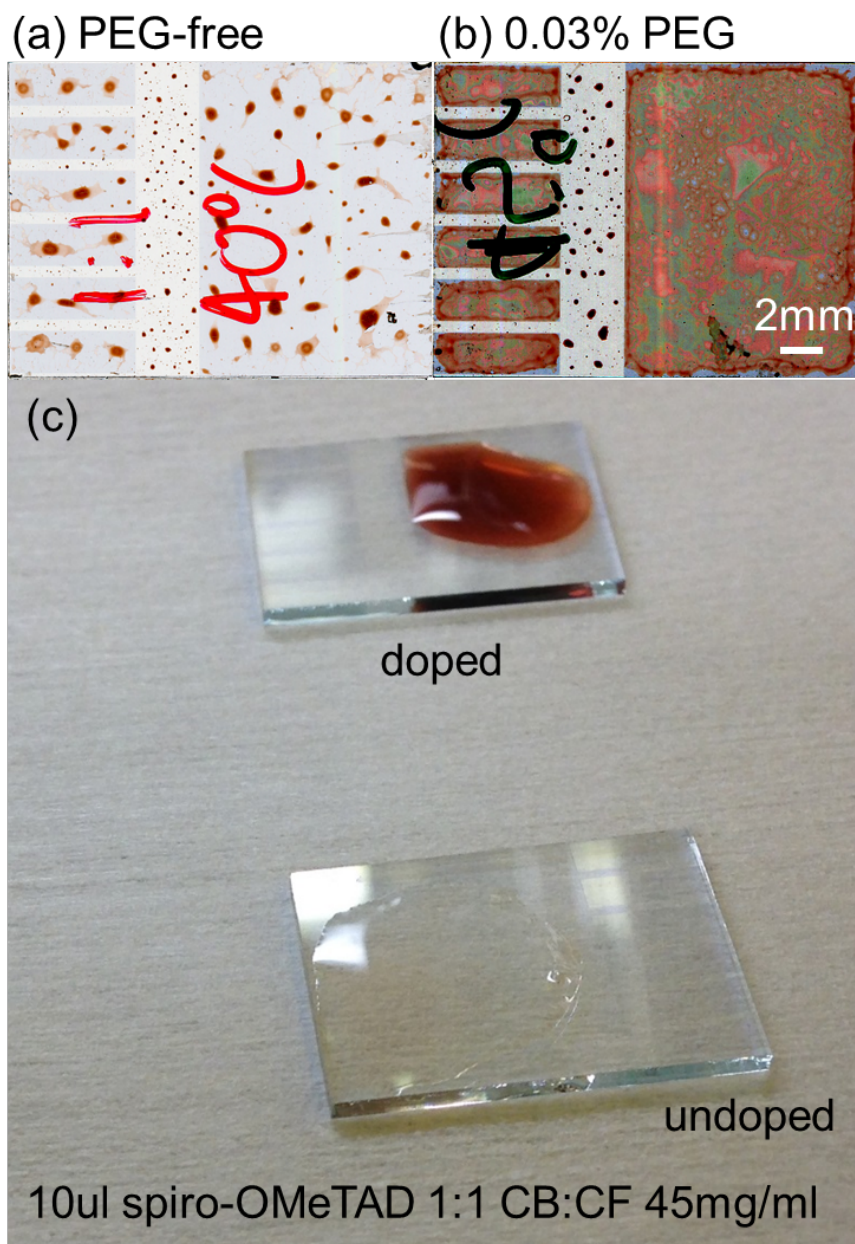


Figure S1 – Spray-coating spiro-OMeTAD ink onto an ITO/glass surface (a) without and (b) with 0.03% PEG added to the ink. The increased contact angle can be seen in the image shown in part (c) when dopants are added to the ink.

