

Supporting information for

Molecular Engineering of Phthalocyanine-based Azo Covalent Organic Frameworks materials for Improving Lithium Storage Behaviors

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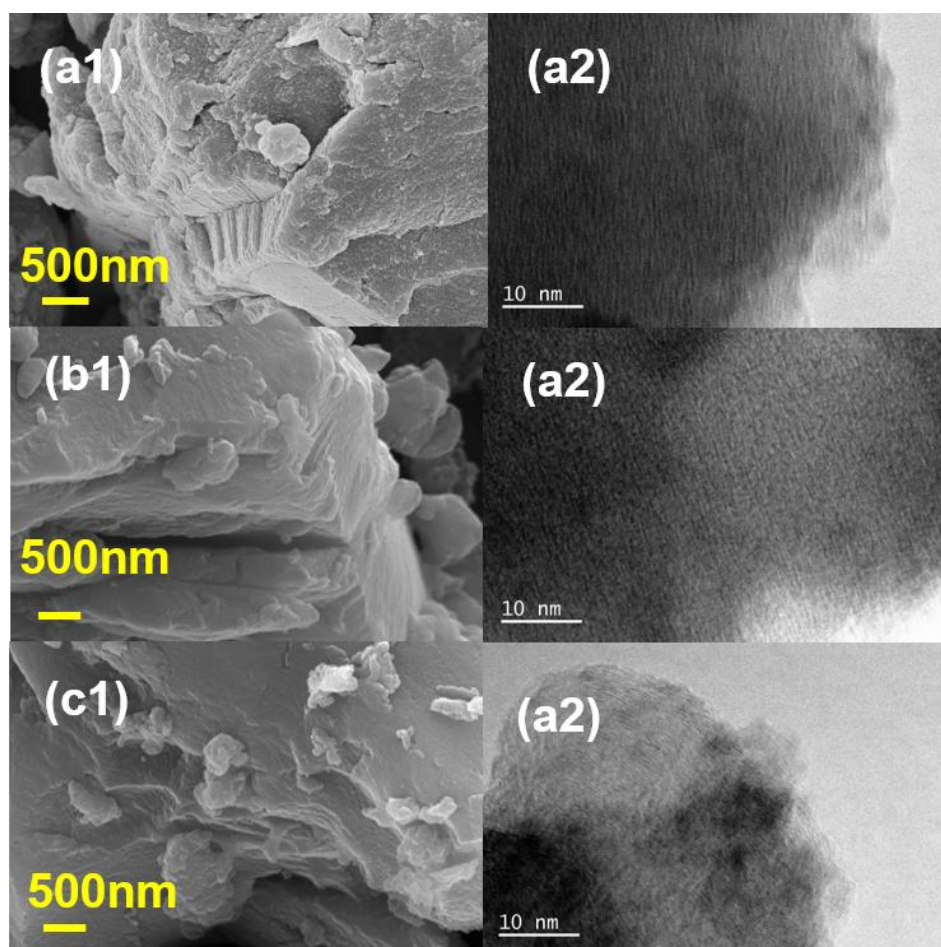


Fig. S1: SEM and EDS images of TPPDA-NiPc (2:1)/(1:1)/(1:2): (a1, a2) TPPDA-NiPc (2:1); (b1, b2) TPPDA-NiPc (1:1); (c1, c2) TPPDA-NiPc (1:2).

