

Supplementary informaion

The Role of EC and sulfolane on the dissolution of transition metals from Lithium-Ion Cathodes

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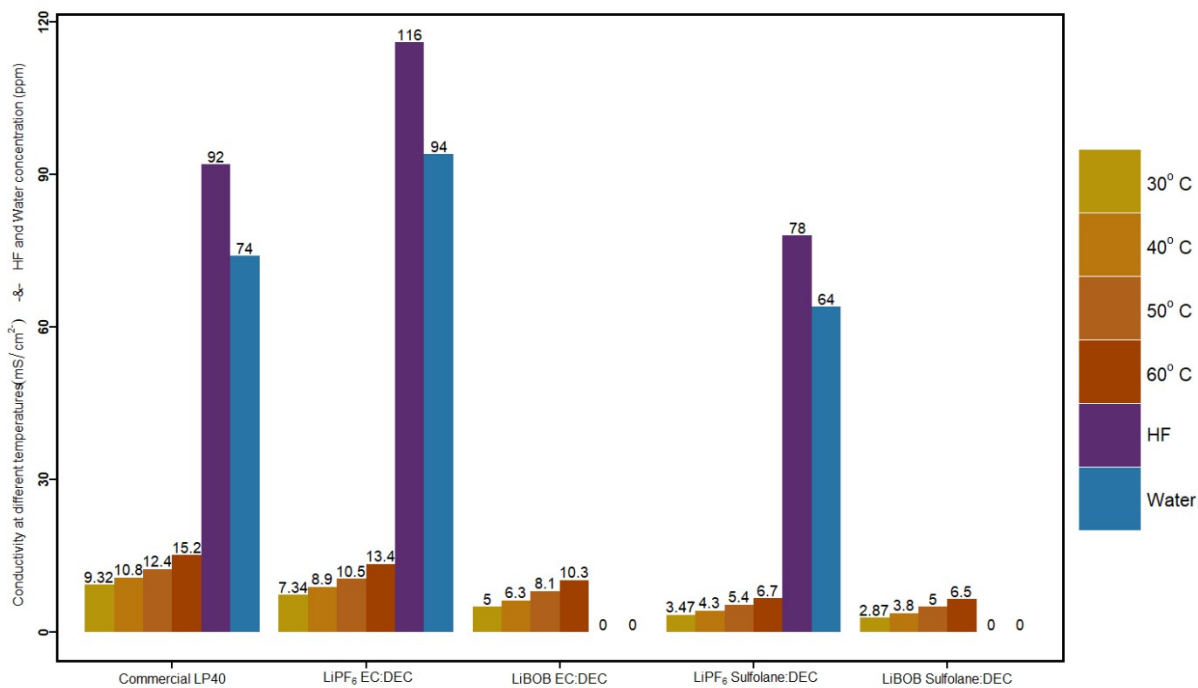


Figure S 1. The ionic conductivity, H₂O and HF concentration of LP40 and prepared electrolytes of 0.7 M LiBOB|SL|DEC, 0.7 M LiPF₆|SL|DEC, 0.7 M LiPF₆|EC|DEC and 0.7 M LiBOB|EC|DEC. Ionic conductivity is conducted at 30 °C, 40 °C, 50 °C and 60 °C.

