Supplementary Information

Photodynamic Response of a Solution Processed Organolead Halide Photodetector

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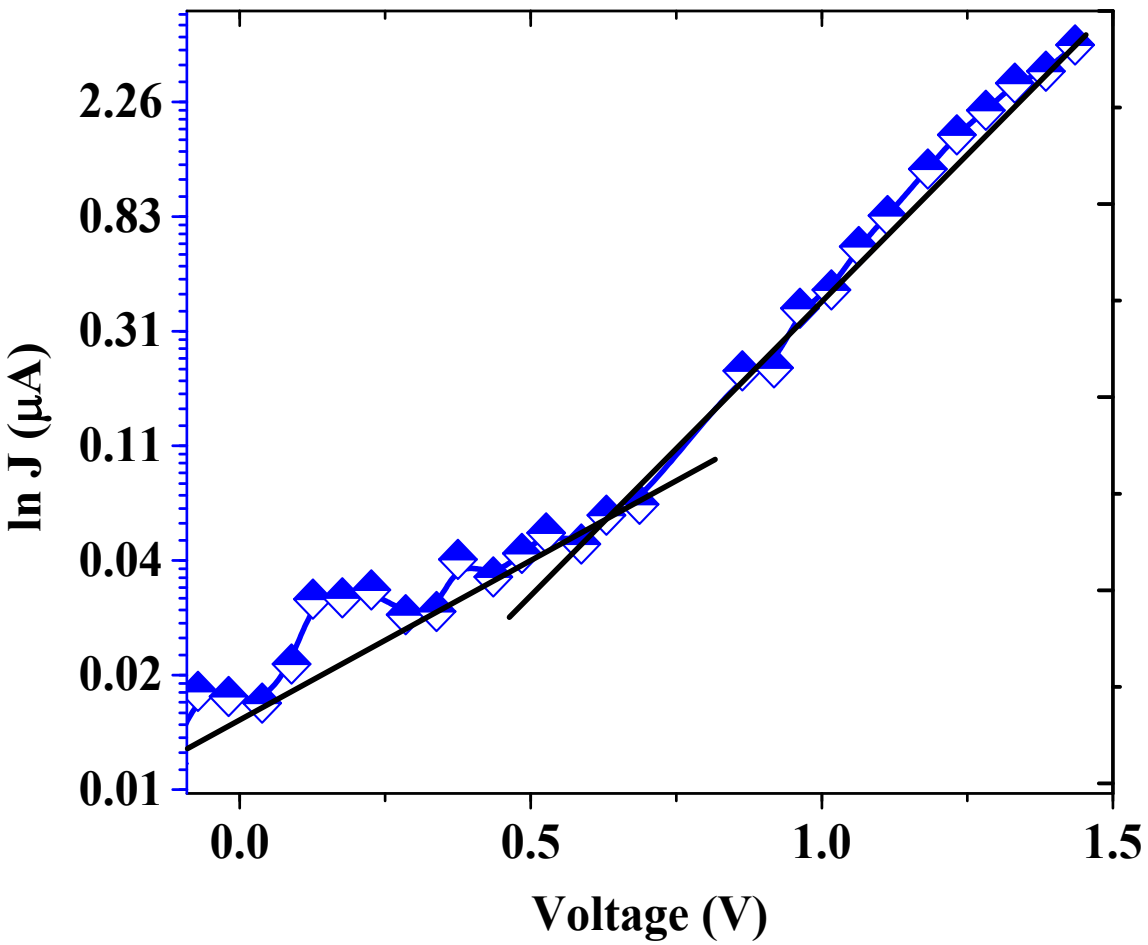

Figure S1. The plot of current against the applied voltage to calculate the ideality factor from the slopes of the line

