Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Walnut-structure Si-G/C materials with high coulombic efficiency for long-life lithium ion batteries

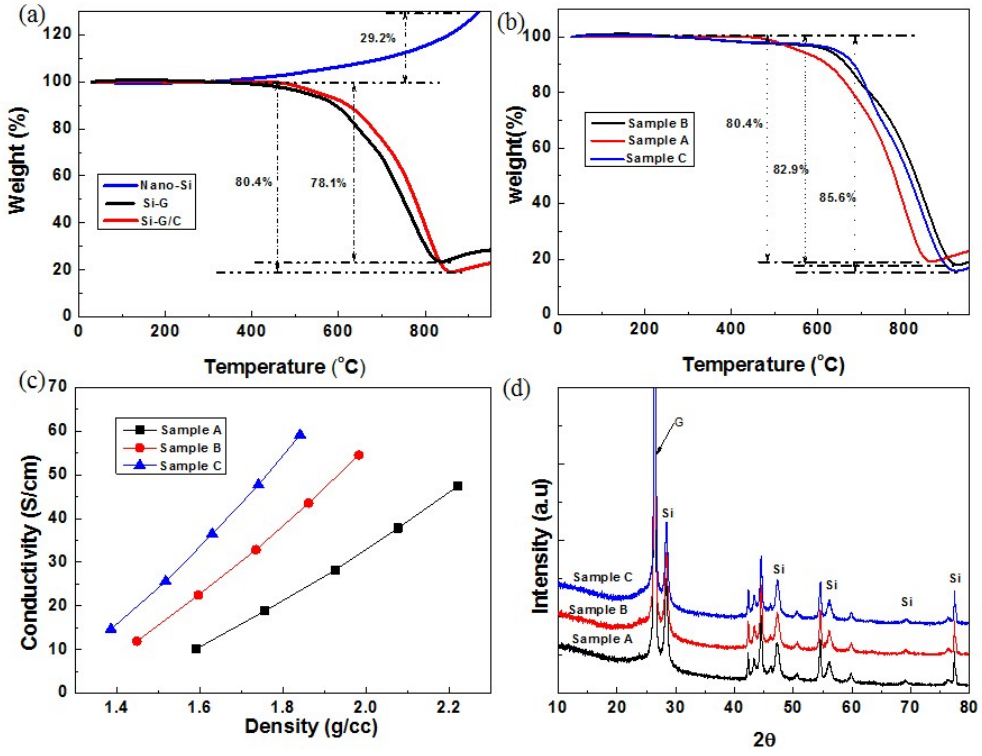

Fig. S1 (a) The TGA analysis of nano-Si, Si-G precursor and Si-G/C composite; (b) the TGA analysis of Sample A. B and C; (c) the electrical conductivity of Sample A, B and C; (d) the XRD pattern of Sample A, B and C.

Sample	Sample A	Sample B	Sample C
BET surface	18.8 m^2/g	8.2 m^2/g	4.8 m^2/g

Table. S1 The BET surface of the Sample A, B and C.

Sample	Si-G precursors	Sample A	Sample B	Sample C
Si%	16.96%	15.17%	13.23%	11.15%
G%	83.04%	74.28%	64.82%	54.58%
C%	0%	10.55%	21.95%	34.27%

Table. S2 The carbon content and Si% calculated form the TGA analysis.

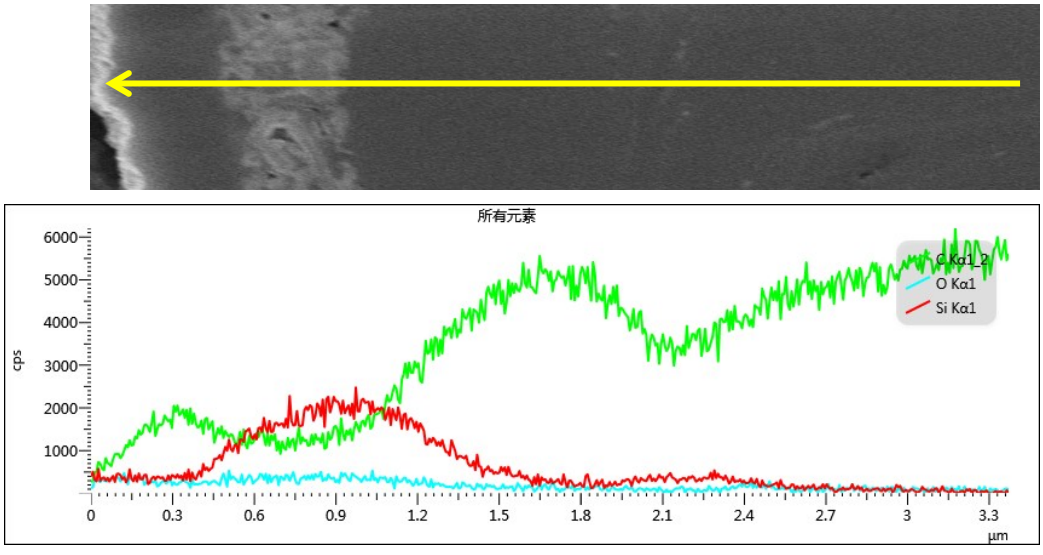

Fig. S2 The line scanning profile of the cross section of Si-G/C composite.

