

Supporting Information

Enhancing the Performance of Tin-Based Perovskite Solar Cells through Solvent Purification of Tin Iodide

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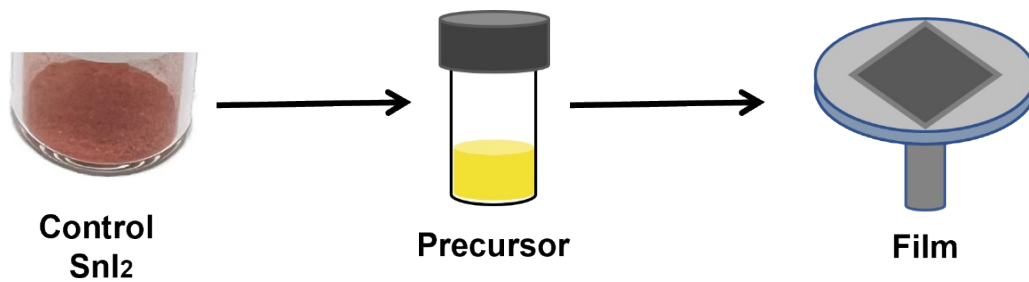


Figure S1. (a) Preparation process of commercial (the control one) SnI_2 -based perovskite films.

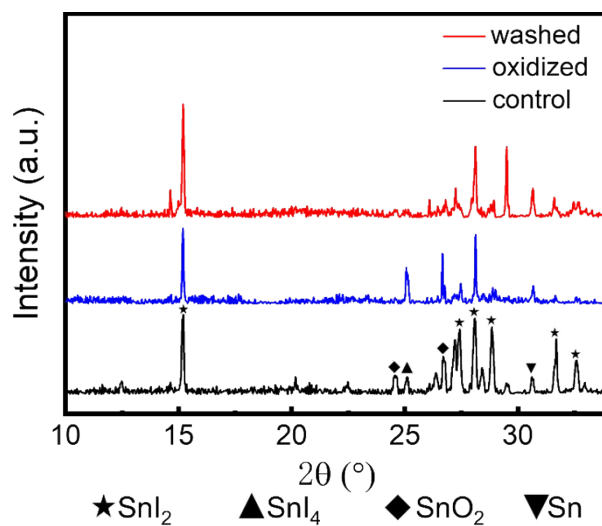


Figure S2. XRD patterns of control, oxidized, and toluene-washed SnI_2 .

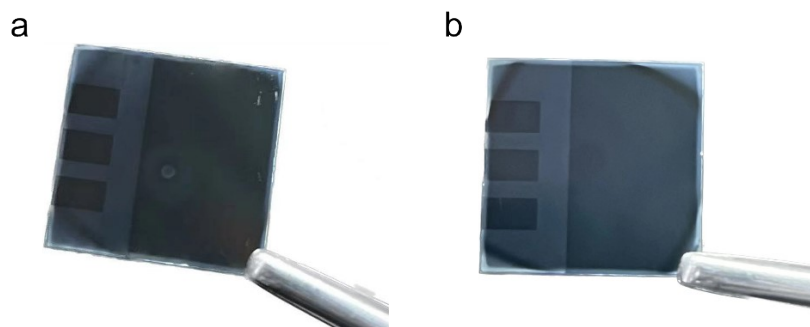


Figure S3. Photography of (a) an oxidized SnI_2 -fabricated perovskite film and (b) a toluene-washed SnI_2 -fabricated perovskite film.

