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MDPI

Supporting Information

Synergetic Effect of Hybrid Conductive Additives for High-Capacity and Excellent Cyclability in Si Anodes

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Table.S1. EIS fitting values in Figure 3a.

EIS [Ω·cm]	CB1	Hybrid1	Hybrid2	SW0.05
R_s	1.92	1.74	1.99	1.84
R_{ct}	65.96	44.06	47.84	53.53

Figure.S1

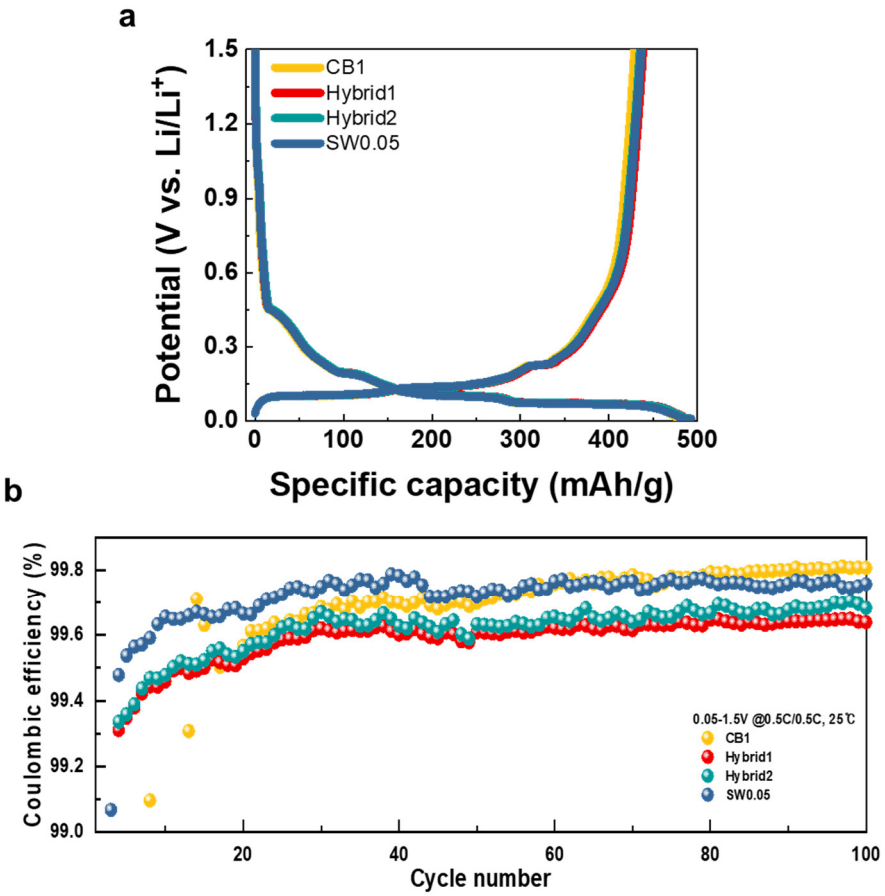

Figure.S1. Comparison of (a) 1st charge/discharge profiles (b) coulombic efficiency of the 4 samples half-cell.

