

Electronic Supplementary Information

Versatile Nanobeads-Scaffolded N-SnO₂ Mesoporous Microspheres: One-Step Synthesis and Superb Performance in Dye-Sensitized Solar Cell, Gas Sensor, and Photocatalytic Degradation of Dye

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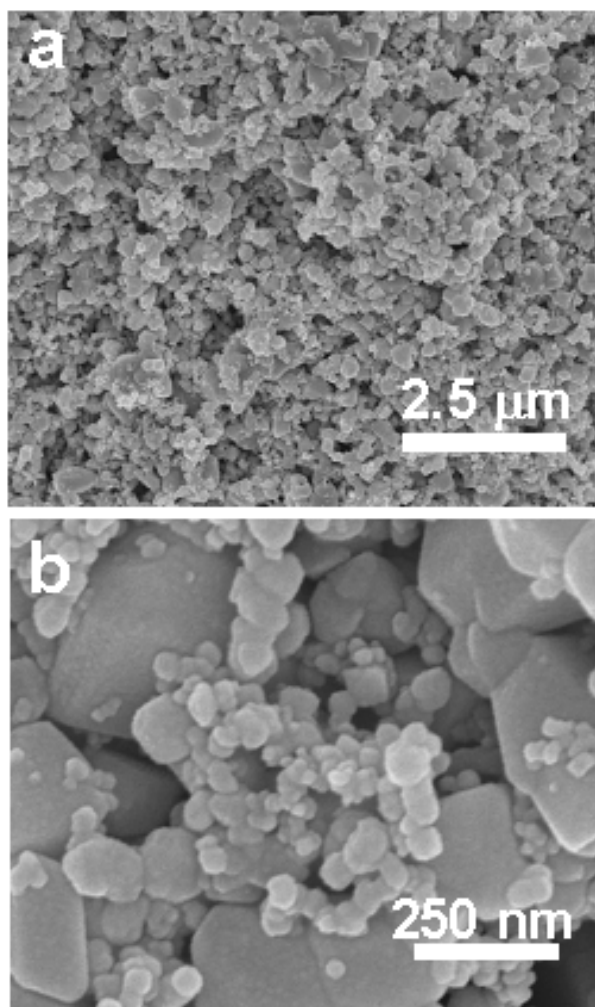


Figure S1. FE-SEM images of the CNPs at different magnification.

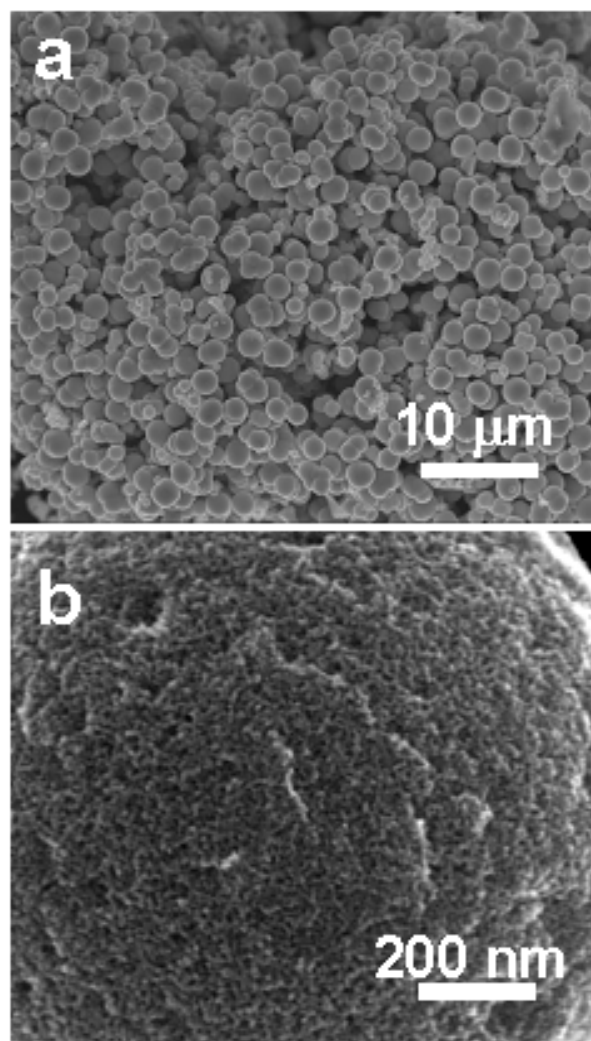


Figure S2. FE-SEM images of the product after annealing the NSMMs at 500 °C for 0.5 h.

