

Supporting Information for

Three-dimensional $\text{LiMnPO}_4 \cdot \text{Li}_3\text{V}_2(\text{PO}_4)_3/\text{C}$ nanocomposite as a bicontinuous cathode for high-rate and long-lived lithium-ion batteries

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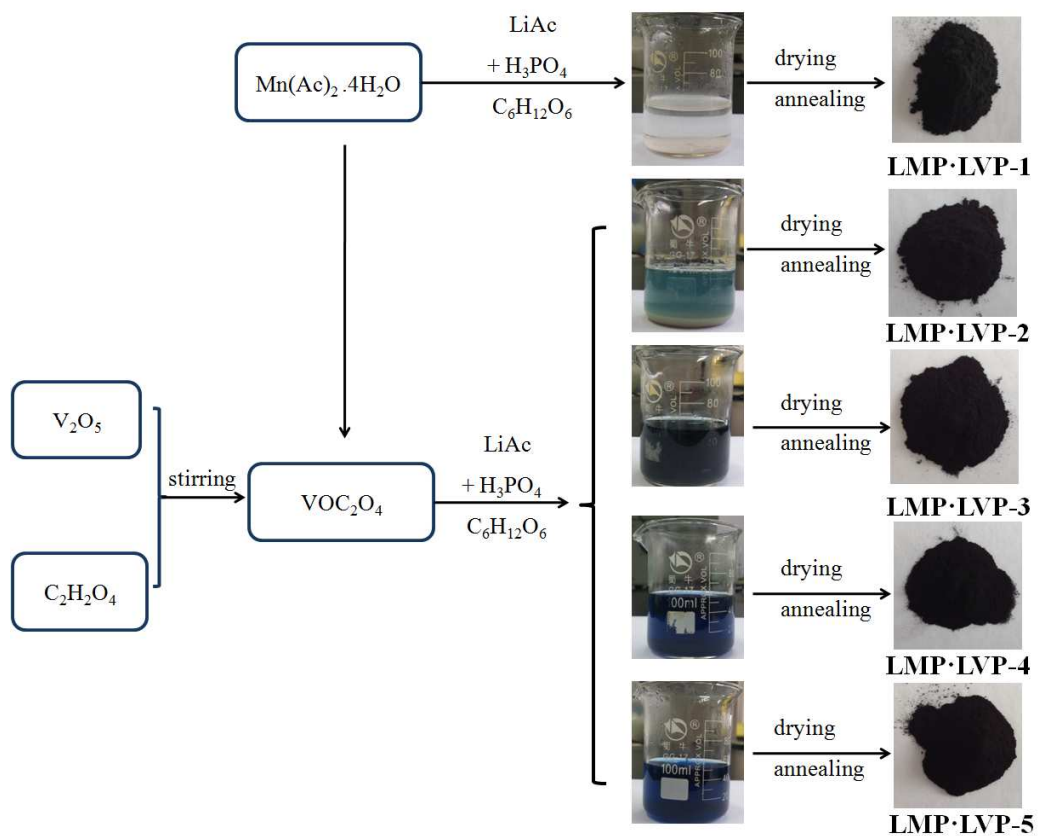


Figure S1. Synthesis process and related photographs of LMP·LVP samples.