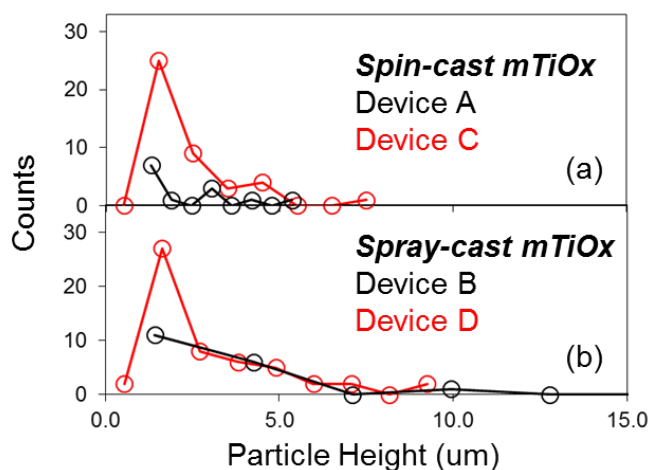


Figure S2 - The results of particle size analysis from topographic maps shown in Figure 4 are shown in parts (a) and (b): a particle height histogram from device A and C in shown in part (a) and device B and D in part (b)

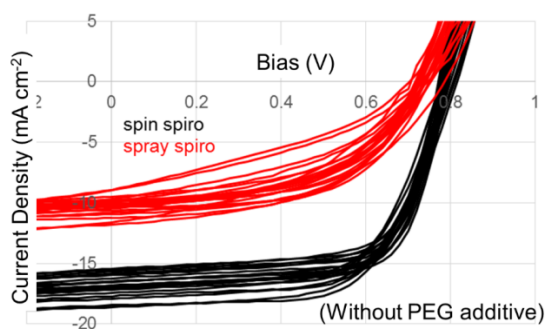


Figure S3 – Analogous spin-cast PSCs fabricated with spin-cast (black lines) and spray-cast (red lines) spiro-OMeTAD thin-films without the PEG additive.

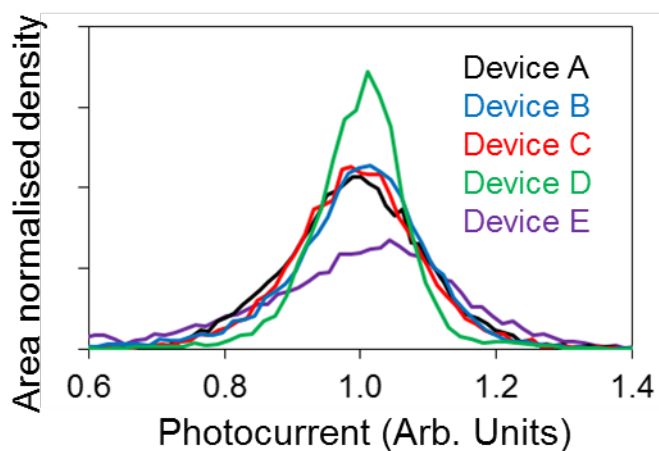


Figure S4 – Area normalised photocurrent histogram plotted from LBIC map data shown in Figure 4(f-g).

