

Fig. S1 SEM image (a) and EDS area mappings of Mn element (b) and Ni element (c) of the LNMO-C.

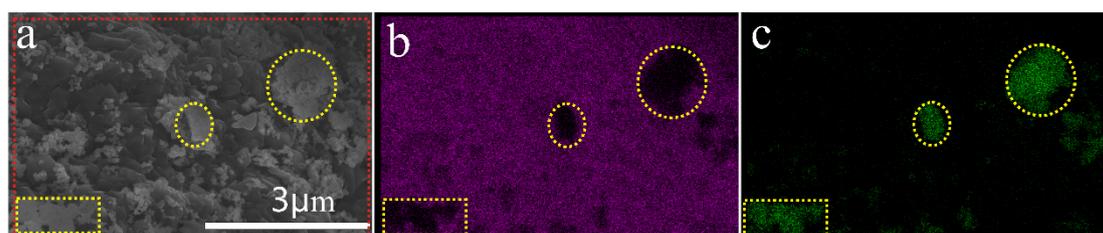


Fig. S2 SEM image (a) and EDS area mappings of Mn element (b) and Ni element (c) of the LNMO-B.

Table S1 BET total surface area, BJH pore size and Pore volume results obtained from Nitrogen adsorption-desorption isotherms of samples.

	BET total surface area ($\text{m}^2 \cdot \text{g}^{-1}$)	BJH pore size (nm)	Pore volume ($\text{cm}^3 \cdot \text{g}^{-1}$)
LNMO-Air	4.6	1.03	0.025
LNMO-C	3.7	0.26	0.0082
LNMO-B	1.4	0.19	0.0024

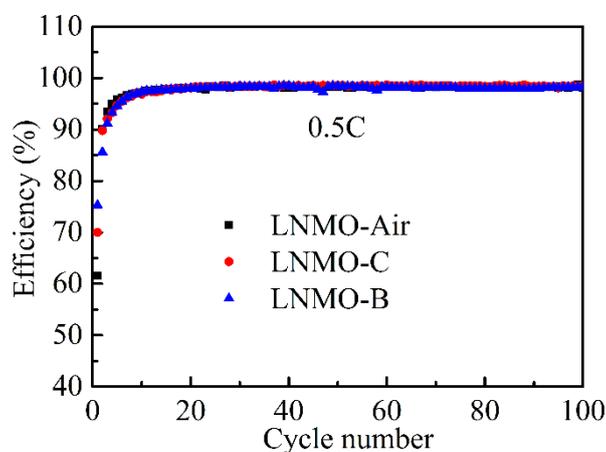


Fig. S3 Coulombic efficiency of coin cells at 0.5C corresponding to Fig. 6(a).

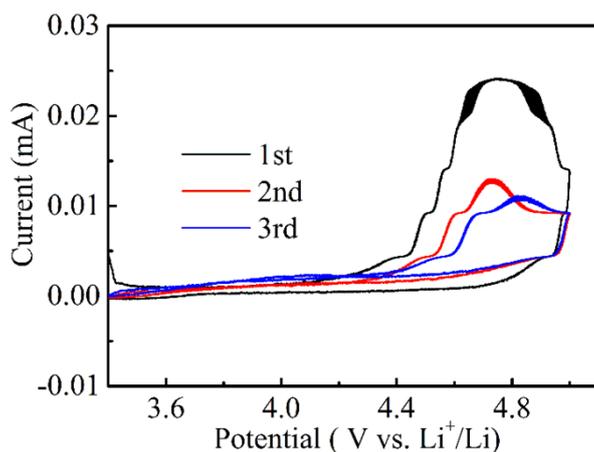


Fig. S4 Cyclic voltammogram curves (0.1 m V s^{-1}) of #301 electrolyte during a voltage range from 3.4 to 5.0V.

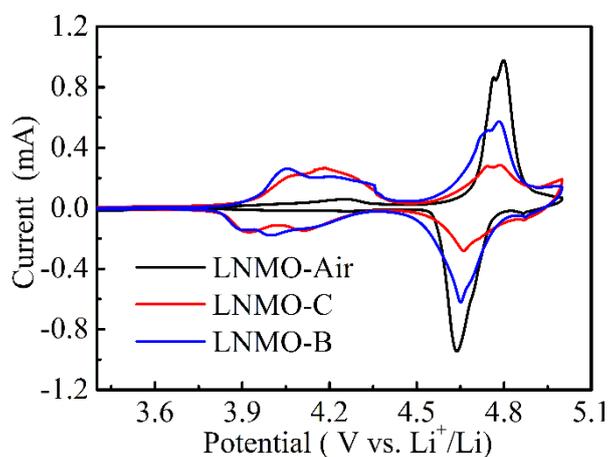


Fig. S5 Cyclic voltammogram curves (0.1 m V s^{-1}) of LNMO samples.

