

Supplementary Materials

Reutilization of Silicon-Cutting Waste via Constructing Multilayer Si@SiO₂@C Composites as Anode Materials for Li-Ion Batteries

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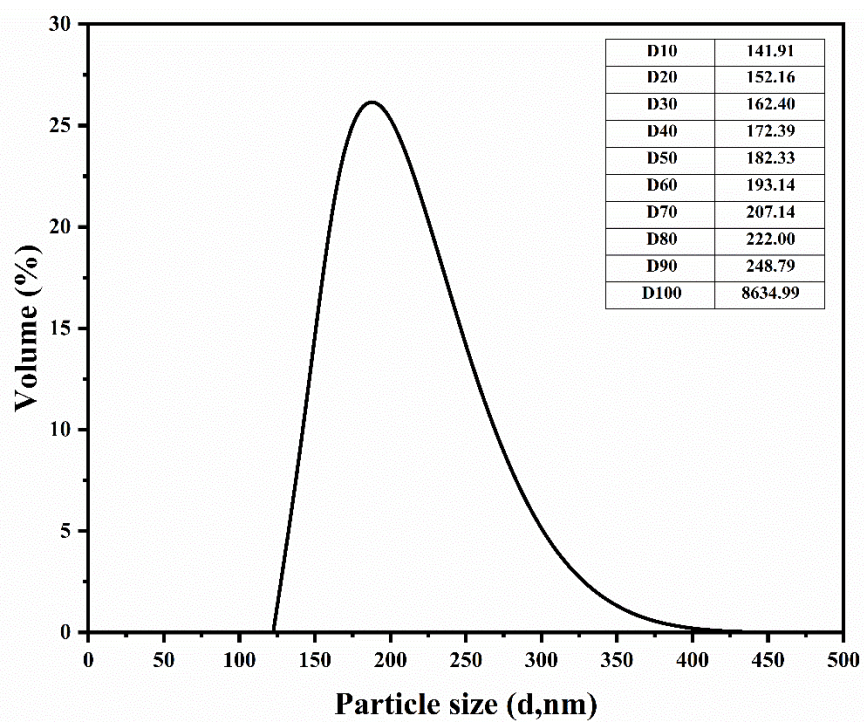


Figure S1. Particle size distribution of SCW.

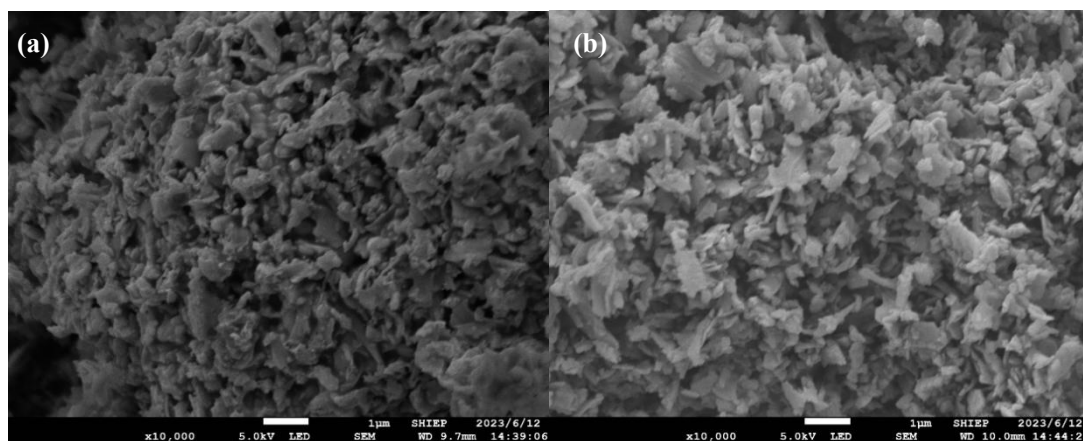


Figure S2. SEM images of (a) Si@SiO₂@C-2 and (b) Si@SiO₂@C-4.

