

1

## Supporting Information

### Degradation conceptualization of an innovative perovskite solar cell fabricated using SnO<sub>2</sub> and P3HT as electron and hole transport layers

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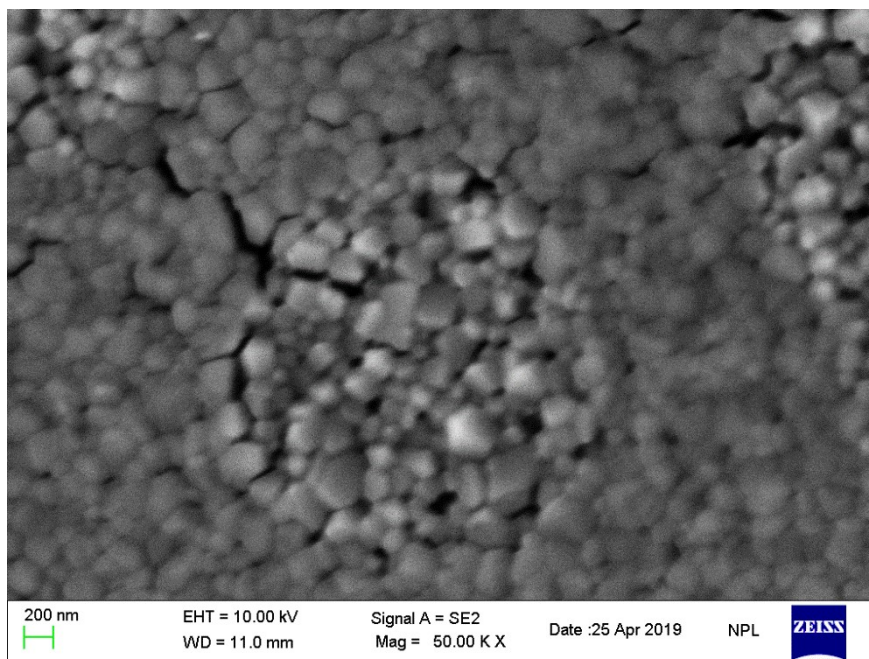
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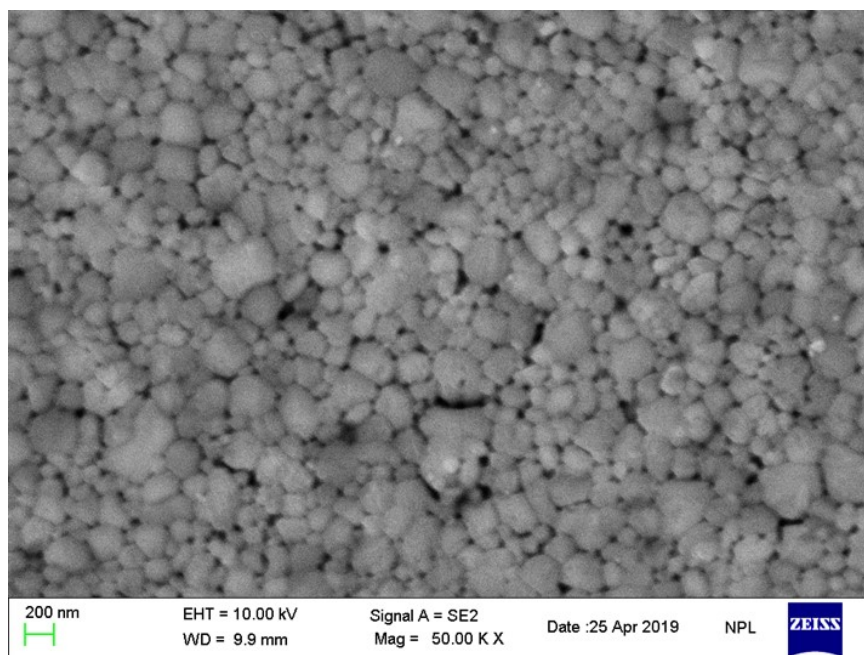
Email: [jai\\_ti2002@yahoo.com](mailto:jai_ti2002@yahoo.com), [tiwarijp@nplindia.org](mailto:tiwarijp@nplindia.org)

