

Electronic Supplementary Information (ESI) available for:

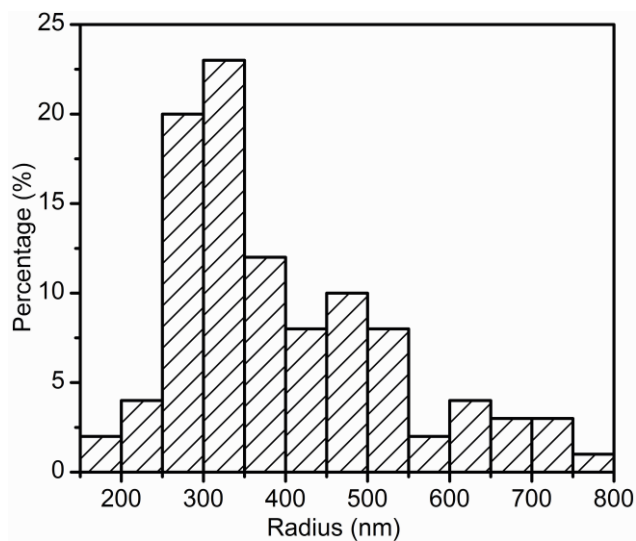
## **Synergistic assembly of nanoparticle aggregates and texture nanosheets into hierarchical TiO<sub>2</sub> core-shell structures for enhanced light harvesting in dye-sensitized solar cells†**

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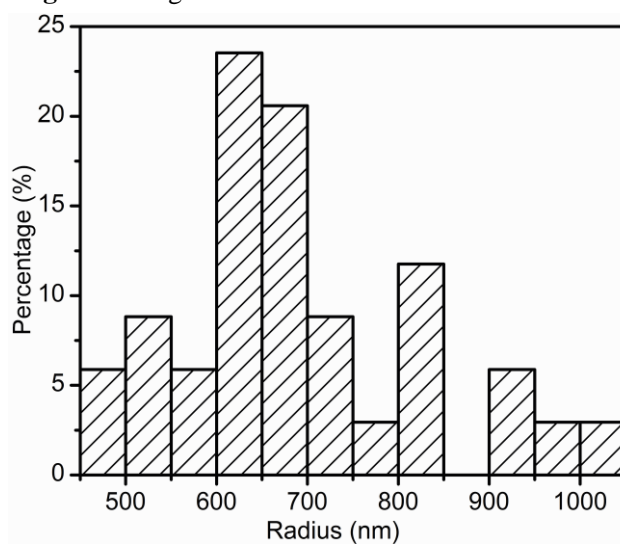
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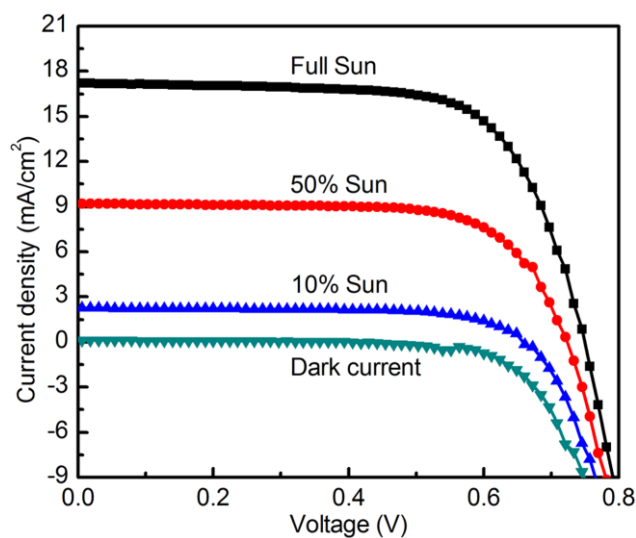
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**Fig. S1** Histograms of radial distributions of HTCSSs.

