

Carbon-coated Silicon Nanoparticle-embedded Carbon Sphere Assembly Electrodes with Enhanced Performance for Lithium-ion Batteries

Donghee Gueon[†], Jaehyun Lee[†], Joong Kee Lee[‡], and Jun Hyuk Moon^{†}*

[†]Department of Chemical and Biomolecular Engineering, Sogang University, Seoul, Korea,

[‡]Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea

Corresponding author, E-mail: junhyuk@sogang.ac.kr

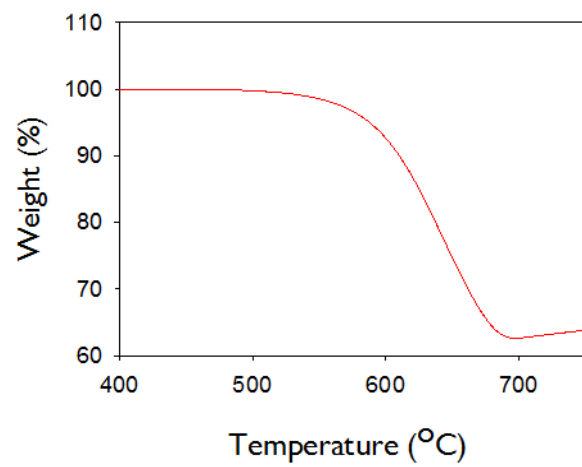


Figure S1. Thermogravimetric analysis (TGA) curve of the C-SNP in air.

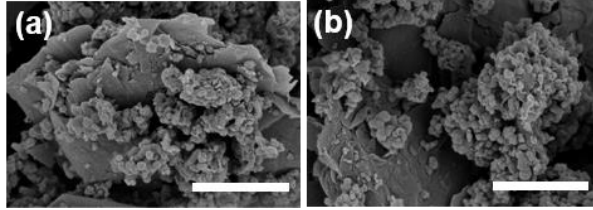


Figure S2. SEM images of (a) 44 wt.% C-SNP/micron-sized carbon particles and (b) 56 wt.% C-SNP/micrometer carbon particles (scale bar: 1 μm)

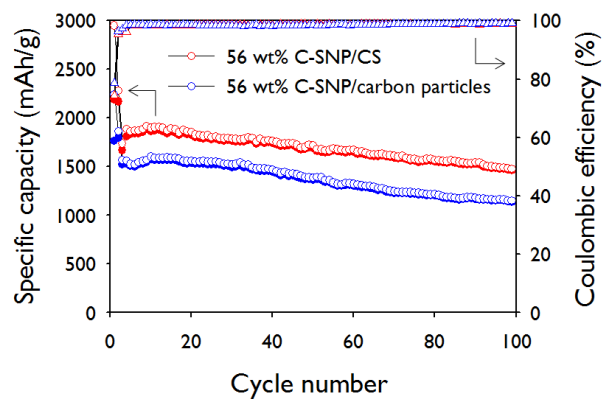


Figure S3. Comparison of cycle performance of C-SNP/CS and C-SNP/commercial carbon particles. The commercial carbon particles were purchased from Aldrich.

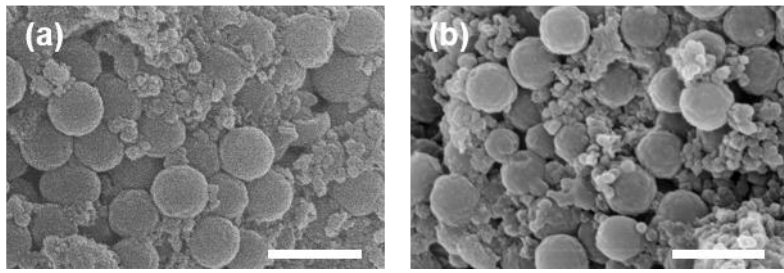


Figure S4. SEM images of (a) 44 wt.% C-SNP/CS after 150 cycles, (b) 56 wt.% C-SNP/CS after 150 cycles (scale bar: 1 μm).

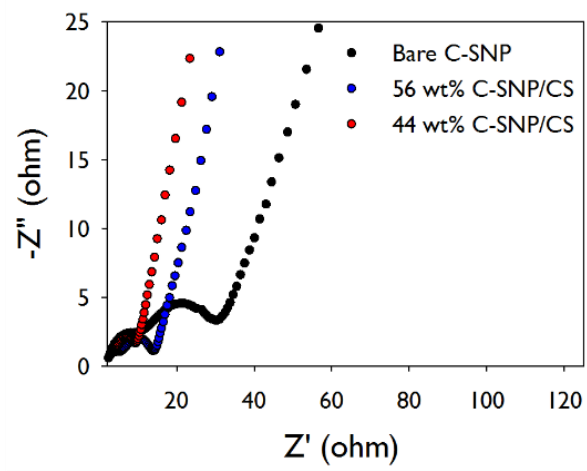


Figure S5. Impedance spectra measured after the rate capability test of bare C-SNP, 56 wt.% C-SNP/CS and 44 wt.% C-SNP/CS.