Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Bifunctional NaCl Template for Synthesis of Si@Graphitic Carbon Nanosheets as Advanced Anode Materials for Lithium Ion Batteries

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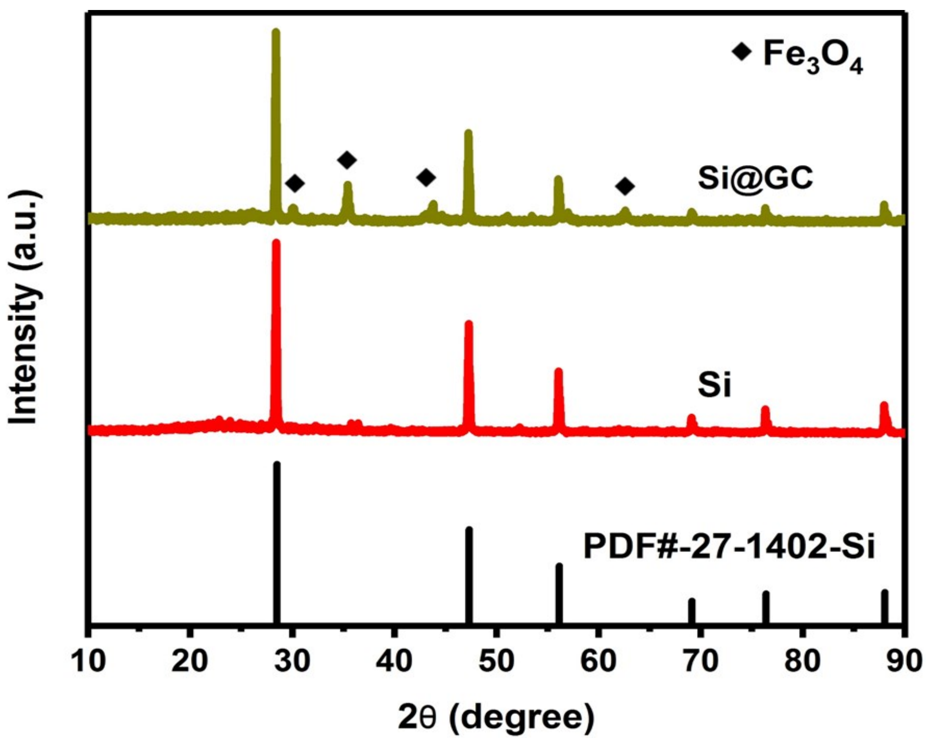

Fig. S1 XRD patterns of ball-milled Si and Si@GC nanosheets.

