

# Supporting Information

## Highly Monodisperse Magnetite/Carbon Composite Microspheres with Mesoporous Structure as High-Performance Lithium-Ion Battery Anodes

Hyung-Seok Lim<sup>‡a</sup>, Daun Kim<sup>‡a</sup>, Jun-Ki Hwang<sup>a</sup>, Yu-Jeong Kim<sup>a</sup>, Yang-Kook Sun<sup>b</sup> and Kyung-Do Suh<sup>\*a</sup>

<sup>a</sup> Department of Chemical Engineering, College of Engineering, Hanyang University, Seoul, Republic of Korea, 133-791

<sup>b</sup> Department of WCU Energy Engineering, College of Engineering, Hanyang University, Seoul, Republic of Korea, 133-791

\* Corresponding author. Tel.: +82-2-2220-0526, fax: +82-2-2220-4680.

E-mail: kdsuh@hanyang.ac.kr (K. -D. Suh)

‡ These authors contributed equally to this work.

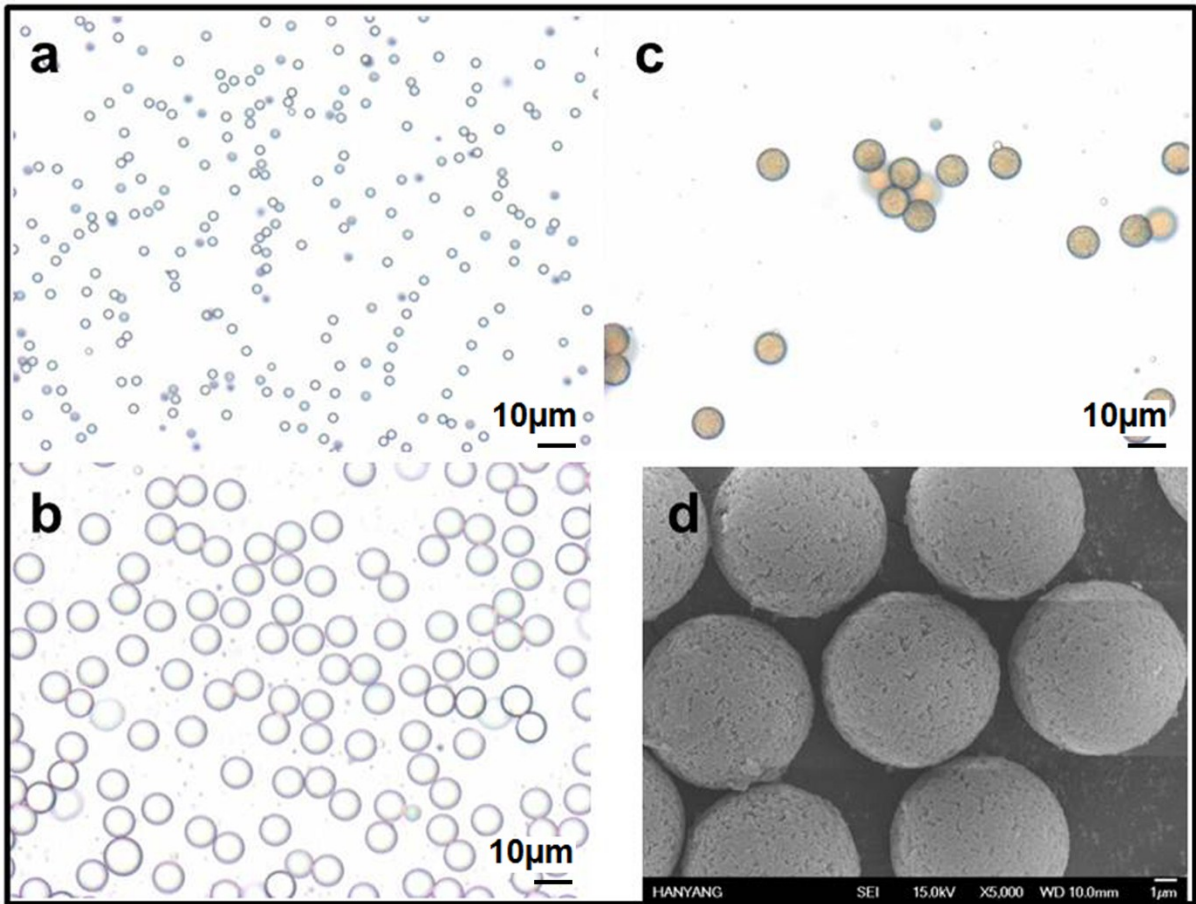


Figure S1. OM images of the polymerization processes of highly monodisperse PS microspheres with a mesoporous structure; (a) PS seed microspheres, (b) swollen PS microspheres with second monomer mixture with heptane as a diluent and (c) porous PS microspheres after polymerization. (d) SEM image of highly monodisperse porous PS microspheres after dry.

