Supporting Information

Mesoporous Carbon Additives for Long Cycle Life Sulfur Cathodes of Li-S Batteries

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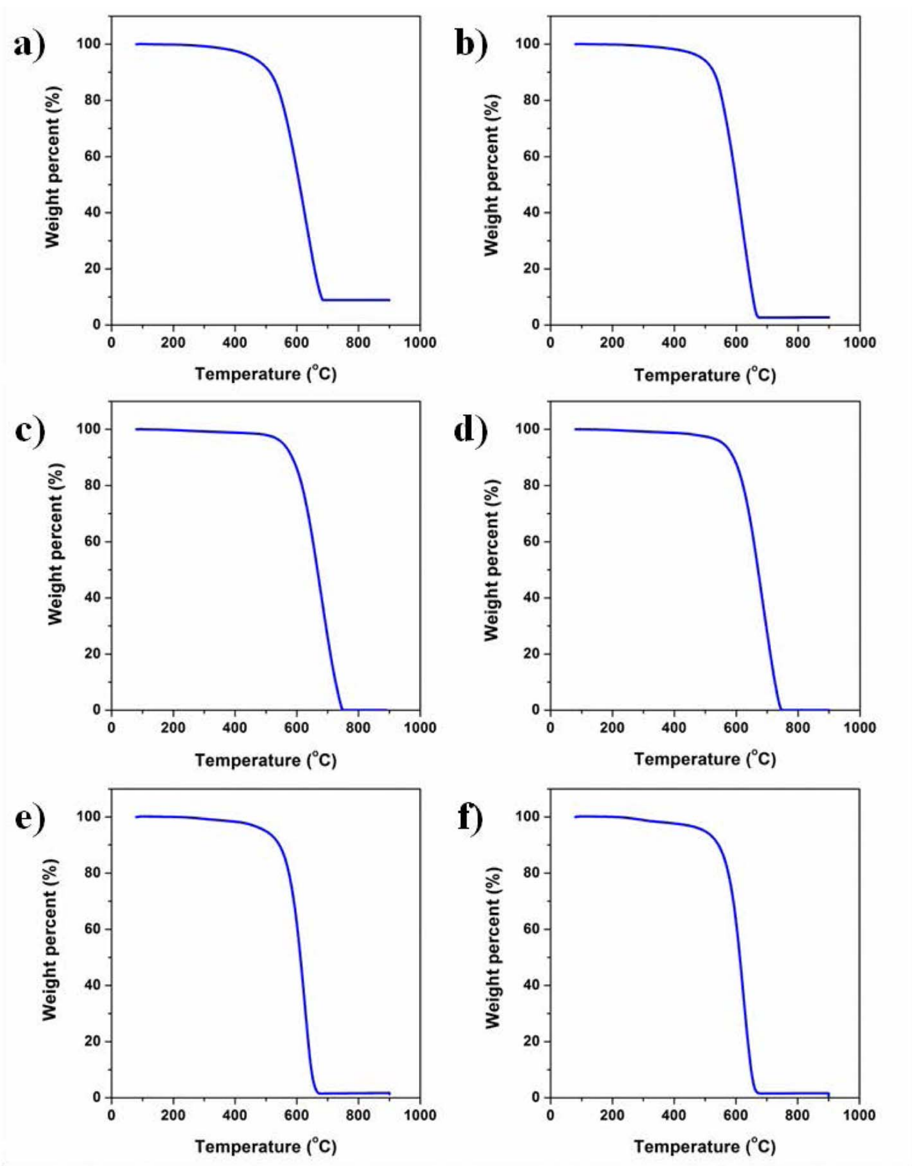

Figure S1. TGA results for the series of DMC after the removal of the silica templates using a 10% HF solution; (a) DMC-0.11 (b) DMC-0.22, (c) DMC-0.44, (d) DMC-0.88, (e) DMC-1.32, and (f) DMC-1.76. Note that data for DMC-0.44 and DMC-0.88 are reported previously.