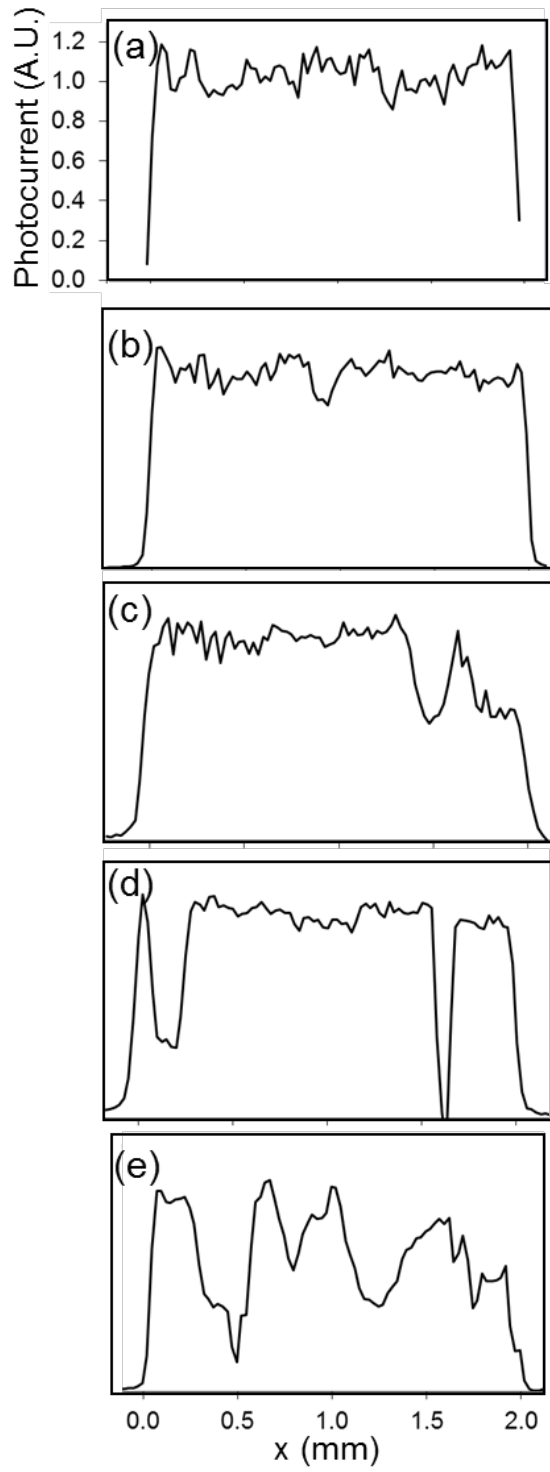


Figure S5 – Cross-sectional data from LBIC maps of Device A-E shown in Figure 4 (main text) shown in parts (a) to (e).

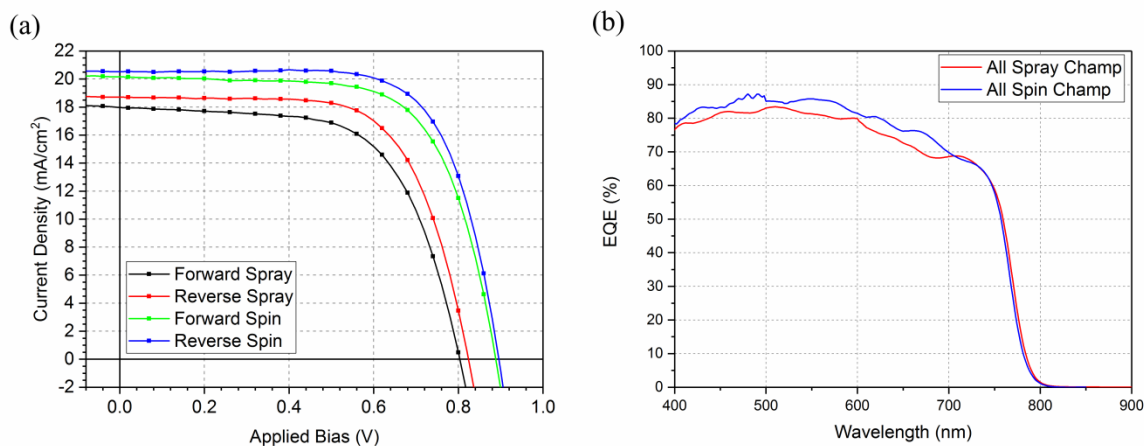


Figure S6 – Champion J-V [part (a)] from small-area devices E (all-spray-cast) and A (all-spin cast). The champion all-spin device had an efficiency of 12.9 % whilst the champion all-spray device had an efficiency of 10.2 %. Part b shows EQE spectra for these devices with respect to AM 1.5 illumination. We calculate the expected values for the J_{SC} to be 18.4 mA cm⁻² for device E and 19.0 mA cm⁻² for device A.