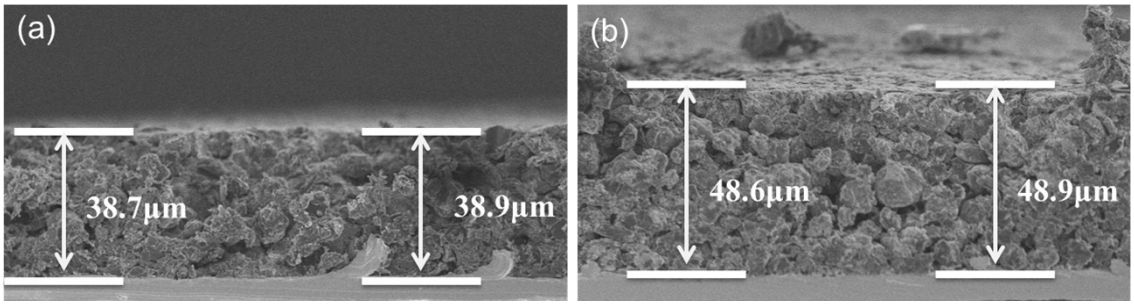

Fig. S3 Si-G@C electrode (a) Cross-section SEM image of a typical electrode before cycling, (b) Cross section SEM image of a typical electrode after cycling for 50 times.

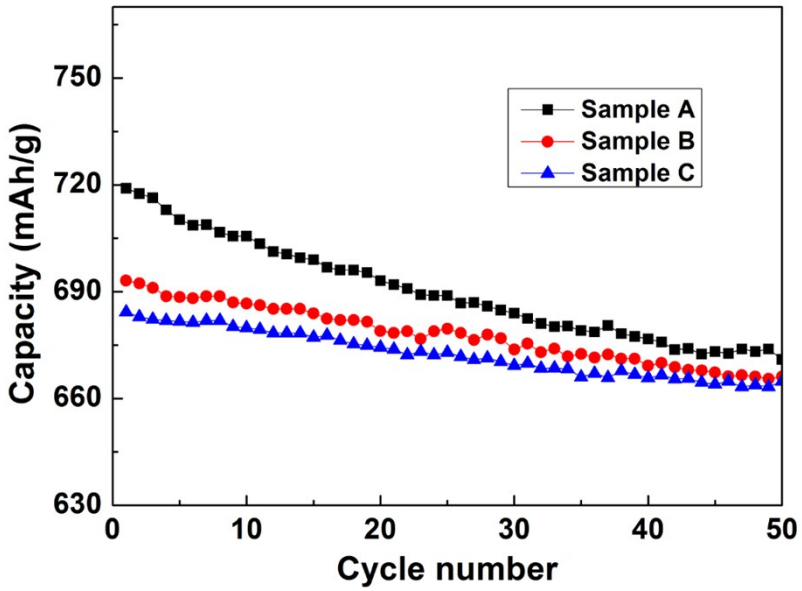

Fig. S4 The cycle performance of Sample A, B and C at a current of 0.5 A/g.

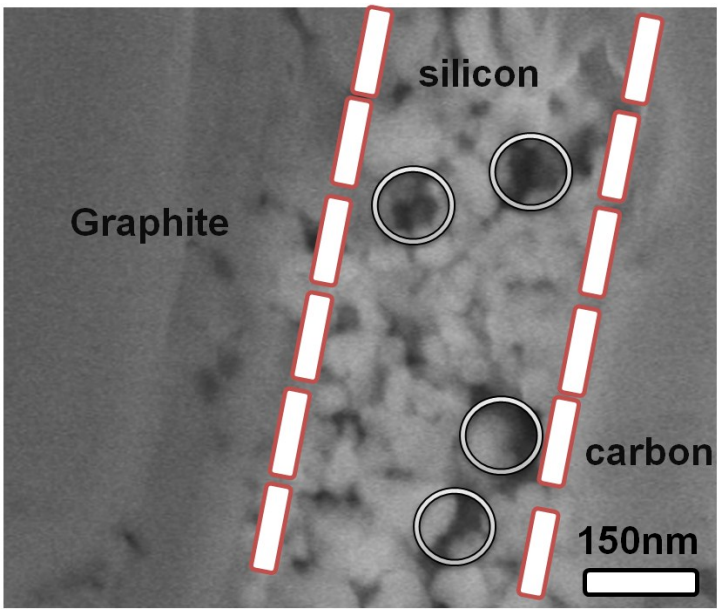

Fig .S5 The magnifying SEM image of the cross section of Si/G/C.