

Supporting Information

High Pyrrolic-N Doped Carbon Modified SiO_x Anode for Superior Lithium Storage

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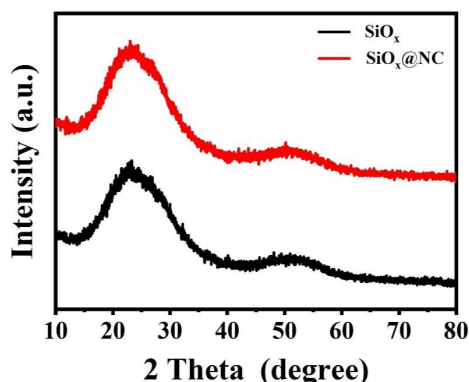


Figure S1. The XRD spectra of $\text{SiO}_x@\text{NC}$ and SiO_x .

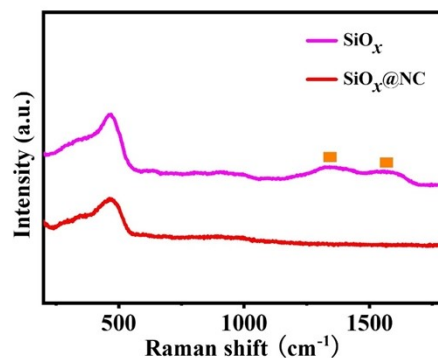


Figure S2. Raman spectra of SiO_x and $\text{SiO}_x@\text{NC}$

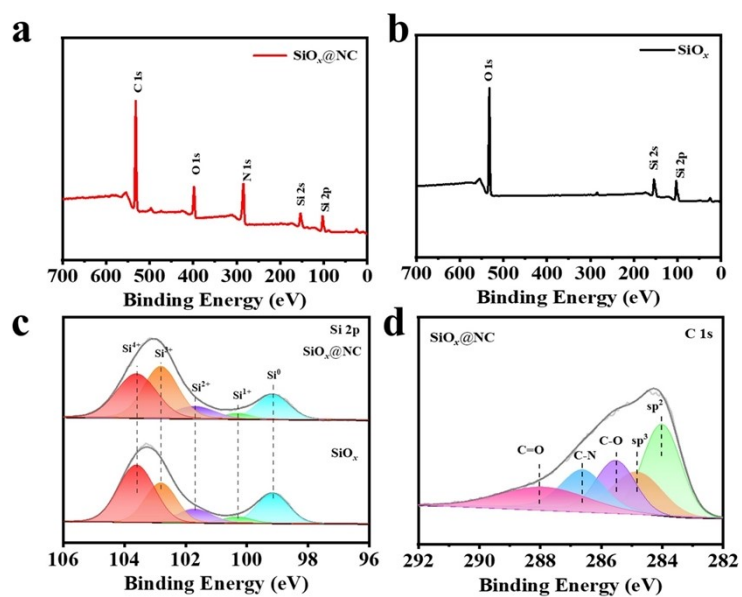


Figure S3. XPS spectra of (a) $\text{SiO}_x@NC$ and (b) SiO_x , (c) fine spectra of Si 2p and (d) the XPS C1s spectrum of $\text{SiO}_x@NC$;

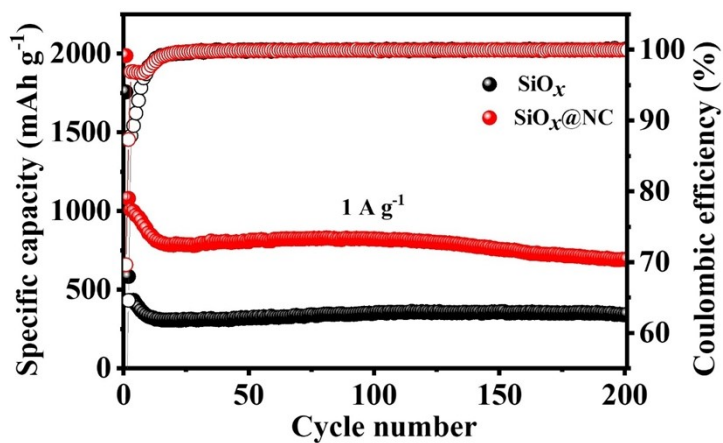


Figure S4. Cycling performance of $\text{SiO}_x@NC$ electrode and SiO_x electrode at 1 A g^{-1} .

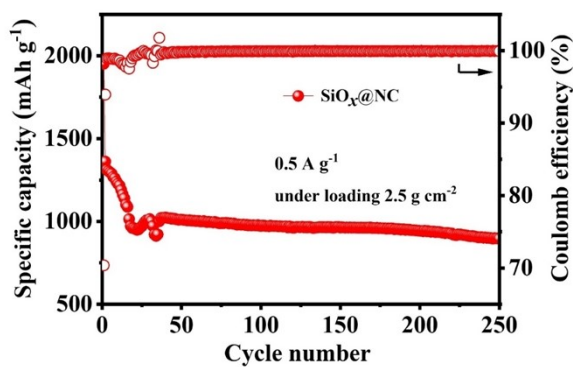


Figure S5. Cycling performance of SiO_x@NC at high loading.

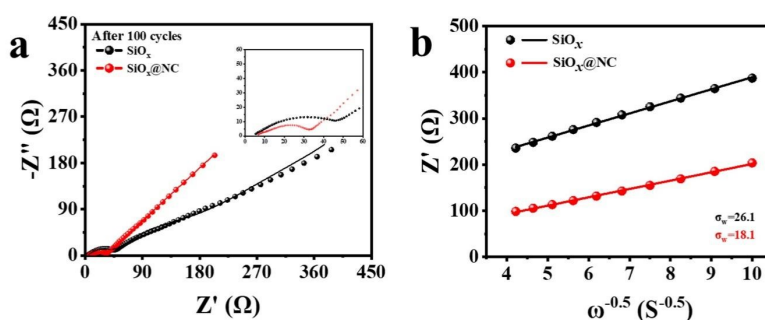


Figure S6. (a) The EIS after 100 cycles of SiO_x@NC and SiO_x electrode and (b) the Z' and $\omega^{-1/2}$ relationship.

Table S1. Organic element analysis of SiO_x@NC sample

Sample	C [%]	H [%]	N [%]
SiO _x @NC	7.819	0.372	4.915

Table S2. Impedance parameters of SiO_x and SiO_x@NC electrodes before and after 100 cycles.

Before cycling		After cycling			
electrodes	R _s (Ω)	R _{ct} (Ω)	R _s (Ω)	R _{SEI} (Ω)	R _{ct} (Ω)
SiO _x	42.6	369.8	4.6	39.0	62.3
SiO _x @NC	22.8	242.7	6.3	8.5	15.5