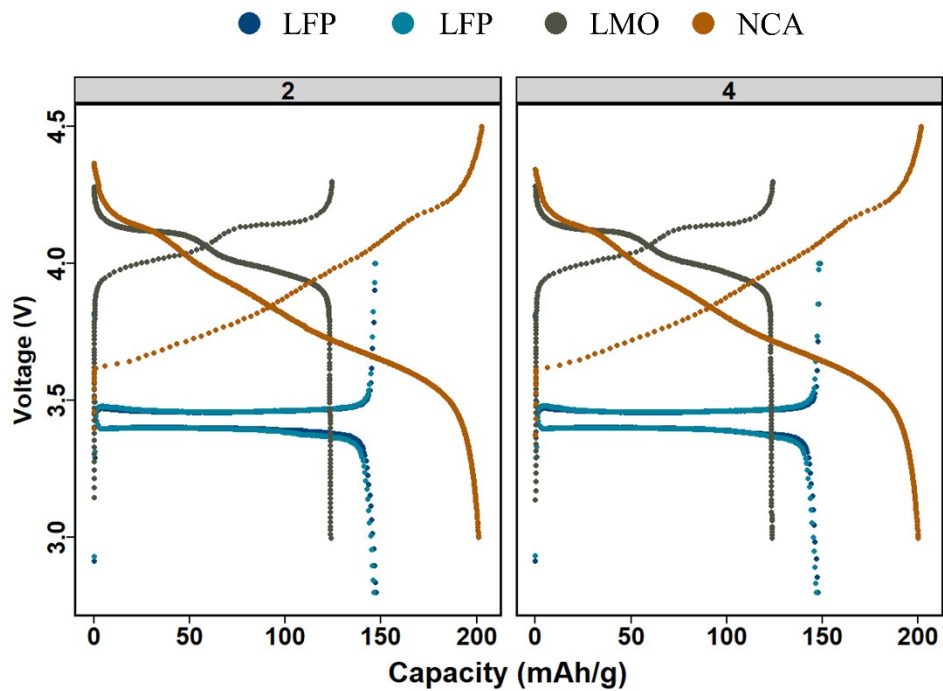


Figure S 2. Half-cell cycling of LFP, LMO and NCA (second and fourth cycle).

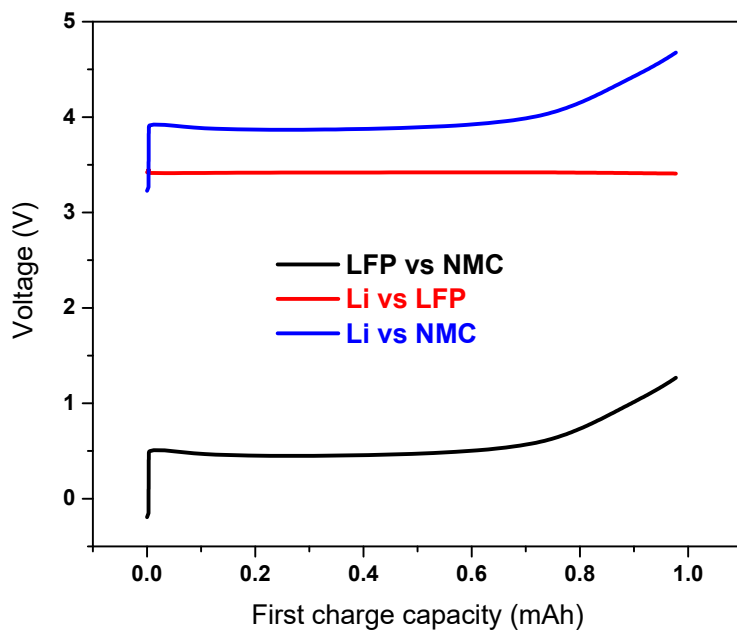


Figure S 3. First charge of a three-electrode cell cycling of LFP|Li|NCA.

