Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Surface modification of cobalt-free layered $Li[Li_{0.2}Fe_{0.1}Ni_{0.15}Mn_{0.55}]O_2$ oxide with $FePO_4/Li_3PO_4$ composite as the cathode for lithium-ion batteries

Feng Wu[a,b], Xiaoxiao Zhang[a], Taolin Zhao[a], Li Li[a,b*], Man Xie[a] and Renjie Chen[a,b*]

[a] Beijing Key Laboratory of Environmental Science and Engineering, School of Chemical Engineering and the Environment, Beijing Institute of Technology, Beijing 100081, P. R.China.

[b] National Development Center for High Technology Green Materials, Beijing 100081, P. R.China.

Corresponding author: E-mail address: lily863@bit.edu.cn

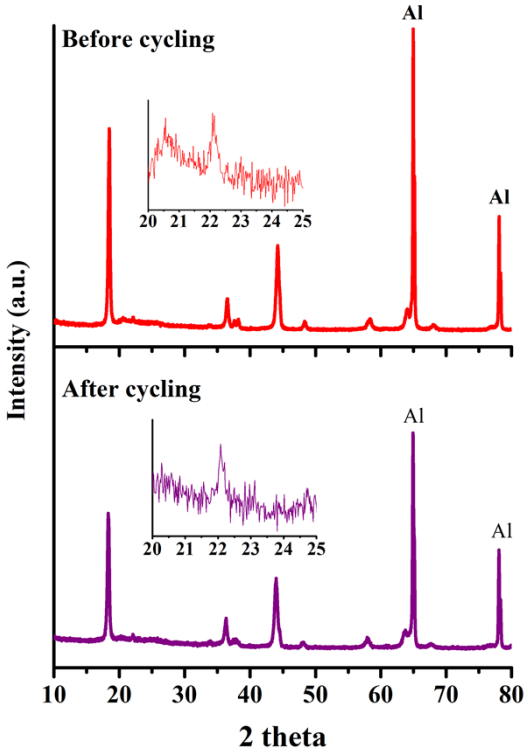

Fig. S1 XRD patterns of FP-3 electrode before cycling and after 100 cycles at 5C.

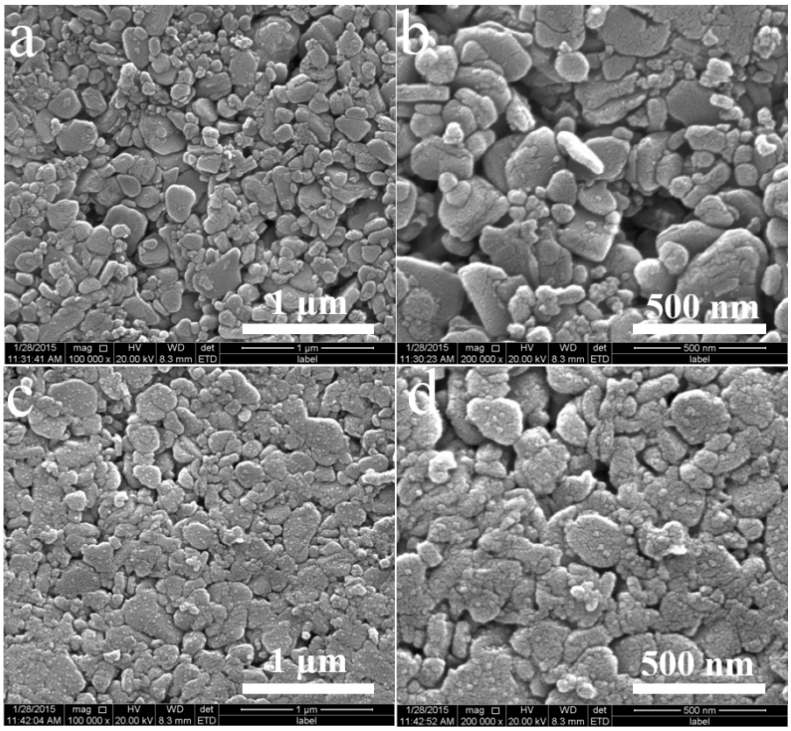

Fig. S2 SEM images of FP-3 electrode before cycling (a, b) and after 100 cycles at 5C(c, d).

