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COMMUNICATION

Supporting information
Improved cycling performance of sulfur nanoparticles with Mussel inspired polydopamine coating

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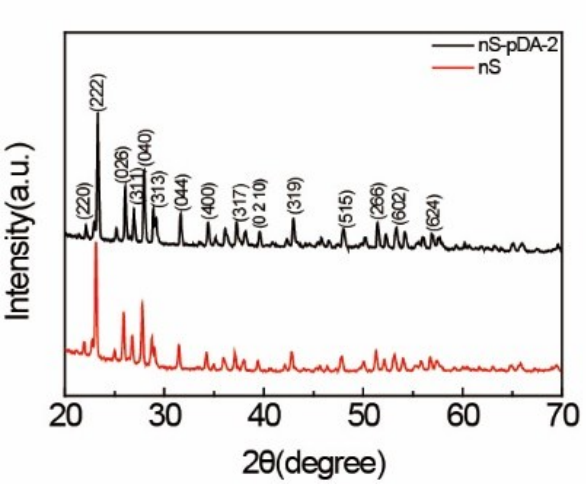

Figure S1. X-ray diffraction patterns of bare sulfur nanoparticles (nS) and ones coated with polydopamine (nS-pDA-2).

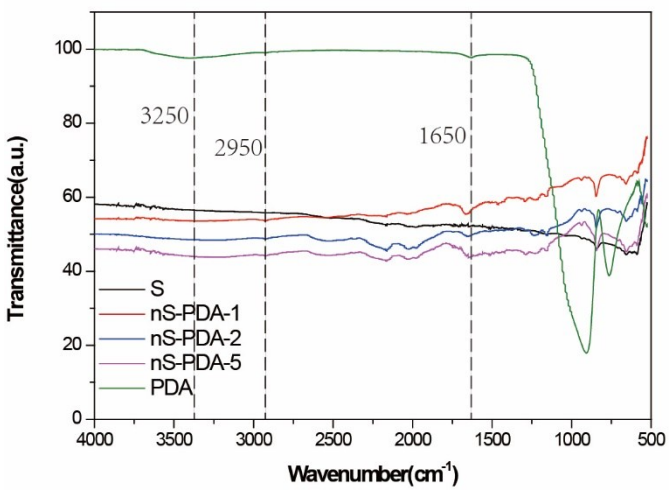

Figure S2. FTIR spectra of the pDA coated sulfur nanoparticles, sulfur and pDA film.

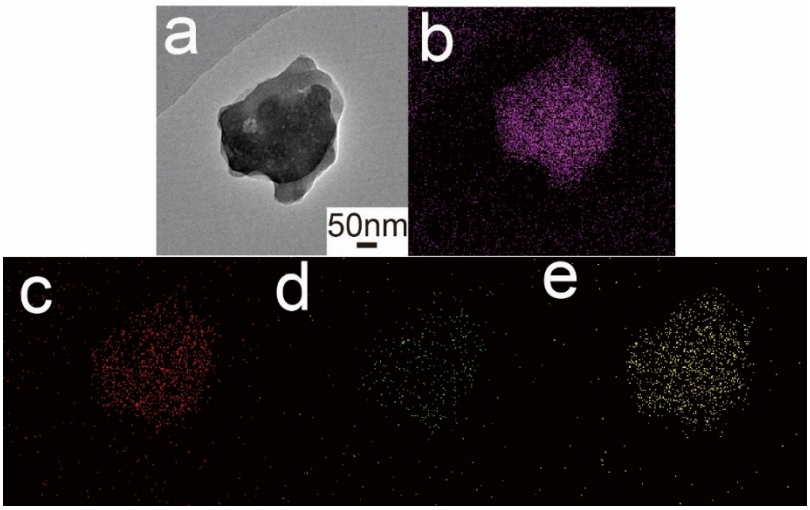

Figure S3. STEM image of nS-pDA-1 (a), and element mapping of for carbon (b), nitrogen (c), oxygen (d) and sulfur (e).