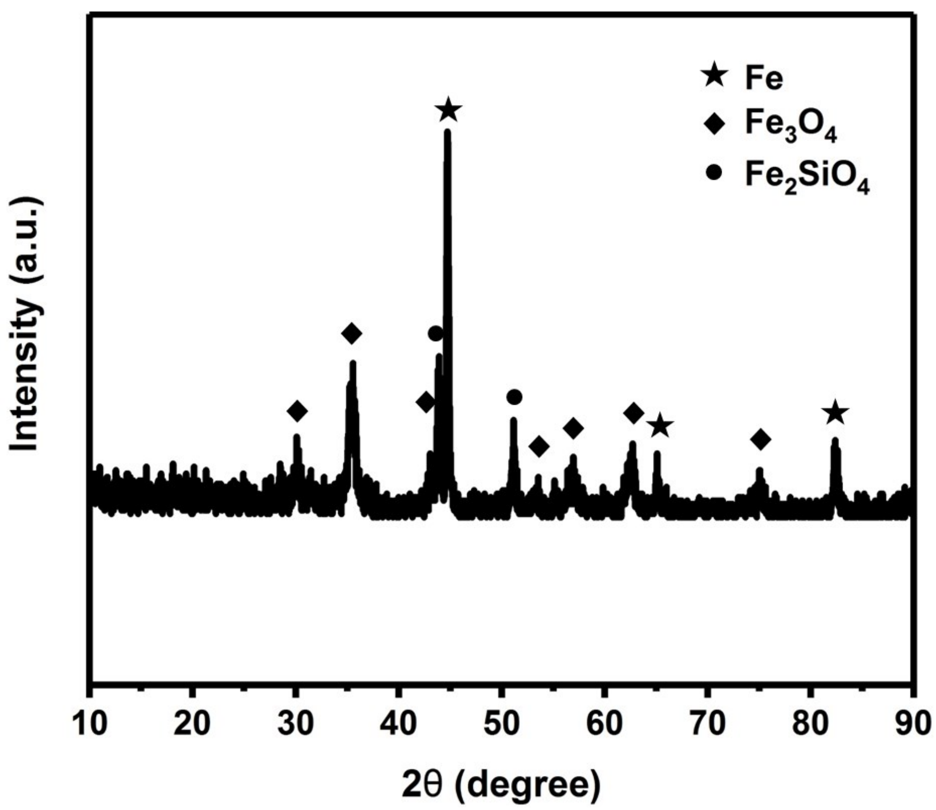

Fig. S2 XRD patterns of Fe-Si-O composite withou added NaCl.

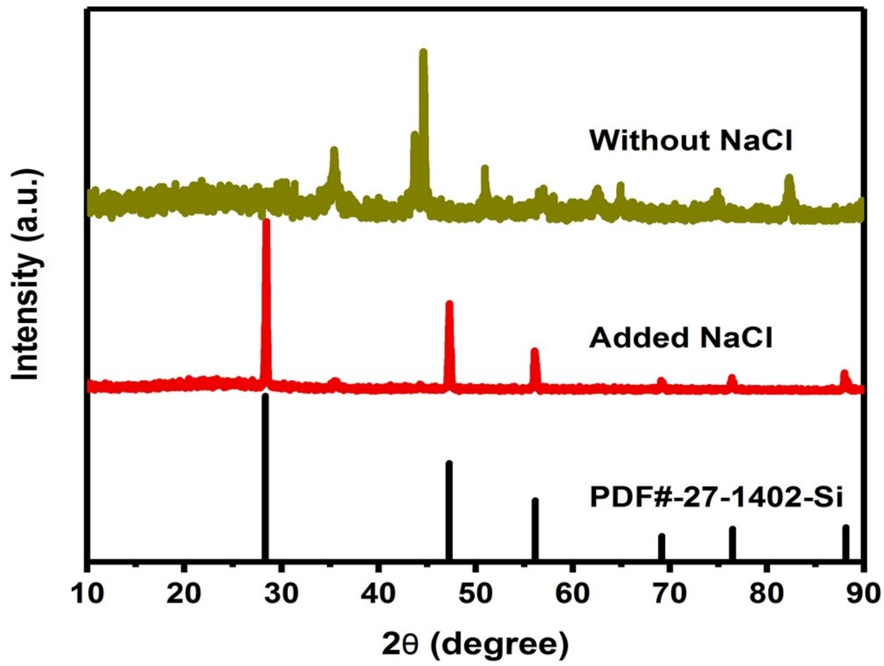

Fig. S3 XRD patterns of as-prepared composite used glucose as the cources.