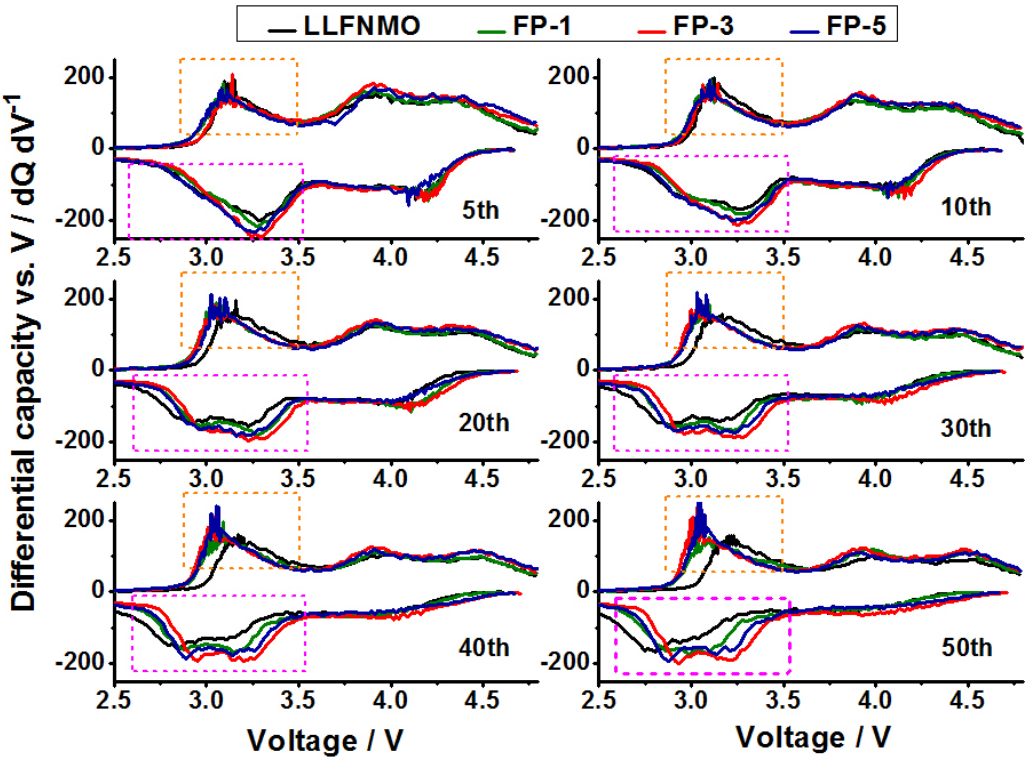

Fig. S3 Differential capacity vs. voltage curves of different cycles at 0.2C of LLFNMO and $FePO_4/Li_3PO_4$ coated samples with different coating amounts.

