

Electronic Supplementary Information

Further utilization of Mn redox reaction via control of structural disorder in olivine system

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Electronic Supplementary Information (ESI) available: [details of any supplementary information available should be included here]. See DOI: 10.1039/x0xx00000x

Table S1: Calculated voltage difference between Fe and Mn cathodic and anodic redox peaks at various C-rates.

C-rate	Sample	$\Delta V (\text{Fe}^{2+}/\text{Fe}^{3+})$	$\Delta V (\text{Mn}^{2+}/\text{Mn}^{3+})$
C/5	LFMP-S	0.0483	0.0909
	LFMP-NS	0.0390	0.0717
	LFMP-NSCr	0.0292	0.0512
C/3	LFMP-S	0.0541	0.0969
	LFMP-NS	0.0352	0.0742
	LFMP-NSCr	0.0299	0.0551
1C	LFMP-S	0.0594	0.1143
	LFMP-NS	0.0518	0.1126
	LFMP-NSCr	0.0443	0.0721

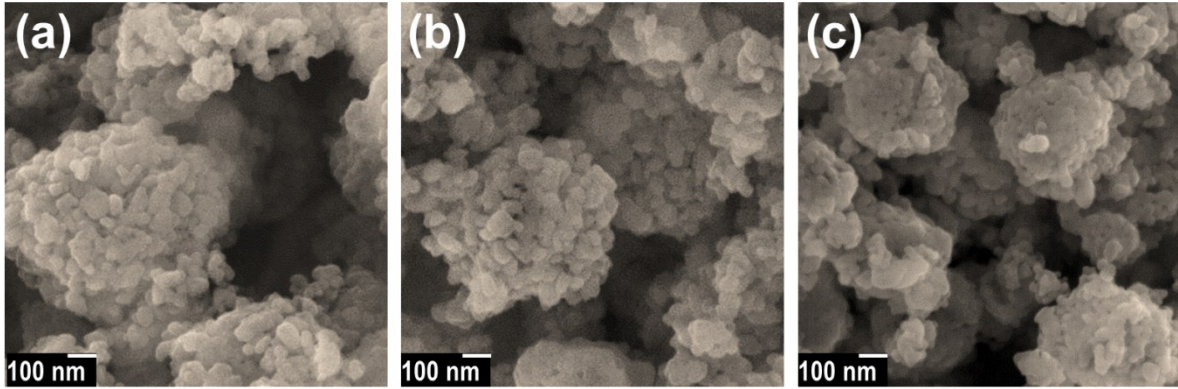


Figure S1: SEM images of (a) LFMP-S, (b) LFMP-NS, (c) LFMP-NSCr powder samples.

