

Electronic Supplementary Information

Hydrothermal synthesis, Evolution, and Electrochemical

Performance of $\text{LiMn}_{0.5}\text{Fe}_{0.5}\text{PO}_4$ Nanostructures

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Supplementary Figures

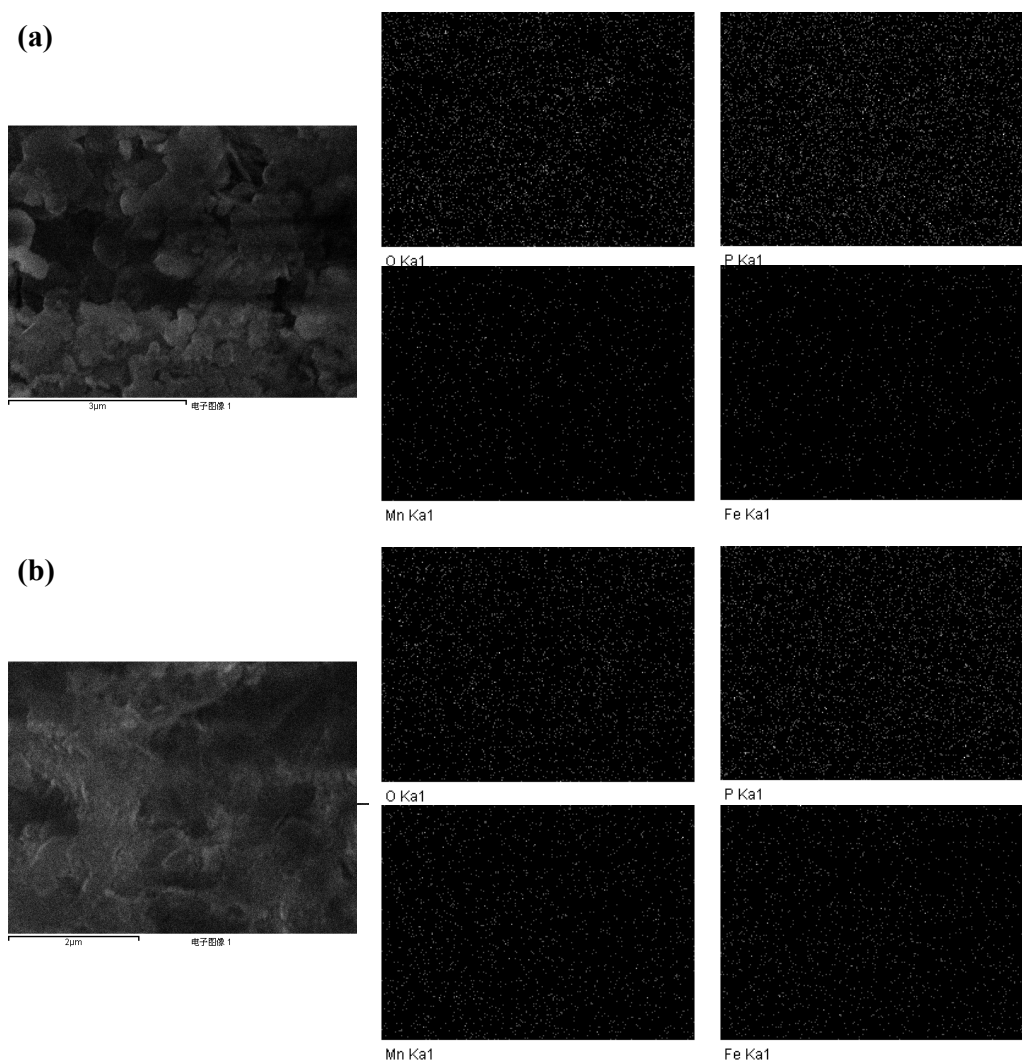


Fig. S1 EDS maps of Fe, Mn, P, O of the intermediates extracted at (a)30 °C and (b)100 °C.