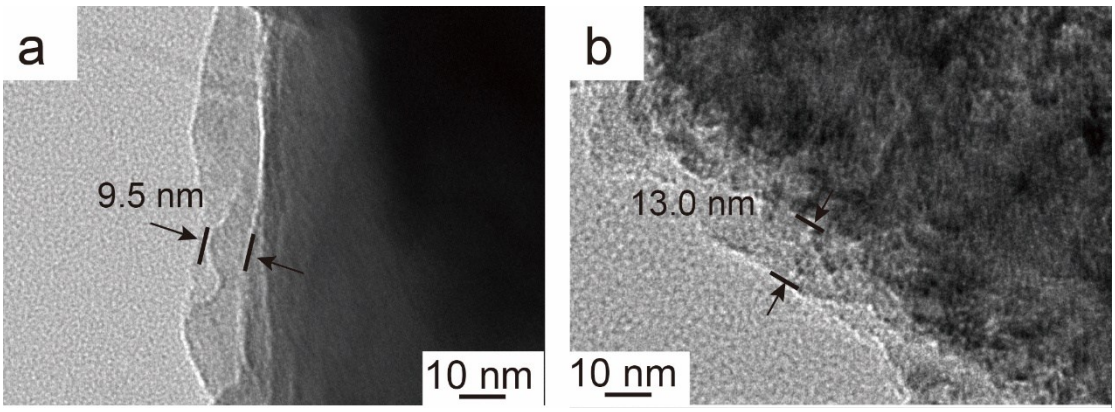

Figure S4. TEM images of ns@pDA-2 and ns@pDA-5.

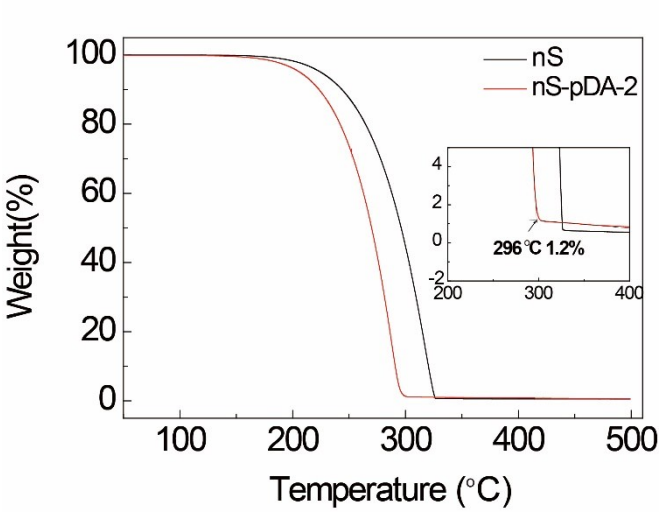

Figure S5. Thermogravimetric analysis of bare sulfur nanoparticles (nS) and ones coated with polydopamine (nS-pDA-2).

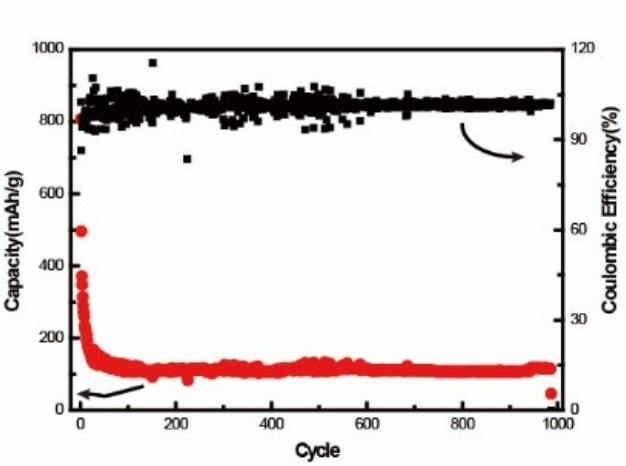

Figure S6. Cycling performance of bared sulfur nanoparticles.

Table S1. Summary of R1, R2 and R3 used in the fitting of Nyquist plots of the electrodes after cycling.

	ns@pDA-1	ns@pDA-2	ns@pDA-5
R1	3.11	4.43	9.95
R2	40.02	28.37	46.4
R3	23.74	29.16	96.2

In the equivalent circuits, R1 represents the resistance of the electrolyte. R3 is the interphase resistance. R2 is the charge transfer resistance, and CPE1, CPE2 are two constant phase elements. Z_W is the Warburg impedance.