Metal-Organic Framework-derived Porous $Mn_{1.8}Fe_{1.2}O_4$ Nanocubes with an interconnected channel structure as High-Performance Anodes for Lithium Ion Batteries

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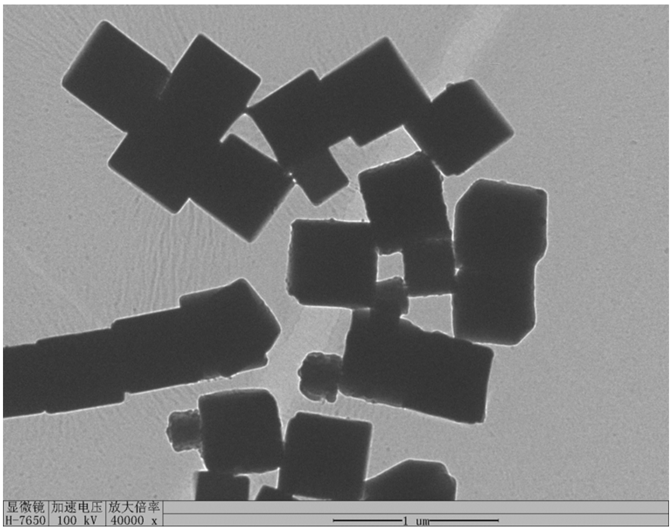

Figure S1. TEM image of $Mn_3[Fe(CN)_6]_2 \cdot nH_2O$ nanocubes.

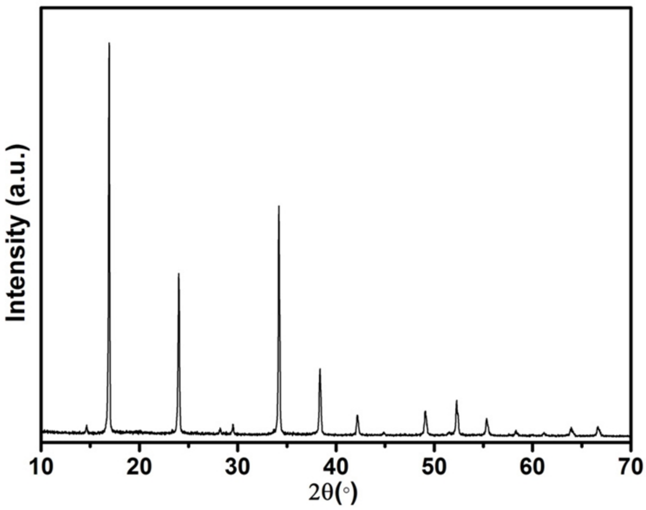

Figure S2. XRD pattern of $Mn_3[Fe(CN)_6]_2 \cdot nH_2O$ nanocubes.

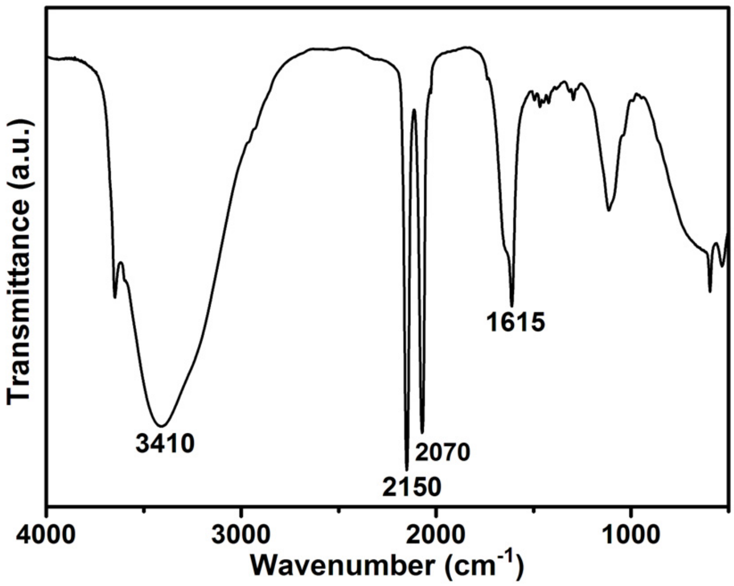

Figure S3. IR spectrum of $Mn_3[Fe(CN)_6]_2 \cdot nH_2O$ nanocubes.

