

Supporting Information

Electrospraying fabrication of Si/SiO_x/C and Sn/C nanosphere arrays on carbon cloth for high-performance flexible lithium-ion batteries

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Key words: electrospraying, Si/SiO_x/C, Sn/C, lithium-ion batteries

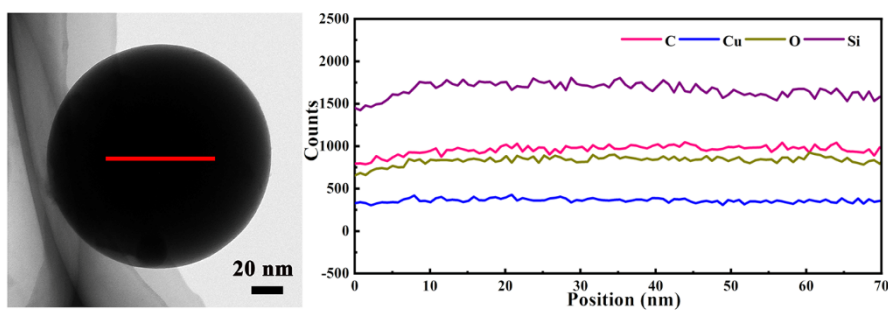


Fig. S1 EDS line scan of SiO_x/C nanosphere.

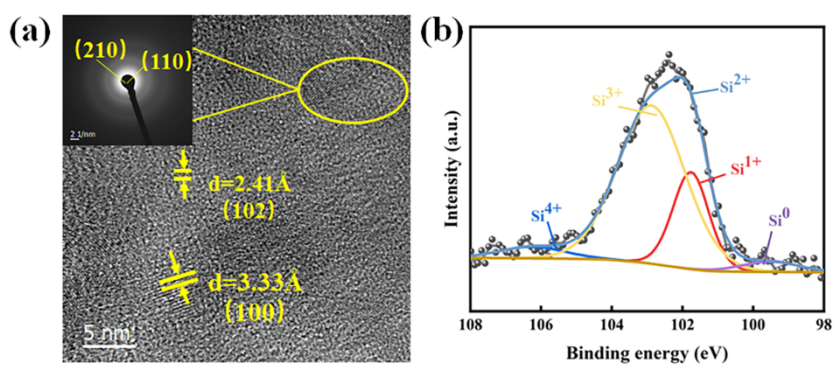


Fig. S2 (a) HRTEM image of and inset shows SAED pattern of $\text{Si}/\text{SiO}_x/\text{C-HF}$. (b) XPS spectra of $\text{Si}/\text{SiO}_x/\text{C-HF}$.

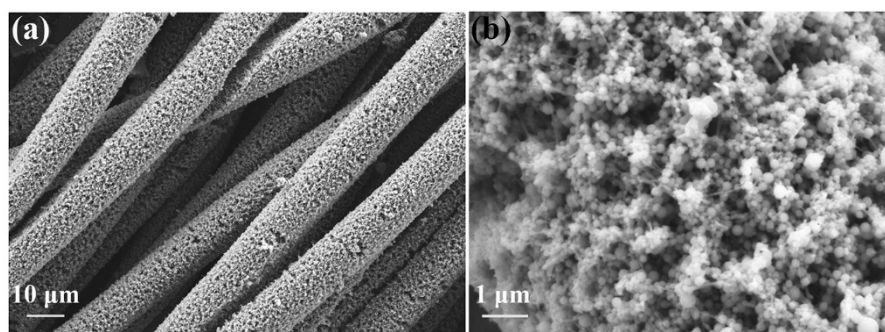


Fig. S3 (a–b) SEM images of the as-synthesized $\text{Si}/\text{SiO}_x/\text{C}@CC$ sample by short time-electrospraying.

Table 1 Comparisons of Li-storage performances between this work and some other reported literatures.