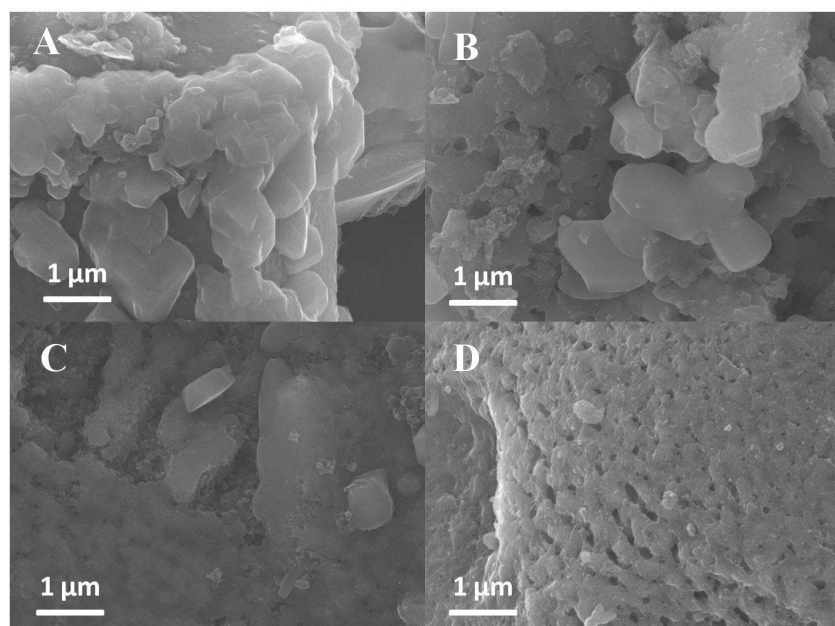


Figure S2. (A) SEM image of LMP·LVP-1. (B) SEM image of LMP·LVP-2. (C) SEM image of LMP·LVP-4. (D) SEM image of LMP·LVP-5.

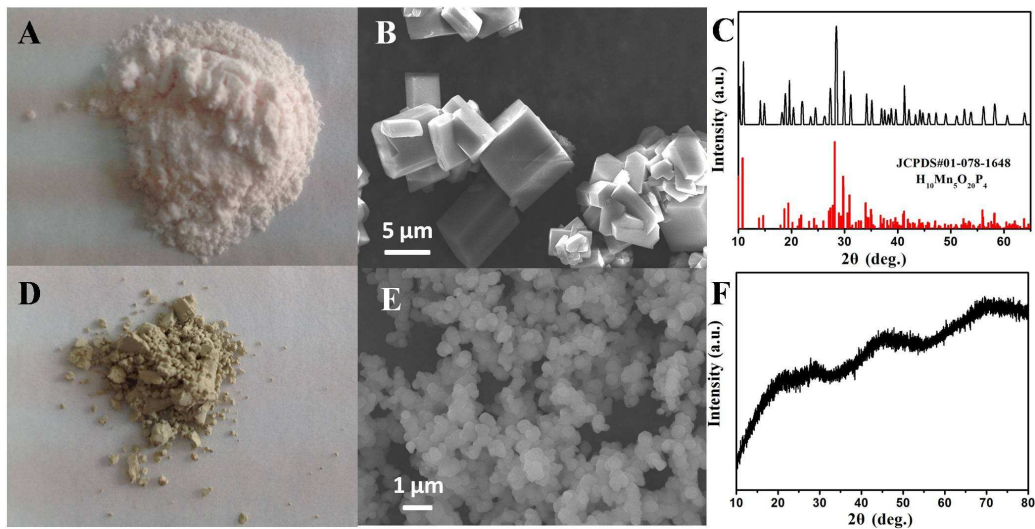


Figure S3. Detailed information of precipitate collected during the synthesis process of LMP·LVP-1 (A: related photograph; B: SEM image; C: XRD result) and LMP·LVP-2 (D: related photograph; E: SEM image; F: XRD pattern).

Table S1. The lattice parameters of LMP in the LMP·LVP-2 to LMP·LVP-5.

LMP·LVP	Lattice Parameters			
	a (Å)	b (Å)	c (Å)	V (Å ³)
2	6.08756	10.39822	4.78617	302.96372
3	6.07624	10.34829	4.78761	301.03877
4	6.13811	10.29815	4.70636	297.49440
5	6.09075	10.24482	4.71498	294.20838