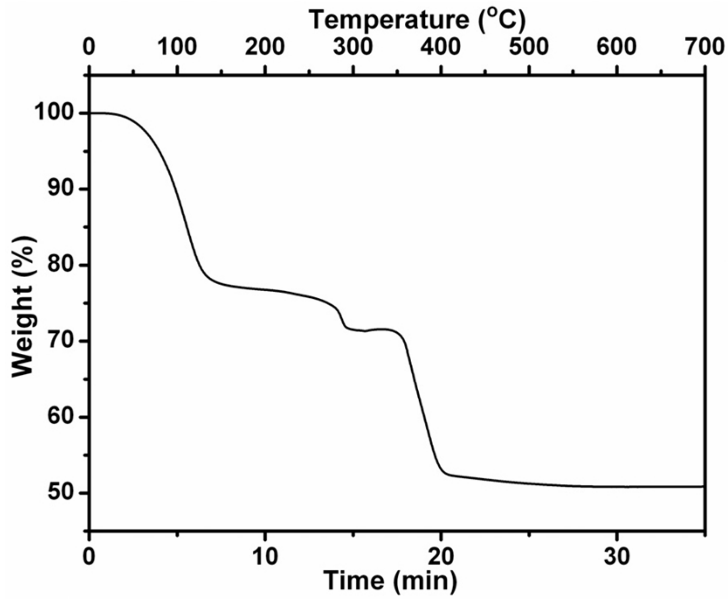

Figure S4. TGA curve of $Mn_3[Fe(CN)_6]_2 \cdot nH_2O$ nanocubes under a flow of the mixed carrier gas (80 vol% He and 20 vol% O_2), with a heating rate of 20 ^{o}C min^{-1} .

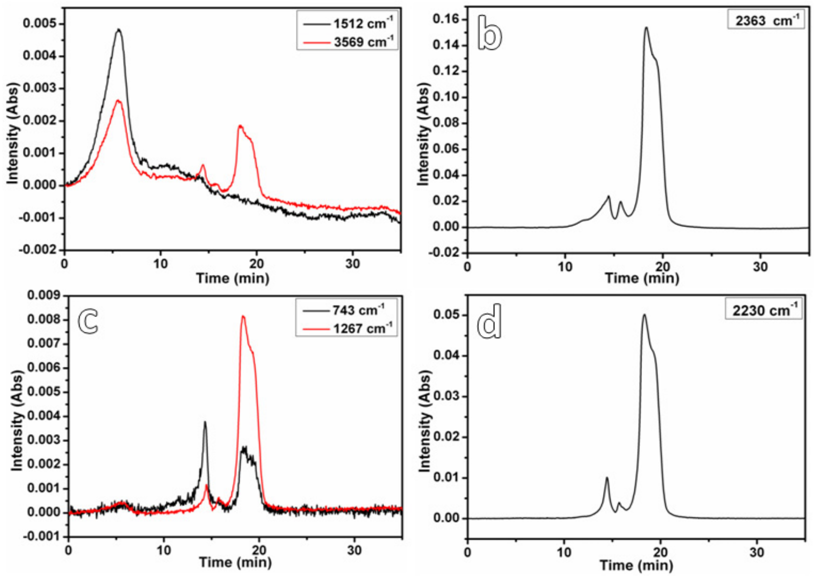

Figure S5. IR absorbance variation of (a) H_2O, (b) CO_2, (c) NO_2 and $(CN)_2$ as a function of time.