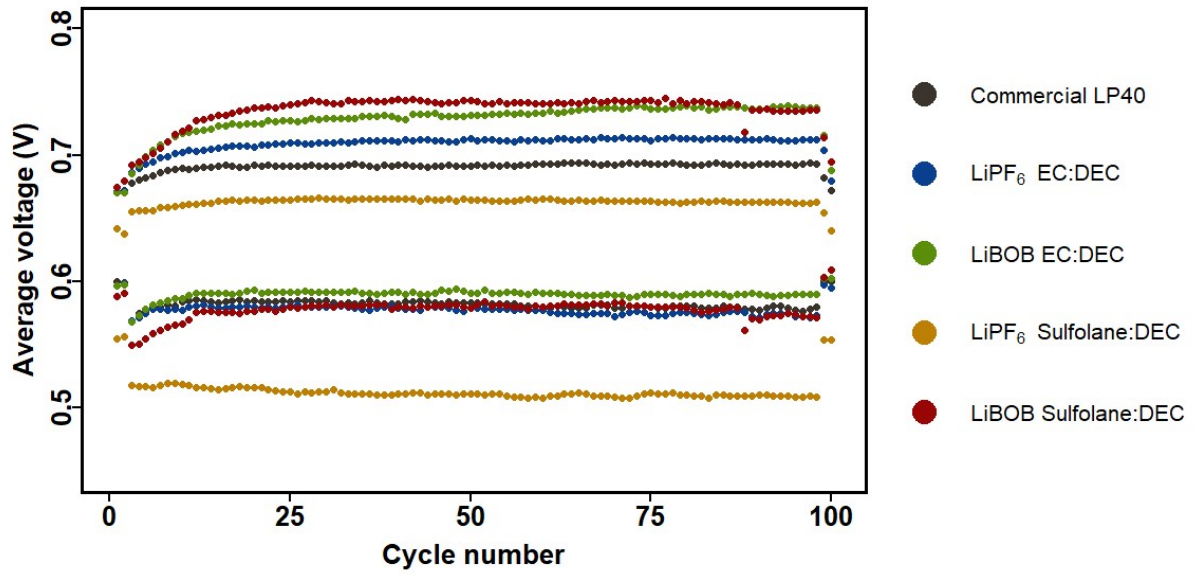


Figure S 4. Average voltage of LMO full-cells.

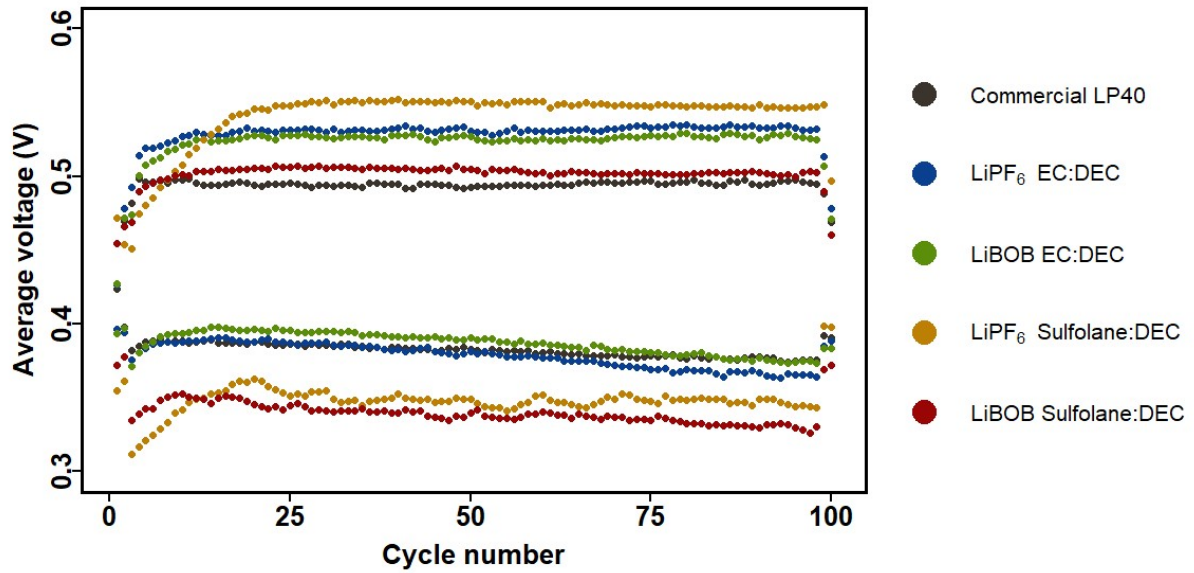


Figure S 5. Average voltage of NCA full-cells.

Table S 1. ICP-OES characterization of NCA powder show the composition of $\text{Li}_{1.021}(\text{Ni}_{0.794}\text{Co}_{0.17}\text{Al}_{0.036})\text{O}_2$.

	Sample Id	Acquisition Time	Li 670,784 (mg/L)	Mn 257,610 (mg/L)	Co 228,616 (mg/L)	Ni 231,604 (mg/L)	Al 396,153 (mg/L)
1	For dilution, 10% HNO ₃	2021-12-20 16:08:34	0.000	0.000	0.000	0.000	0.000
2	Reference, Multi 3 0.1 mg/L	2021-12-20 16:11:11	0.100	0.100	0.100	0.100	0.100
12	NCA_powder	2021-12-20 16:38:41	0.489	0.001	0.326	3.193	0.067
	<i>RSD</i>		<i>0.9%</i>	<i>1.4%</i>	<i>2.2%</i>	<i>3.4%</i>	<i>2.4%</i>