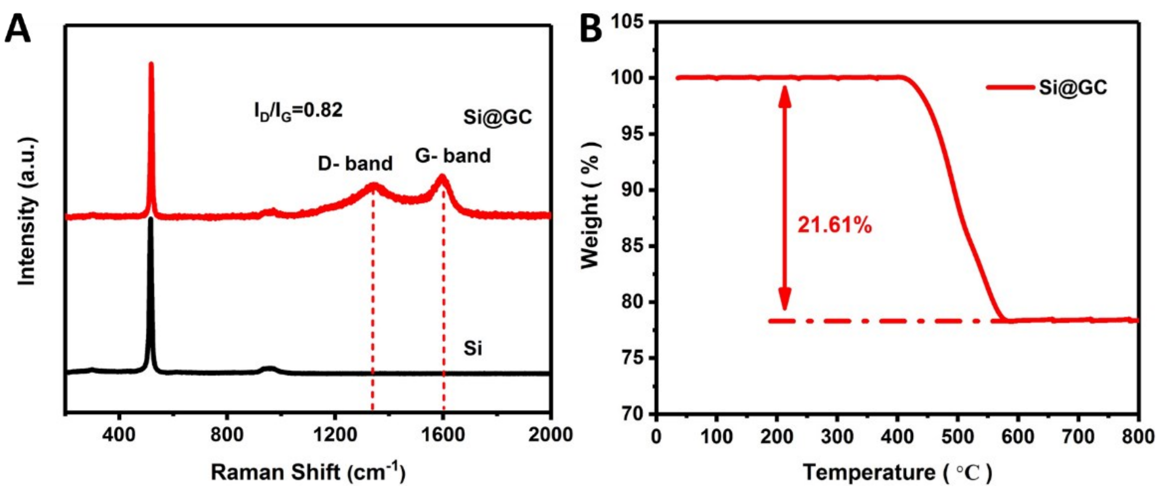

Fig. S4 (a) Raman spectra of Si and Si@GC nanosheets; (b) TGA curves of Si@GC nanosheets.

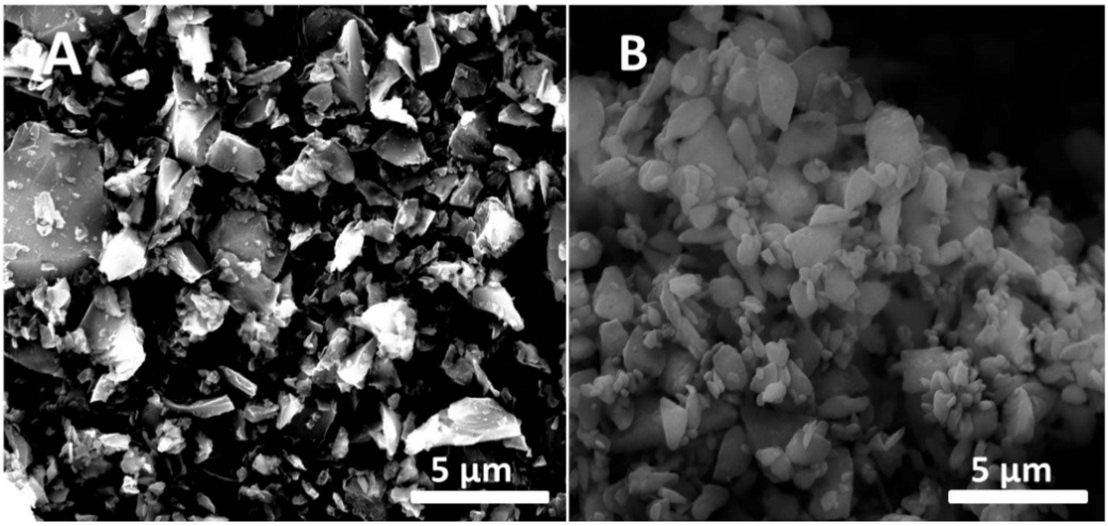

Fig. S5 SEM images of (A) commercial Si powder and (B) ball balling Si powder.