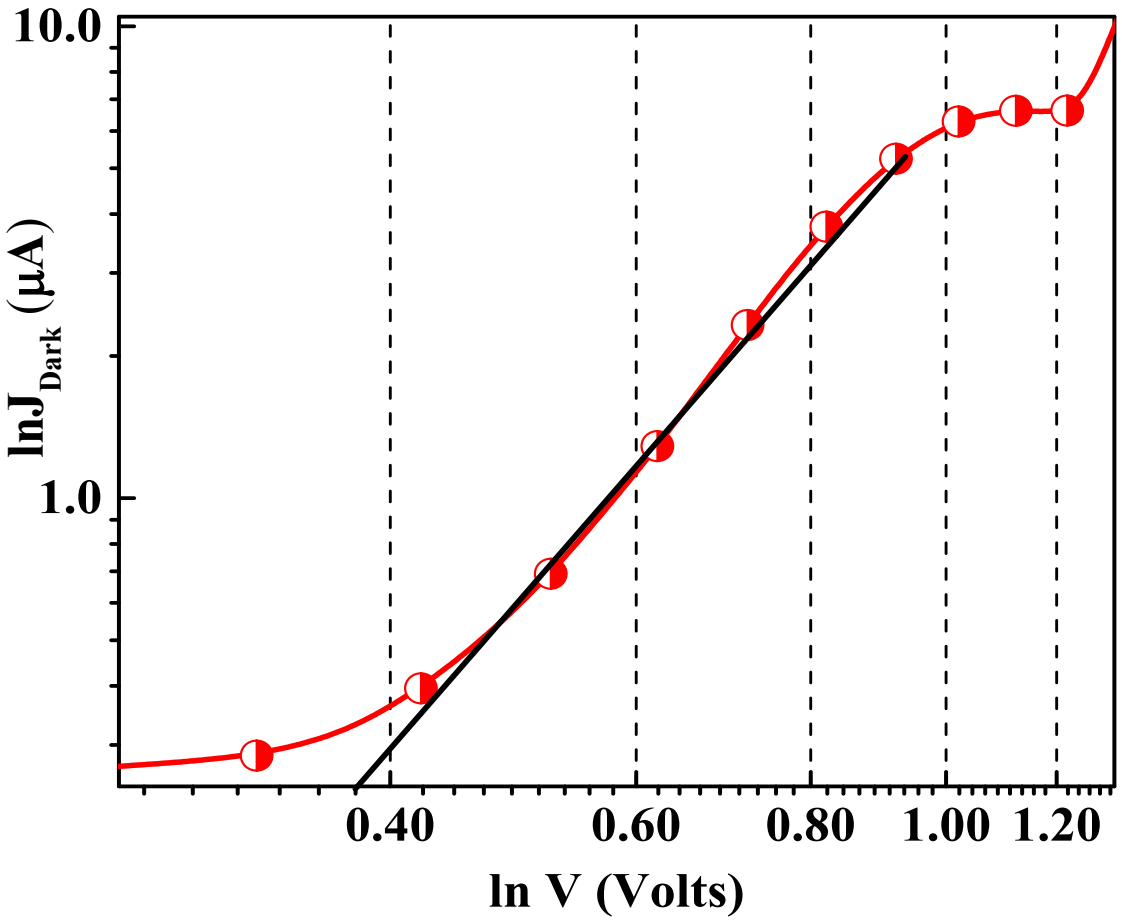

Figure S2. The plot of dark current against the applied voltage to calculate the ideality factor at the higher potential

