Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Hierarchical structured Mn_2O_3 nanomaterials with excellent electrochemical properties for lithium ion batteries

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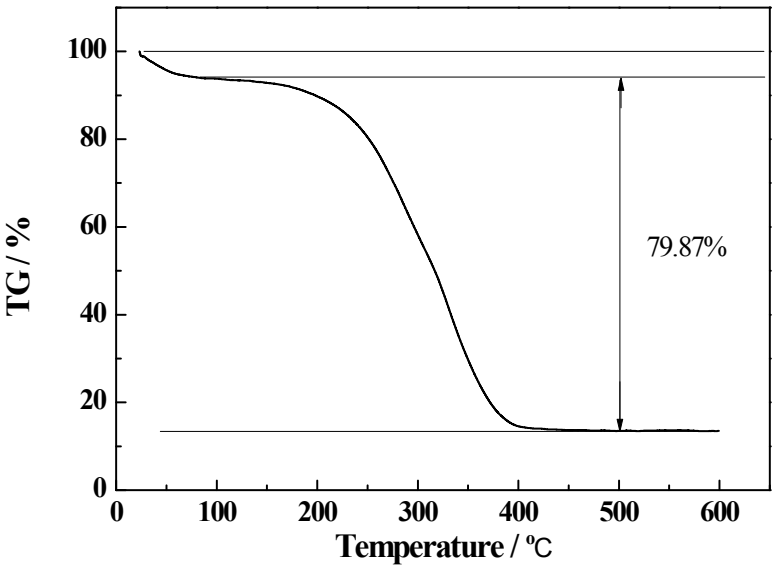

