

Supporting Information

Layer-structured $P3\text{-K}_{0.5}\text{Mn}_{0.95}\text{W}_{0.05}\text{O}_2$ for Enhanced Potassium-ion Batteries by Mitigating Phase Transformation

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KEYWORDS

Potassium ion battery; layer-structured oxide; cathode materials; structural stability; phase transformation

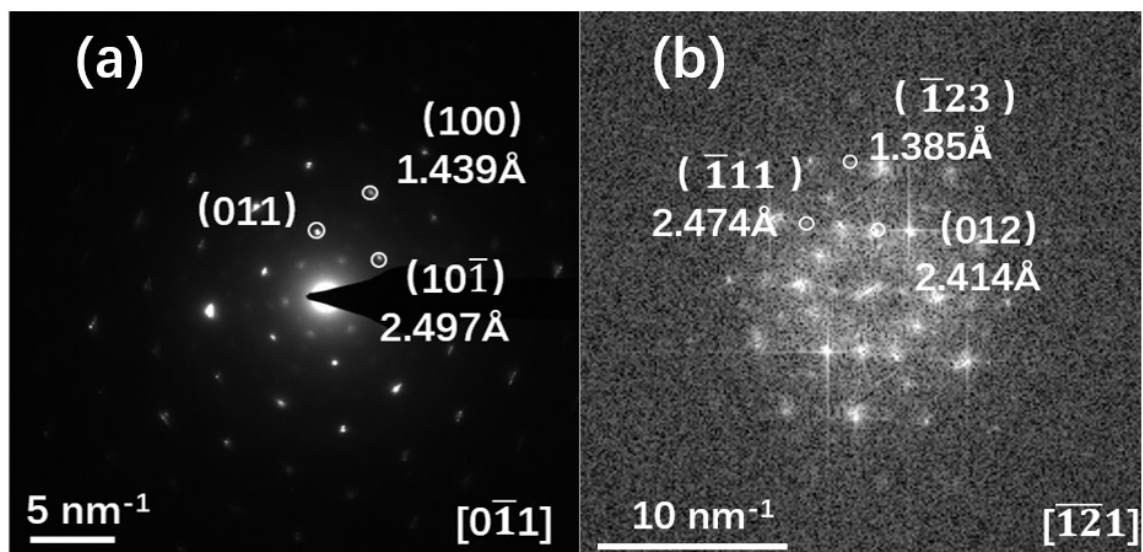


Figure S1. (a, b) Fast Fourier transform (FFT) patterns of KMWO

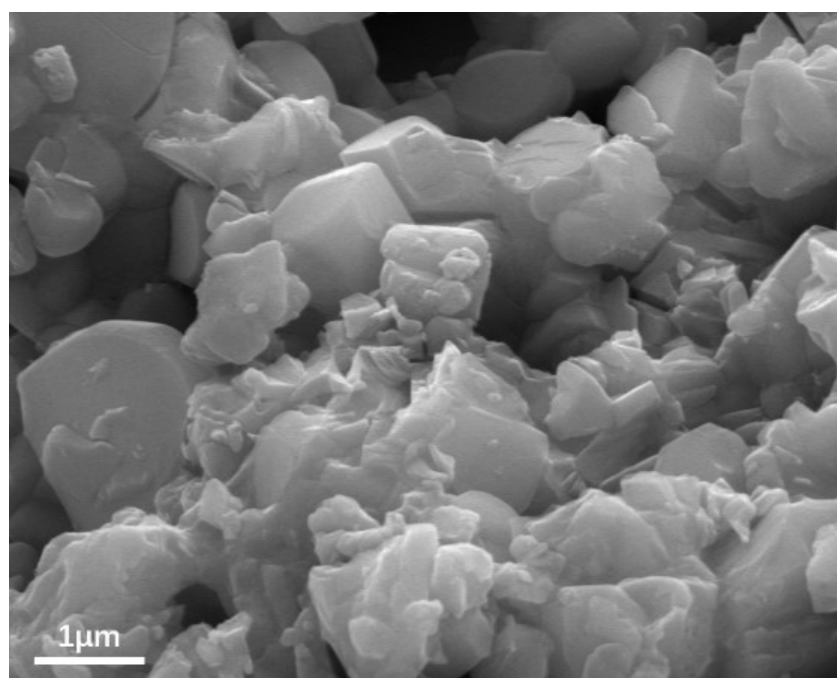


Figure S2. SEM image of KMO

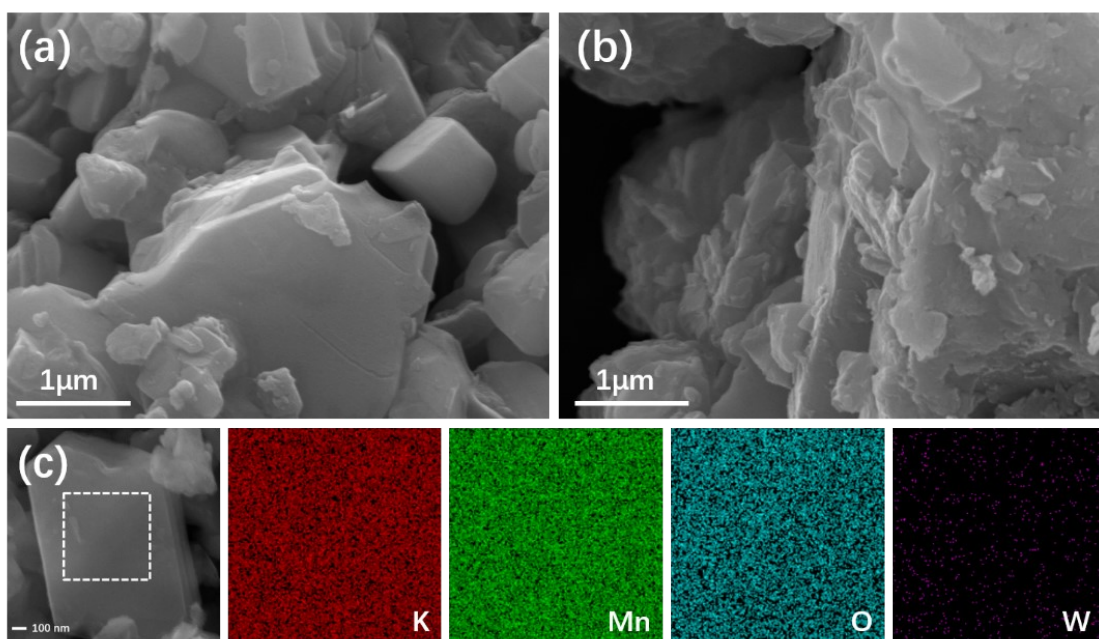


Figure S3. a, b) SEM image of KMWO at different magnification. c) EDS elemental mapping of KMWO

Table S1. Structural parameters of KMO obtained by Rietveld refinement of Figure 1.

Atom	x	y	z	B	Occ.
O1	0.31369	0	0.0449	1.486	1.034
K1	-3.65726	0	1.56993	0.235	0.108
Mn1	0	0	0	0.803	1.308
O2	-0.26641	0	0.53281	1.486	0.962

Table S2. Structural parameters of KMWO obtained by Rietveld refinement of Figure 1.

Atom	x	y	z	B	Occ.
O1	0.35981	0	0.12086	0.514	1.152
K1	-2.90676	0	1.58737	29.924	0.1872
Mn1	0	0	0	6.747	1.372856
O2	-0.30242	0	0.50785	0.514	0.798
W1	0	0	0	6.747	0.05

Table S3. Results of fitting the variable temperature electrochemical impedance spectra to the magnitude of the activation energy.

Sample	Temperature (K)	R _{ct} (Ω)	E _a (KJ mol ⁻¹)
KMO	303.15	5603	96.77
	308.15	2875	
	313.15	2248	
	318.15	1379	
	323.15	922	
KMWO	303.15	5039	73.43
	308.15	2310	
	313.15	1746	
	318.15	926	
	323.15	276	