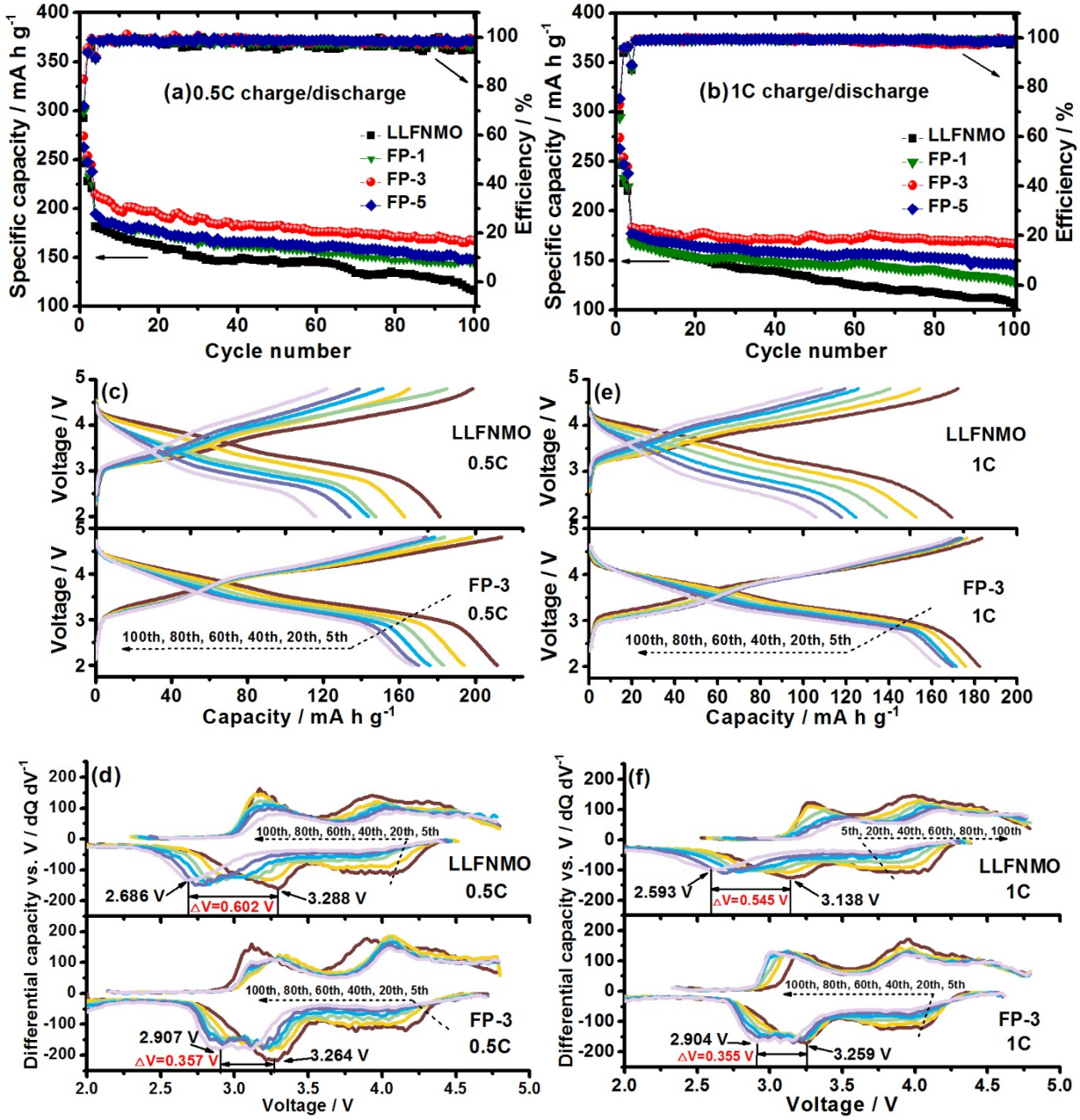

Fig. S4 Cycling performances of all the samples at 0.5C (a) and 1C (b), charge/discharge profiles of different cycles and the corresponding differential capacities curves of LLFNMO and FP-3 at 0.5C (c, d) and 1C (e, f).

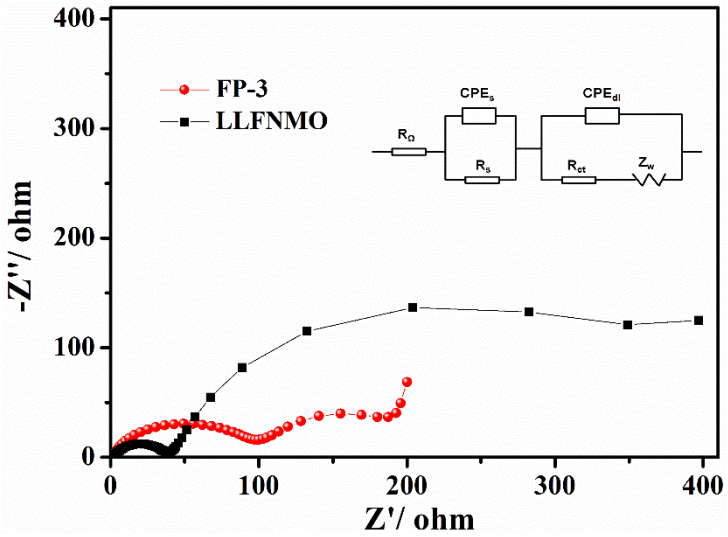

Fig. S5 Nyquist plots of LLFNMO and FP-3 after cycling 100 cycles at 5C. The test voltage is 4 V at charged state.