

Electronic Supplementary Information

Entropymetry for Non-destructive Structural Analysis of LiCoO₂ Cathodes

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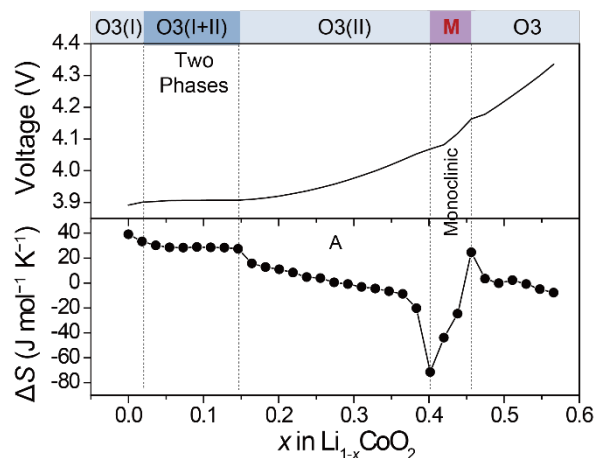


Fig. S1. Correlation of ΔS profile with voltage profile.

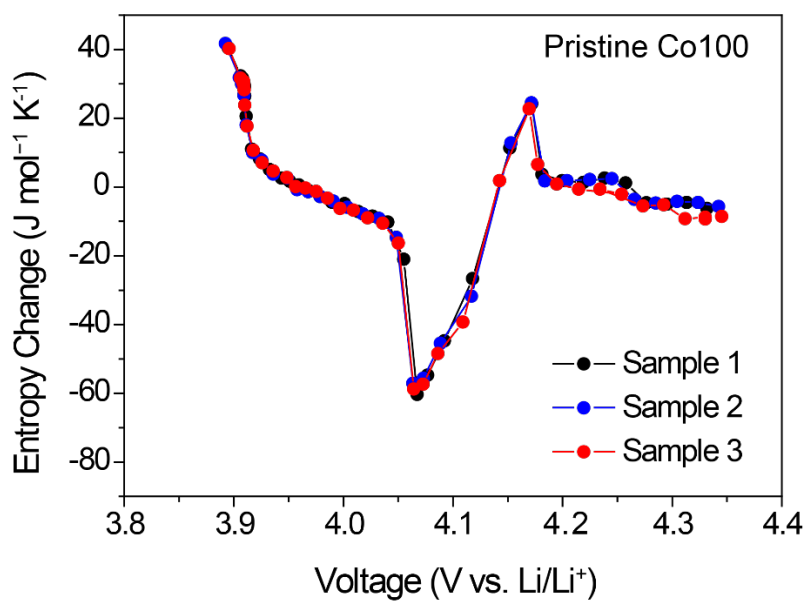


Fig. S2. ΔS profiles of three pre-cycled Co100 cells during charging.

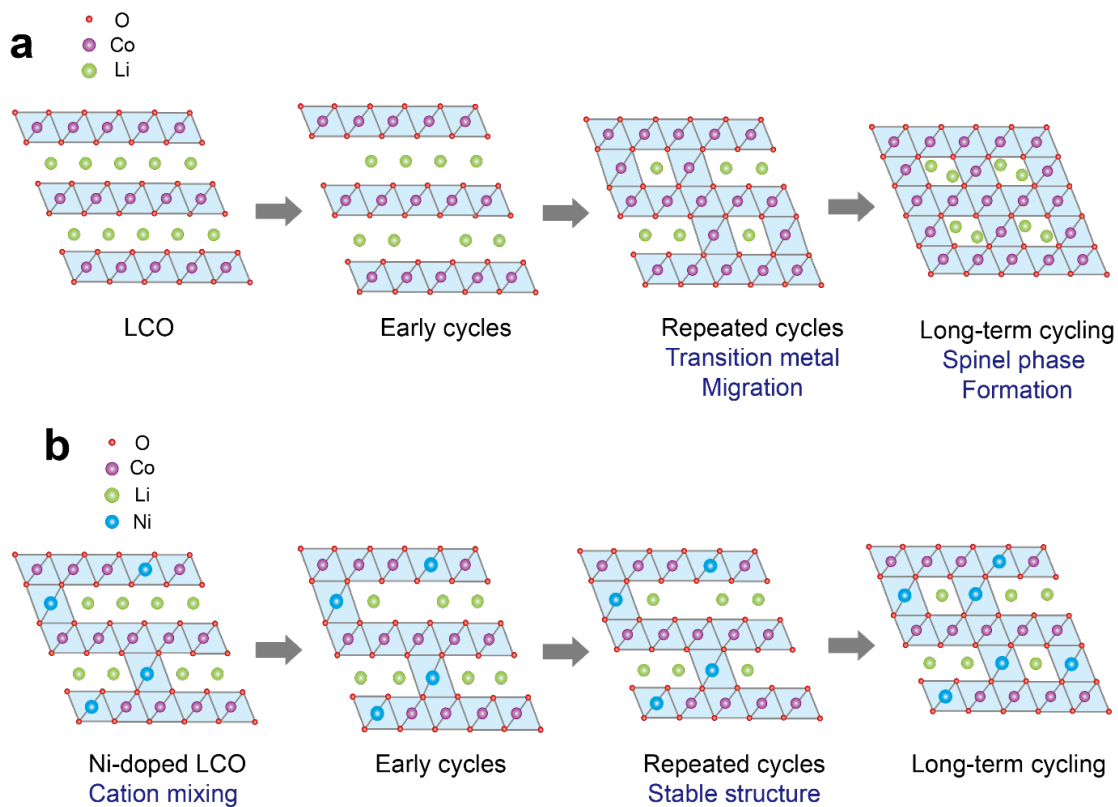


Fig. S3. Schematic diagrams of phase transitions of (a) LCO and (b) Ni-doped LCO during high voltage cycling.