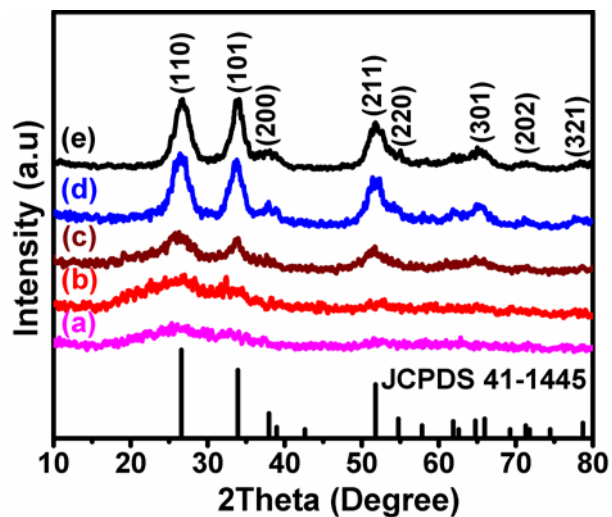


Figure S3. XRD patterns of the samples. (a) 2 h, (b) 4 h, (c) pure water as the solvent, and (d) without $C_6H_{12}O_6$, (e) 8 h. NOTE: for simplicity, only major diffraction peaks were indexed.

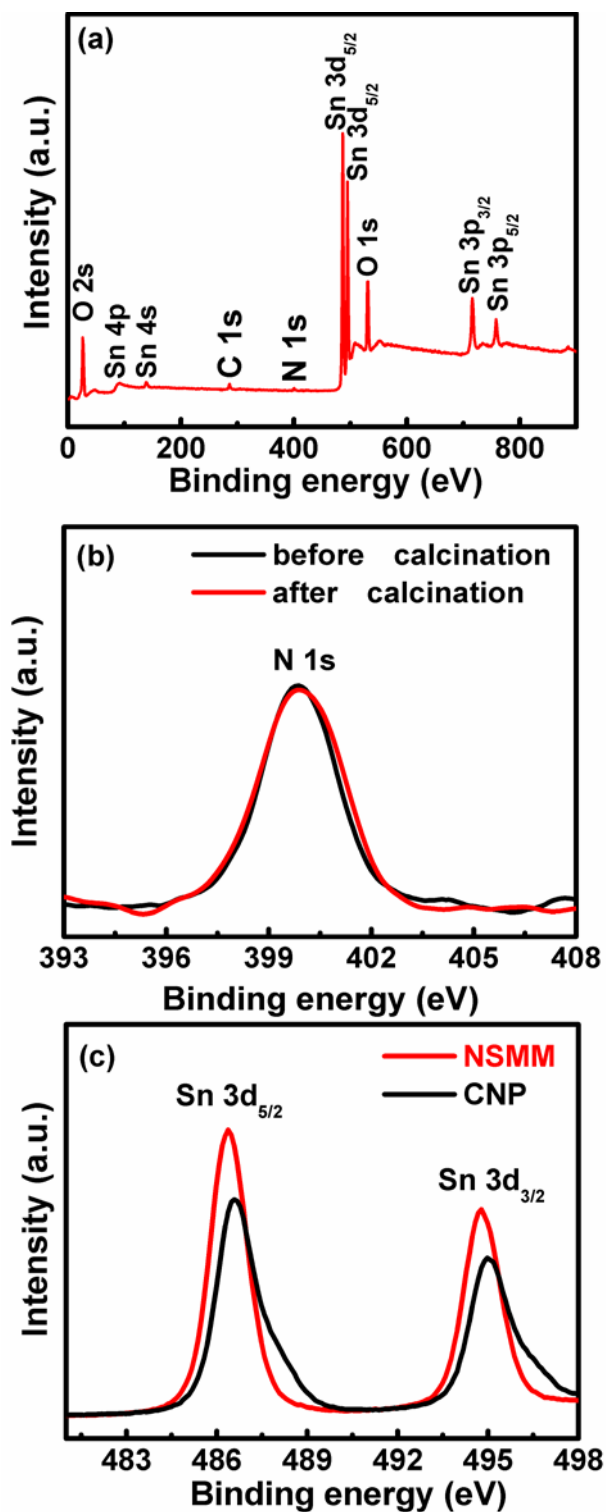


Figure S4. The typical XPS spectra of the NSMMs: (a) the survey spectra, (b) the high-resolution spectra of N 1s. (c) the high-resolution spectra of Sn 3d.