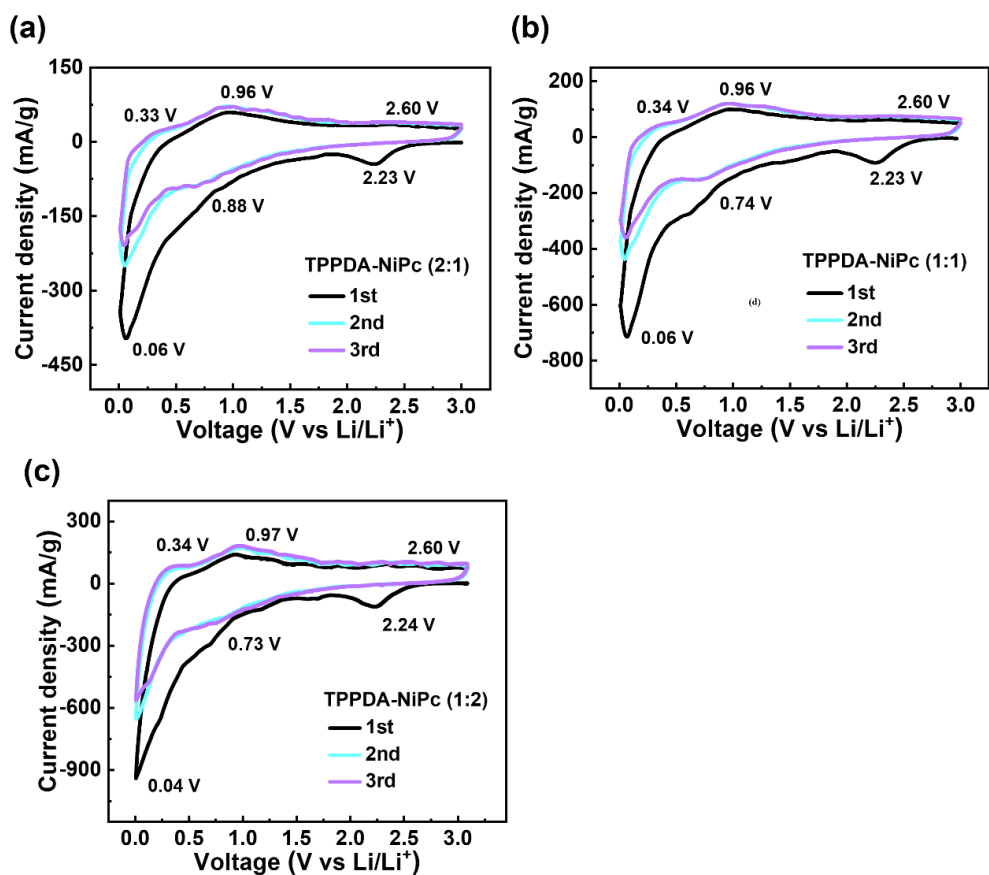


Fig. S2: CV curves of TPPDA-NiPc : (a) TPPDA-NiPc (2:1); (b) TPPDA-NiPc (1:1); (c) TPPDA-NiPc (1:2).

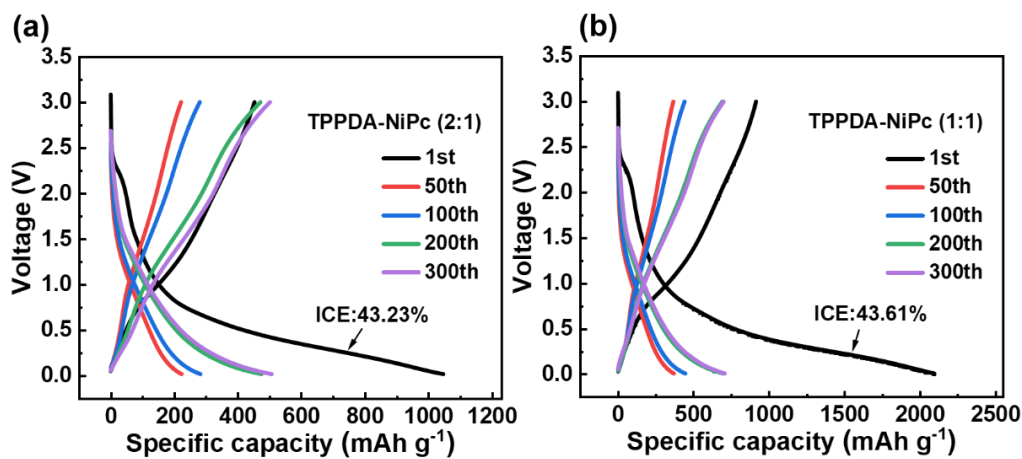


Fig. S3: Charging and discharging curves of TPPDA-NiPc at 100 mA g⁻¹ current density with different number of cycles: (a) TPPDA-NiPc (2:1); (b) TPPDA-NiPc (1:1).