Anode	morphology	capacity and cycling times	literature
Si@SiO _x @C	nano particle	1183 mA·h·g ⁻¹ at 100 mA·g ⁻¹ , 150 cycles	29
Si@SiO _x	particle	1090.2 mA·h·g ⁻¹ at 100 mA·g ⁻¹ , 100 cycles	30
Si@SiO _x /C	particle	1125 mA·h·g ⁻¹ at 100 mA·g ⁻¹ , 100 cycles	31
Si@SiO _x @C	particle	1972 mA·h·g ⁻¹ at 100 mA·g ⁻¹ , 500 cycles	32
Si/SiO _x /C	nanosphere arrays on carbon cloth	1750 mA·h·g ⁻¹ at 500 mA·g ⁻¹ , 1050 cycles	This work

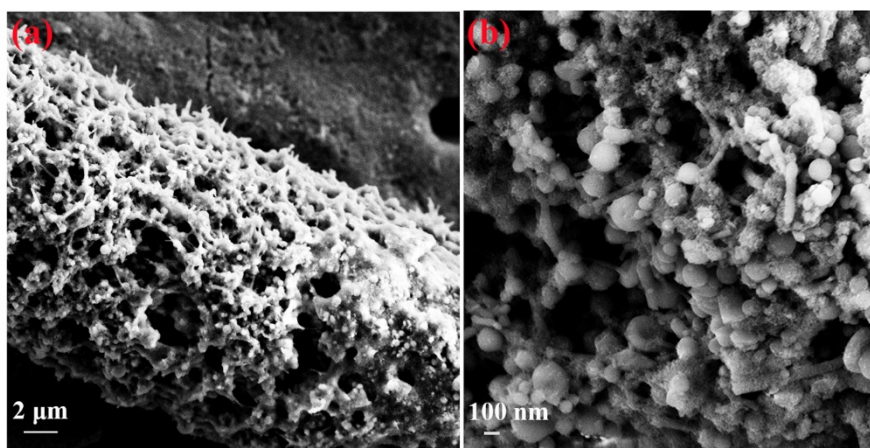


Fig. S4 (a–b) SEM images of the Si/SiO_x/C@CC electrode after 1050 cycles at a current density of 0.5 A·g⁻¹.

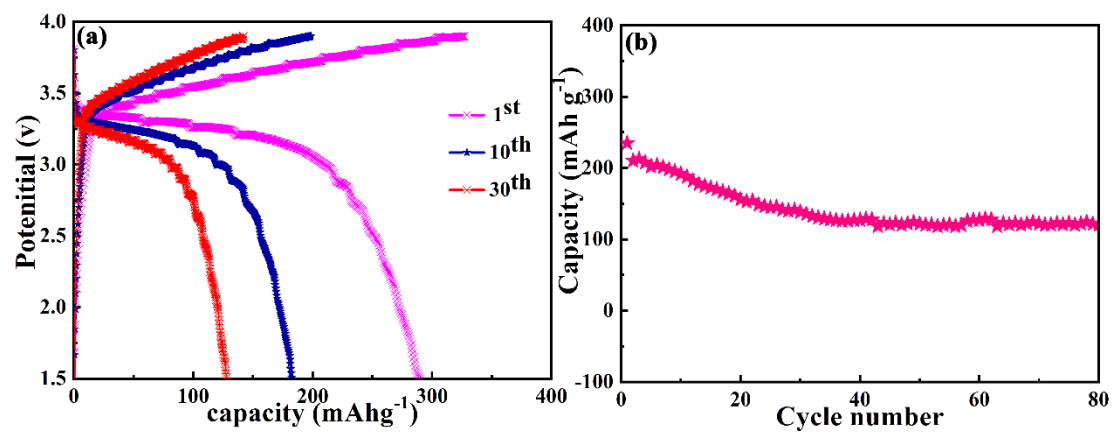


Fig. S5 Schematic illustration for the fabrication of SiO_x/C@CC/solid electrolyte/LiCoO₂ flexible lithium-ion battery. (b) 1st, 10th and 30th lithium-insertion/extraction curves between 2.5 and 3.9 V at a current density of 0.5 A · g⁻¹. (c) Cycling performance at current density of 0.5 A · g⁻¹.