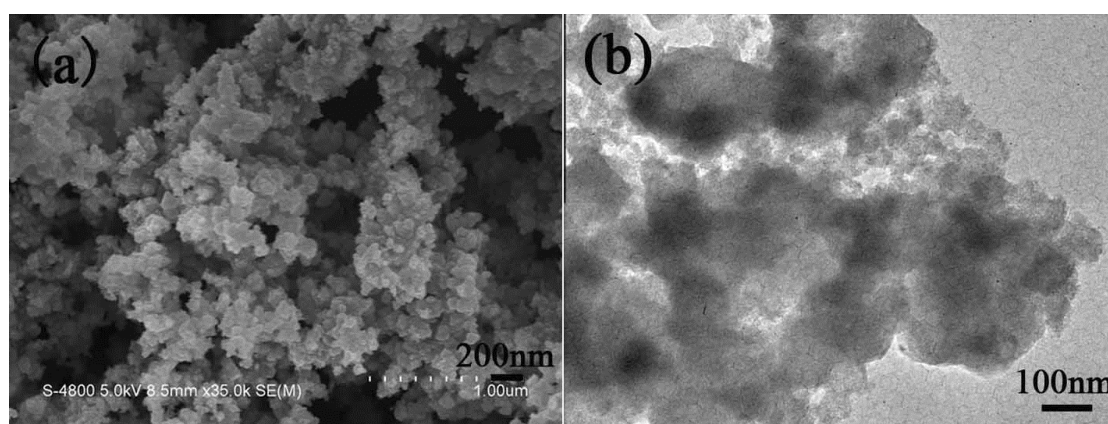


**Electronic supplementary information for**  
**Ge@C Core-Shell Nanostructures for Improved Anode Rate Performance in**  
**Lithium-Ion Batteries**

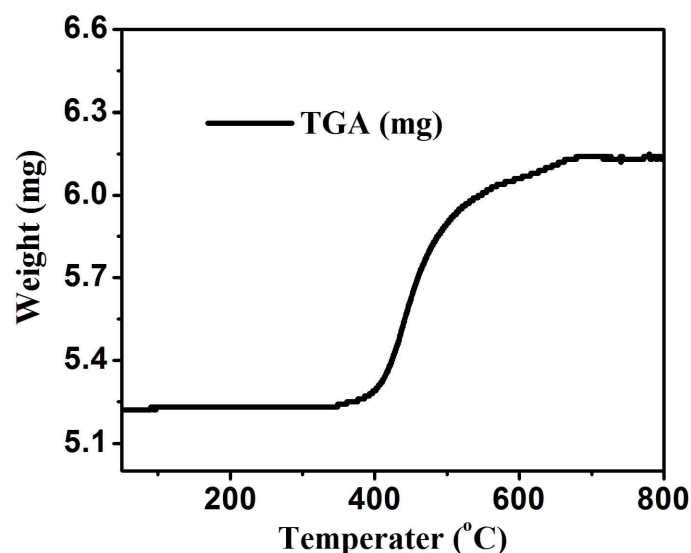
Tingting Qiang,<sup>a</sup> Jiaxin Fang,<sup>a</sup> Yixuan Song,<sup>a</sup> Qiuyang Ma,<sup>a</sup> Ming Ye,<sup>a</sup> Zhen Fang,  
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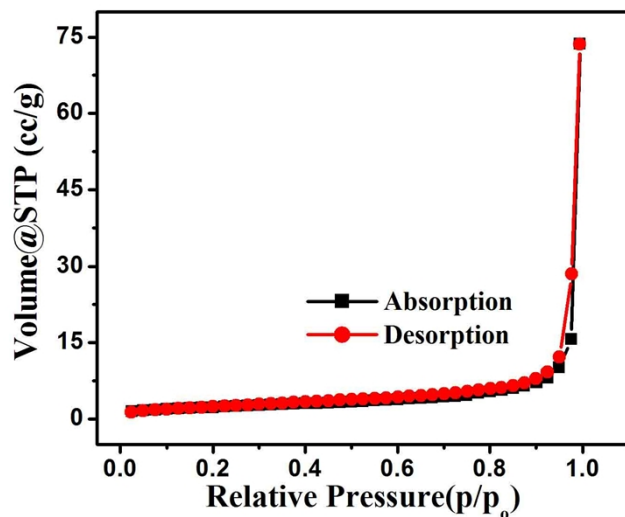
**Characterization details**