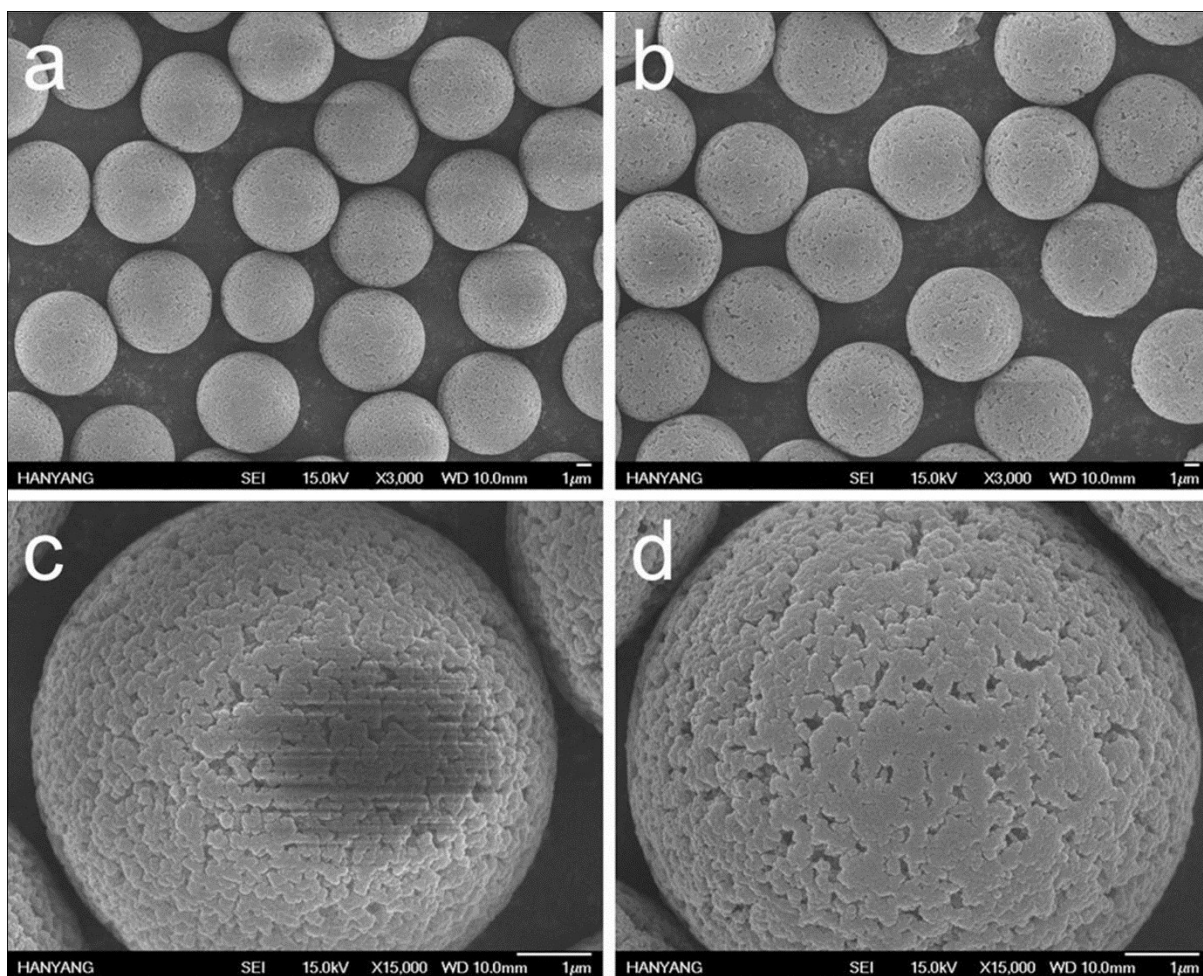


Figure S2. SEM images of highly monodisperse PS microspheres with a mesoporous structure after sulfonation process; (a and c) SPS-H4 and (b and d) SPS-H7.

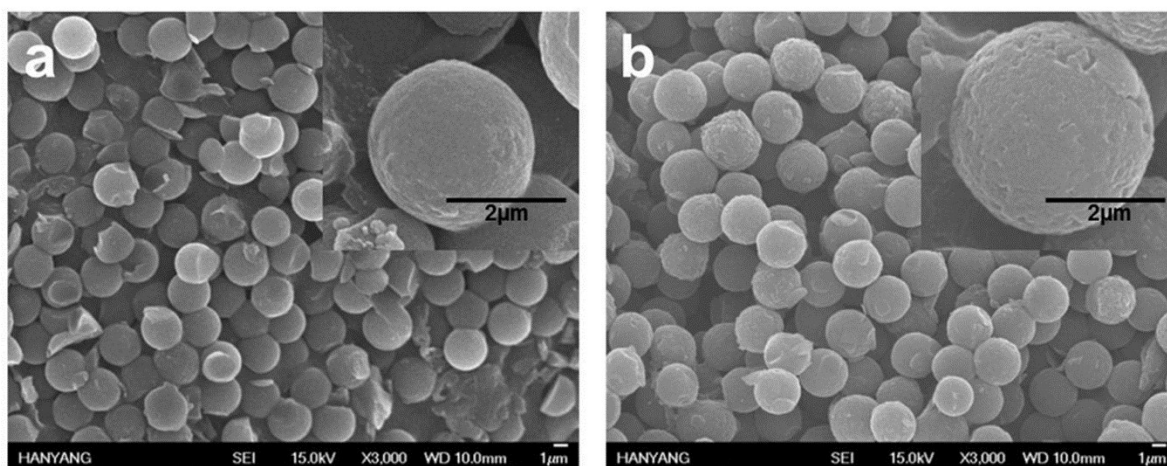


Figure S3. SEM images of porous carbon microspheres obtained from heat-treatment of SPS microspheres without  $\text{Fe}_3\text{O}_4$  nanocrystals; (a) PC-H4 and (b) PC-H7.