Fig.S1 TG curve of leave-template adsorbed $Mn(CH_3COO)_2$

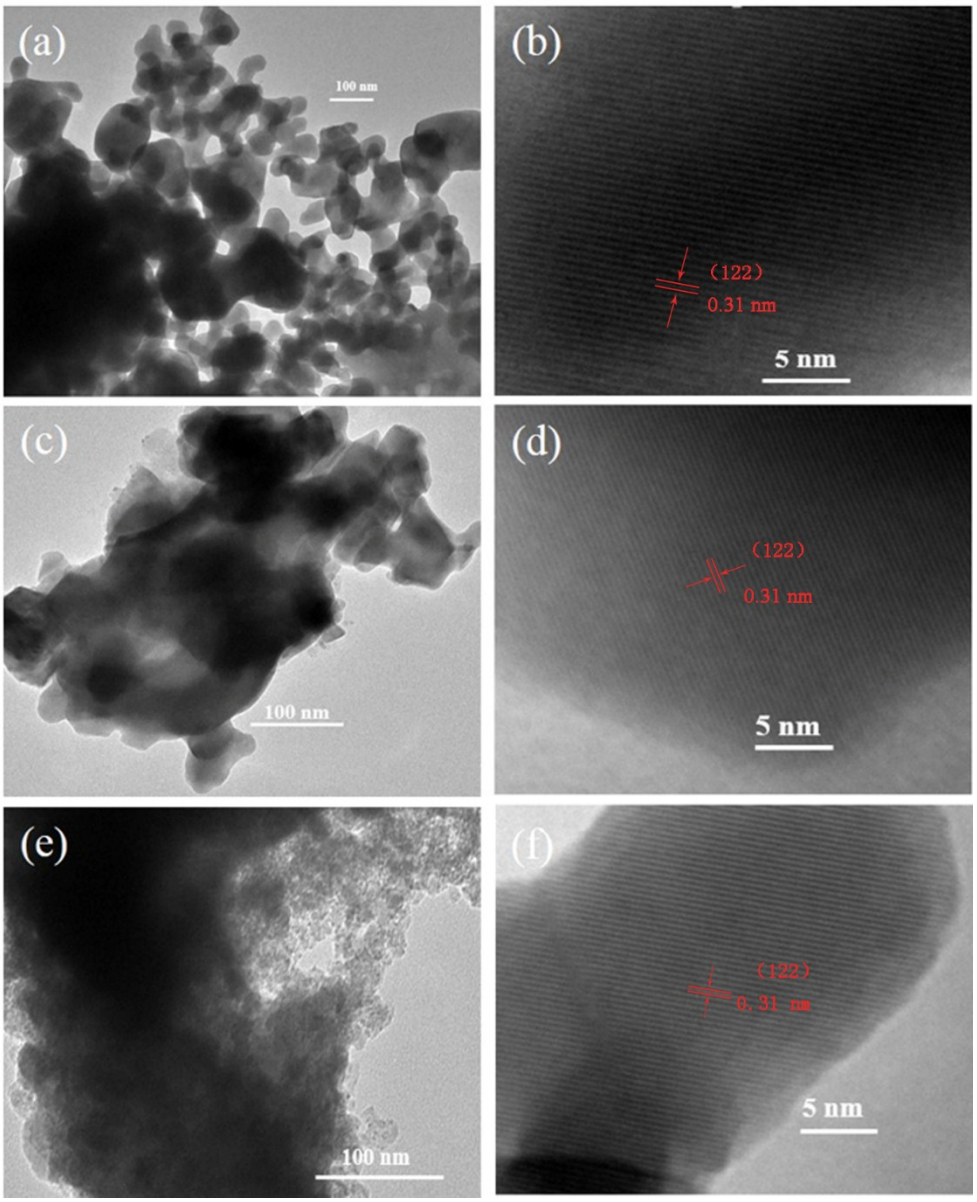

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Fig. S2 TEM images of G-Mn_2O_3 (a,b), P-Mn_2O_3 (c,d) and T-Mn_2O_3 (e,f).

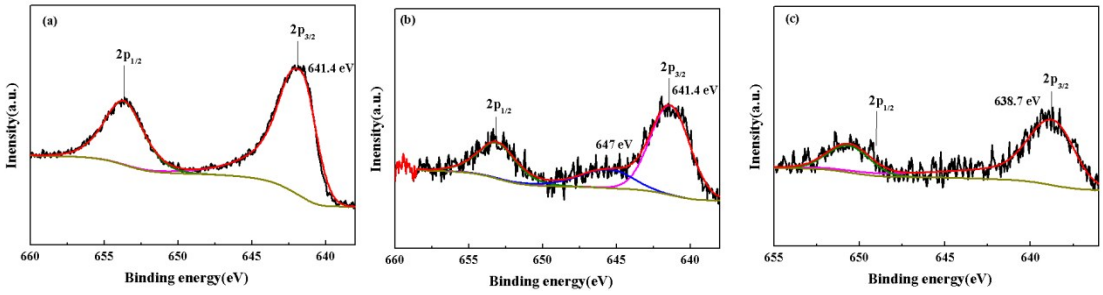

Fig.S3 XPS spectra of G-Mn_2O_3 material at different discharge state (a) pristine material, (b) discharge state at 0.25 V and (c) discharge state at 0.01 V.

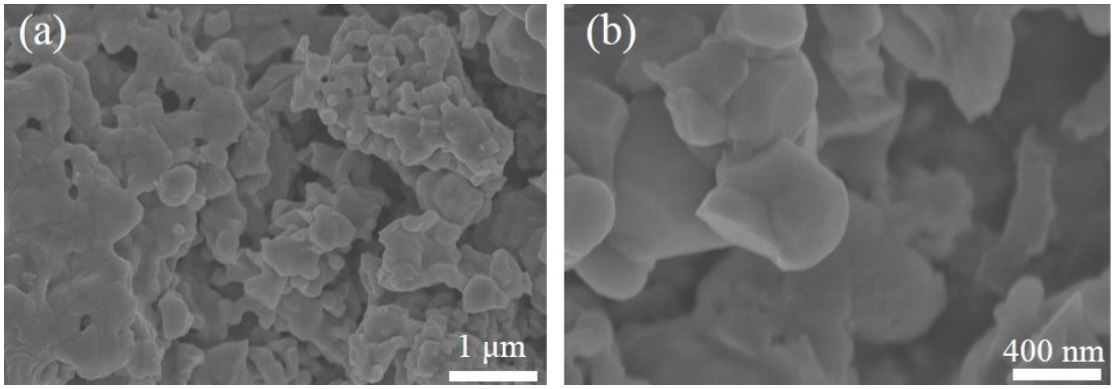

Fig.S4 SEM images of the powder-Mn_2O_3.