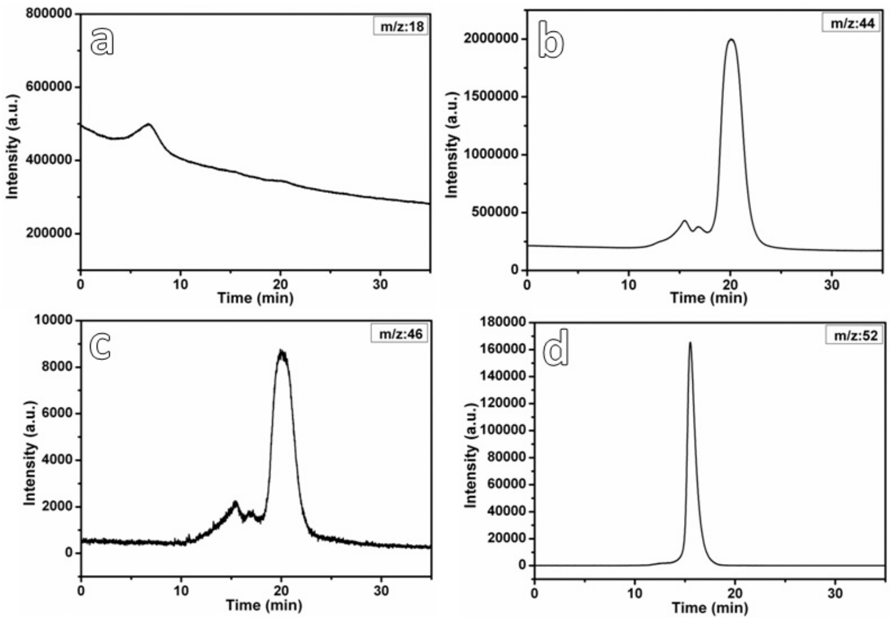

Figure S6. MS intensity variation of (a) H_2O, (b) CO_2, (c) NO_2 and $(CN)_2$ as a function of time.

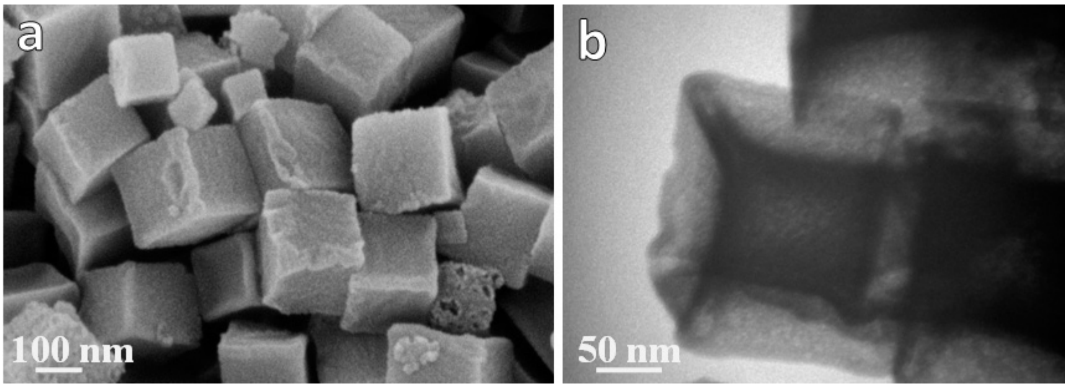

Figure S7. The high-magnification FESEM (a) and TEM (b) images of $Mn_{1.8}Fe_{1.2}O_4$ nanocubes.

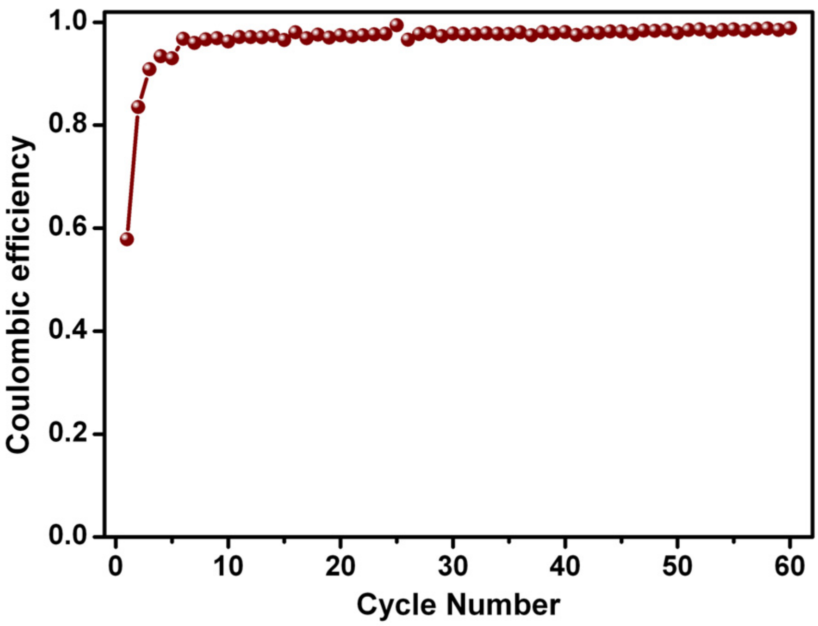

Figure S8. The coulombic efficiency of the $Mn_{1.8}Fe_{1.2}O_4$ nanocubes for lithium storage at a current density of 200 mA g^{-1}.

