Supporting information for

An Electrochemical Approach to Graphene Oxide Coated Sulfur for Long Cycle Life

Joonhee Moon¹†, Jungjin Park²,³†, Insu Jo¹, Seung-Ho Yu²,³, Cheolho Jeon⁶, Jouhahn Lee⁶, Sung-Pyo Cho¹,⁴, Yung-Eun Sung²,³*, Byung Hee Hong¹,⁵*

¹Department of Chemistry, College of Natural Science, Seoul National University, Seoul 151-747, Republic of Korea
²School of Chemical and Biological Engineering, Seoul National University, Seoul 151-742, Republic of Korea.
³Center for Nanoparticle Research, Institute for Basic Science (IBS), Seoul 151-742, Republic of Korea
⁴National Center for Inter-University Research Facilities, Seoul National University, Seoul 141-742, Republic of Korea
⁵Graduate School of Convergence Science and Technology, Seoul National University, Suwon 443-270, Republic of Korea
⁶Korea Basic Science Institute, Daejeon 302-333, Republic of Korea

† These authors contributed equally to this work.
*Corresponding author, E-mail: byunghee@snu.ac.kr
**Figure S1.** SEM images of (a) GO-S/CB and (b) S/CB composites. The insets show the magnified images of GO-S/CB and S/CB, respectively.

**Figure S2.** (a) Fourier transform infrared spectroscopy (FTIR) spectra of CB and GO. Strong peaks attributed to the characteristic vibrational mode of oxygen functional groups. X-ray photoelectron spectroscopy of CB and GO. (b) C 1s peaks and (c) O 1s peaks. Compared to CB, GO shows higher oxygen related peaks such as $-\text{OH}$, C=O, C-O and C-O-C at 3434 cm$^{-1}$, 1725 cm$^{-1}$, 1024-1180 cm$^{-1}$, and 1200 cm$^{-1}$, respectively. In addition, the C 1s peak of CB is sharp and strong, while the peaks of GO at 286.27 and 287.18 cm$^{-1}$ are rather broad and weak. On the contrary, the O 1s peak of GO is stronger than that of CB.