Supporting Information

SiO_x/C Composite Spheres as an Anode Material for High-Performance Lithium-Ion Batteries

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Figure S1. FR-IR spectra of the $SiO_x/C-4$ powder.



Figure S2. Galvanostatic intermittent titration curves of (a) $SiO_x/C-1$, (c) $SiO_x/C-2$, (e) $SiO_x/C-3$, and (g) $SiO_x/C-5$ electrodes at 0.1 A g⁻¹ (pulse time = 10 min, following static time = 40 min). Li⁺ diffusion coefficient as a function of voltage during lithiation and delithiation for (b) $SiO_x/C-1$, (d) $SiO_x/C-2$, (f) $SiO_x/C-3$, and (h) $SiO_x/C-5$ electrodes.



Figure S3. SEM images of $SiO_x/C-4$ electrode (a) before cycling, (b) after 200 cycles, and (c)

10 cycles.



Figure S4. Cross-sectional TEM images of $SiO_x/C-4$ electrode after different cycles.

Samples	Before cycling		10 th Cycle		
	R_s	R _{ct}	R_s	R _{sei}	R _{ct}
SiO _x /C-1	2.21	576.8	3.78	28.37	197.4
SiO _x /C-2	0.74	390.6	3.21	26.22	194.8
SiO _x /C-3	1.82	401.5	5.24	24.71	184.5
SiO _x /C-4	1.6	171.7	4.22	16.69	31.5
SiO _x /C-5	0.58	370.2	6.11	32.06	48.6

Table S1. The fitting results of EIS parameters for the different electrodes before and after 10 cycles.