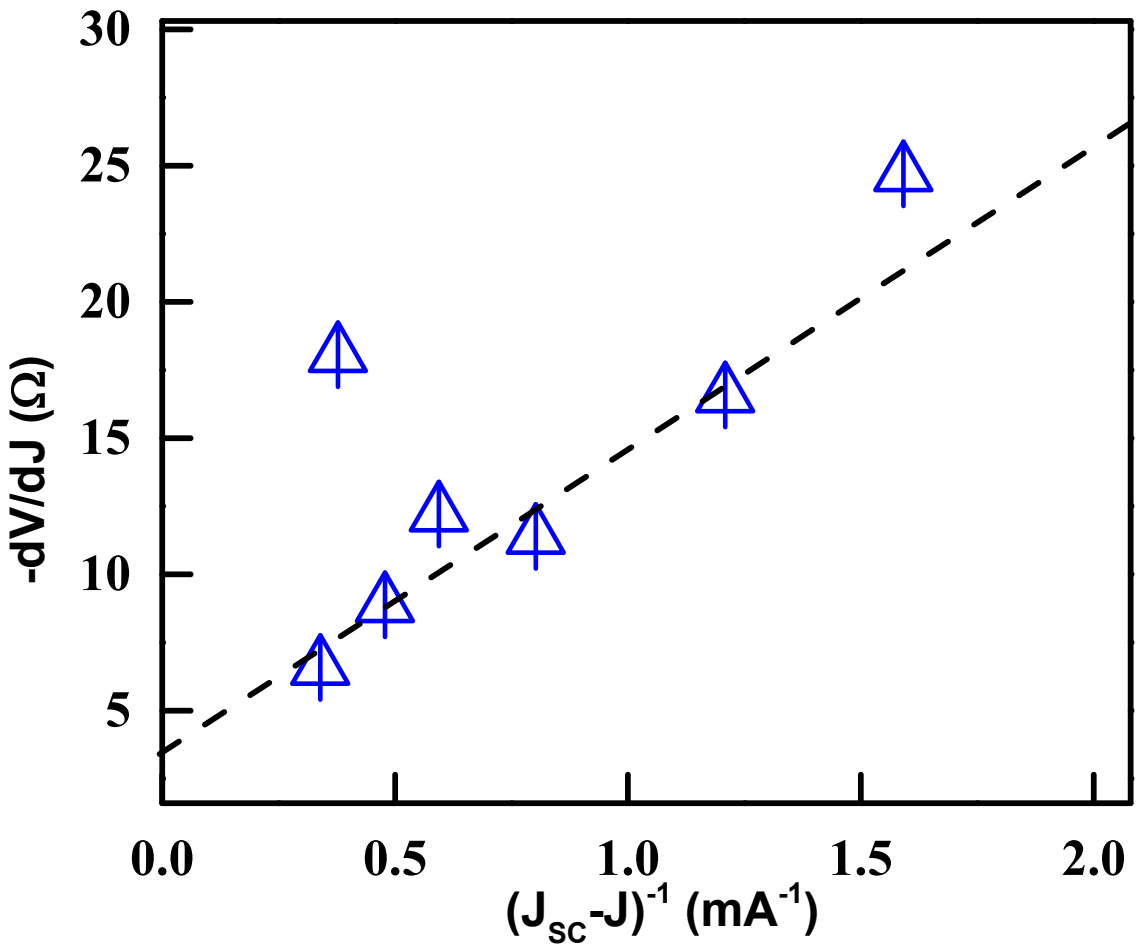

Figure S3. The plot of *-dV/dJ* versus $(J_{SC}\text{-}J)^{-1}$ with the linear fitting curves

