Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting Information

From α-$NaMnO_2$ to Crystal Water Containing Na-birnessite: Enhanced Cycling Stability for Sodium-ion Batteries

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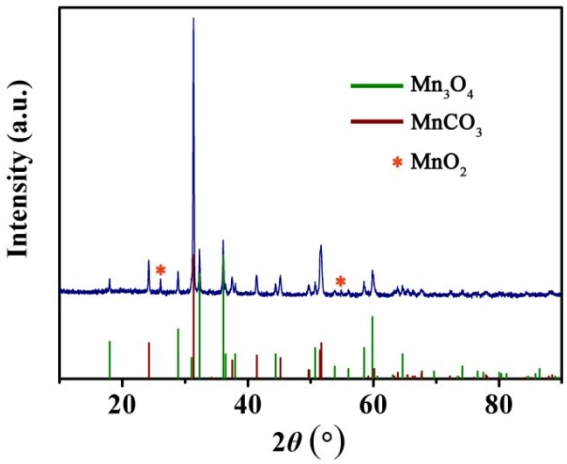

Fig. S1 The XRD pattern of $MnCO_3$ obtained by hydrothermal method.

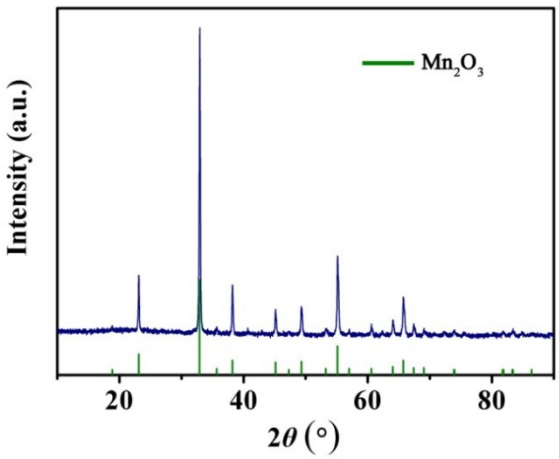

Fig. S2 The XRD pattern of Mn_2O_3 obtained from $MnCO_3$.

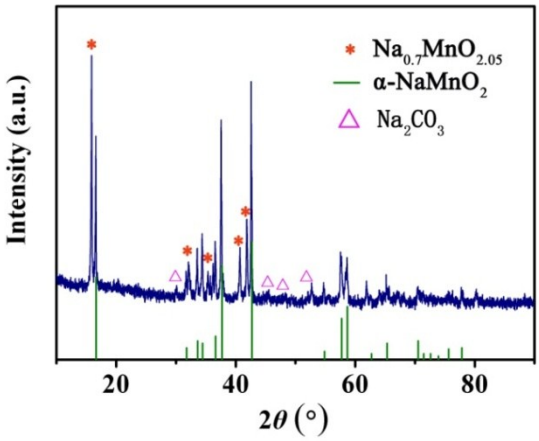

Fig. S3 The XRD pattern of M700.

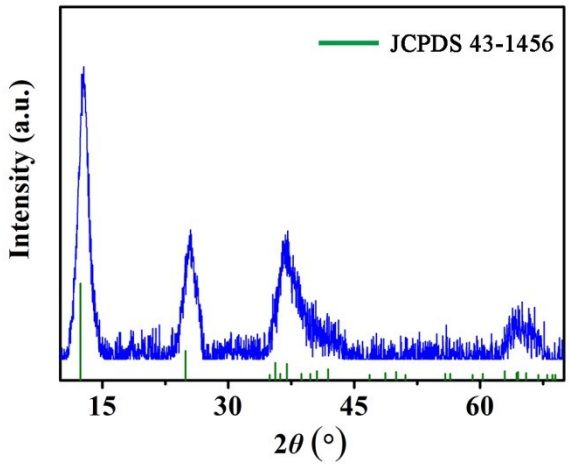

Fig. S4 The XRD pattern of Na-birnessite obtained by oxidation method.

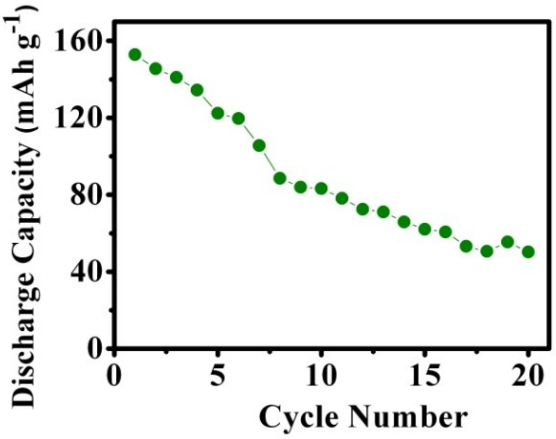

Fig. S5 The cyclic performance between 1.0 and 4.5 V (vs. Na^+/Na) of MW.

Table S1 The ICP results of Na-birnessite.

Sample	Na	Mn
Na-birnessite	0.274	1.00

Table S2 The content of Mn^{3+} and Mn^{4+} in α-$NaMnO_2$ and Na-birnessite.

Sample	Content (%)	
	Mn^{3+}	Mn^{4+}
α-$NaMnO_2$	60.14%	39.86%
Na-birnessite	10.22%	89.78%

Table S3 The energy density only based on the cathode materials.

Sample	Charge/Discharge current density (mAh g^{-1})	Gravimetric Energy Density (Wh kg^{-1})	References
$NaMnO_2$	10	327	This work
Na-birnessite	10	284 (2-3.8 V)	This work
	20	393 (1-4.5V)	This work
$Na_{0.85}Li_{0.17}Ni_{0.21}Mn_{0.64}O_2$	15	323	6
$Na_{0.44}MnO_2$	12.2	224	7, 8
P2-$Na_{2/3}Fe_{1/2}Mn_{1/2}O_2$	12	523	7, 9
O3-$NaFe_{1/2}Mn_{1/2}O_2$	12	303	7, 9
$NaFePO_4$	7.5	338	7, 10
$Na_3V_2(PO_4)_3$	11.7	316	7,11
$Na_{2/3}Cu_{0.33}Mn_{0.67}O_2$	10	281	12
$Na_{2/3}Cu_{0.14}Mn_{0.86}O_2$	10	391	12