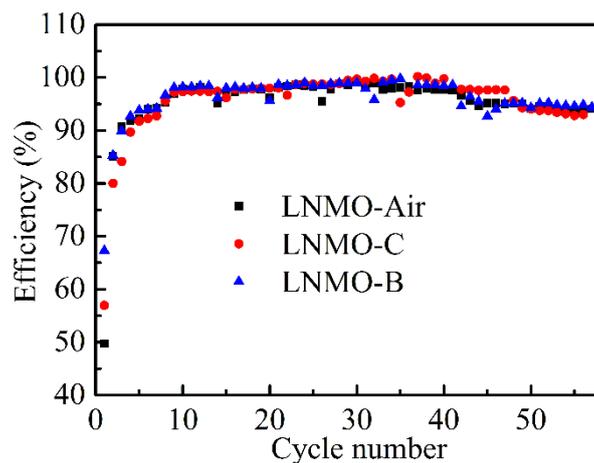


Fig. S6 Coulombic efficiency of coin cells at various rates corresponding to Fig. 7

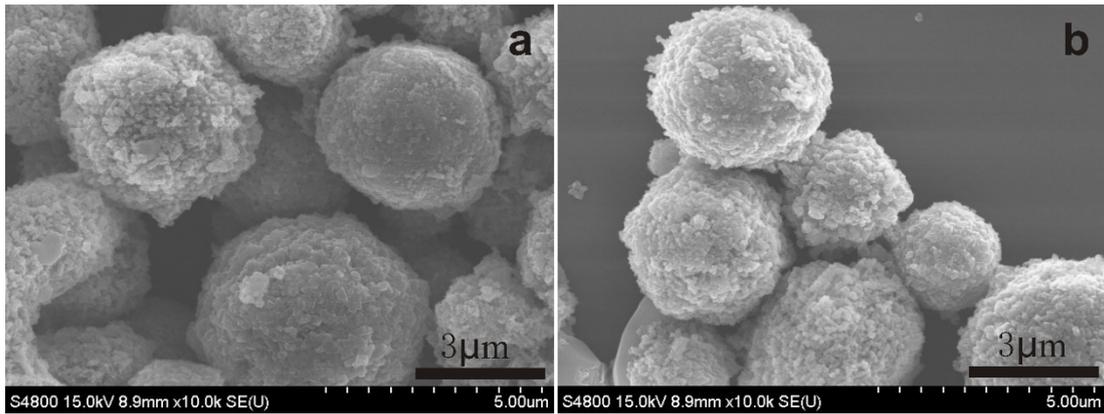


Fig. S7 SEM images of the samples (a) LNMO-Air, (b) LNMO-O₂.

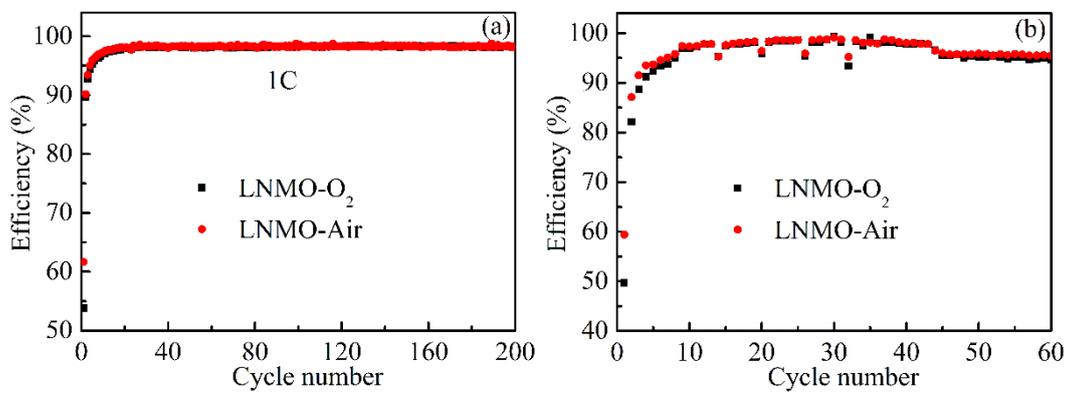


Fig. S8 Coulombic efficiency of (a) coin cells corresponding to Fig. 12(b) and (b) coin cells corresponding to Fig. 12(c)

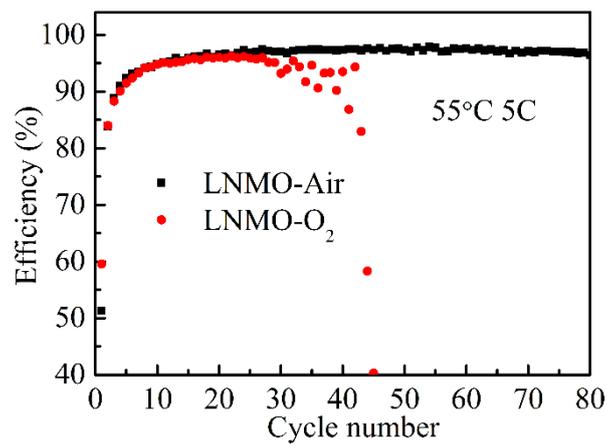


Fig. S9 Coulombic efficiency of coin cells corresponding to Fig. 13(b).