Supplementary Information

Preparation and improved electrochemical performance of SiCN-graphene composite derived from poly(silylcarbondiimide) as Li-ion battery anode

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Supplementary Information List:

Fig.S1 FTIR spectrum of graphite, graphite oxide (GO) and $NaBH_4$ reduced graphene.

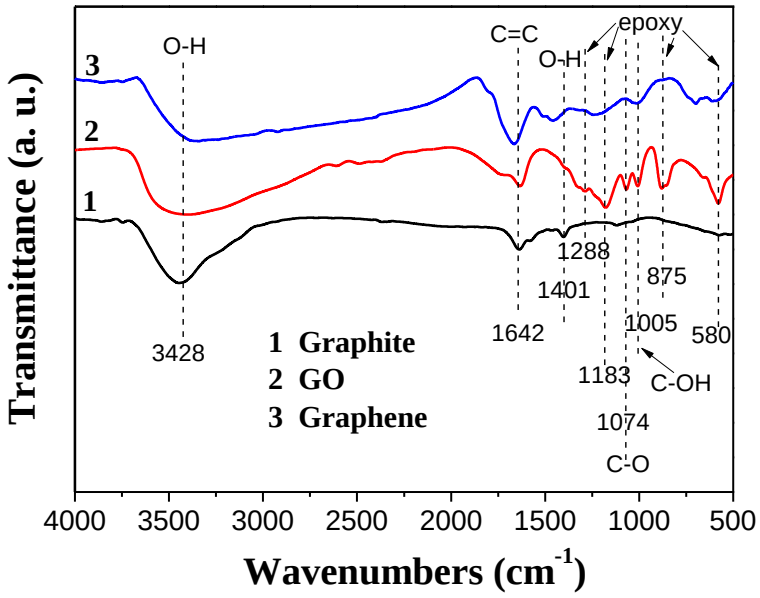


Fig.S2 TEM images of $NaBH_4$ reduced graphene.

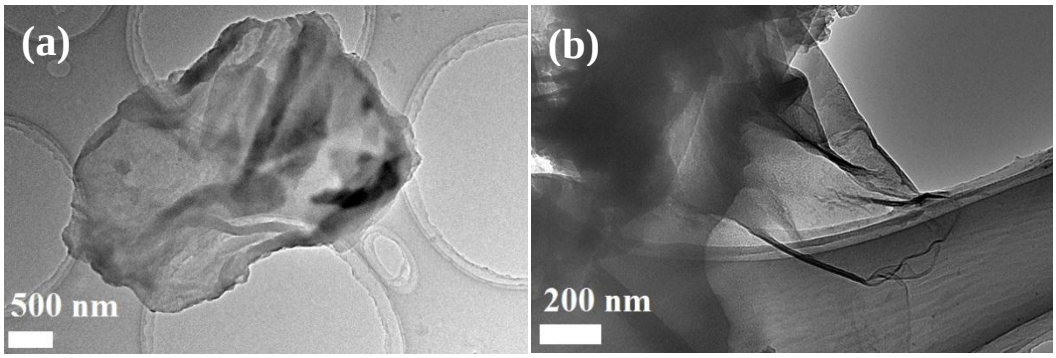
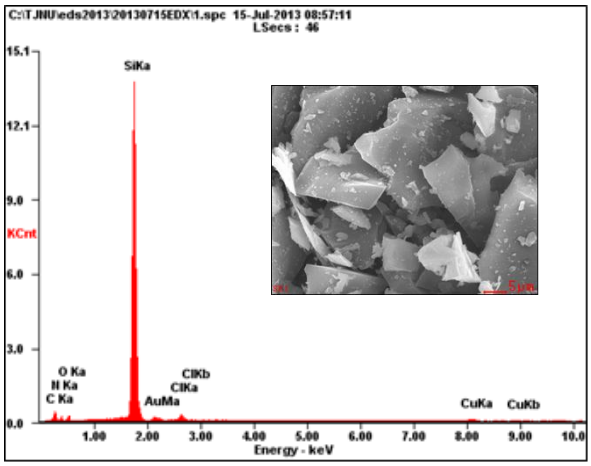