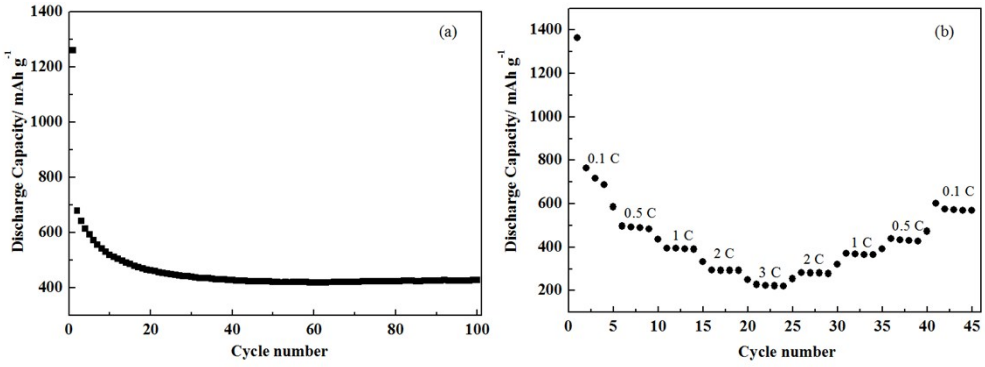

Fig.S5 (a) Cycle performance and (b) rate capability of powder -Mn_2O_3.

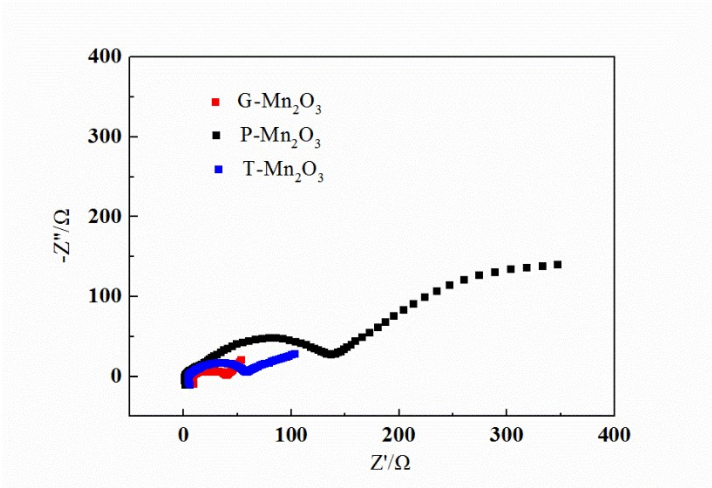

Fig.S6 Electrochemical impedance spectra test were performed after cycling at 0.3 C in 300th cycle. The OCV of all the cells was 0.01 V (Discharge period).

Morphology	**Cpacity (mAh g^{-1})/cycles/ current density (mA g^{-1})**	**Rate capability(mAh g^{-1})**			**References**
		1000	2000	3000	
Hierarchically microsphere	920/100/200		528.4		[1]
Porous nanoplates	813.7/50/100		448.4		[2]
nanowires	502.3/100/100	220			[3]
Hierarchically porous single crystals	845/50/100	410			[4]
porous octahedra	755/100/200	509	411		[5]
Hollow core–shell microspheres	620/500/1000	343	237		[6]
Hierarchically porous structure	1274.6/300/300	503.1	419.5	381.5	Our work

Table S1 Comparison of electrochemical performance of Mn_2O_3 materials prepared in this study with those reported in the literatures.

Cycle number	R_e	R_{ct}
1^{st}	7.0	582.6
100^{th}	7.8	286.2
200^{th}	12.5	58.5
300^{th}	9.2	46.8

Table S2 Related resistance parameters of G-Mn_2O_3 electrode in the 1^{st}, 100^{th}, 200^{th}, and 300^{th} cycles.

References

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