

Supporting Information

Confined Germanium NPs in N-doped carbon matrix for High-rate and Ultralong-life Lithium Ion Batteries

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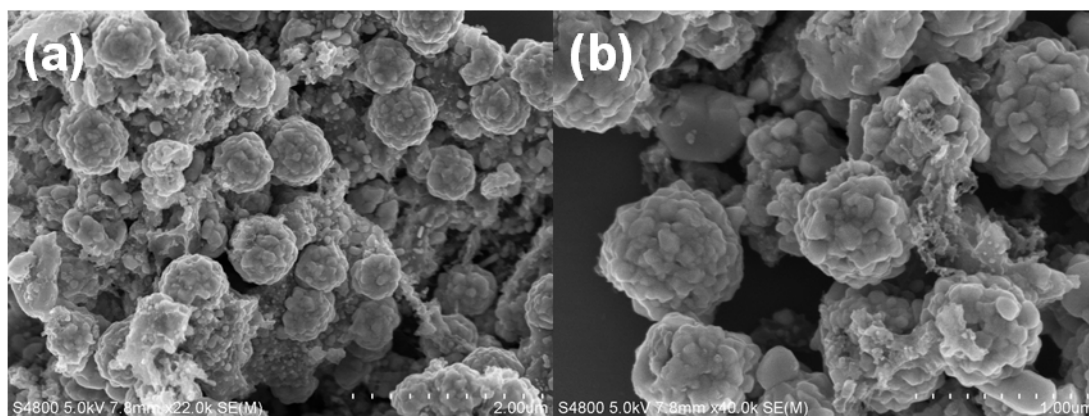


Figure S1. The SEM images of bulk Ge without adding CMK-3.

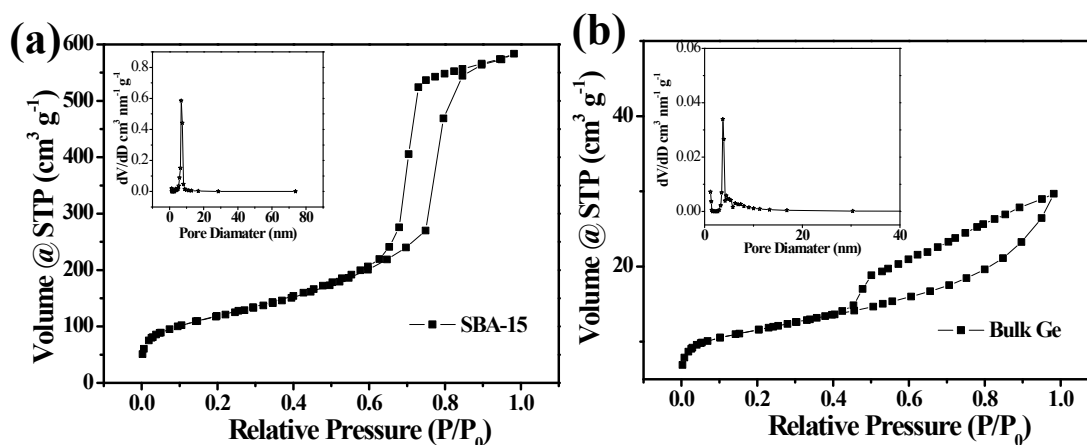


Figure S2. N₂ adsorption-desorption isotherm of pristine SBA-15 (a) and bulk Ge (b). The inset shows the pore size distribution calculated using the BJH method. The specific surface area is 523.49 m² g⁻¹, mean pore diameters 6.889 nm, and pore volumes 0.936 cm³ g⁻¹ of SBA-15. The surface area of bulk Ge is 42.12 m² g⁻¹, the pore diameter is 4.06 nm and the pore volumes 0.043 cm³ g⁻¹.