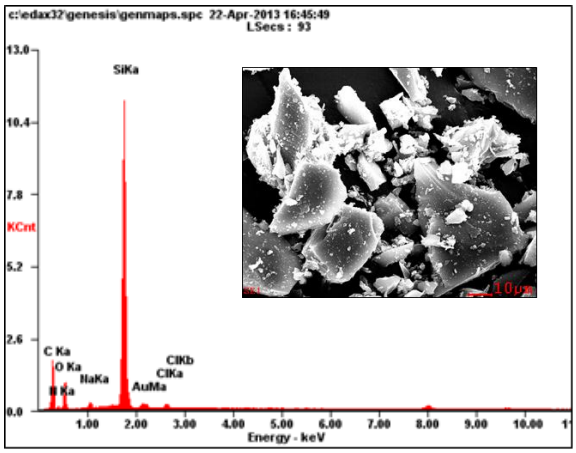
Fig.S3 EDX and element content in SiCN **(a)** and SiCN-graphene composite **(b)**.

(a)



Element	*Wt%*	*At%*
CK	27.46	42.90
NK	12.35	16.54
OK	05.71	06.70
SiK	48.47	32.38
AuM	03.07	00.29
ClK	01.35	00.72
CuK	01.59	00.47
Matrix	Correction	ZAF

(b)



Element	*Wt%*	*At%*
CK	50.19	64.37
NK	04.32	04.75
OK	16.29	15.69
NaK	00.93	00.62
SiK	25.93	14.22
AuM	01.88	00.15
ClK	00.46	00.20
Matrix	Correction	ZAF

Fig.S4 XPS analysis of survey of SiCN **(a)**, SiCN-graphene composite **(b)** and the physical mixture of SiCN and graphene (SiCN+graphene) **(c)**.