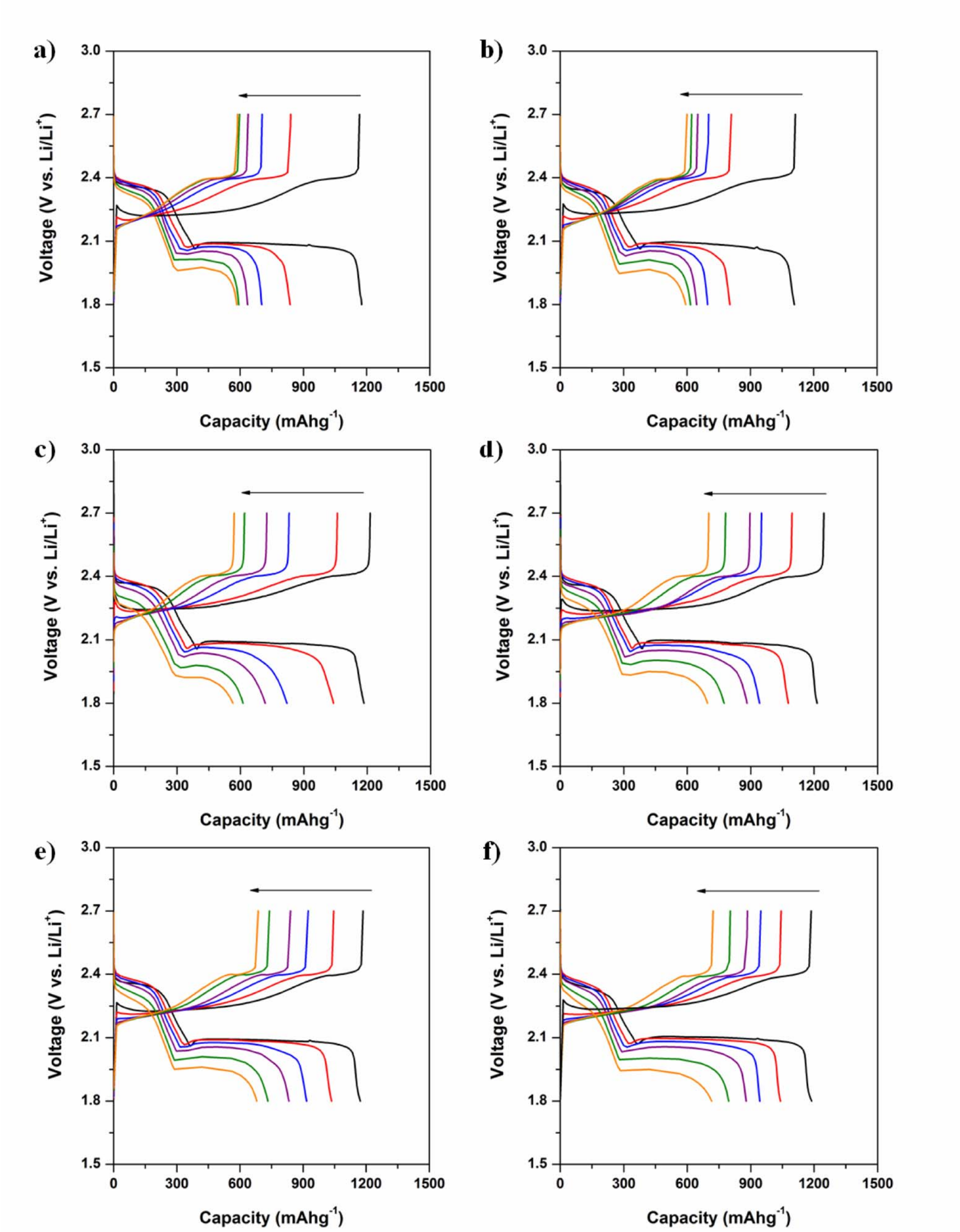

Figure S2. Galvanostatic charge and discharge profiles of Li-S batteries in the voltage range of 1.8 to 2.7 V *vs.* Li/Li^+ at different current densities, such as 0.05 C, 0.1 C, 0.25 C, 0.5 C, 1.0 C, and 1.5 C (1 C = 1674 mA/g): (a) DMC-0.11 (b) DMC-0.22, (c) DMC-0.44, (d) DMC-0.88, (e) DMC-1.32, and (f) DMC-1.76.