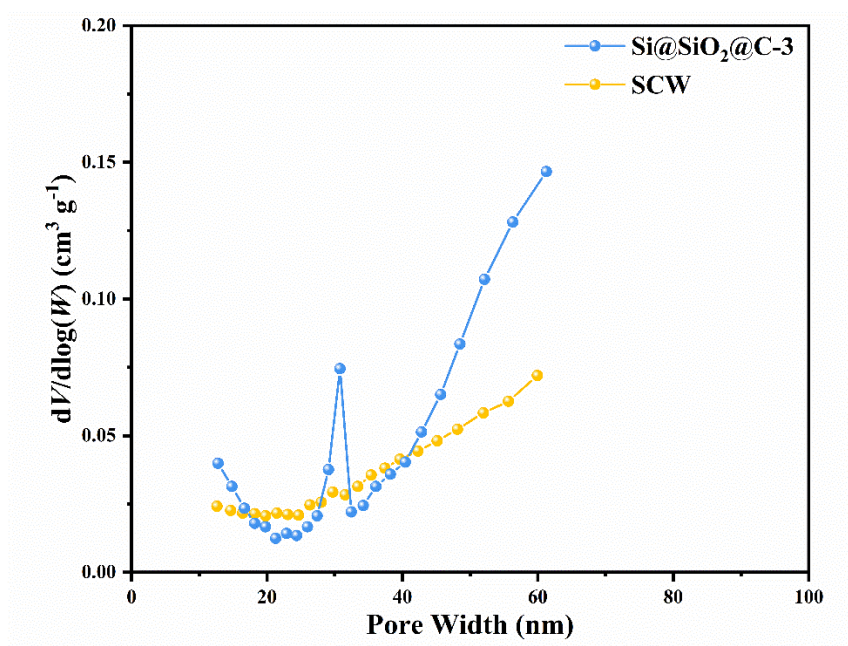


Figure S3. Pore size distribution of SCW and Si@SiO₂@C-3.

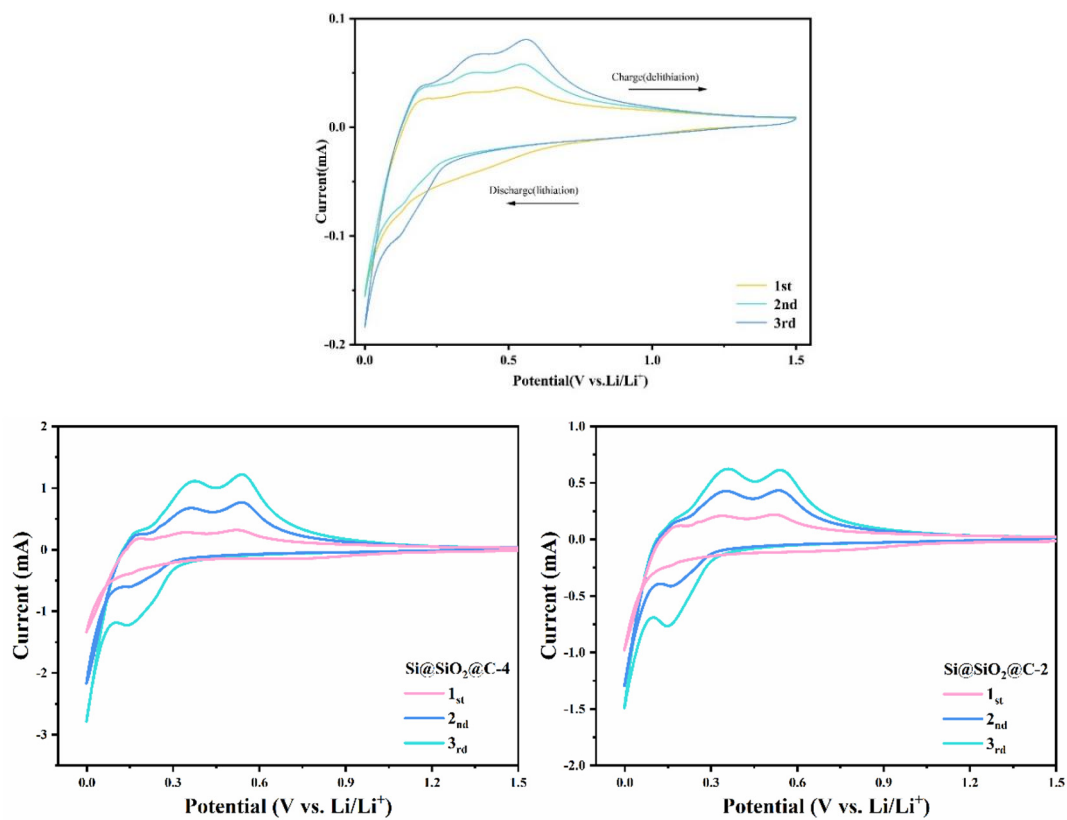


Figure S4. The initial three CV curves of SCW, Si@SiO₂@C-4 and Si@SiO₂@C-2 at 0.1 mV s⁻¹.

