

Supporting Information for

**Bias-free, Solar-charged Electric Double-Layer Capacitors**

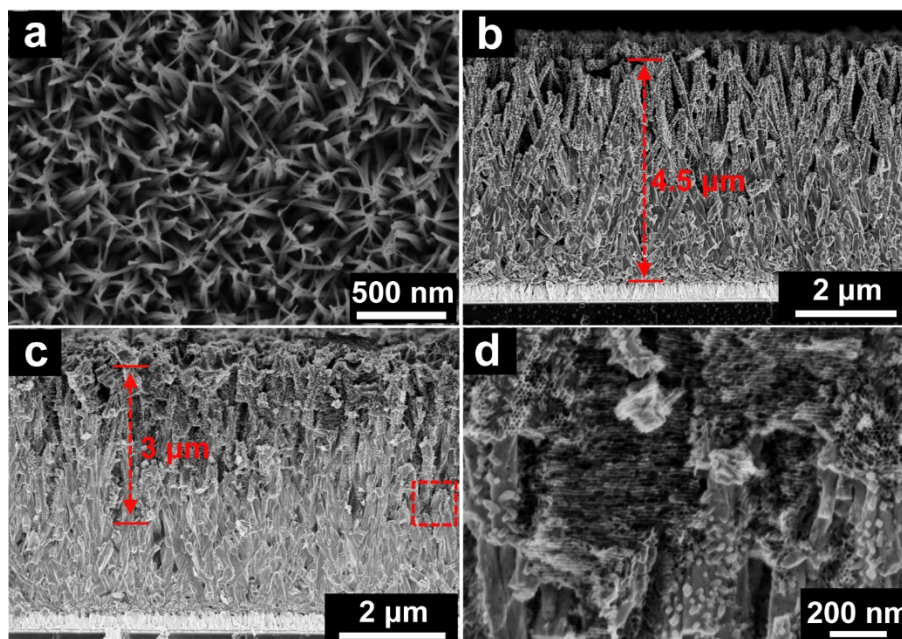
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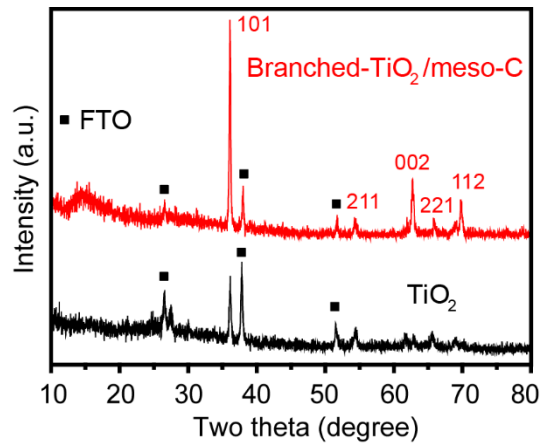
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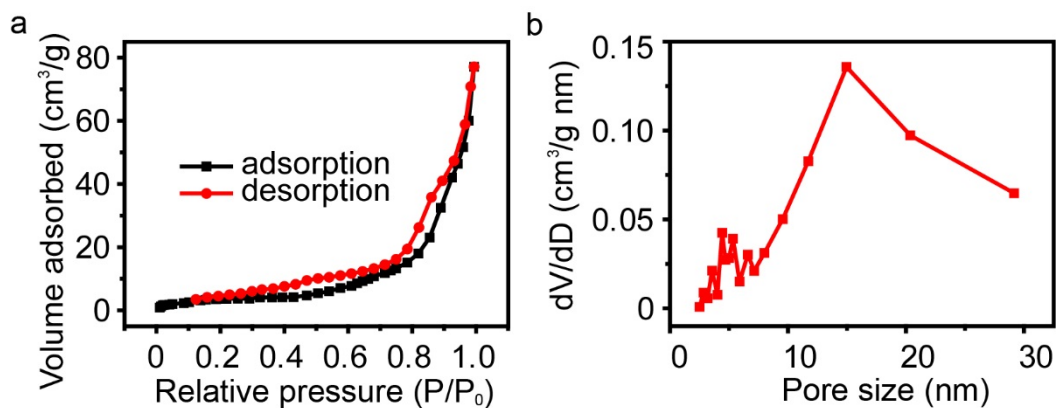
<sup>†</sup> These authors contributed equally to this work.



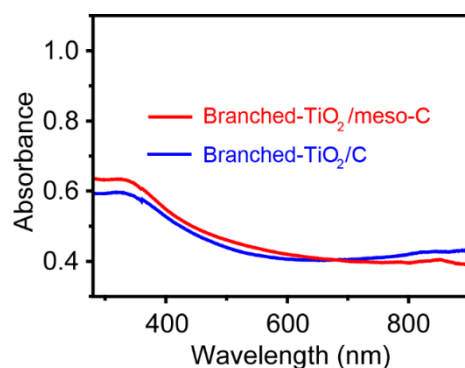
**Fig. S1** (a) Top-view SEM image of  $\text{TiO}_2$  nanowire arrays. (b, c) Side-view SEM image of (b) branched  $\text{TiO}_2$  and (c) branched  $\text{TiO}_2/\text{meso-C}$  hybrid structures, respectively. (d) Magnified view of the red dotted box in (c).



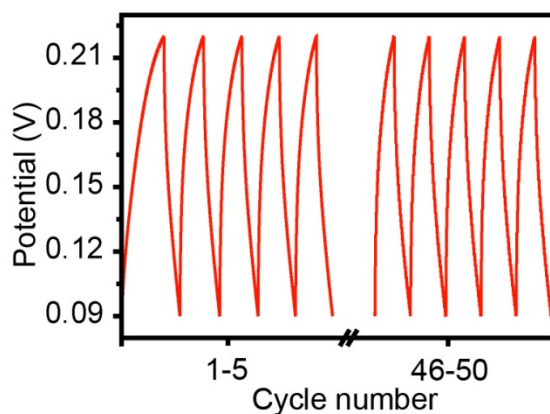
**Fig. S2** XRD patterns of the branched- $\text{TiO}_2$  (black curve) and the branched- $\text{TiO}_2/\text{meso-C}$  (red curve) hybrid structures. Black squares represent the peaks of fluorine-doped tin oxide (FTO) substrate.



**Fig. S3** (a) N<sub>2</sub> sorption isotherms of the branched-TiO<sub>2</sub>/meso-C hybrid structures. (b) Pore distribution calculated from the desorption branch.



**Fig. S4** UV-Vis absorption spectra of the branched-TiO<sub>2</sub>/C (blue curve) and branched-TiO<sub>2</sub>/meso-C (red curve) hybrid structures.



**Fig. S5** Charge-discharge curves of the branched-TiO<sub>2</sub>/meso-C hybrid structure at a current density of 0.1 A/g without light irradiation.