Electronic Supplementary Information

Improved photovoltaic performance of perovskite solar cells based on three-dimensional rutile TiO_2 nanodendrite array film

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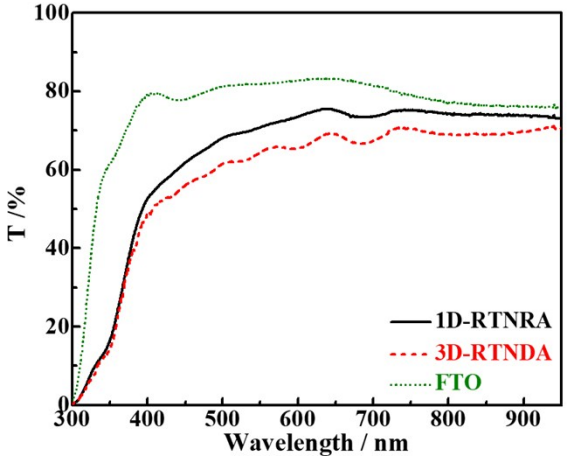

Fig. S1 Optical transmittance spectra of the bare FTO glass, the 1D-RTNRA and 3D-RTNDA films on FTO glass.

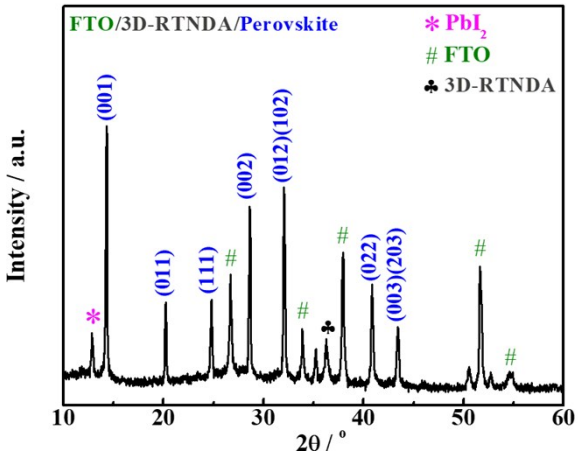

Fig. S2 XRD pattern of the perovskite layer loaded on the 3D-RTNDA film.

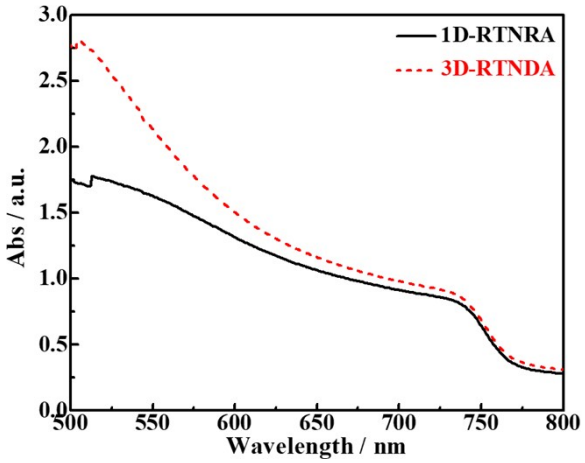

Fig. S3 UV-Vis absorption spectra of the perovskite layers loaded on the 1D-RTNRA and 3D-RTNDA films.

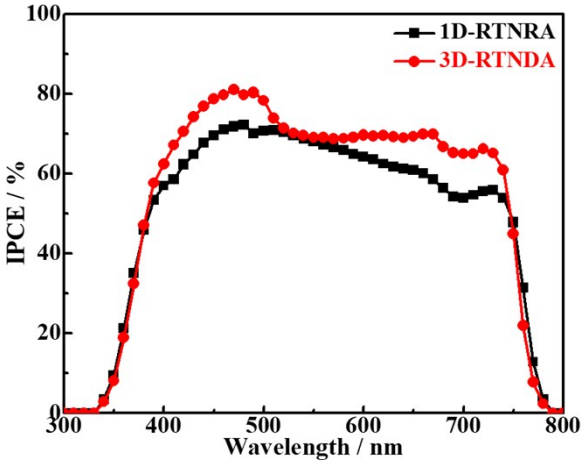

Fig. S4 IPCE curves of the PSCs fabricated with the 1D-RTNRA and 3D-RTNDA films.

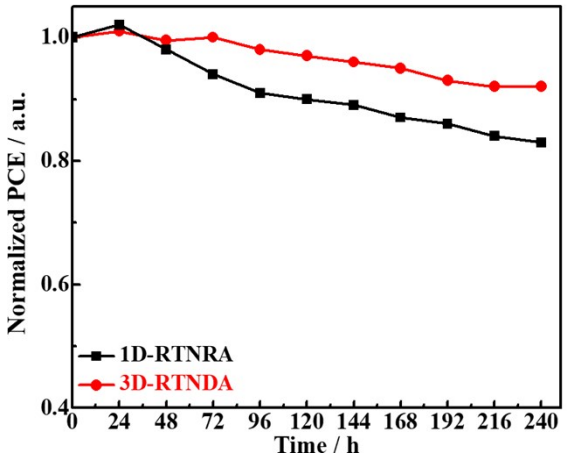

Fig. S5 Long-term stabilities of the PSCs fabricated with the 1D-RTNRA and 3D-RTNDA films. Those PSCs without encapsulation were stored at ambient condition in the dark at room temperature with a humidity of ~20%.

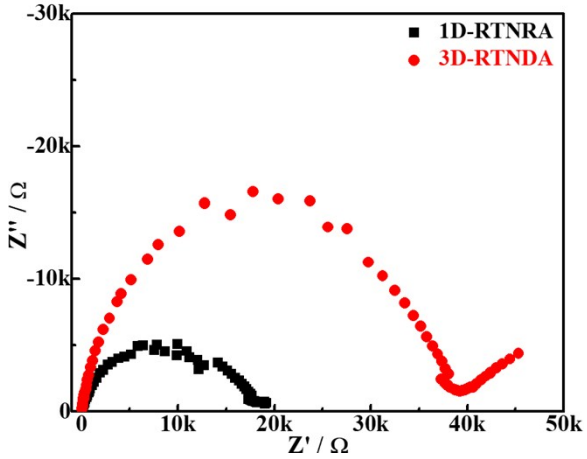

Fig. S6 EIS spectra of the PSCs fabricated with the 1D-RTNRA and 3D-RTNDA films measured under dark at 0.6 V.