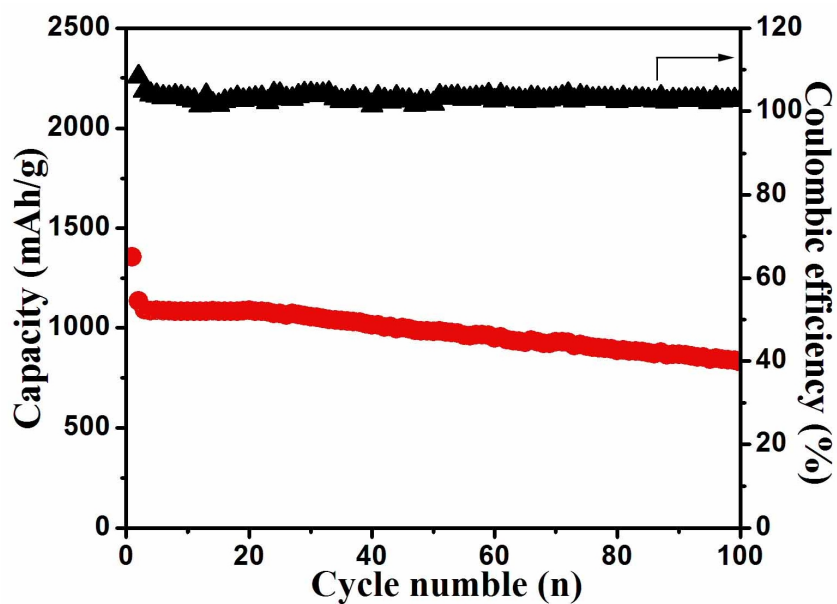
**Fig. S1.** (a) SEM image of Ge NPs. (b) TEM images of Ge NPs.



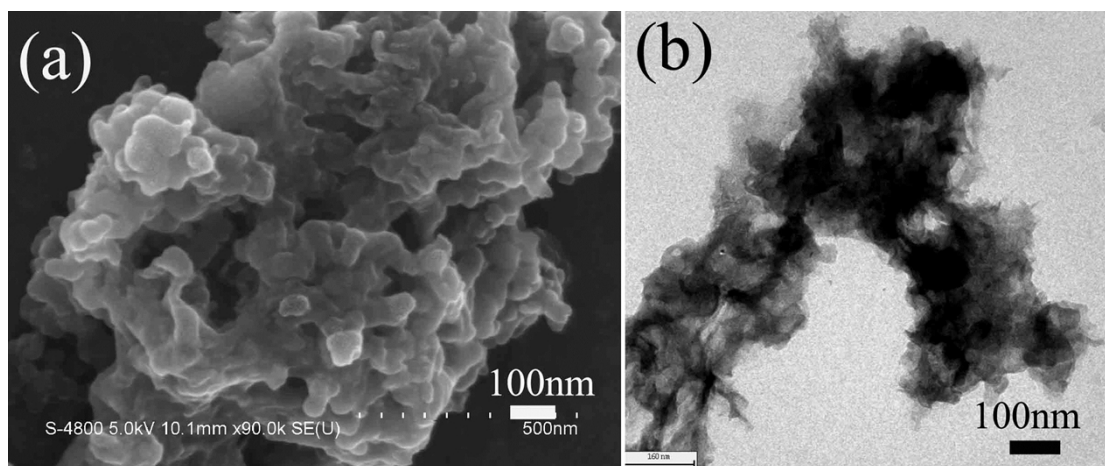
**Fig. S2.** TGA curves of the Ge@C nanocomposites.



**Fig. S3.** N<sub>2</sub> adsorption/desorption isotherms and pore-size distribution curves of Ge@C nanocomposites.



**Fig. S4.** Cycling performance of Ge@C nanostructures at 500 mAh g<sup>-1</sup> for 100 cycles (0.01 V - 1.5 V versus Li<sup>+</sup>/Li).



**Fig. S5.** (a) SEM and (b) TEM images of Ge@C nanocomposites electrodes cycled after 50 cycles at 500mA/g.