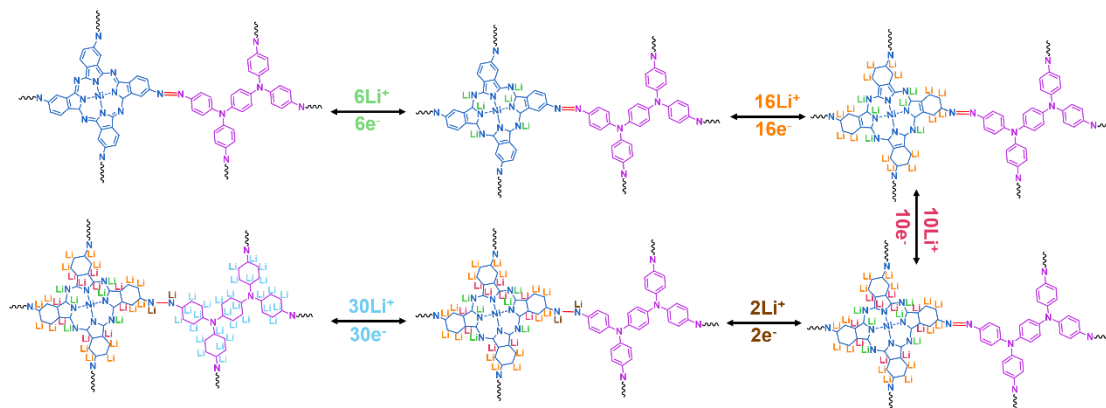


Fig. S4: Schematic diagram of lithium storage in TPPDA-NiPc (2:1)/(1:1)/(1:2).