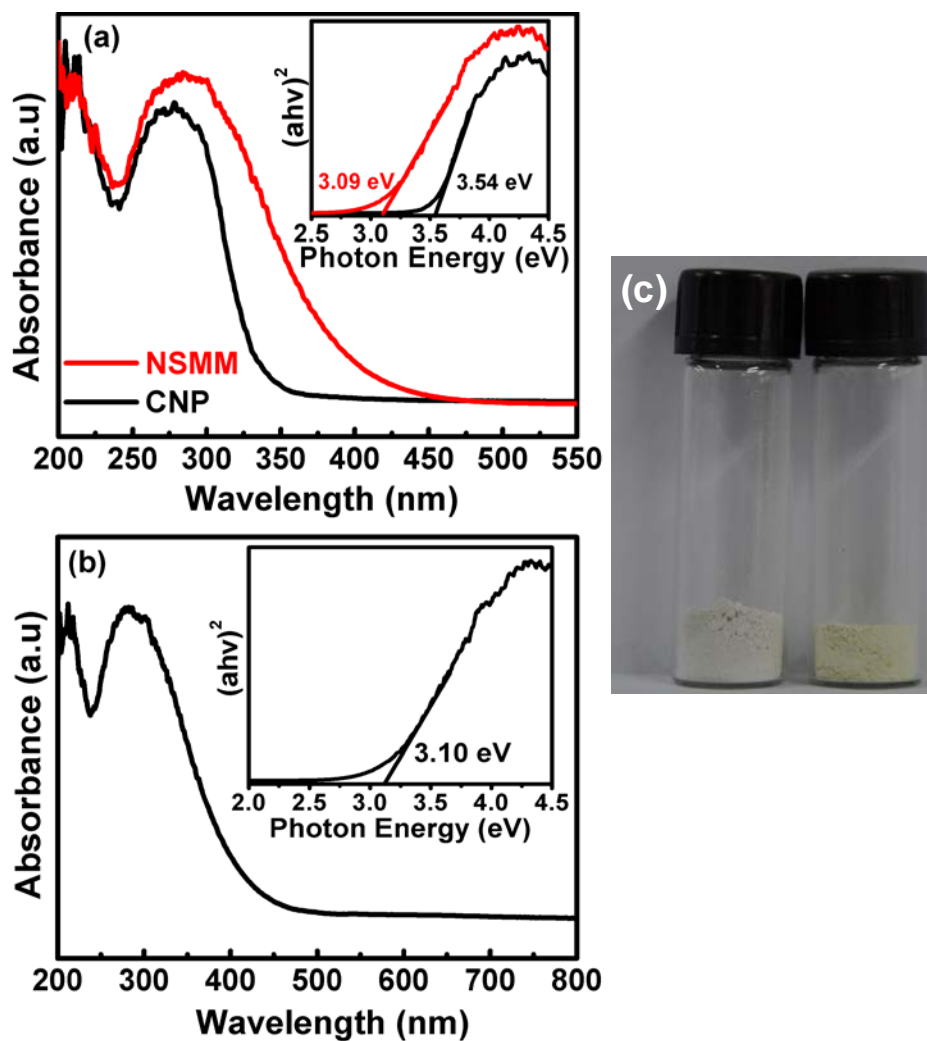


Figure S5. (a) UV-vis absorption spectrum of the two samples. (b) UV-vis absorption spectrum of NSMM after calcination. (c) The photo images of the CNP (left) and NSMM (right).

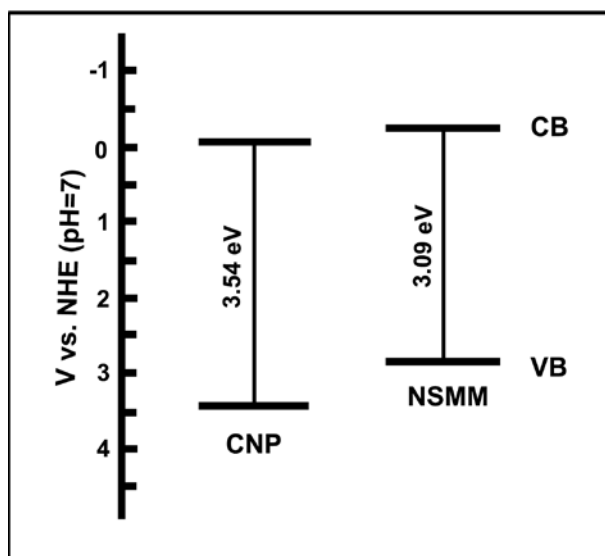


Figure S6. Energy band diagram of the two samples.