**Figure S1.** Morphology of the MAPbI<sub>3</sub> film annealed at 100°C for (a) 10 and (b) 40 minutes, respectively.

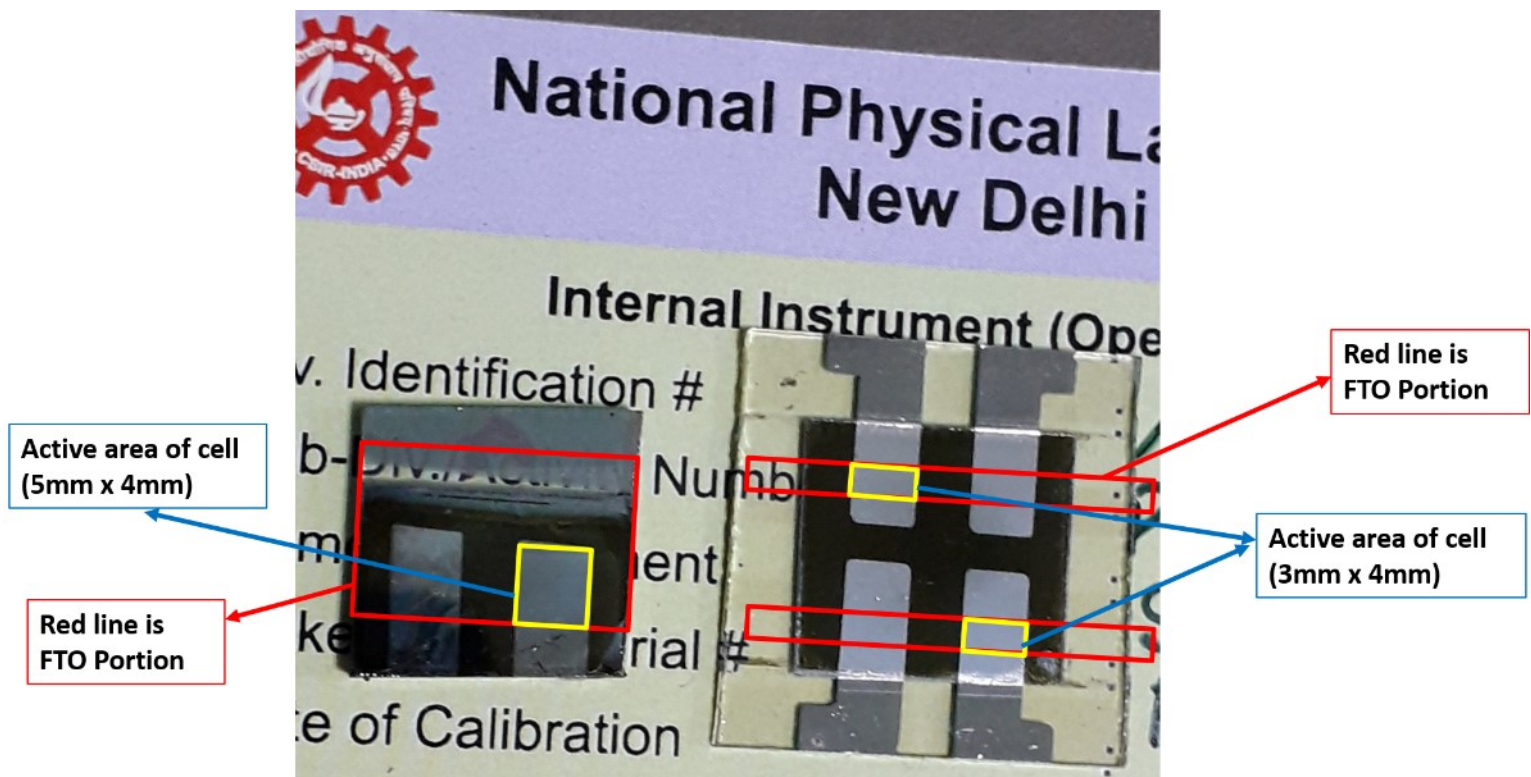
(a)



(b)



**Figure S2.** The device's active area is demonstrated in the fabricated devices as  $0.20 \text{ cm}^2$  and  $0.12 \text{ cm}^2$  (for the shown image, we have fabricated perovskite solar cells on two different device patterns). For the right-hand side image, we have patterned FTO glass with a small portion of FTO strip ( $\sim 3\text{mm}$ ) using laser scribe, i.e. (red line), the remaining portion is glass, for metal (Ag) deposition we designed a metal mask strip of ( $\sim 4\text{mm}$ ). However, for the left-hand side image, we have patterned FTO glass with a large portion of the FTO strip (shown by the redline rectangle) remaining portion is glass, and for metal (Ag) deposition, we designed a metal (Ag) mask strip of ( $\sim 4\text{mm}$ ). The yellow rectangle shows the active area. We define the PCE with the help of  $V_{oc}$ ,  $J_{sc}$ , FF, and power input.



**Figure S3.** (a) Device demonstration by using P3HT and Spiro-OMeTAD as HTL in FTO/SnO<sub>2</sub>/MAPbI<sub>3</sub>/HTL/Ag (b) Silver electrode degradation and its corrosion on the devices where P3HT and spiro-OMeTAD are used as an HTL in the device of structure FTO/SnO<sub>2</sub>/MAPbI<sub>3</sub>/HTL/Ag.