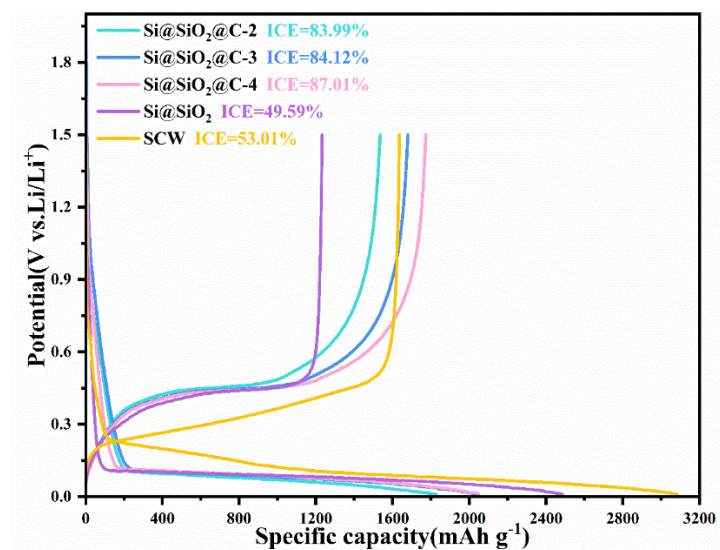


Figure S5. The initial GCD curves of SCW, Si@SiO₂, Si@SiO₂@C-4, Si@SiO₂@C-3 and

Si@SiO₂@C-2 at 0.1 mV s⁻¹.

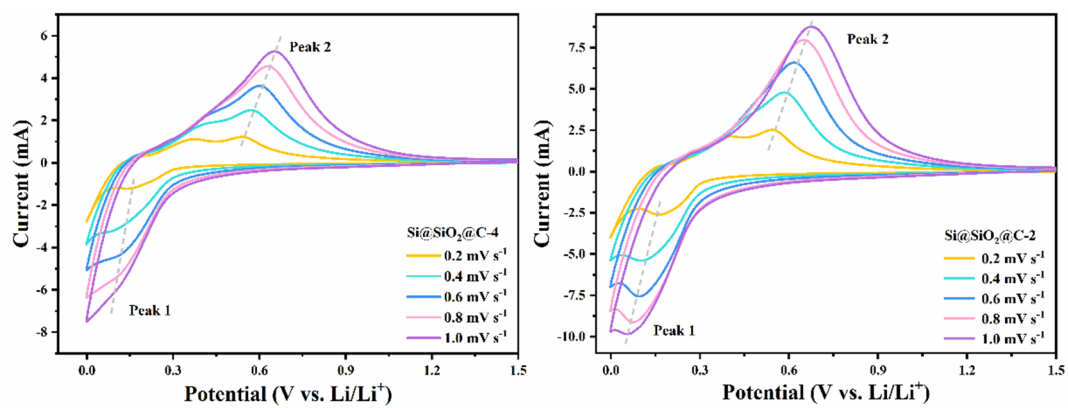


Figure S6. The CV curves of Si@SiO₂/C at 0.2, 0.4, 0.6, 0.8 and 1.0 mV s⁻¹ scan rates.

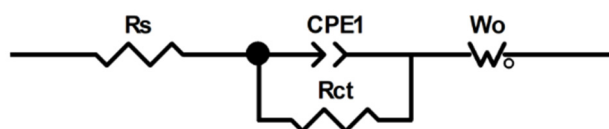


Figure S7. Equivalent circuit model linked with EIS curves.

Table S1. XRF results of SCW.

Sample EA	Si	C	O	Ni	Cl	Fe	Cu	Ca	Al
Weight (%)	82.4808	9.1417	8.1182	0.0679	0.0622	0.0513	0.0313	0.0273	0.0194

Table S2. BET specific surface area, pore volume, and BJH pore size of SCW and Si@SiO₂@C-

3.

Sample	S _{BET} (m ² g ⁻¹)	V _{total} (cm ³ g ⁻¹)	Average pore size (BJH) (nm)
SCW	114.49	0.26	8.31
Si@SiO ₂ @C-3	60.56	0.13	9.29

Table S3. The R_{ct} and Warburg values of SCW, Si@SiO₂@C-2, Si@SiO₂@C-3 and Si@SiO₂@C-

4.

Sample	R_{ct} (ohm)	σ (Ω S ^{-1/2})
SCW	37.17	236.16
Si@SiO ₂ @C-2	26.56	55.39
Si@SiO ₂ @C-3	18.55	32.11
Si@SiO ₂ @C-4	57.19	69.26