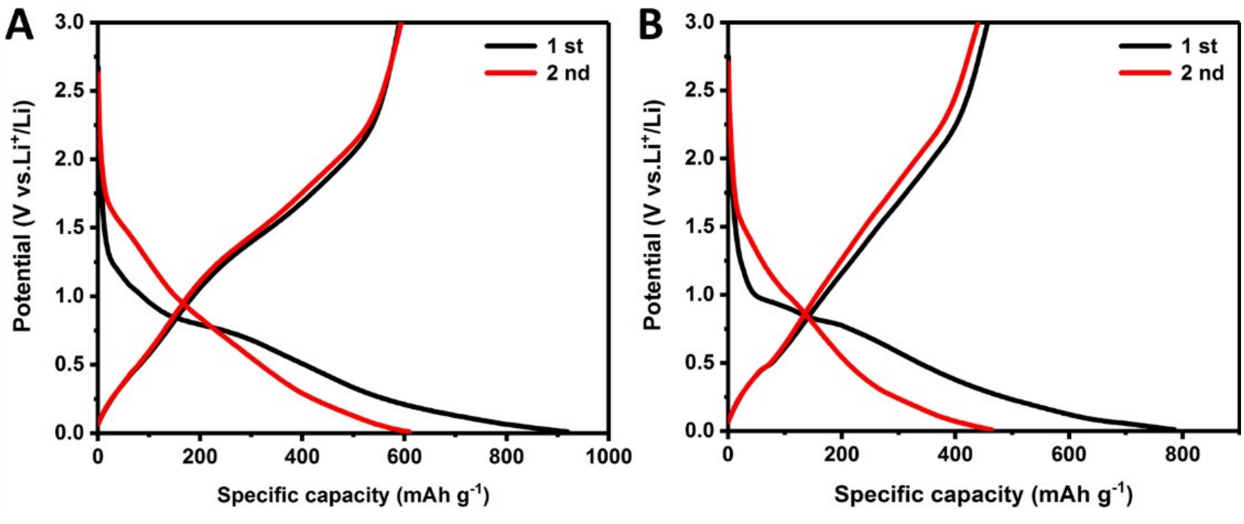

Fig. S6 Discharge and charge curves of as-prepared samples used (A) ascorbic acid and (B) glucose as the sources without added NaCl, respectively.

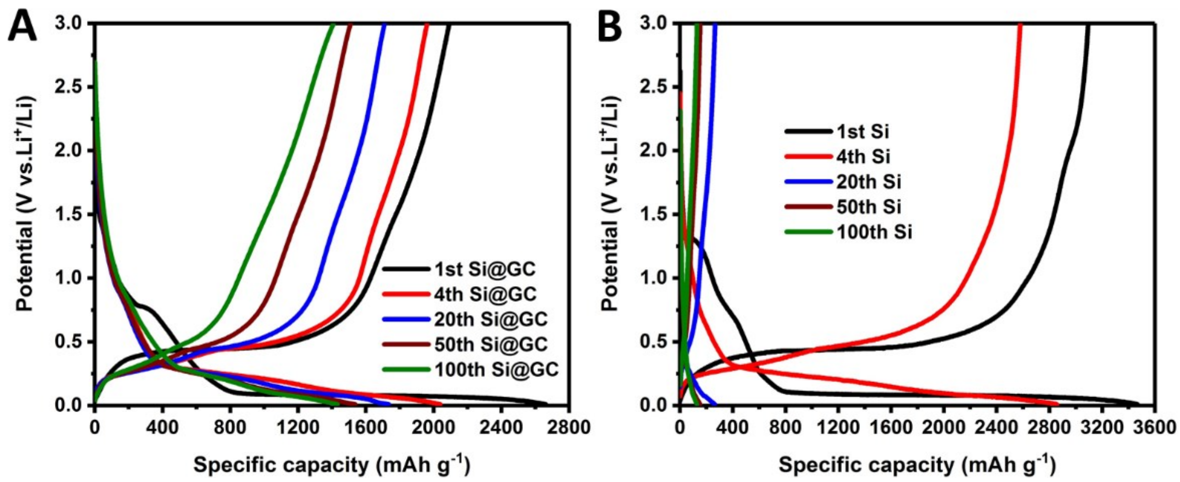

Fig. S7 Discharge/charge profiles of (A) Si@GC nanosheets and (B) pure Si under different cycles.