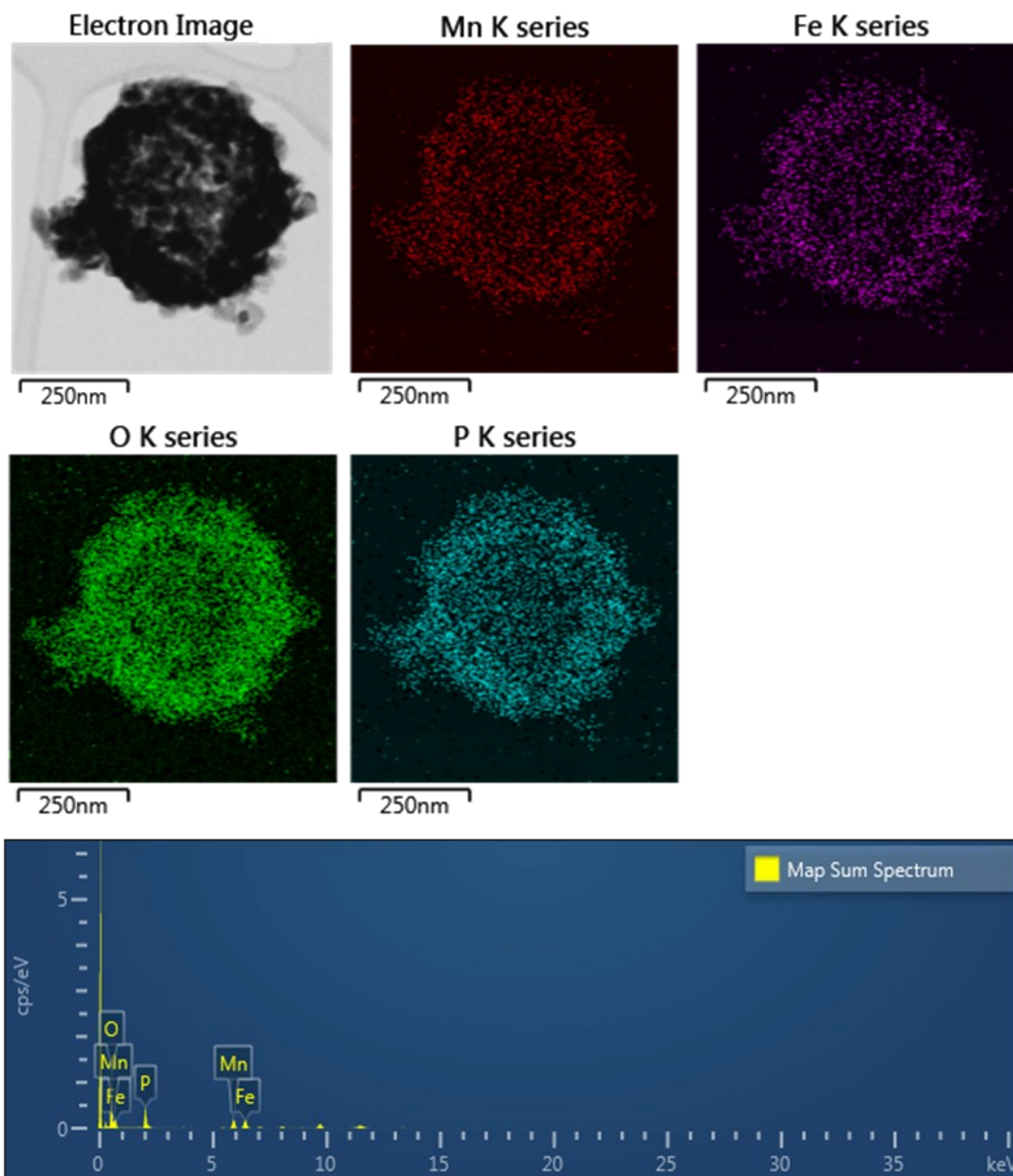


Figure S2: EDX and EDS mapping of LFMP-S powder samples.

