

[Supporting information]

**Thermal Assisted Oxygen Annealing for High Efficiency Planar CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Solar Cells**

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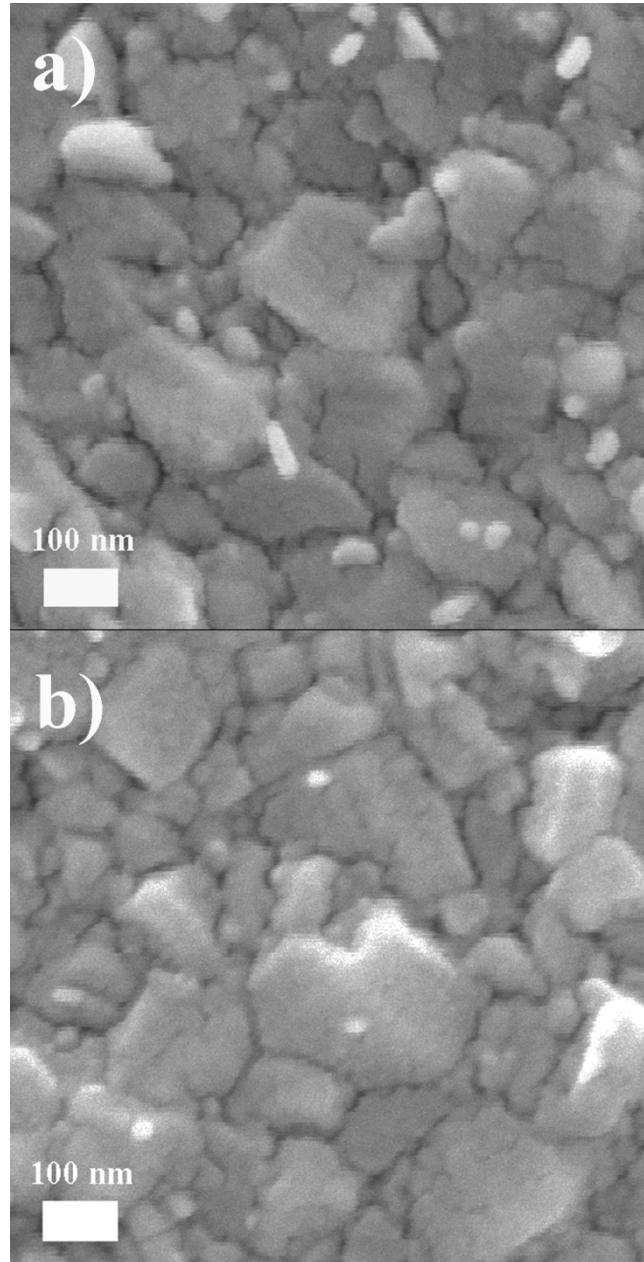
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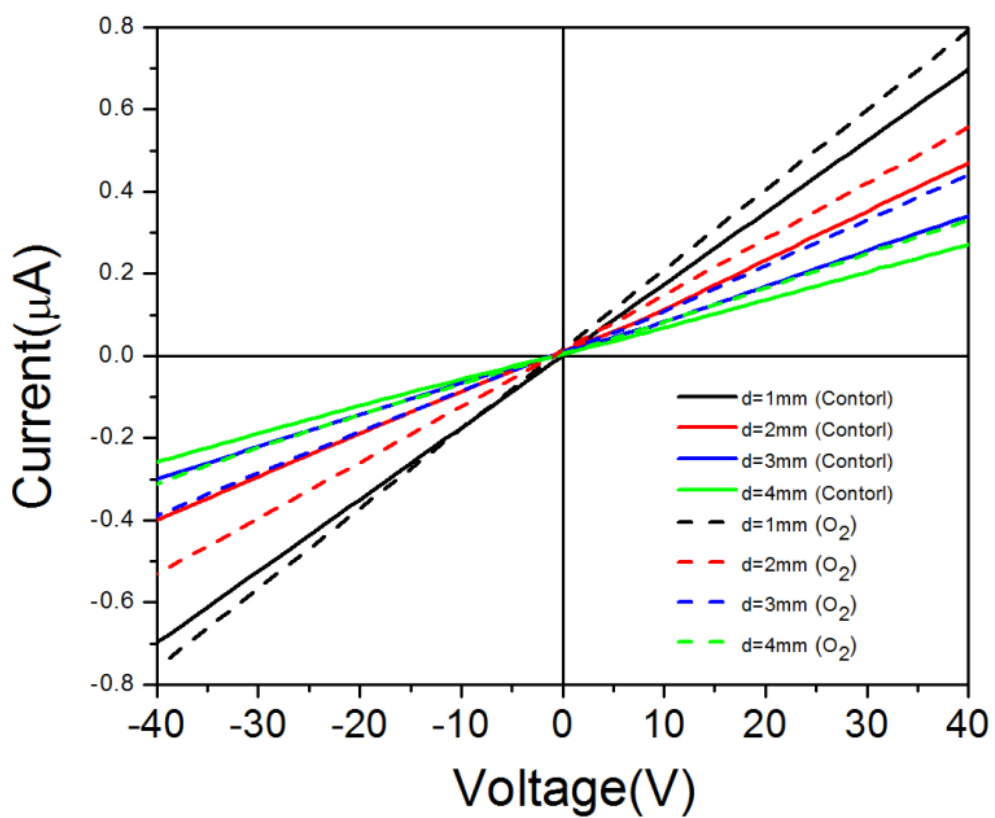
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**Figure S1.** The SEM top-view image of the perovskite film before and after O<sub>2</sub> annealing process



**Figure S2.** The *I-V* characteristics across the electrode with different separation on the film of spiro-MeOTAD before and after O<sub>2</sub> annealing