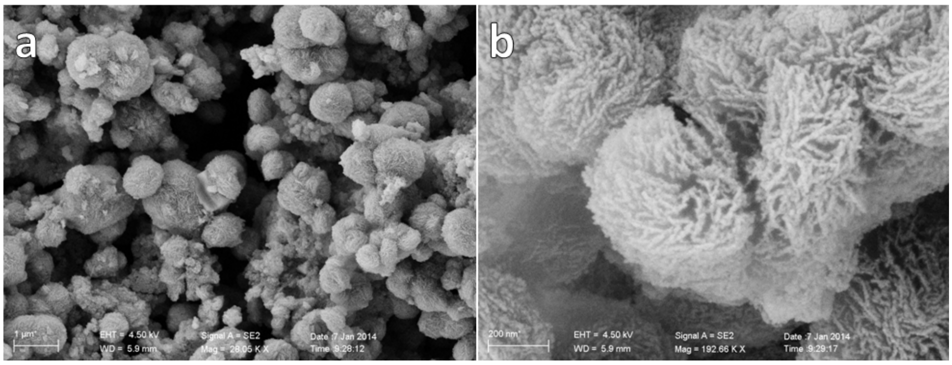

Figure S9. Morphological analysis of the electrode cycled for 20 cycles at a current density of 200 mA g^{-1}.

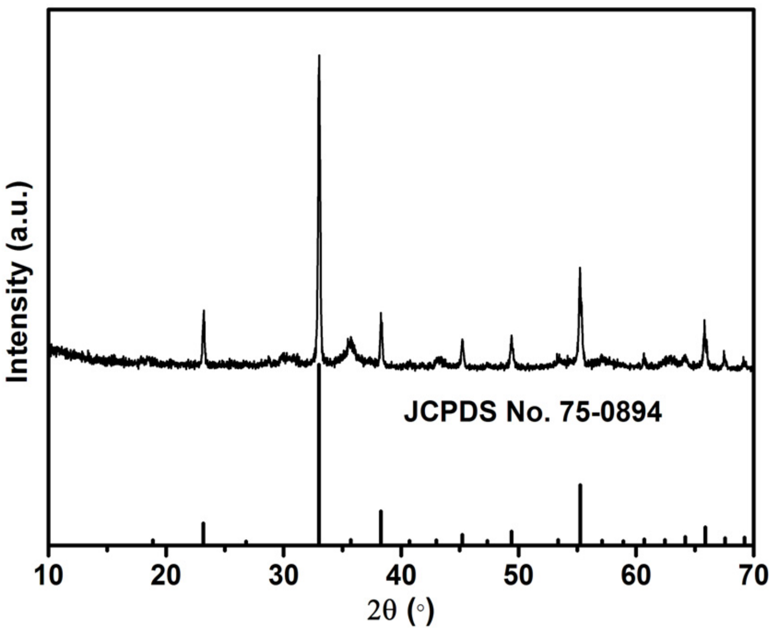

Figure S10. XRD pattern of as-prepared $Mn_xFe_{2-x}O_3$ obtained at 600 ^oC.