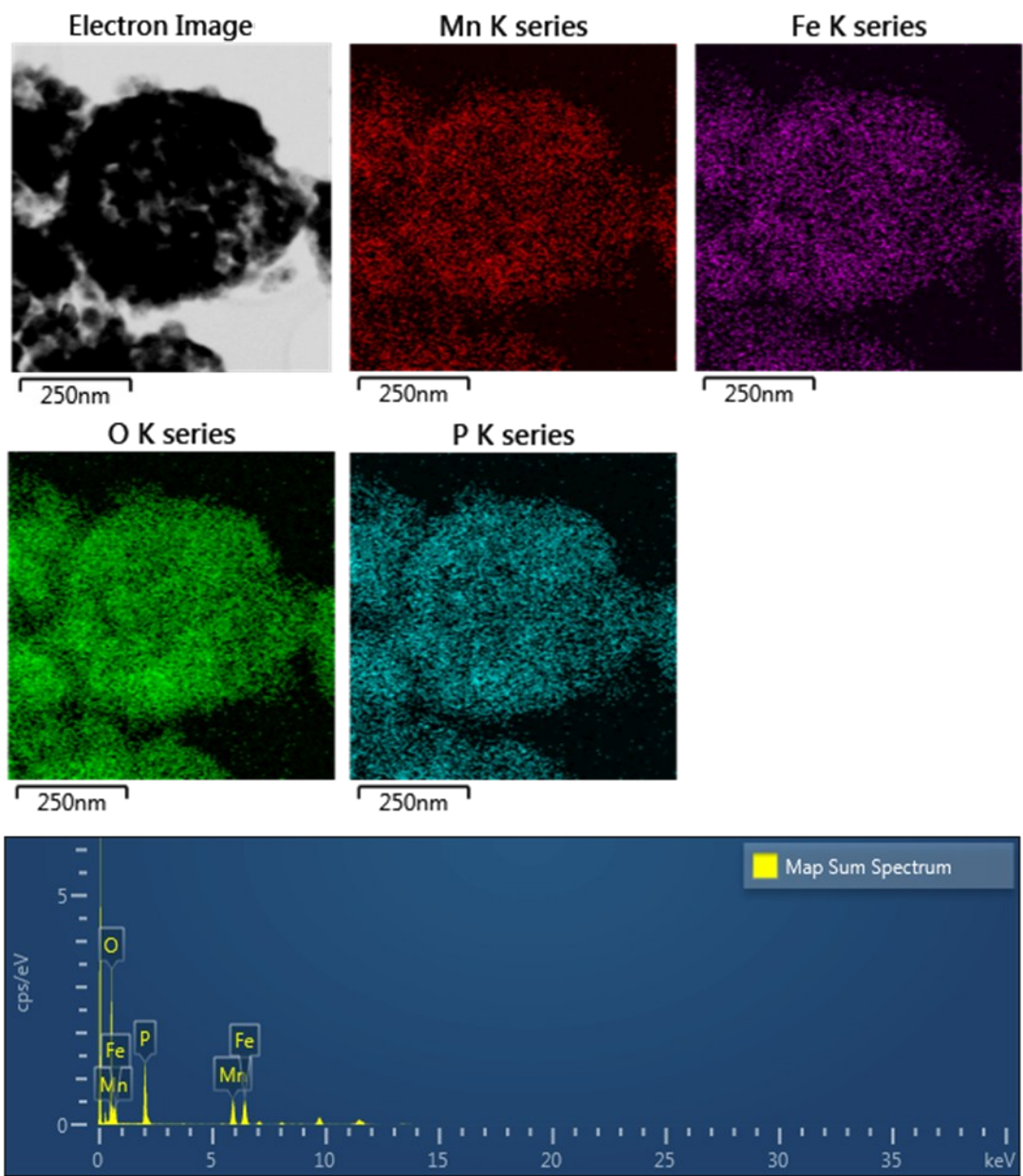


Figure S3: EDX and EDS mapping of LFMP-NS powder samples.