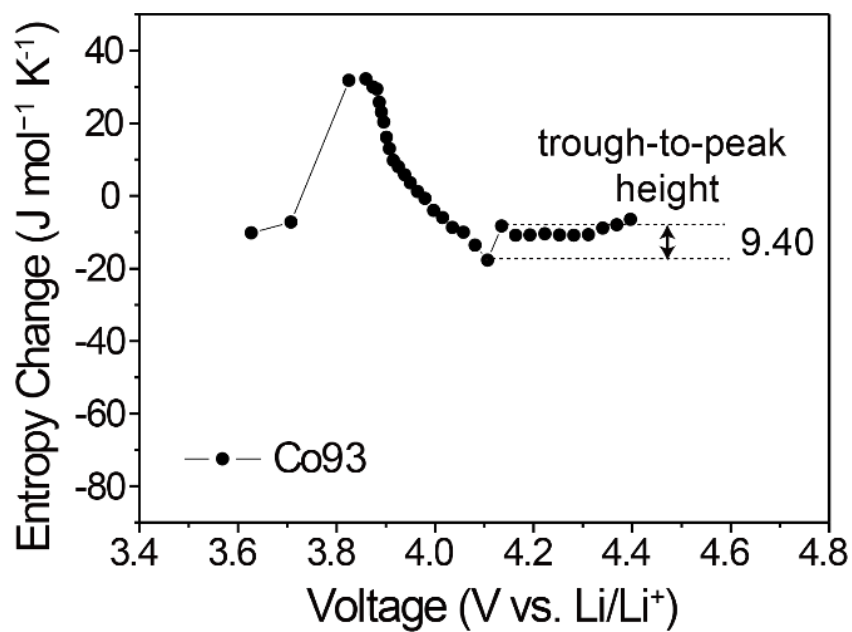


Fig. S4. ΔS profile of pre-cycled Co93 throughout charging.

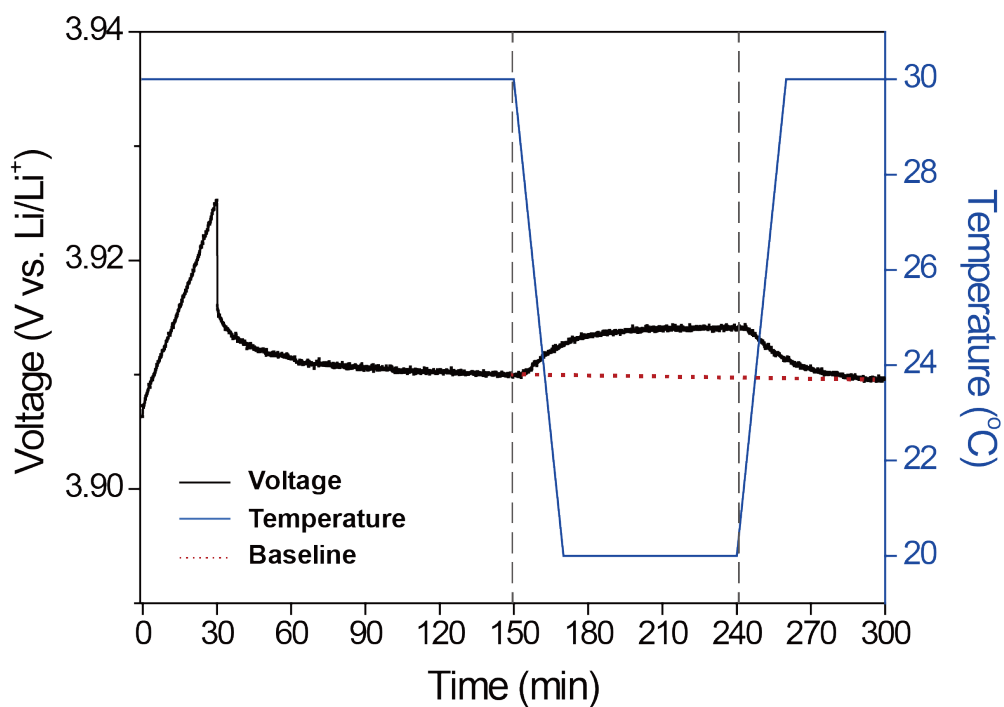


Fig. S5 Open-circuit voltage changes upon temperature variation.

Table S1. Elemental analysis of Co100, Co97 and Co95.

Sample	Atomic ratio	
	Co	Ni
Co100	0.999	0.001
Co97	0.971	0.029
Co95	0.953	0.047

Table S2. Calculation of trough-to-peak height change of Co100, Co97, and Co95 before and after cycling in the monoclinic phase region.

	Trough		Peak		Trough-to-peak height	
	Before cycles	After cycles	Before cycles	After cycles	Before cycles	After cycles
Co100	-75.79	-44.39	18.78	6.32	94.57	50.71
Co97	-49.45	-29.13	18.69	6.52	68.14	35.65
Co95	-28.42	-18.98	4.41	-2.88	32.82	16.10