Figure.S2

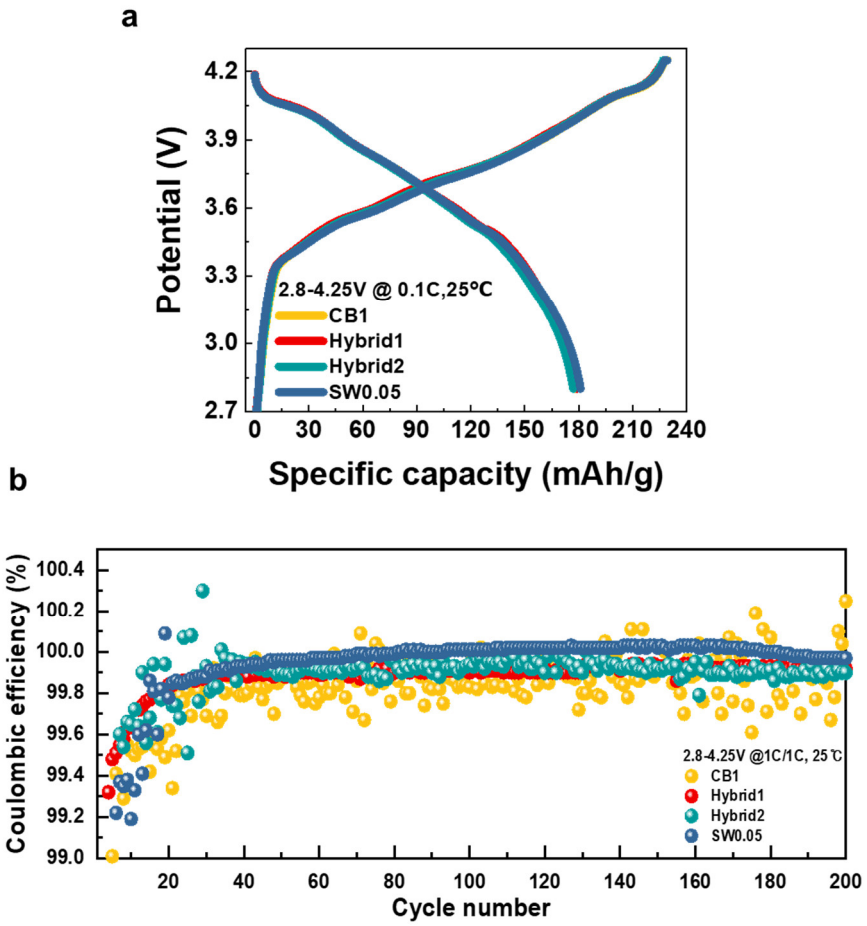

Figure.S2. Comparison of (a) 1st charge/discharge profiles (b) coulombic efficiency of the 4 samples full-cell.

Table.S2. Initial coulombic efficiency values in Figure 3c and Figure 4a.

		CB1	Hybrid1	Hybrid2	SW0.05
Initial Coulombic Efficiency [ICE]	Half-cell	88.71	88.92	88.37	88.60
	Full-cell	78.35	78.92	77.46	77.55

Figure.S3

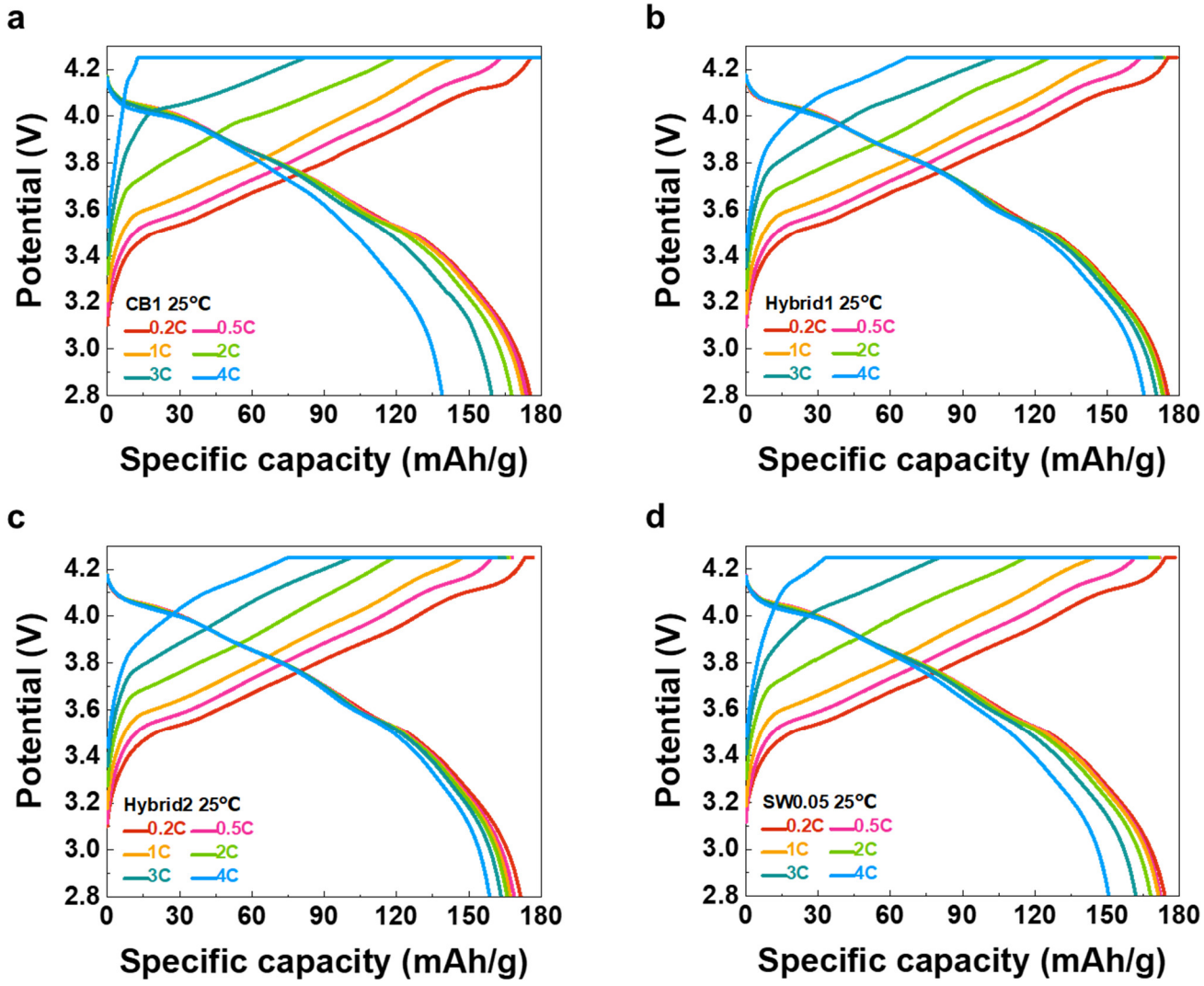

Figure.S3. Charge/discharge curves at various current density of (a) CB1 (b) Hybrid1 (c) Hybrid2 (d) SW0.05.