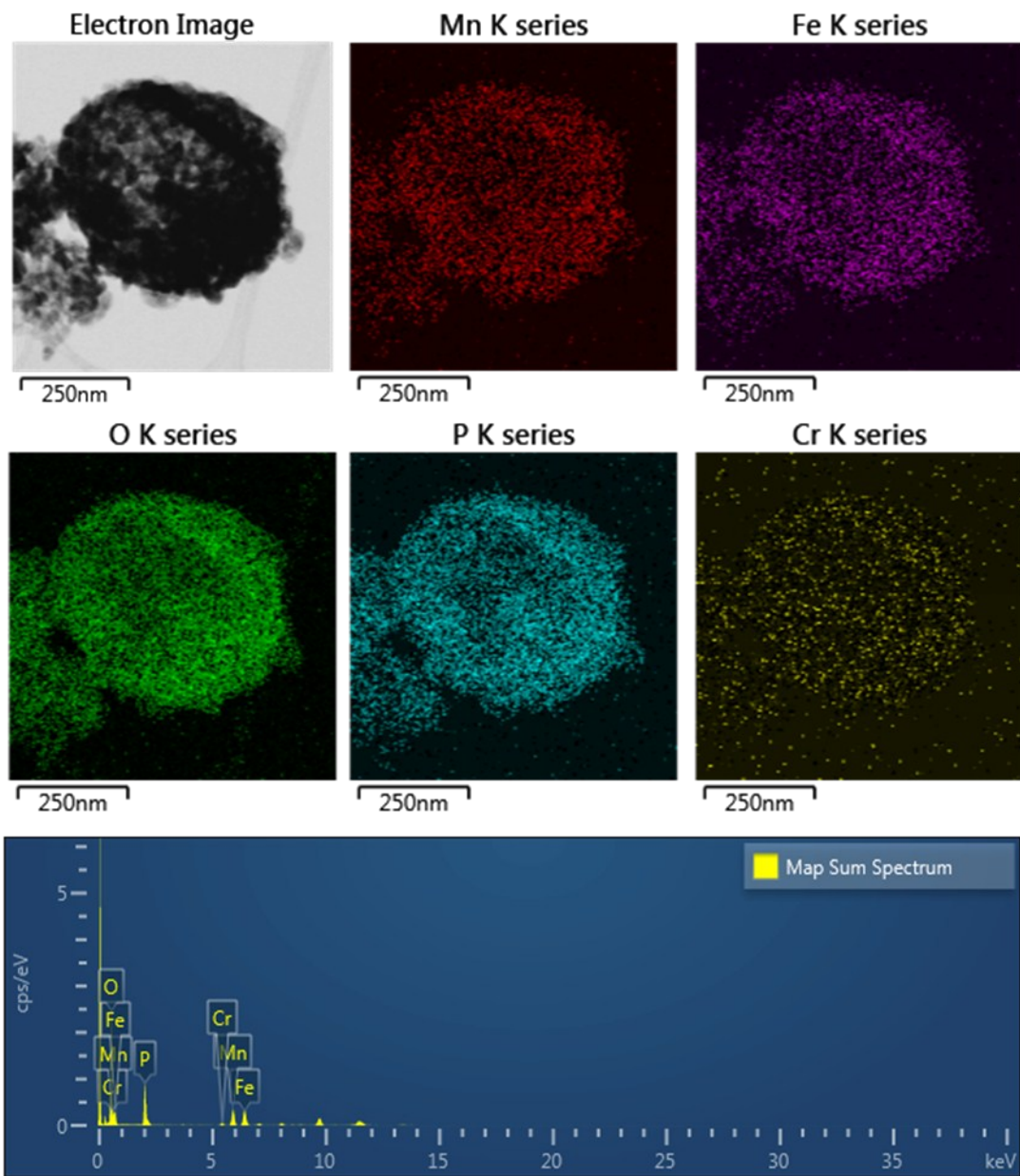


Figure S4: EDX and EDS mapping of LFMP-NsCr powder samples.

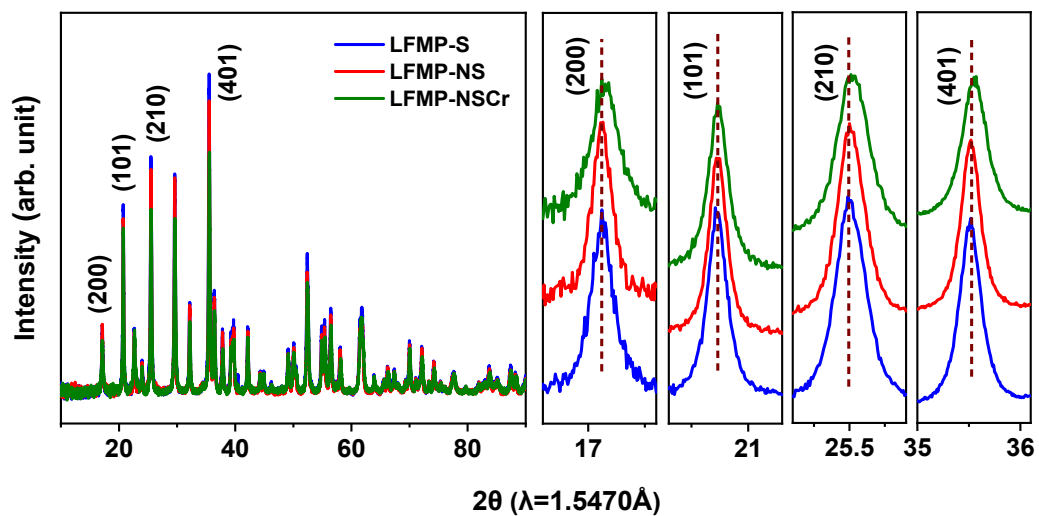


Figure S5: HRPD patterns of LFMP-S, NS, and NSCr powder samples with selected enlarged Bragg peaks.