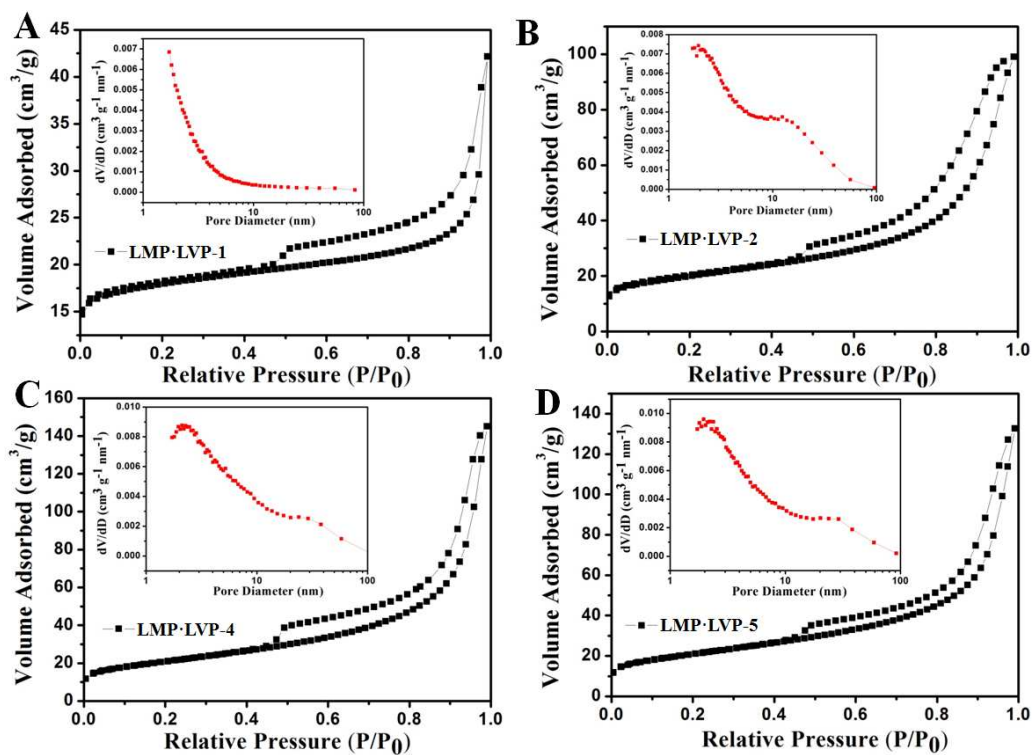


Figure S4. The N_2 adsorption-desorption isotherms of LMP·LVP samples (A: LMP·LVP-1; B: LMP·LVP-2; C: LMP·LVP-4; D: LMP·LVP-5). The inset shows the corresponding pore size distribution curve determined using the BJH method.

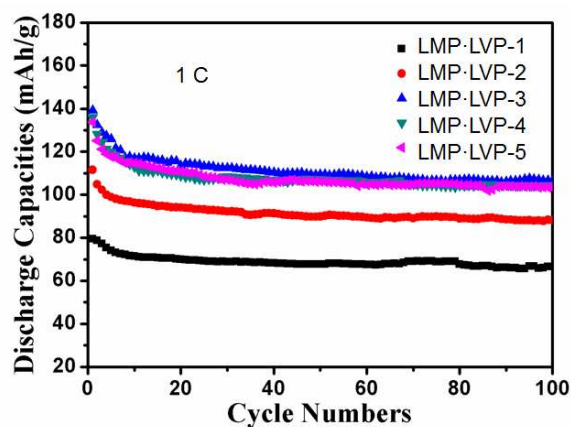


Figure S5. Electrochemical performances of the LMP·LVP samples at 1C.

Table S2. The data of BET surface area and pore volume from LMP·LVP-1 to LMP·LVP-5.

LMP·LVP	1	2	3	4	5
BET Surface Area (m²/g)	58.2	65.6	68.3	72.9	73.2
Pore Volume (cm³/g)	0.046	0.146	0.331	0.217	0.197

Table S3. The detailed electrochemical capacities and capacity retentions during rate cycling test and common tests.

	Rate cycling test					Common cycling test				
	0.5 C	1 C	2 C	5 C	10 C	0.5 C	1 C	2 C	5 C	10 C
1st capacity (mAh/g)	155.4	121.7	120.2	114.5	110.7	152.5	139.2	133.7	121.1	115.7
10th capacity (mAh/g)	132.1	120.6	118.6	112.4	110.2	126.8	116.8	114.7	106.4	108.4
50th capacity (mAh/g)						112.3	109.4	106.2	100.1	101.7
100th capacity (mAh/g)						109.2	106.3	103.3	96.2	98.4
10th capacity Retention (%)	85	99.1	98.7	98.2	99.5	83.1	83.9	85.8	87.6	93.7
50th capacity Retention (%)						73.6	78.6	79.4	82.7	87.9
100th capacity Retention (%)						71.6	76.4	77.3	79.4	85