Figure.S4

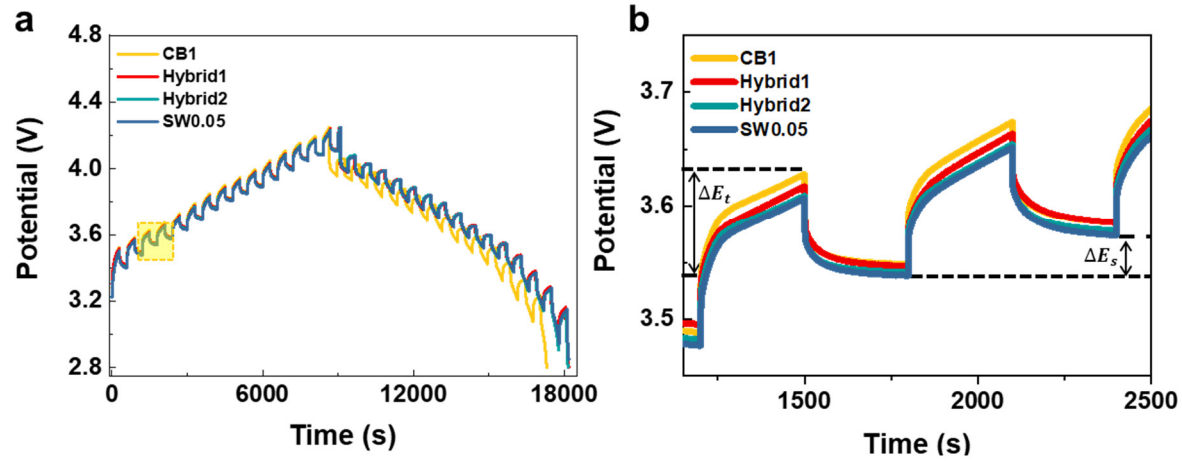

Figure.S4. (a) GITT curves for 4 samples. (b) Detailed GITT curves from 1200 to 2400 second at 0.5C.

Table.S3. Detailed values of Li ion diffusion coefficient.

	CB1	Hybrid1	Hybrid2	SW0.05
D_{Li^+} [cm²/s]	1.43E-8	1.71E-8	1.39E-8	1.25E-8

Figure.S5

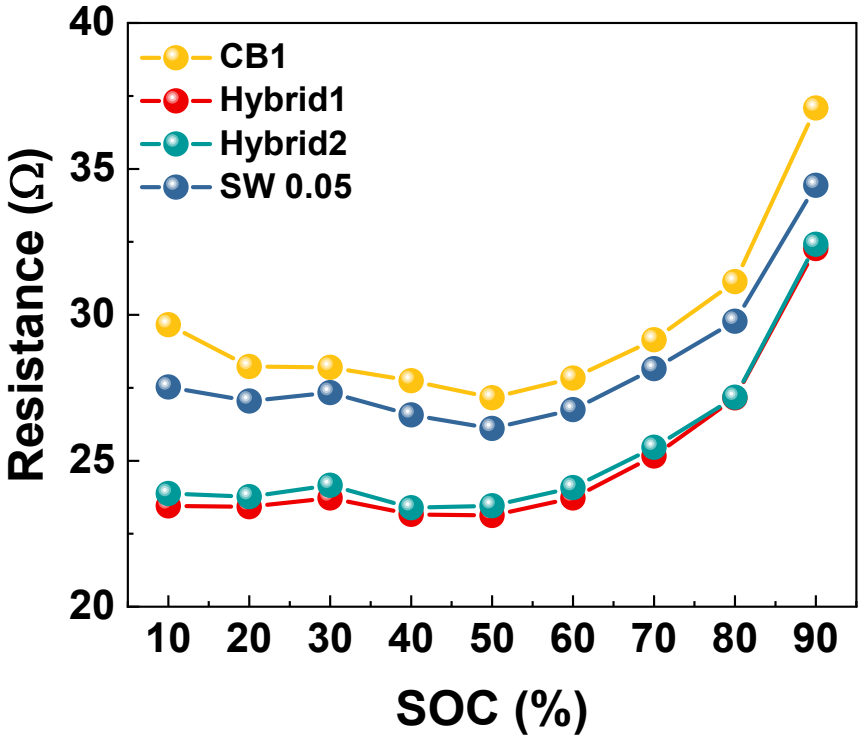

Figure.S5. Resistance vs SOC profiles during the charge.

Table.S4. Detailed values at various SOC.

IR [Ω]	CB1	Hybrid1	Hybrid2	SW0.05
@ SOC 10 %	29.66	23.45	23.88	27.52
@ SOC 50 %	27.16	23.12	23.46	26.11
@ SOC 90 %	37.09	32.27	32.41	34.43