Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C. This journal is © The Royal Society of Chemistry 2019

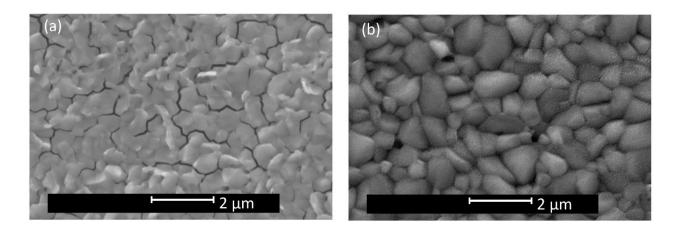


Figure **S1**. SEM images of a MAPI surface (a) and MASI surface (b). The cracks between the grains of the MAPI sample are caused by the exposure to the electron beam.

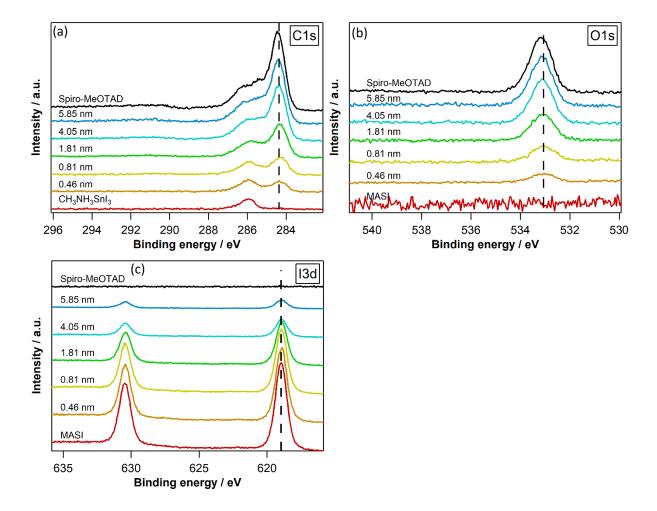


Figure S2. Detailed spectra of the MASI / Spiro-MeOTAD interface with (a) C1s, (b) O1s and (c) I3d.

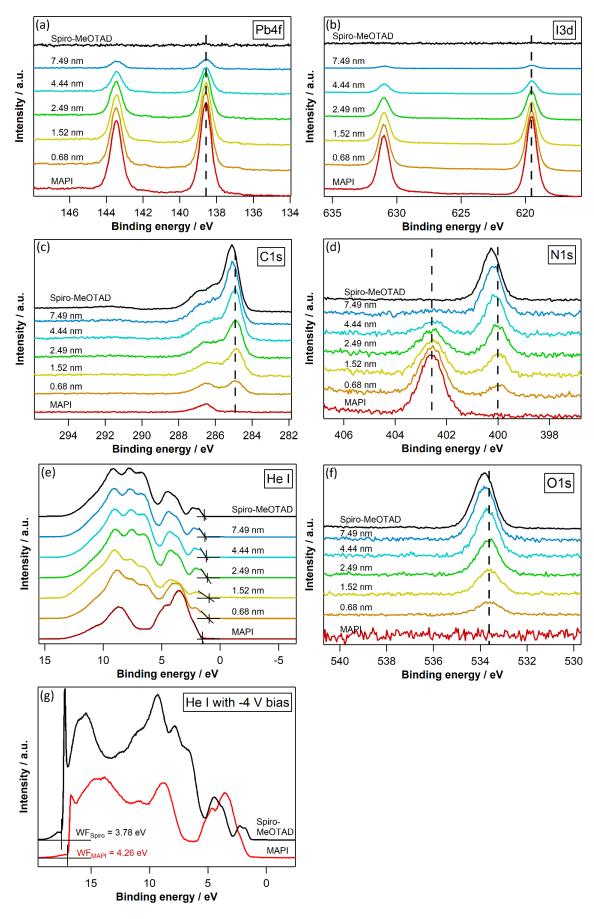


Figure **S3.** Detailed spectra of the MAPI / Spiro-MeOTAD interface with (a) Pb4f, (b) I3d, (c) C1s, (d) N1s, (e) He I, (f), O1s and (g) He I with an applied bias of -4V.