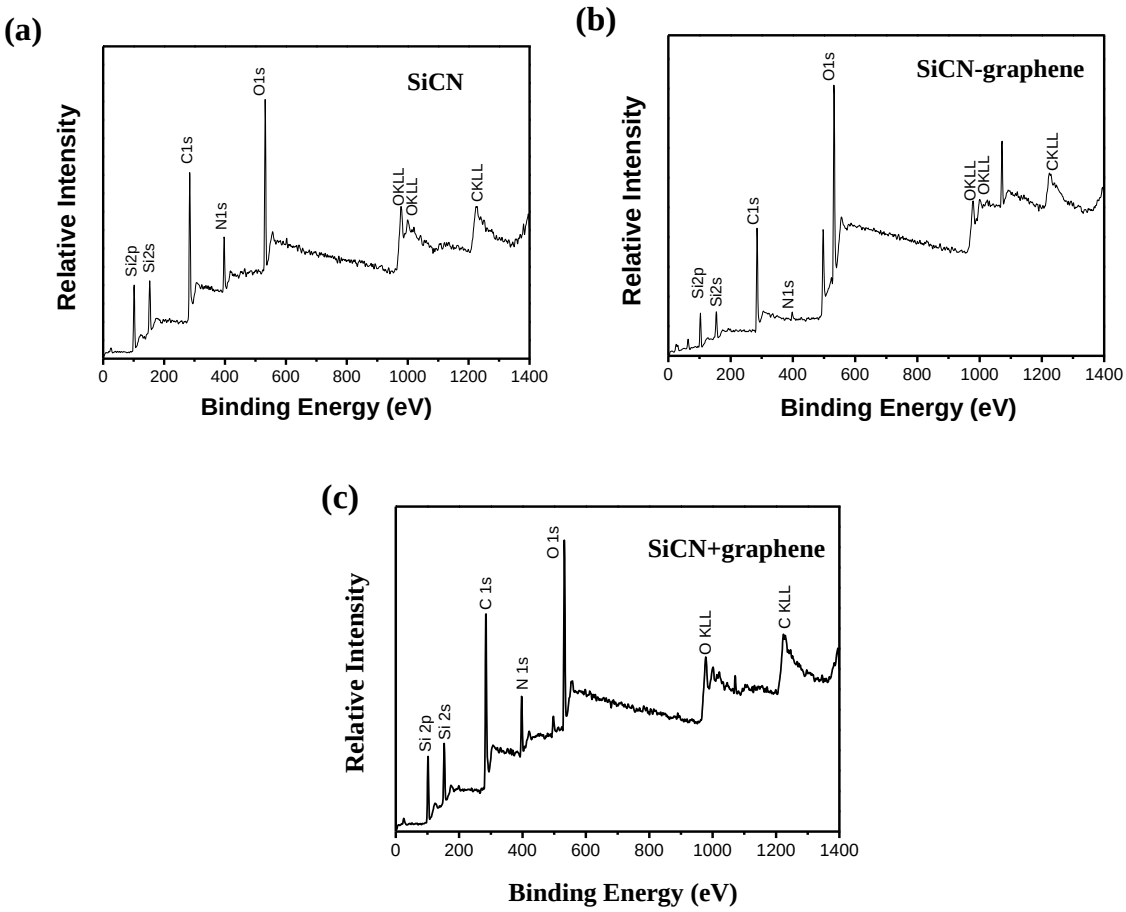
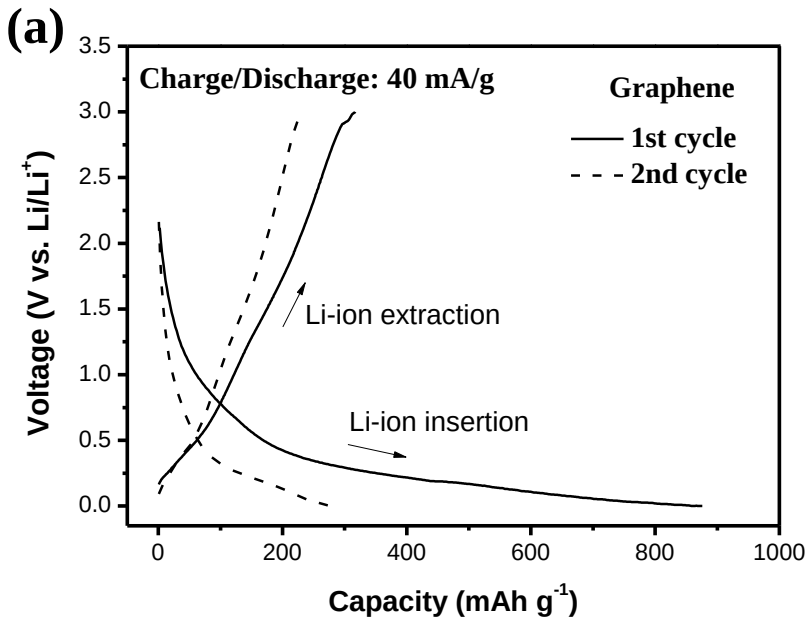
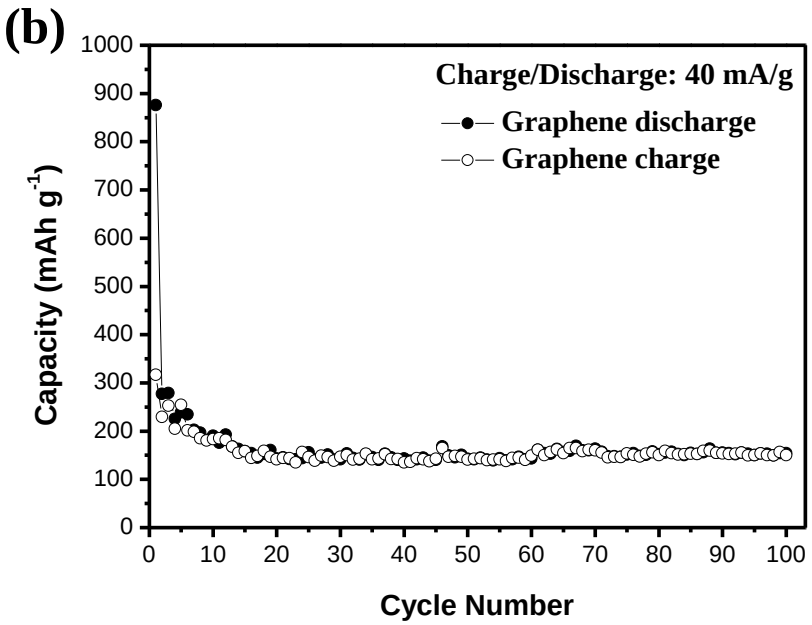


Fig.S5 (a) First and second charge-discharge cycles for the graphene anode, cycled at current density of 40 mA/g; **(b)** Charge-discharge capacity for the 100 cycles for the graphene anode.





Tab.S1 Atomic percent of elements on the surface of SiCN and SiCN-graphene composite determined by XPS analysis.

Sample	In atomic % from XPS			
	Si	C	N	O
SiCN	17.35	50.17	10.59	21.89
SiCN-graphene	11.95	47.82	1.86	38.37