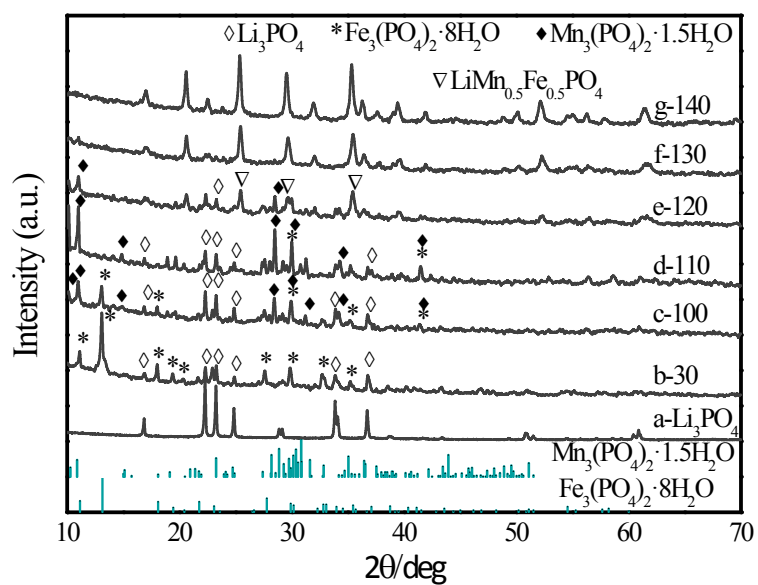


Fig. S2 XRD pattern of (a) Li_3PO_4 and the intermediate extracted at (b)30 °C, (c)100 °C, (d)110 °C, (e)120 °C, (f)130 °C, (g)135 °C, (h)140 °C during the temperature rise period with resultant concentration of precursor at 0.25mol L⁻¹.

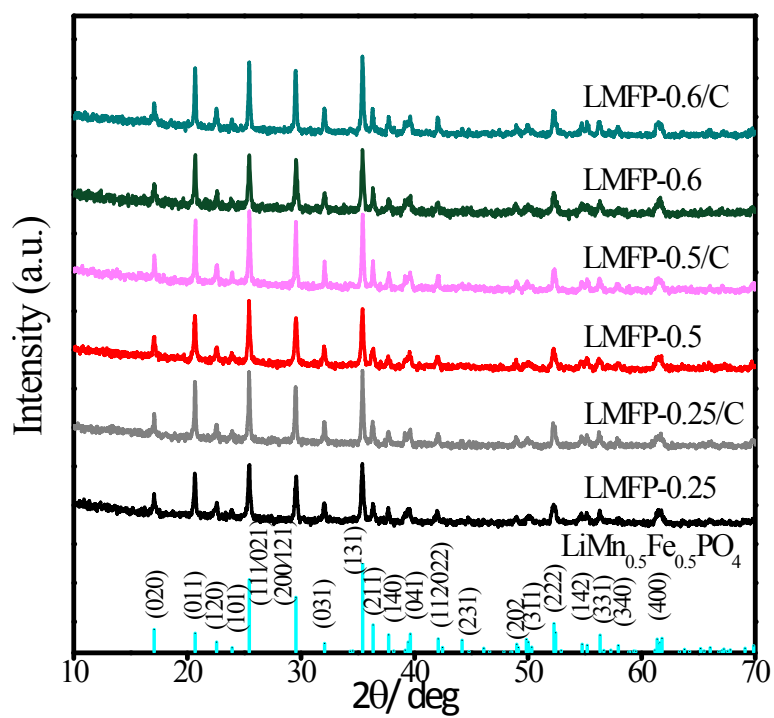


Fig. S3 XRD pattern of LMFP samples synthesized under three different resultant concentration of precursor and corresponding carbon coated samples.

Supplementary Table

Table S1 Rietveld refinement results of the XRD pattern of intermediate extracted during soaking period

Intermediate	a(Å) ±0.0002	b(Å) ±0.0002	c(Å) ±0.0002	V(Å ³) ±0.002
0min	4.7271	10.4057	6.0501	297.597
10min	4.7251	10.4012	6.0486	297.269
60min	4.7214	10.3870	6.0443	296.420
600min	4.7199	10.3784	6.0308	295.419

Table S2 Atomic composition of LMFP-0.25/C, LMFP-0.5/C and LMFP-0.25/C

sample	atomic composition (Li:Mn:Fe:P)
LMFP-0.25/C	0.93:0.52:0.55:1
LMFP-0.5/C	0.95:0.52:0.57:1
LMFP-0.6/C	0.91:0.51:0.58:1