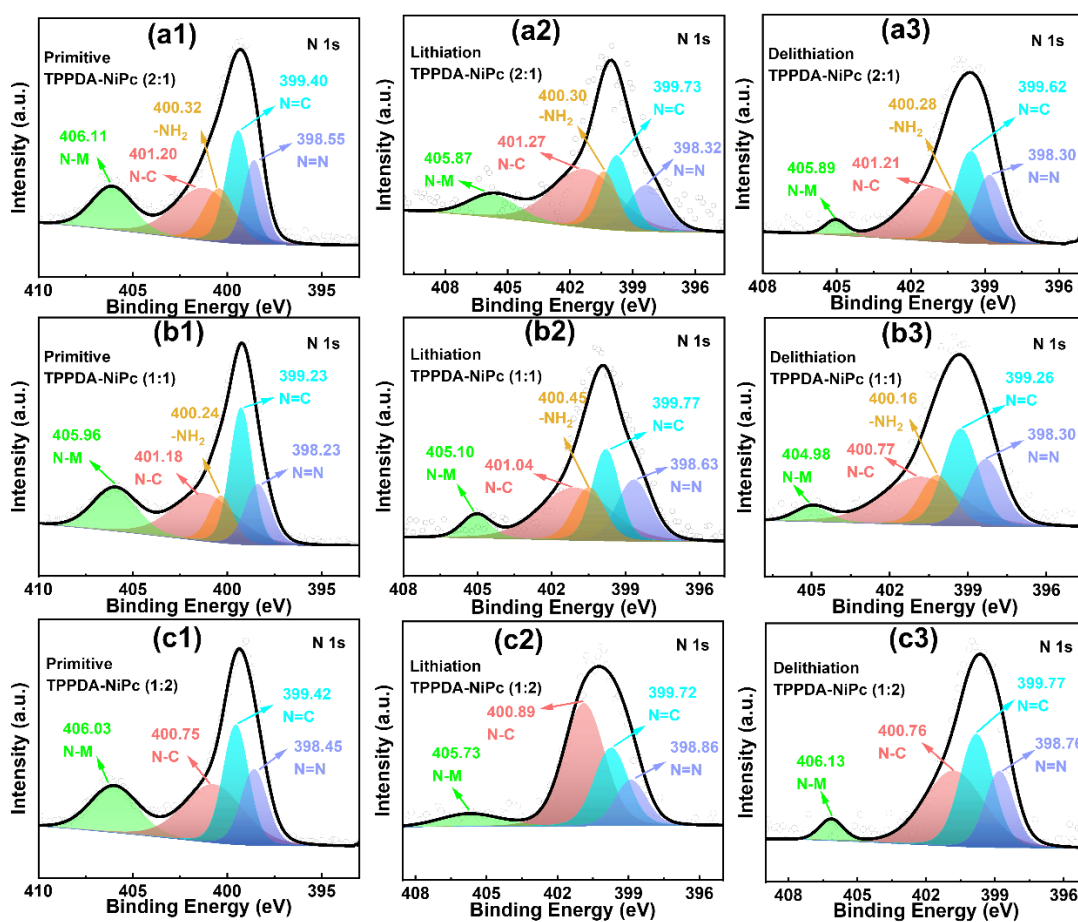


Fig. S5: XPS N 1s diagram of TPPDA-NiPc (2:1)/(1:1)/(1:2) electrode material at the original (a1, b1, c1) and discharge (a2, b2, c2) and charge (a3, b3, c3) conditions.

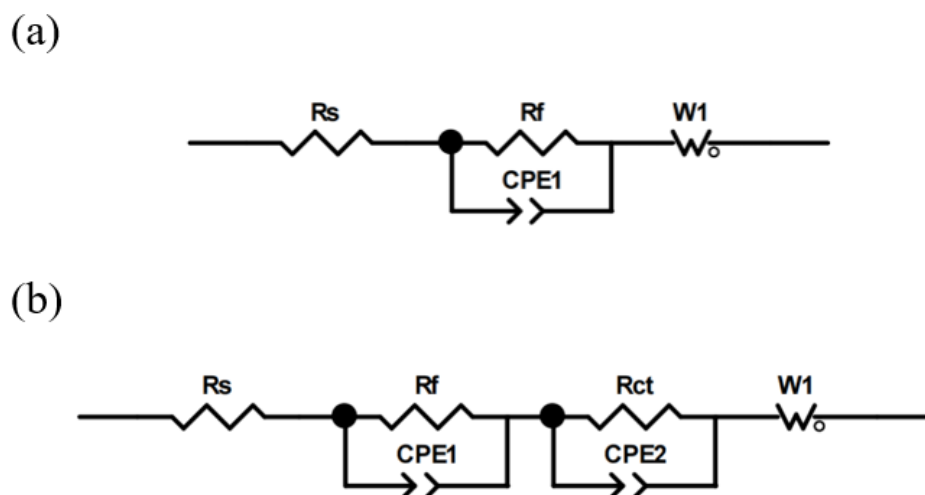


Fig. S6: Equivalent circuit models used to fit the EIS data. (a) before cycling and (b) after cycling.

Table S7: List of EIS fitting parameters for TPPDA-NiPc (2:1)/(1:1)/(1:2) electrodes.

Samples	Cycle number	R_s/Ω (Error%)	R_f/Ω (Error%)	R_{ct}/Ω (Error%)	W_1/Ω (Error%)
TPPDA-NiPc (2 : 1)	0	2.83(9.20)	-	336.8(7.87)	0.39(1.95)
	50	1.92(8.23)	14.07(7.64)	116.5(7.00)	0.37(1.98)
	200	3.99(6.25)	35.38(13.69)	48.6(12.10)	0.67(1.07)
TPPDA-NiPc (1 : 1)	0	5.58(9.80)	-	232.6(1.37)	0.46(1.55)
	50	5.3(6.77)	26.46(2.16)	71.5(7.47)	0.62(1.25)
	200	3.79(9.70)	7.14(5.60)	35.9(2.53)	0.35(0.94)
TPPDA-NiPc (1 : 2)	0	1.93(10.26)	-	188.6(2.43)	0.41(2.74)
	50	3.5(5.10)	19.9(4.53)	38.6(1.70)	0.35(1.04)
	200	5.86(4.05)	26.59(4.30)	35.4(3.69)	0.64(0.57)

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