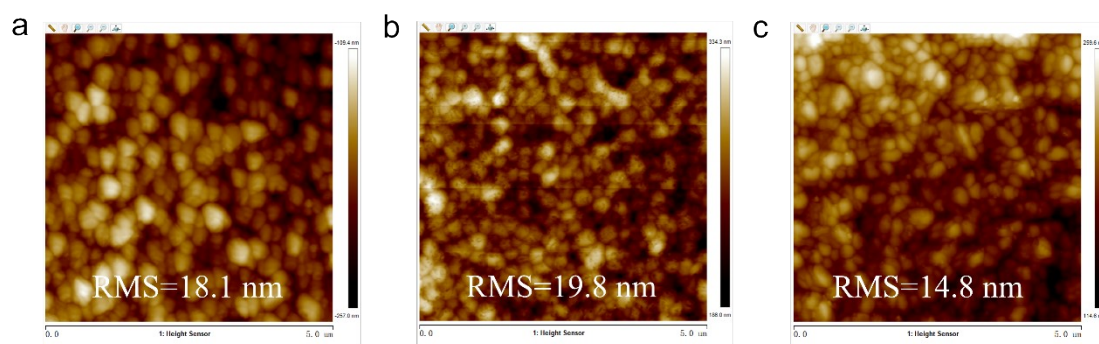


Figure S4. AFM images of (a) control SnI_2 , (b) oxidized SnI_2 , (c) and toluene-washed SnI_2 -fabricated perovskite films.

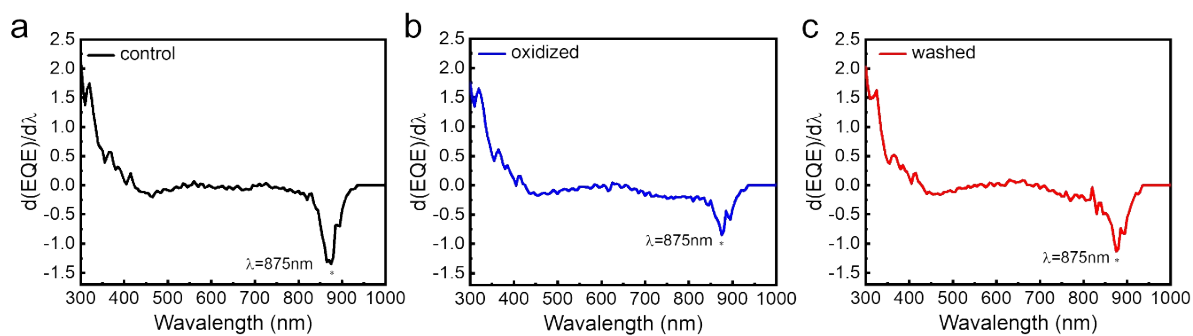


Figure S5. Plots of derivative of EQE spectra used to determine bandgaps of (a) control, (b) oxidized, and (c) washed SnI_2 -based perovskite films.

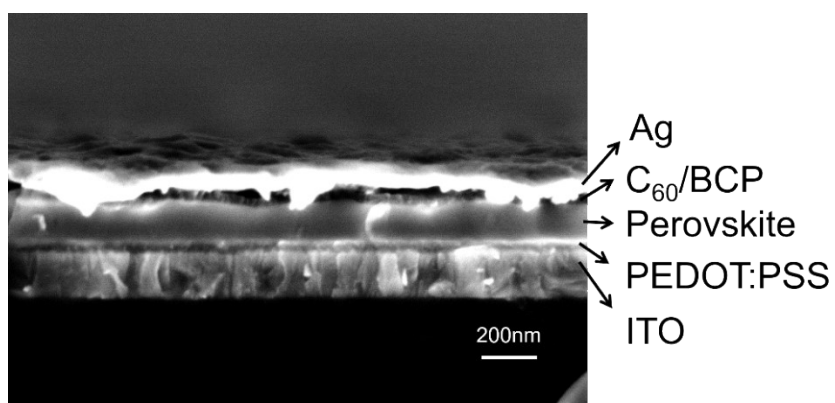


Figure S6. A cross-sectional SEM image of a representative FASnI_3 solar cell fabricated from toluene-washed SnI_2 .