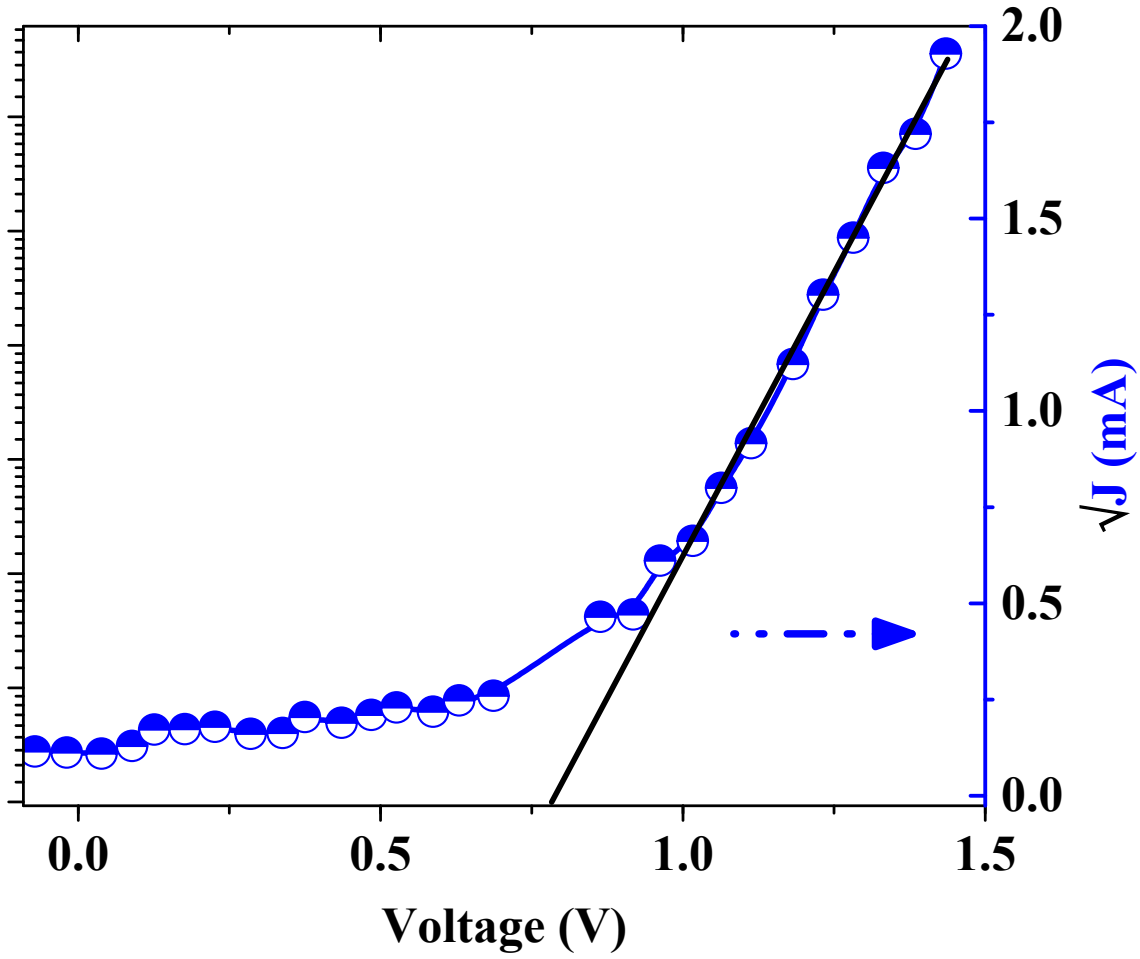

Figure S4. Extraction of mobility value by using Mott-Gurney relation

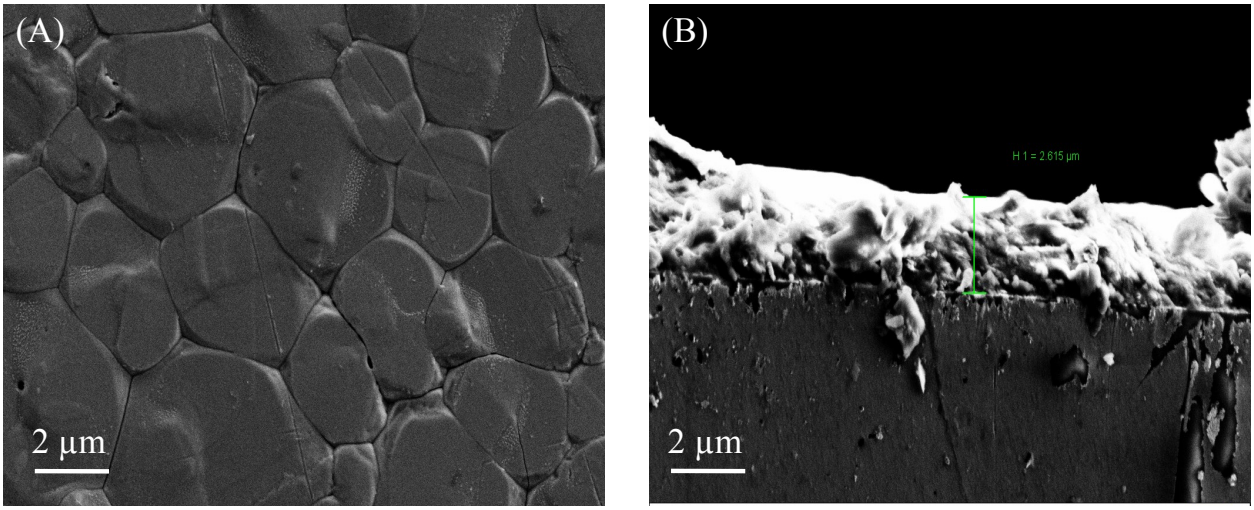

Figure S5. SEM images of the perovskite thin film at high magnification and cross-sectional view

The FESEM micrographs of $CH_3NH_3PbI_3$ thin films on FTO substrate are shown in Figure S5 (A and B).The FESEM micrograph of deposited film (Fig. S5A) confirms that the film is uniform, and the grains are cube-shaped. The thickness of the deposited perovskite film can be measured using the FESEM in a cross sectional view shown in Figure S5 and film thickness was found to be ~3 µm.