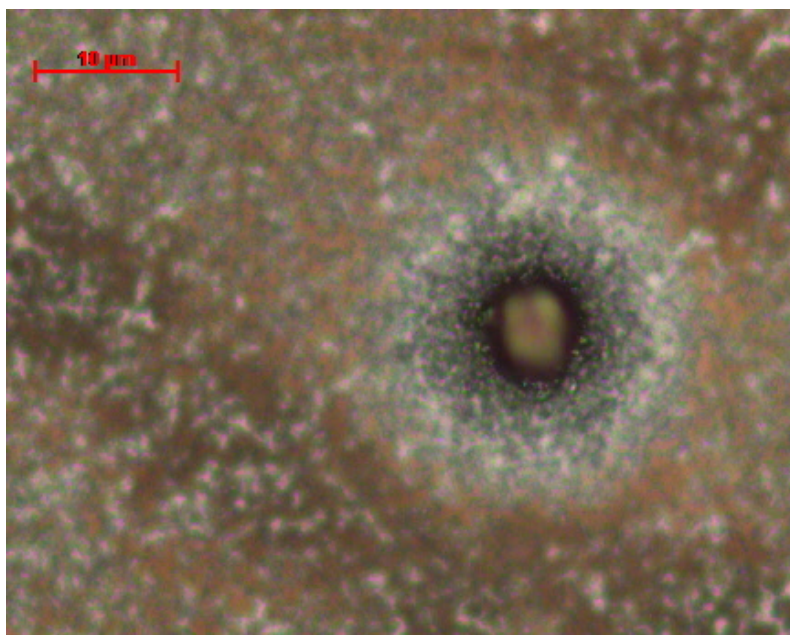


Figure S7 – Optical microscope image of an aggregate in a spray-cast perovskite film. The scale bar is 10 μm.

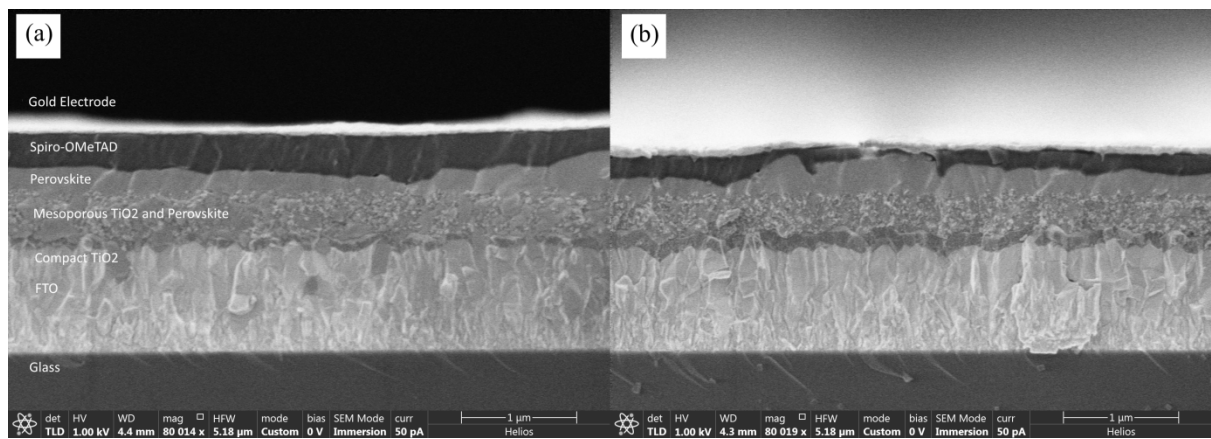


Figure S8 – Cross sectional SEM recorded across device A (part a) and device E (part b).