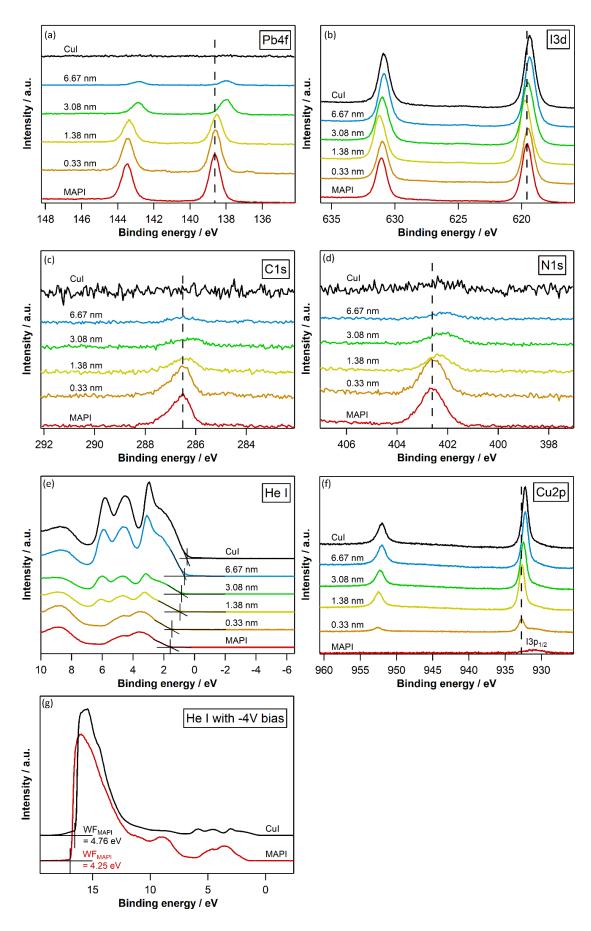


Figure **S4.** Detailed spectra of the MAPI / CuI interface with (a) Pb4f, (b) I3d, (c) C1s, (d) N1s, (e) He I, (f), Cu2p and (g) He I with an applied bias of – 4V.

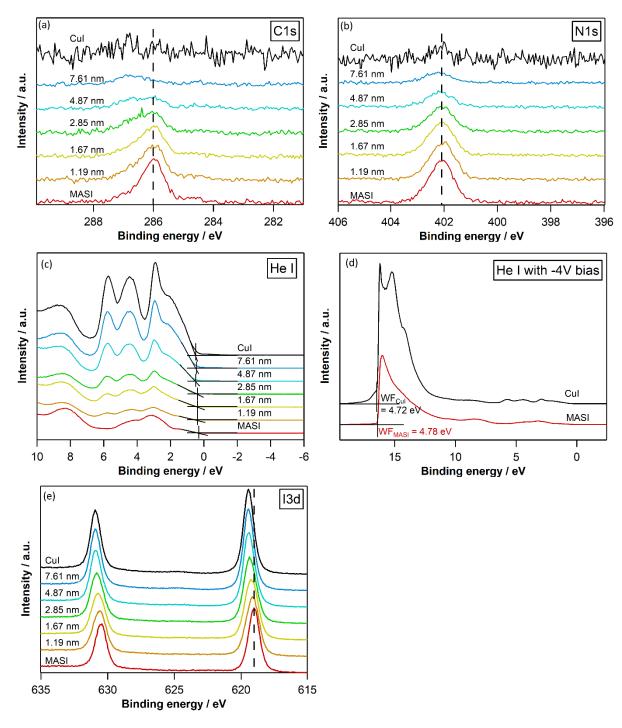


Figure **S5.** Detailed spectra of the MASI / Cul interface with (a) C1s, (b) N1s, (c) He I, (d) He I with an applied bias of – 4V and (e) I3d.

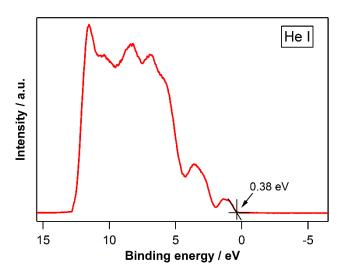


Figure **S6**. He I measurement of a doped spin-coated Spiro-MeOTAD film.