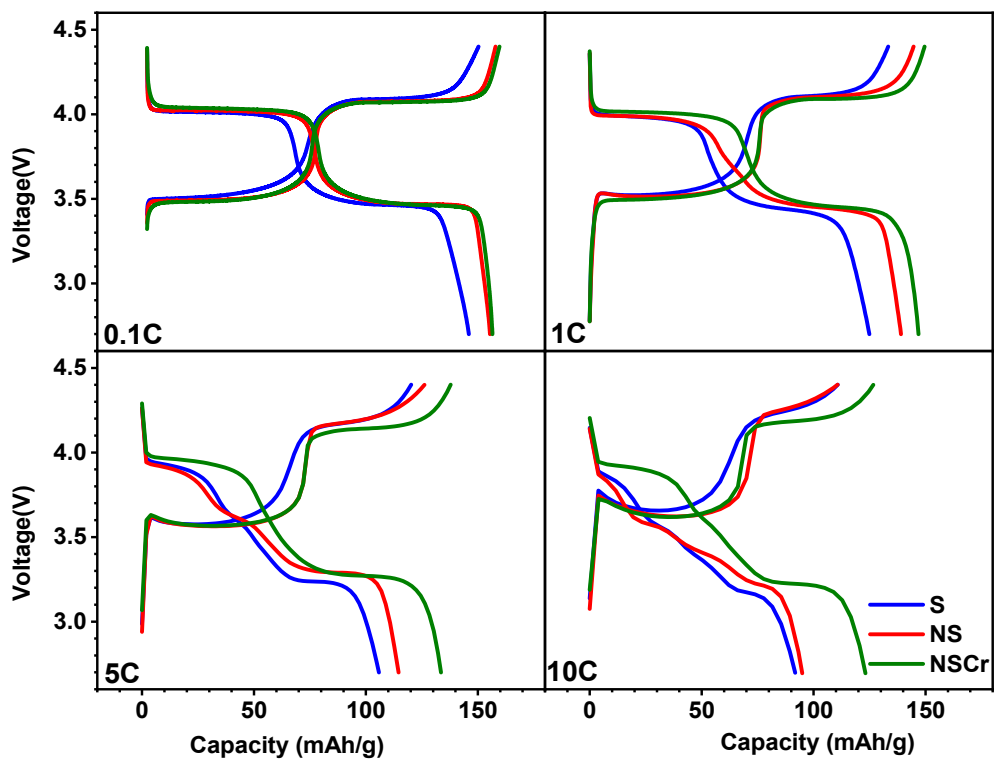


Figure S6: The electrochemical charge and discharge profiles of the LFMP-S, NS and NSCr electrodes at 0.1C, 1C, 5C, and 10C.

