

Supporting Information

A Novel LiCoPO_4 -coated Core-shell Structure for Spinel
 $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ as a High-performance Cathode Material for
Lithium-ion Batteries

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Table S-1. Comparison of electrochemical performances between the current study and previous works concerning core-shell $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ modified by other materials.

Coating Material	Initial Discharge Capacity (mAh g^{-1})	Capacity Retention (%)	Rate Performance (mAh g^{-1})	References
LiCoPO_4	137	96.4 (100 cycles)	130 (20 C)	Current work
LiAlSiO_4	131	94.3 (150 cycles)	-	[1]
FePO_4	112	95.5 (100 cycles)	~82 (5C)	[2]
Polypyrrole	112.9	91.0 (300 cycles)	85 (5C)	[3]
Fe_2O_3	126	98.6 (100 cycles)	~100 (10 C)	[4]
Al_2O_3	~114	~93.0 (150 cycles)	~38 (4 C)	[5]
Fluorination	135	95.2 (50 cycles)	-	[6]
LiPO_3	130	-	110 (20 C)	[7]
$\text{Li}_2\text{O}-2\text{B}_2\text{O}_3$	111	91.4 (100 cycles)	105.8 (10 C)	[8]
RuO_2	110	70.1 (1000 cycles)	-	[9]
Trihydroxy benzene	106	109 (200 cycles)	-	[10]
$\text{Li}_4\text{Ti}_5\text{O}_{12}$	103	~58 (100 cycles)	-	[11]
Al	135	96.1 (100 cycles)	~115 (2 C)	[12]
C	125	71 (500 cycles)	104 (10 C)	[13]
V_2O_5	131.5	92.2 (100 cycles)	105.3 (10 C)	[14]
AlF_3	103.6	93.6 (100 cycles)	-	[15]
MgF_2	115.3	89.9 (100 cycles)	-	[16]
Polyacrylate	130	90.0 (200 cycles)	101.5 (12 C)	[17]

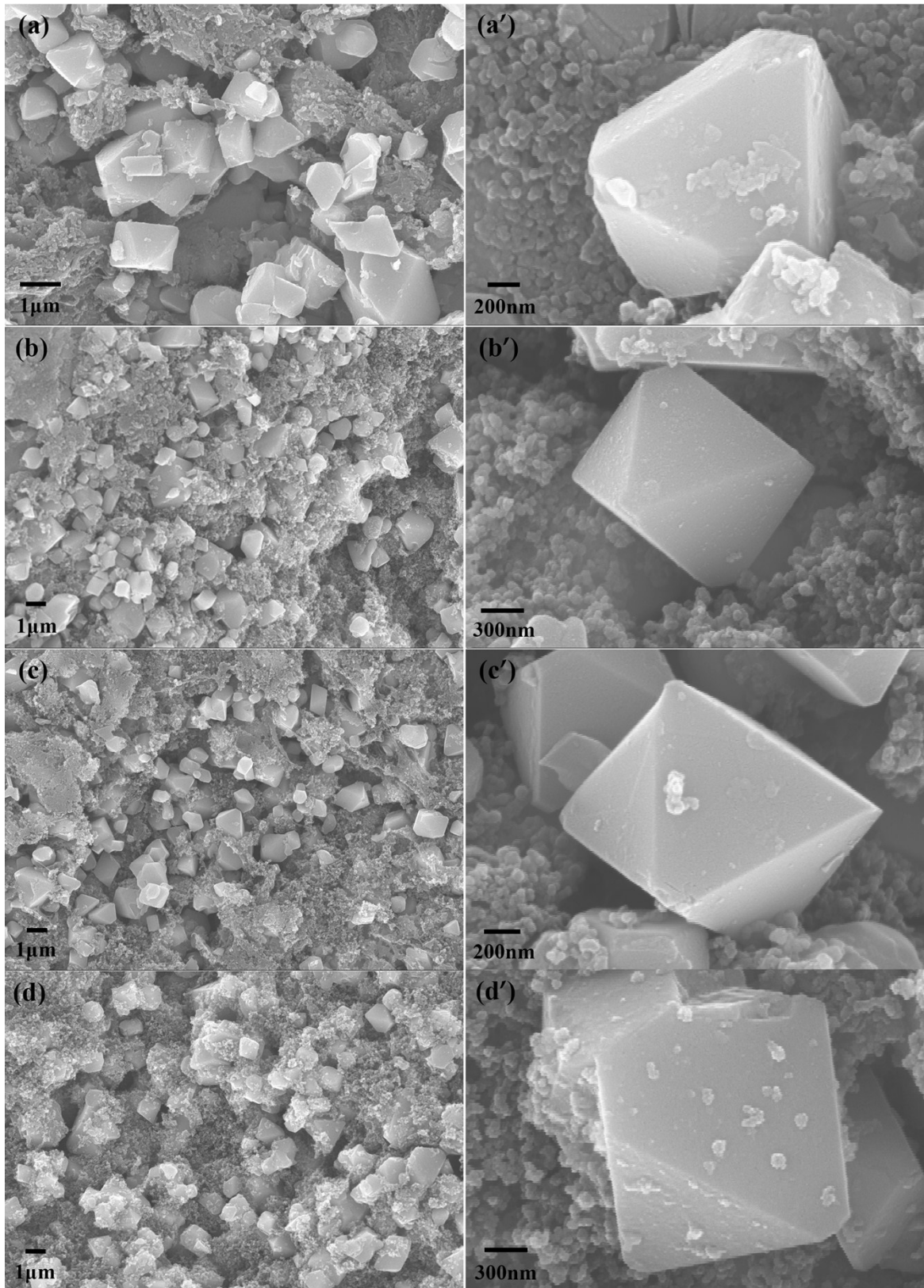


Figure. S-1 SEM images of (a, a') NM-Pure, (b, b') NM-CP1, (c, c') NM-CP5 and (d, d') NM-CP10 cathode cycled at 0.5 C charging/discharging for 600 times.

Reference

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