

Supporting Information

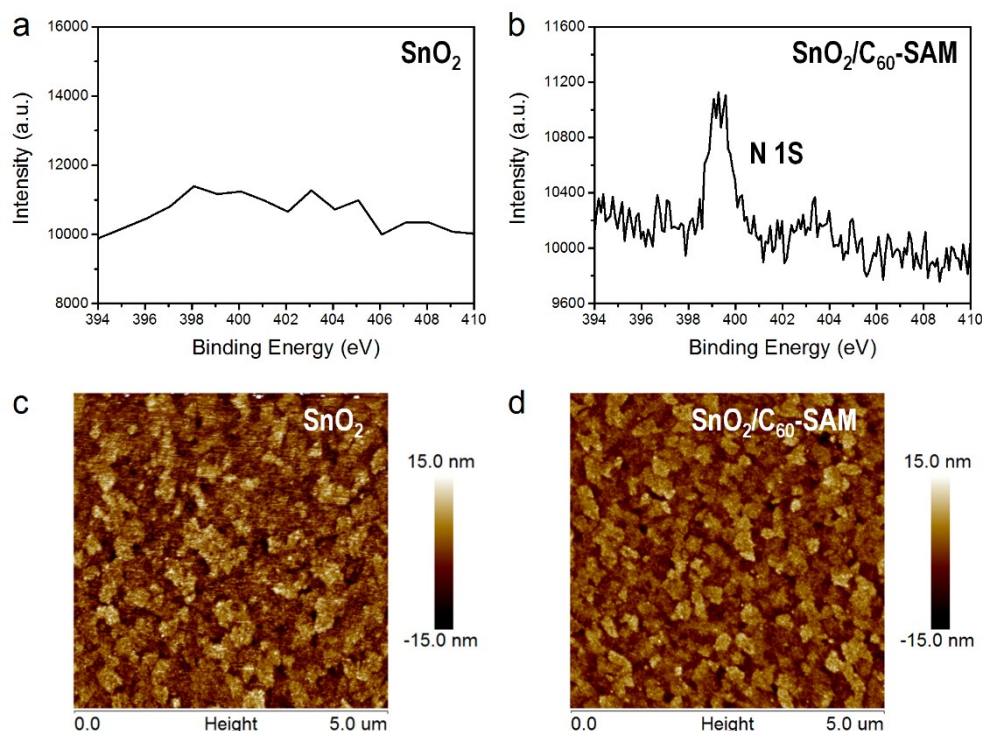


Figure S1. (a) XPS spectrum of SnO₂ film. (b) XPS spectrum of SnO₂/C₆₀-SAM film. The appearance of the N 1s signal in SnO₂/C₆₀-SAM film represents the successful deposition of C₆₀-SAM above the SnO₂ layer. (c) AFM image of SnO₂ film. (d) AFM image of SnO₂/C₆₀-SAM film. SnO₂ films with or without C₆₀-SAM show similar morphology, illustrating that the C₆₀-SAM-deposition process makes no impact on the film morphology of the SnO₂ layer.

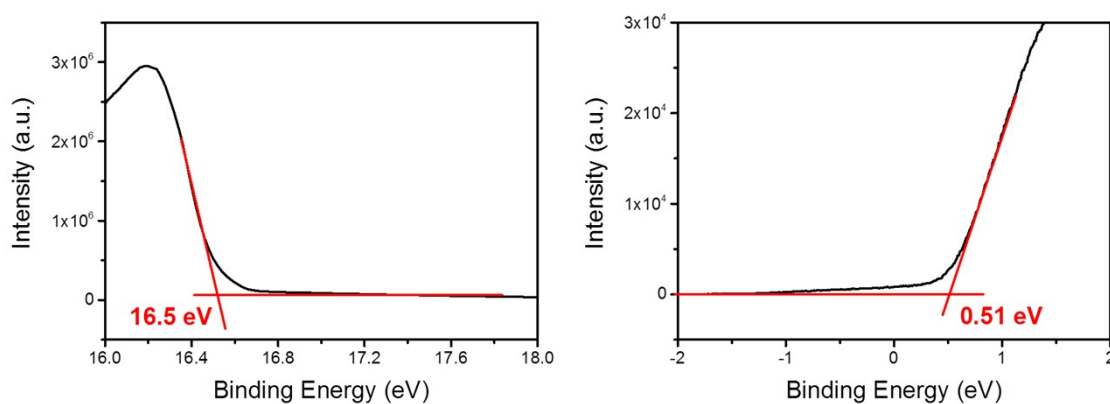


Figure S2. UPS spectrum of FA_{0.5}MA_{0.5}Sn_{0.5}Pb_{0.5}I₃ perovskite. In the UPS measurements, a He I source with photon energy of 21.22 eV was used to excite the sample. Therefore, the calculated VB is 5.2 eV.

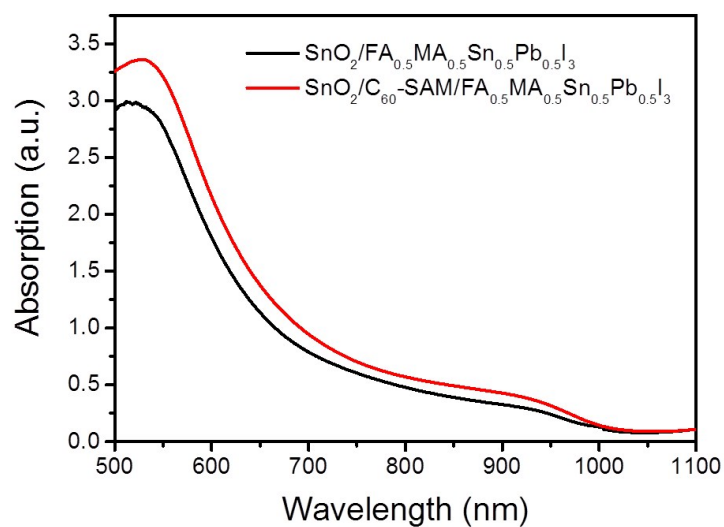


Figure S3. Absorption of $\text{FA}_{0.5}\text{MA}_{0.5}\text{Sn}_{0.5}\text{Pb}_{0.5}\text{I}_3$ films deposited above SnO_2 and $\text{SnO}_2/\text{C}_{60}\text{-SAM}$ substrates.

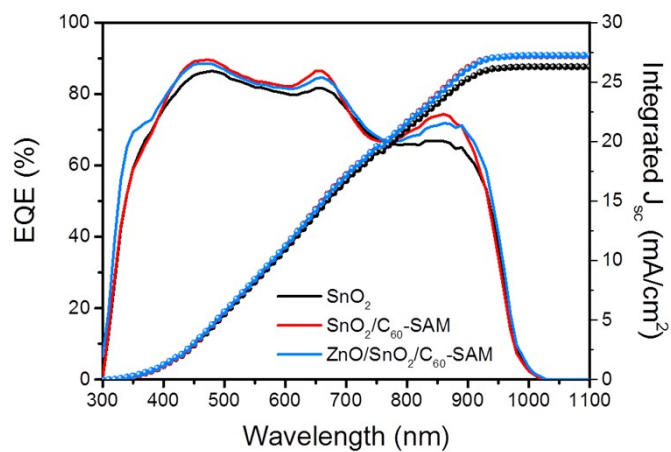


Figure S4. EQE spectra (solid lines) and their integrated current density (solid lines with dots) of PVSCs with different ETLs.