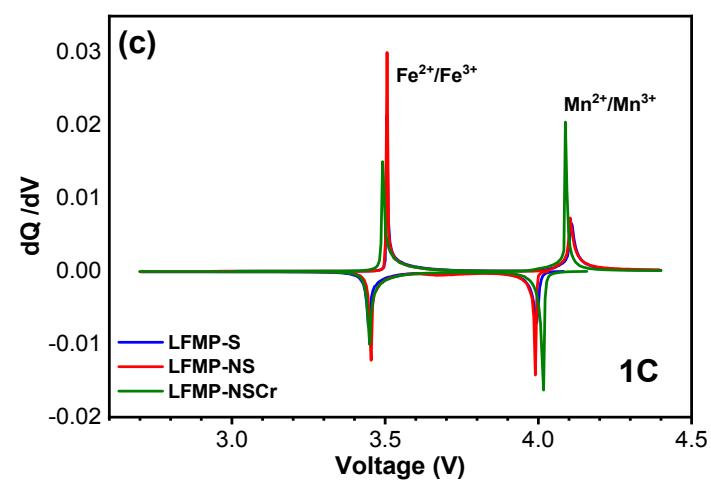
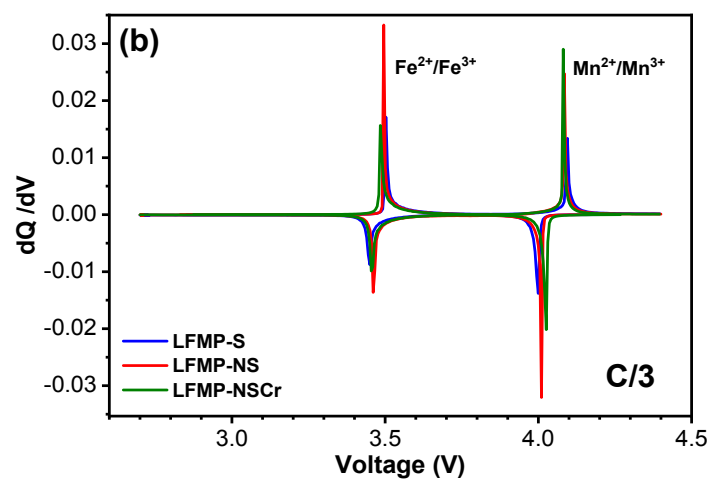
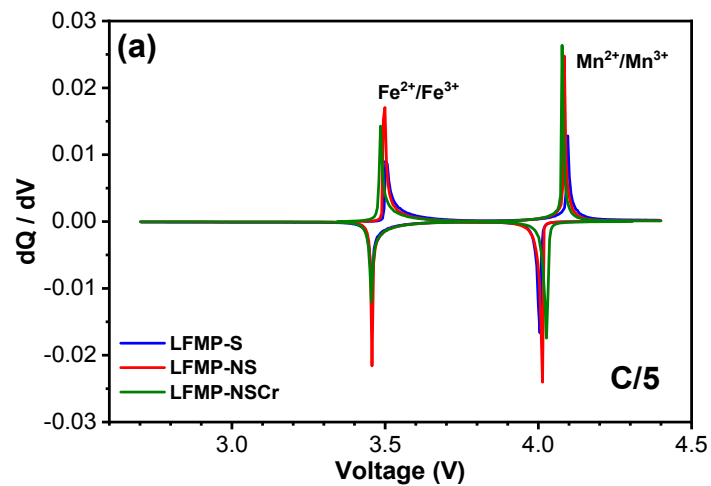


Figure S7: dQ/dV curves of LFMP-S, NS and NSCr electrodes at different C-rates of (a) C/5, (b) C/3, and (c) 1C.

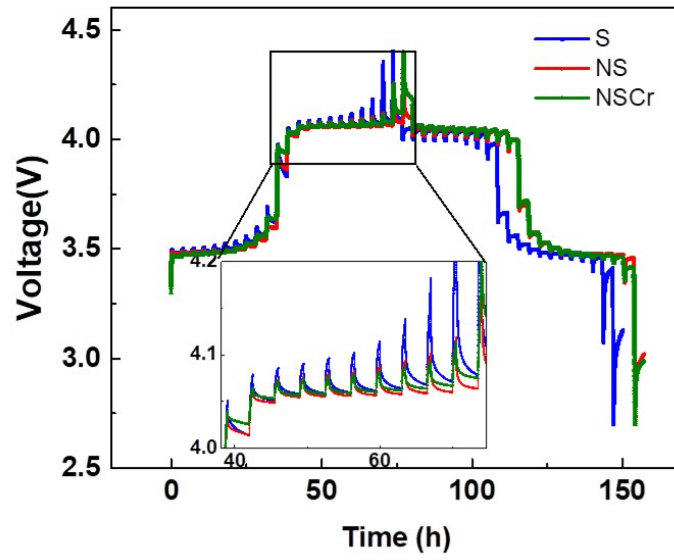


Figure S8: GITT curves of the LFMP-S, NS, and NSCr electrodes measured during 1st cycle.