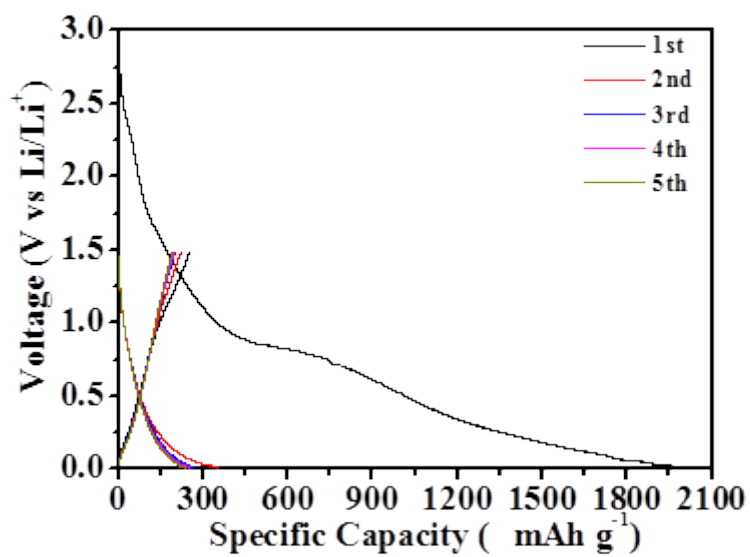


Figure S3. Charge/discharge profiles of acidulated CMK-3 nanocomposite.

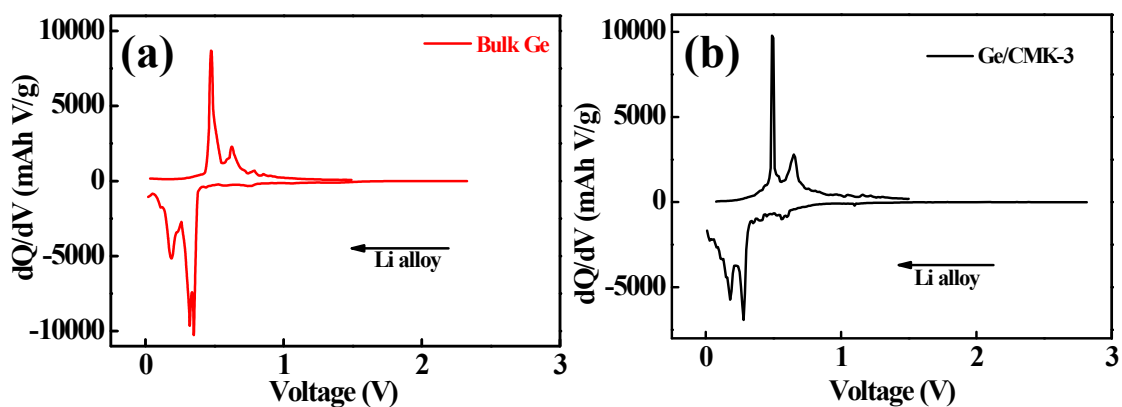


Figure S4. Differential capacity plots of bulk Ge and Ge/CMK-3 at first cycles.

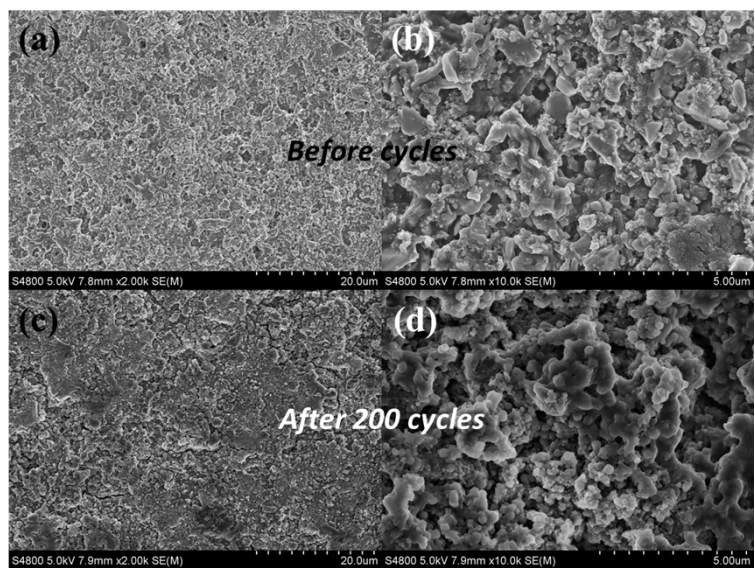


Figure S5. SEM images of the Ge/CMK-3 composite electrode before and after 200 charge/discharge cycles.