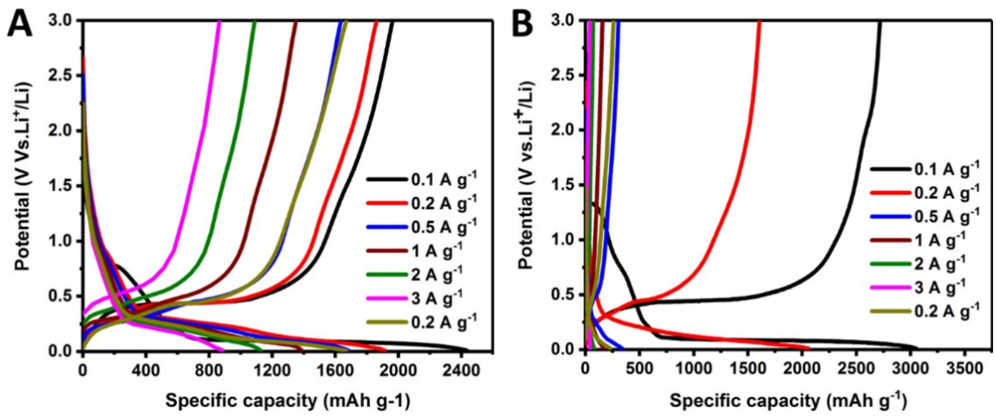

Fig. S8 Discharge/charge profiles of (A) Si@GC nanosheets and (B) pure Si under different current densities.

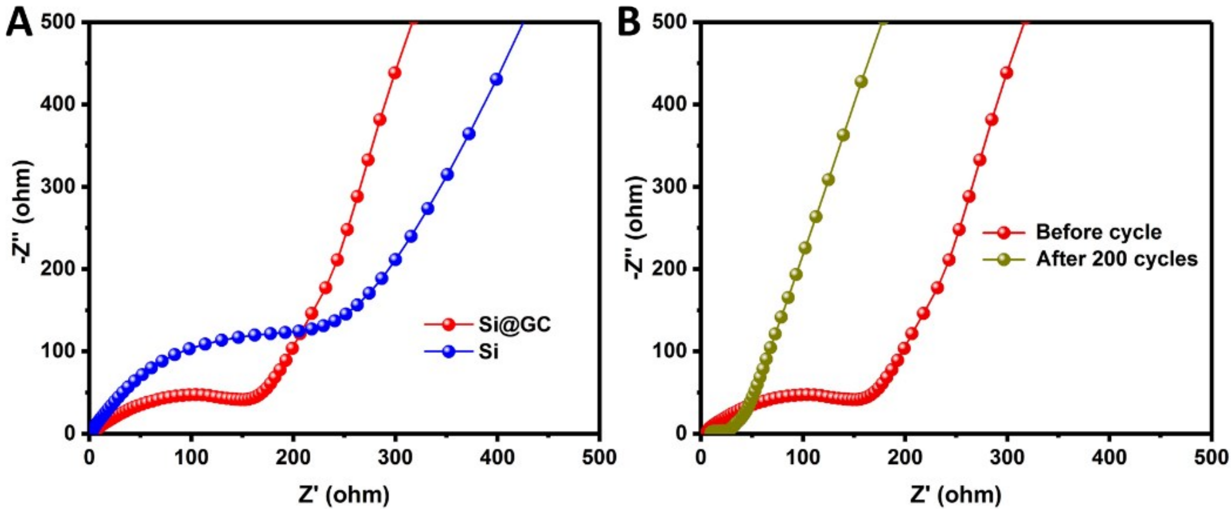

Fig. S9 (A) Nyquist plots of Si and Si@GC electrodes before cycling; (B) before and after 200 th cycle of Si@GC composite at 0.5 A g^{-1}

Table S1 Compared with electrochemical performance of 2D Si@GC nanosheets with previous reported Si-based anode materials.

Materials	Current density	Initial discharge/ charge specific capacity (mAh/g)	Reversible capacity (mAh/g)/ cycle number (n)	Ref.
ternary SiGC composite	0.5A/g	1016/818	610/300	[42]
core-shell yolk-shell Si@C@void@C	0.5A/g	-	1366/50	[47]
silicon/carbon nanosheets	300 mA/g	1256/901	655/100	[40]
The p-Si-Ag/C composites	0.2A/g	1566.7/1028.8	Over 1000/200	[51]
the sandwich-structured Si@C-rGO composite	300 mA/g	1352.7/1001	930.9/400	[21]
Silicon/Wolfram Carbide@Graphene composite	0.1A/g	1297/892	535/250	[15]
Si nanosheets@C composite	0.1A/g	1846/719	822/200	[27]
Si@Graphitic Carbon Nanosheets	0.5A/g	2662.3/ 2092.2	1450.7/400	This work