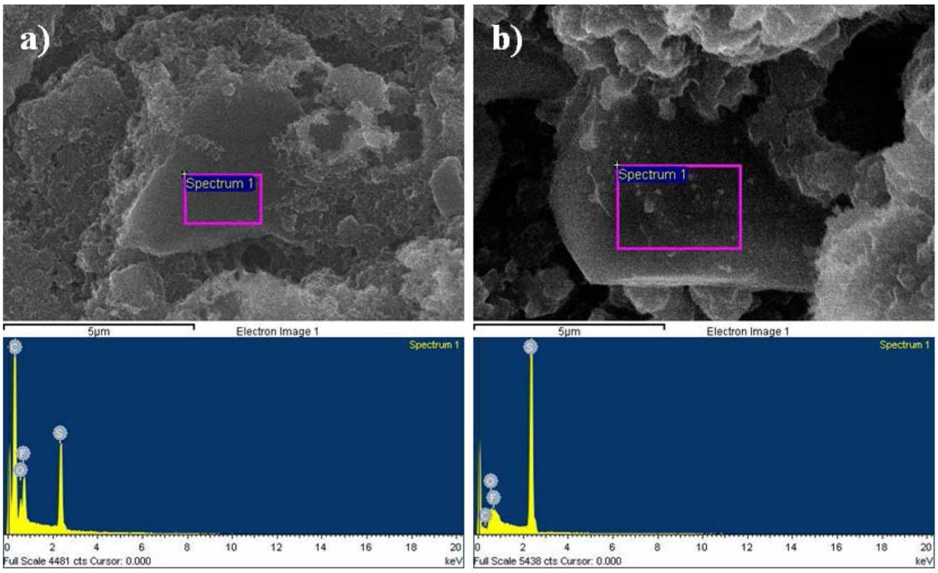

Figure S3. FESEM images and corresponding EDS results for DMC-1.32 integrated in the sulfur cathodes: (a) after aging 24 h at open circuit voltage (OCV) and (b) after the first discharge to 1.8 V *vs.* Li/Li^+ with a constant current of 0.05 C (1 C = 1674 mA/g). The ratio of S to F has been notably increased after the first discharge from 0.6 to 31.2.

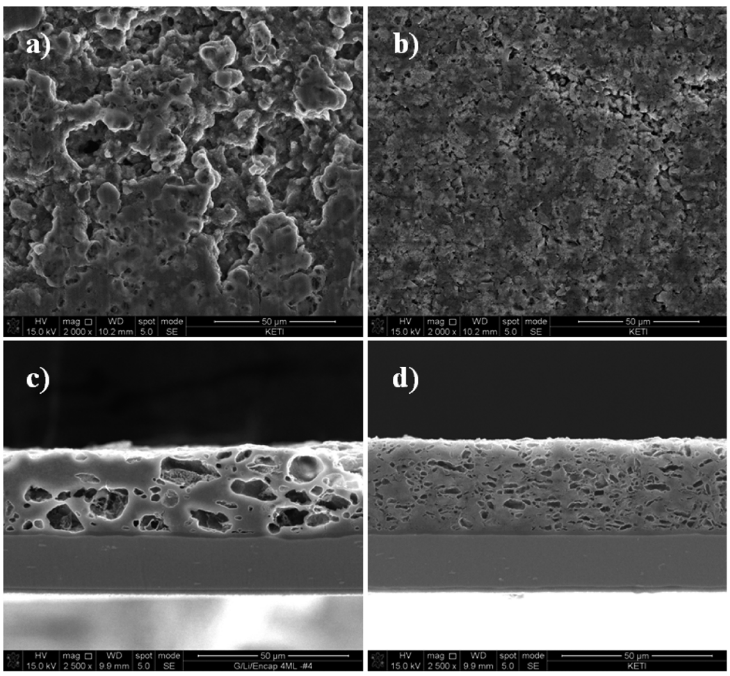

Figure S4. FESEM images of sulfur cathodes: (a) top-view image of a sulfur cathode without DMC additive, (b) top-view image of a sulfur cathode with DMC additive, (c) cross-sectional image of a sulfur cathode without DMC additive, and (d) cross-sectional image of a sulfur cathode with DMC additive.