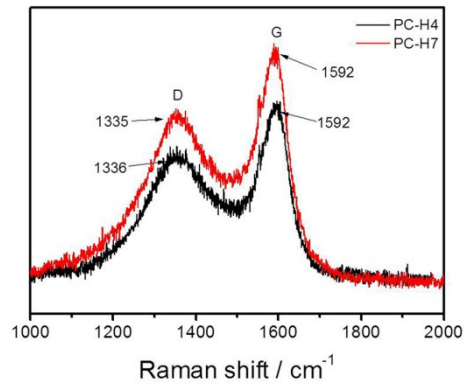


Figure S4. Raman spectra of porous carbon microspheres obtained from heat-treatment of SPS microspheres without Fe<sub>3</sub>O<sub>4</sub> nanocrystals; (black line) PC-H4 and (red line) PC-H7.

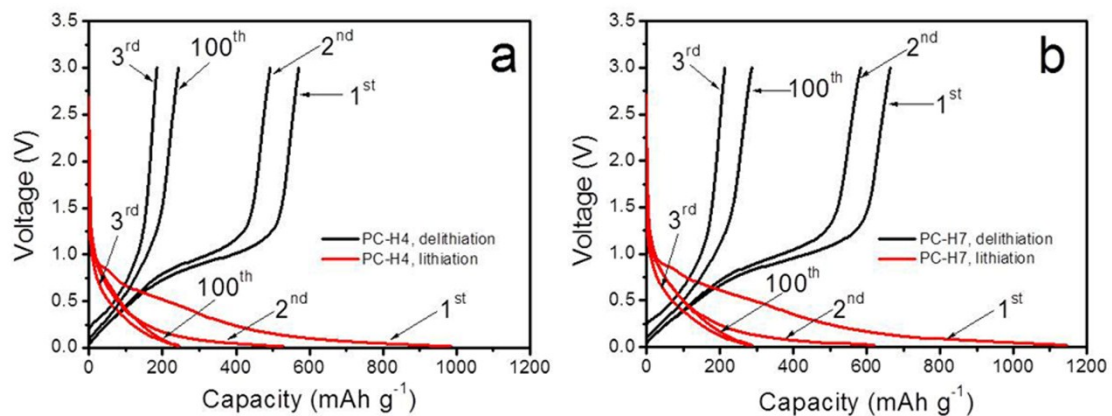


Figure S5. Voltage profiles of (a) PC-H4, (b) PC-H7 composite electrodes in the 0.02-3V voltage window at (first two cycles) 1/5 and (third and 100th cycles) 1C.

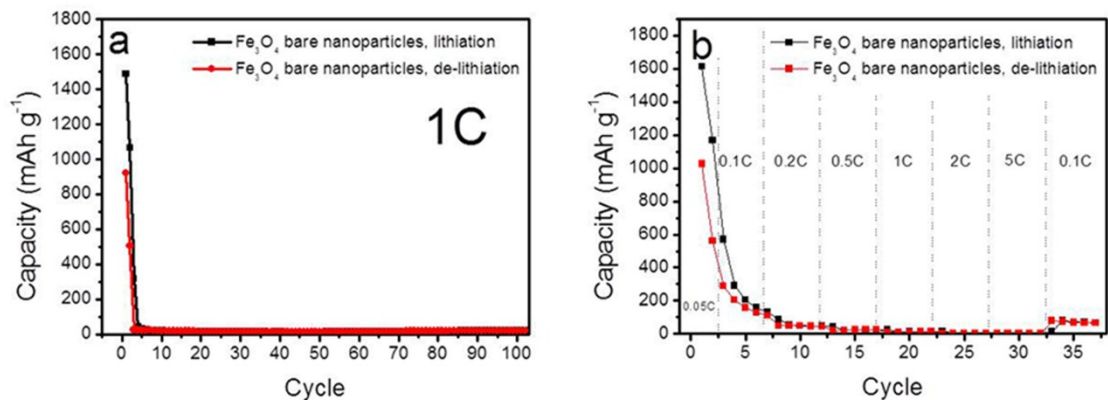


Figure S6. (a) Cycling performance of the composite electrode made with bare Fe<sub>3</sub>O<sub>4</sub> nanoparticles in the 0.02-3V voltage window at 1/20 C (first two cycles) and 1C. (b) The specific capacity of the composite electrode made with bare Fe<sub>3</sub>O<sub>4</sub> nanoparticles as a function of the cycling rate (0.1-5 C).

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