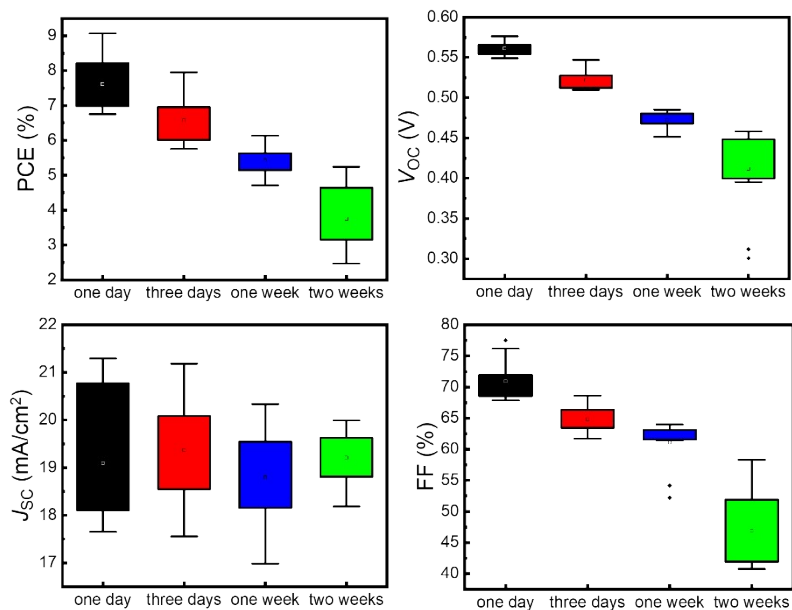


Figure S7. Photovoltaic parameters of the solar cells using toluene-washed SnI₂ with air oxidation for one day, three days, one week, and two weeks.

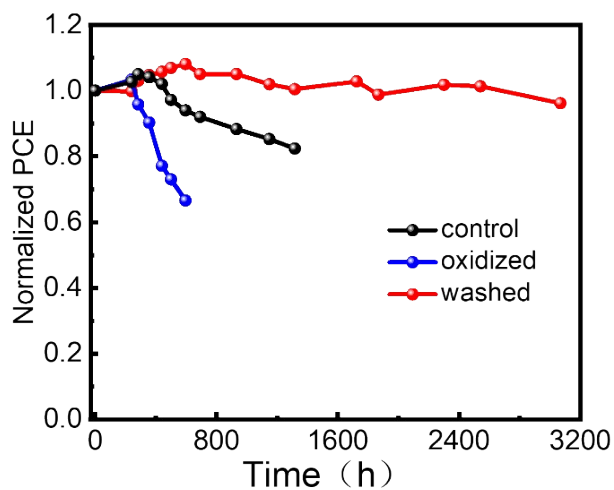


Figure S8. Long-term shelf storage stability of control, oxidized, and toluene-washed SnI₂-fabricated PSCs without encapsulation, which were stored in an N₂-filled glovebox at room temperature in the dark.

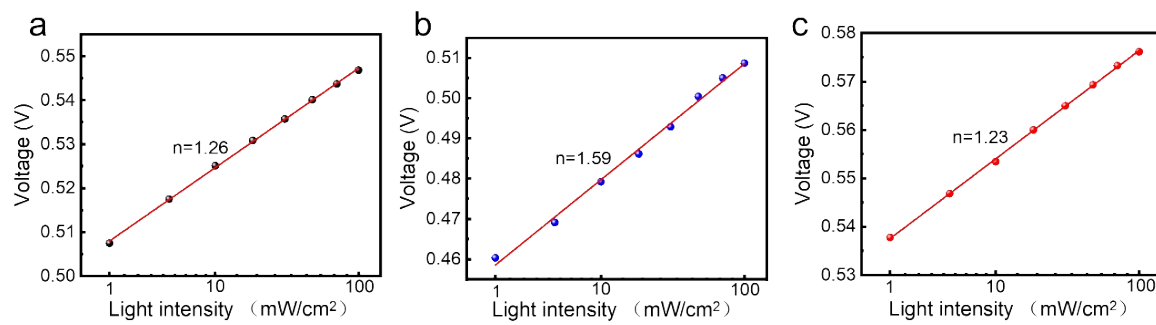


Figure S9. Light intensity-dependent V_{OC} of the solar cells employing (a) control, (b) oxidized, and (c) toluene-washed SnI₂.