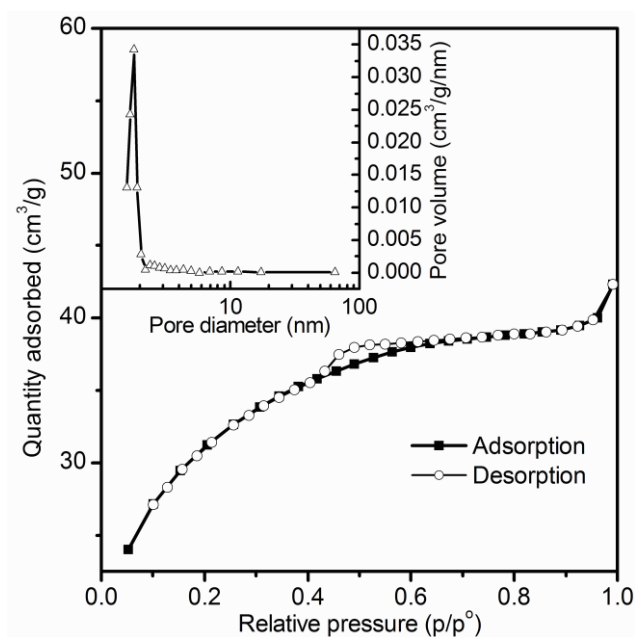


**Fig.S2** Histograms of radial distributions of TMSSs.

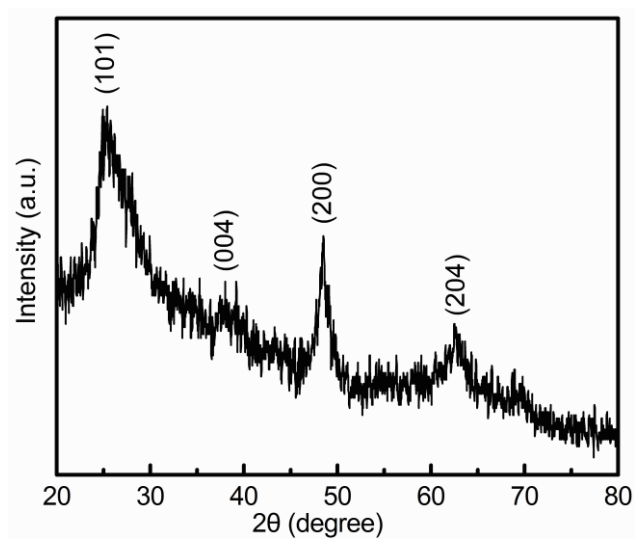


**Fig. S3** J-V characteristics of DSC made of HTCSS/P25 nanoparticle composite, measured under

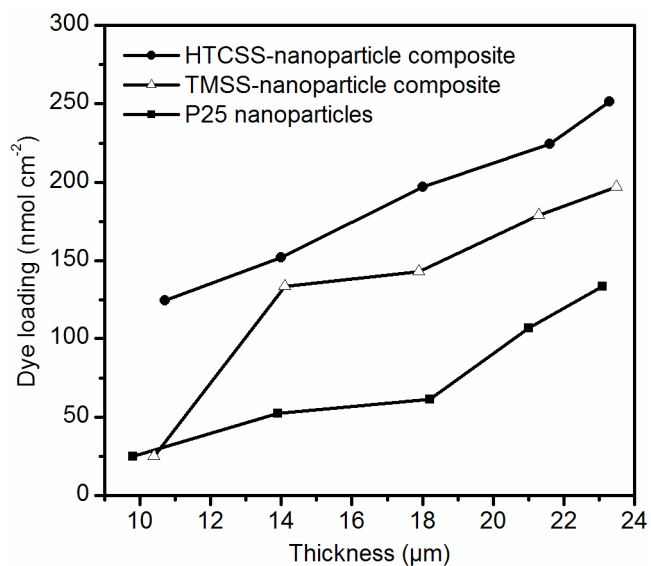
various light intensities.



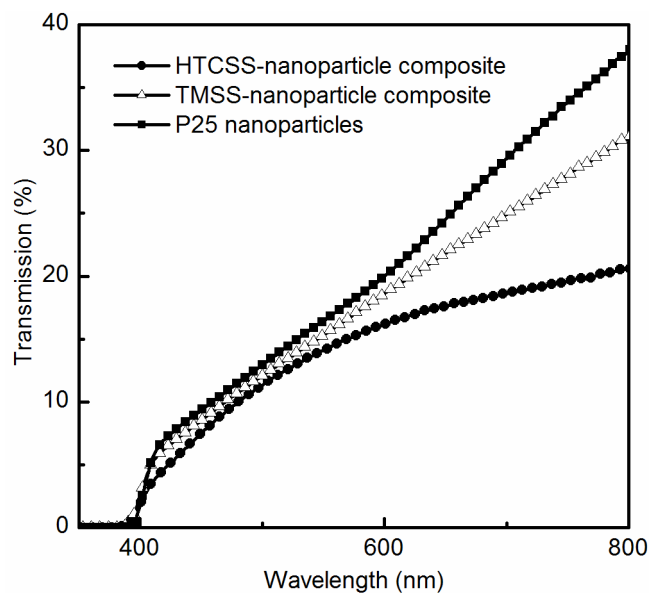
**Fig. S4** N<sub>2</sub> adsorption-desorption isotherms for the as-synthesized TMSS sample. The inset shows the corresponding pore size distribution.



**Fig. S5** XRD patterns of as-prepared TMSS samples.



**Fig. S6** Relationship between the dye loading and the film thickness for HTCSS-nanoparticle composite, TMSS-nanoparticle composite and P25 nanoparticles.



**Fig. S7** Transmittance spectra of the TiO<sub>2</sub> films prepared from HTCSS-nanoparticle composite, TMSS-nanoparticle composite and P25 nanoparticles of similar thicknesses.