

Supplementary Information for

Fabrication of SiO₂/TiO₂ Double-Shelled Hollow Nanospheres with Controllable Size via Sol-Gel Reaction and Sonication-Mediated Etching

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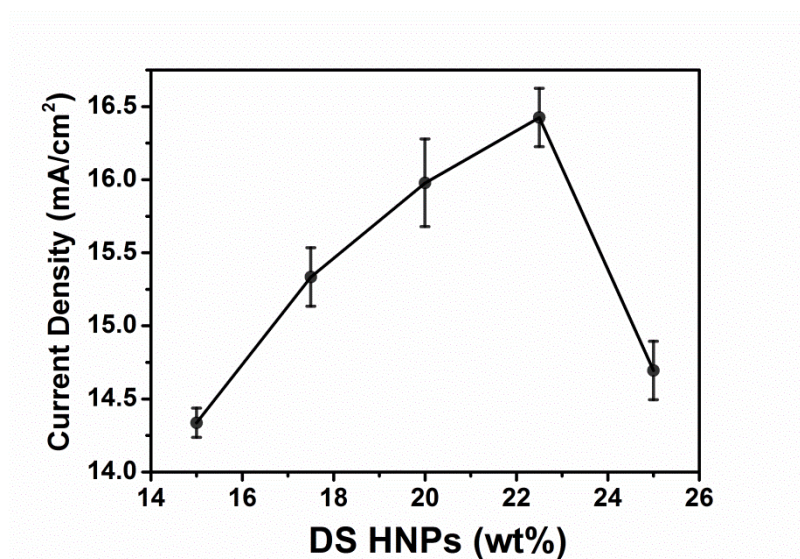


Figure S1. Current density (J_{SC}) of the anode film as a function of DS HNP concentration (contents: 15-25 wt%) in the scattering layer.

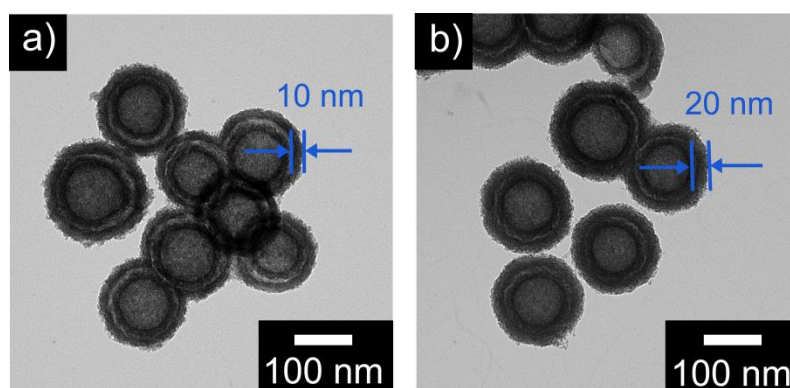


Figure S2. Transmission electron microscopy (TEM) images of 120-nm double shell hollow nanoparticles (DS HNPs) with a shell thickness of a) 10 nm and b) 20 nm.

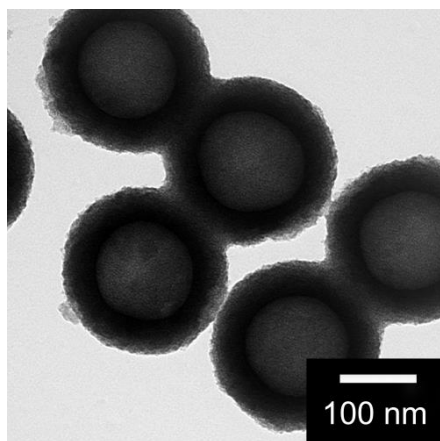


Figure S3. TEM images of single-shell HNPs (SS HNPs) 240 nm in size.

Table S1. Average and standard deviation of power conversion efficiency (PCE) of DSSCs employing TiO₂ NPs, SS HNPs, and DS HNPs as scattering layer. Same experiments were held 5 times.

Sample	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Ave ^a (%)	Dev ^b (%)
TiO ₂ NPs	6.58	6.35	6.36	6.37	7.10	6.6	0.32
SS HNP	8.01	7.94	7.95	8.125	7.90	8.0	0.09
DS HNP	8.4	8.58	8.25	8.4	8.40	8.4	0.12

a : Average of power conversion efficiency (η) of each materials. b : Standard deviation (σ) of power conversion efficiency for every experiments conducted.