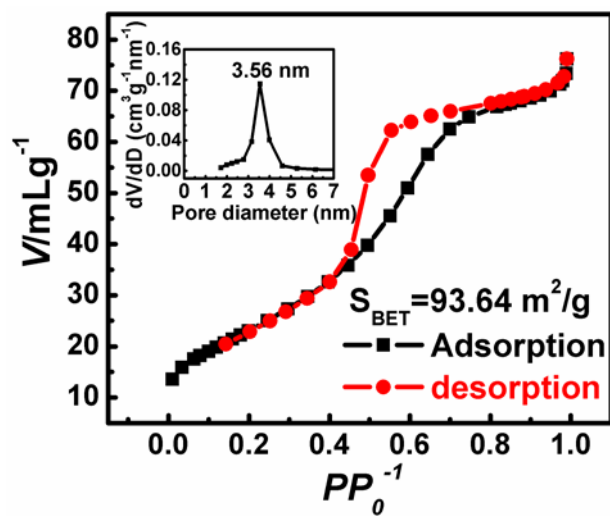


Figure S7. Nitrogen sorption isotherms of the NSMMs. Inset shows the pore diameter distribution of NMSS.

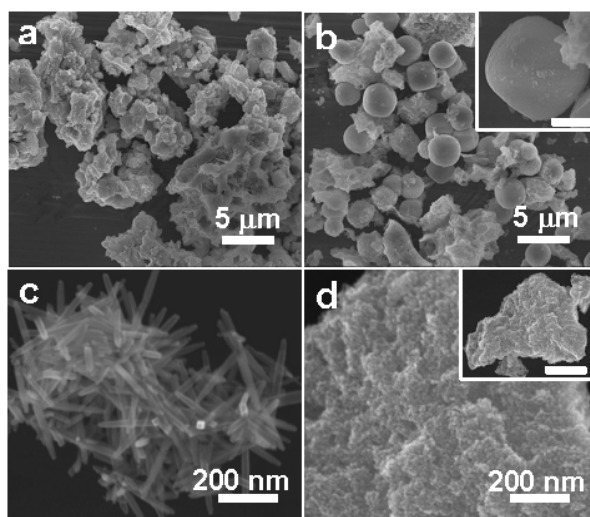


Figure S8. Morphology evolution of NSMM (a) 2 h, (b) 4 h; FE-SEM image of (c) SnO₂ nanorods formed without C₆H₁₂O₆, (d) SnO₂ bulks formed with pure H₂O as solvent.

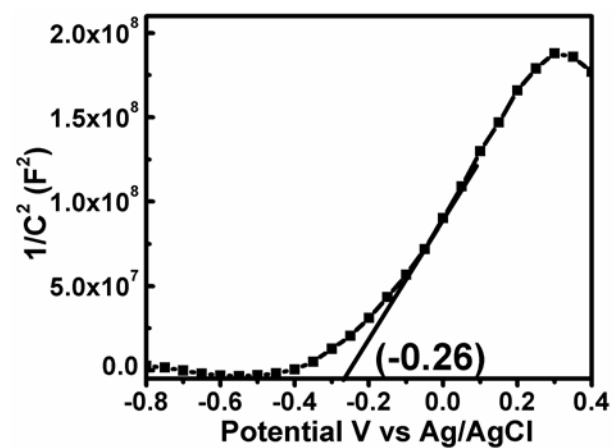


Figure S9. Mott-Schottky plots of the NSMMs electrodes after calcination..

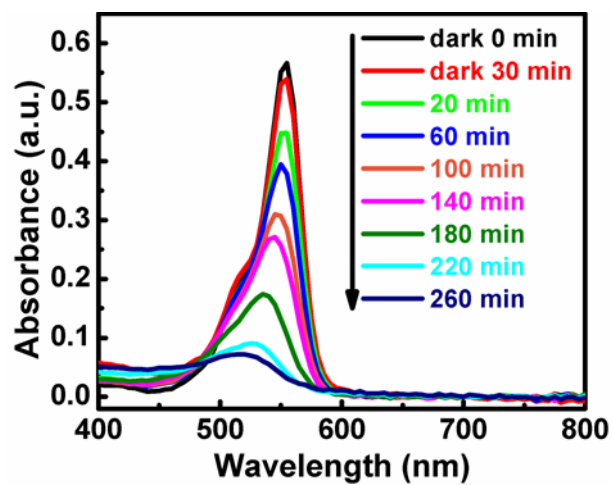


Figure S10. Time-dependent UV-vis absorbance spectra of the RhB solution in the presence of CNP sample.