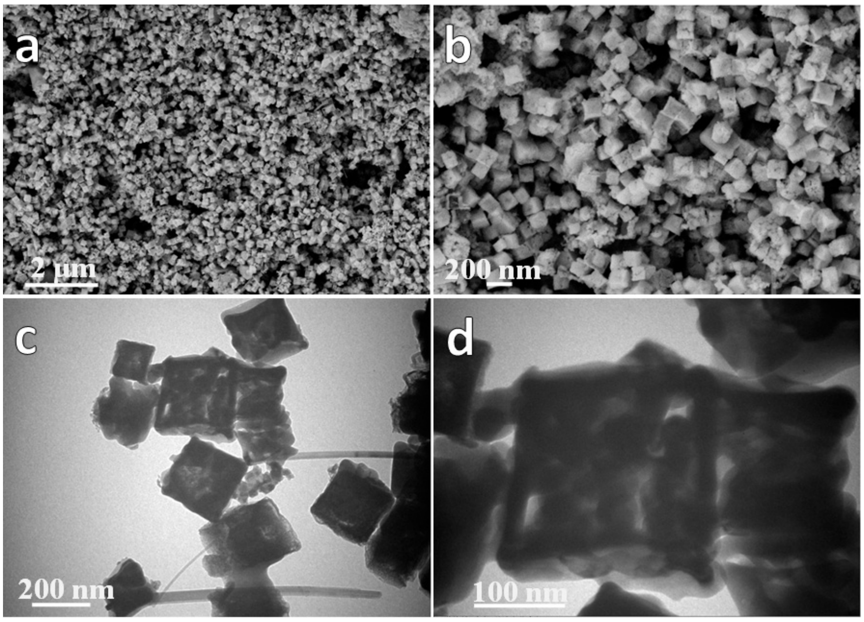

Figure S11. FESEM images of $Mn_xFe_{2-x}O_3$ sample at different magnification (a and b). TEM images of $Mn_xFe_{2-x}O_3$ sample at different magnification (c and d).

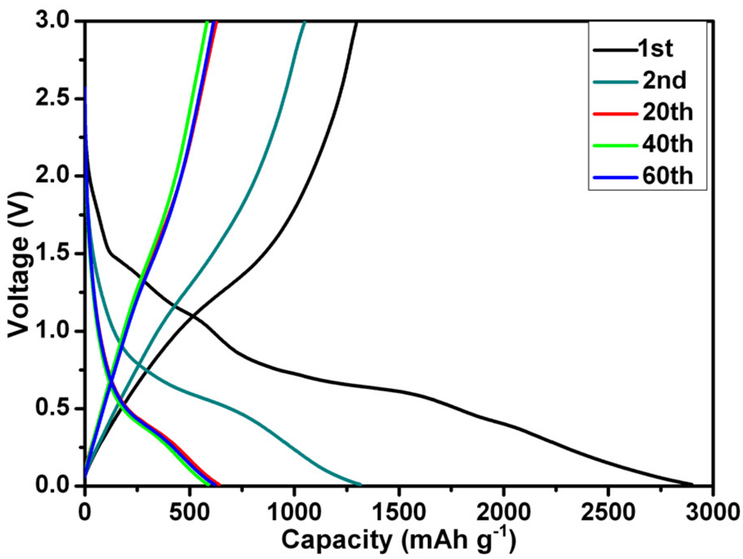

Figure S12. Discharge-charge curves of $Mn_xFe_{2-x}O_3$ sample (600 ^{o}C) at a current density of 200 mA g^{-1}.

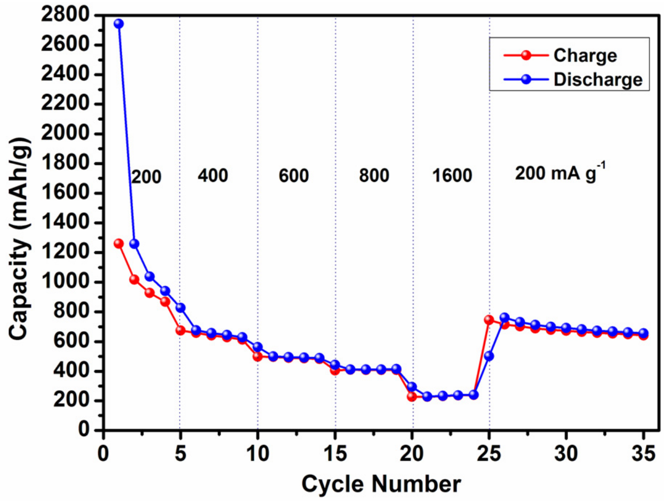

Figure S13. Rate capability test for the $Mn_xFe_{2-x}O_3$ nanocubes at various current densities (100-1600 mA g^{-1}).