Electronic Supplementary Material

Effects of gradient concentration on the microstructure and electrochemical performance of $LiNi_{0.6}Co_{0.2}Mn_{0.2}O_2$ cathode materials

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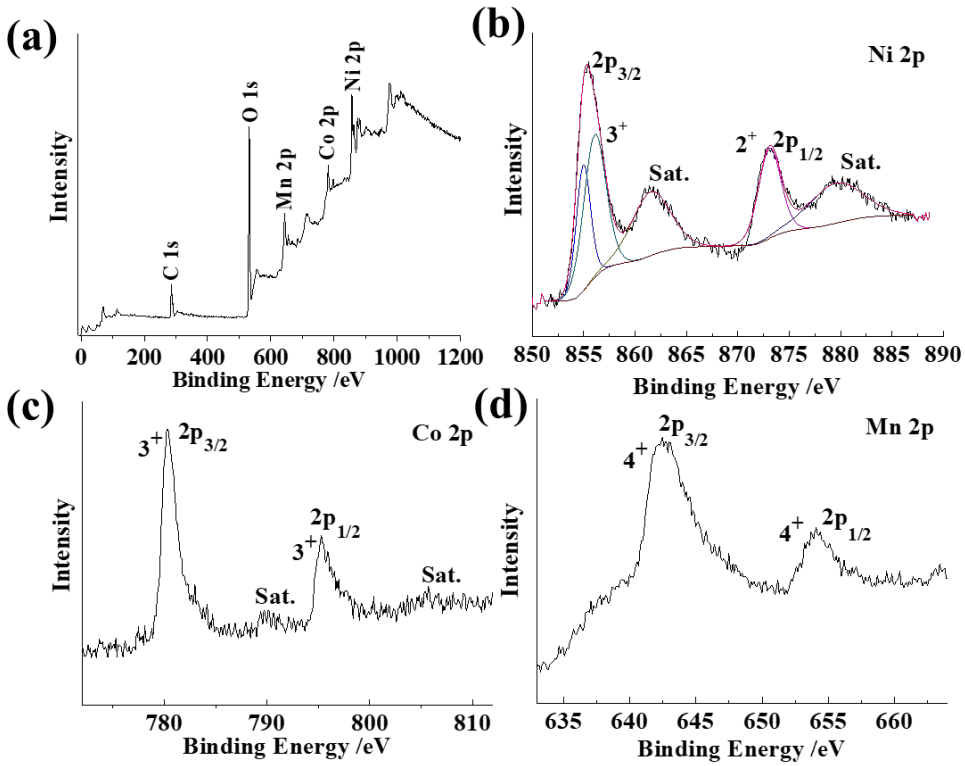

Fig. S1 XPS spectra for GC3.5 sample: (a) original XPS survey spectra; (b) Ni 2p; (c) Co 2p; (d) Mn 2p

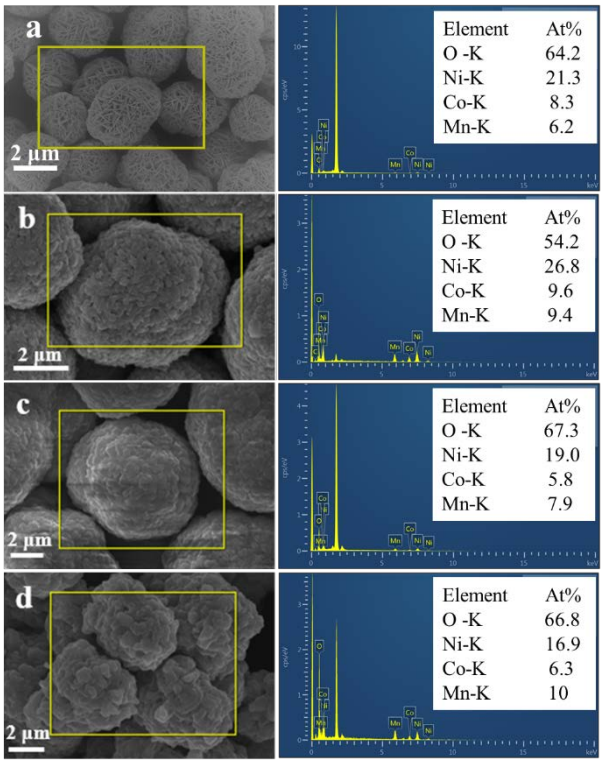

Fig. S2 The EDS spectra of as-prepared LNCM622 samples: (a) CC2, (b) GC2.75, (c) GC3.5, (d) GC5

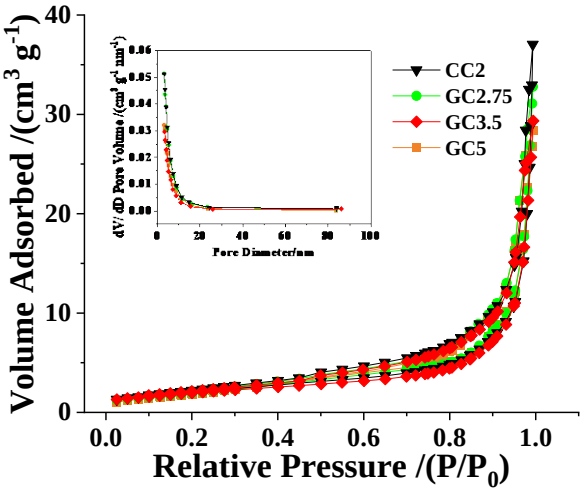

Fig. S3 Nitrogen adsorption-desorption isothermal curves of as-prepared LNCM622 samples (inset: the corresponding pore size distribution)

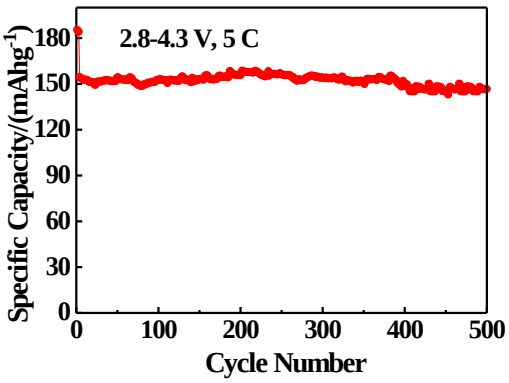

Fig. S4 Cycling performance of the GC 3.5 sample

Table S1 ICP-MS results of the GC and CC LNCM622 samples

Sample	Molar ratio of Ni: Co: Mn
CC2	6: 2.02: 1.90
GC2.75	6: 2.04: 1.91
GC3.5	6: 2.06: 1.94
GC5	6: 2.05: 1.91

Table S2 Structural constants of the GC and CC LNCM622 samples

Sample	a/Å	c/Å	c/a	I(003)/I(104)
CC2	2.868	14.111	4.92	1.21
GC2.75	2.863	14.150	4.94	1.32
GC3.5	2.871	14.149	4.93	1.34
GC5	2.863	14.131	4.94	1.23

Table S3 D50 and tap-density of the GC and CC LNCM622 samples

sample	D50 /μm	Tap-density / (g cm^{-3})
CC2	4.00	1.96
GC2.75	5.66	2.20
GC3.5	6.57	2.45
GC5	6.43	2.28

Table S4 The specific area and pore size of the GC and CC LNCM622 samples

Sample	Specific area/ (m^2 g^{-1})	Pore size/nm
CC2	1.87	5.23
GC2.75	1.12	4.83
GC3.5	0.93	4.72
GC5	0.96	4.78