

Electronic Supplementary Information: Nanoscale ion intermixing induced activation of Fe₂O₃/MnO₂ composites for application in lithium ion batteries

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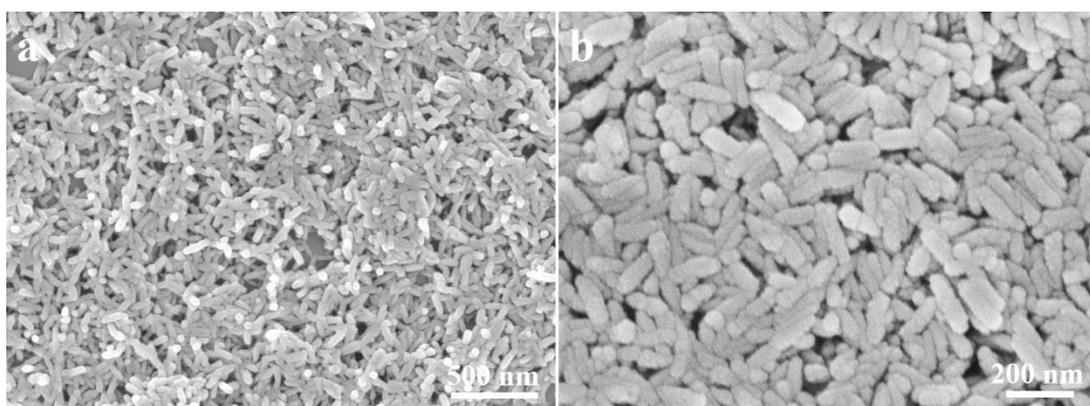


Figure S1 FESEM images of FeOOH nanorods

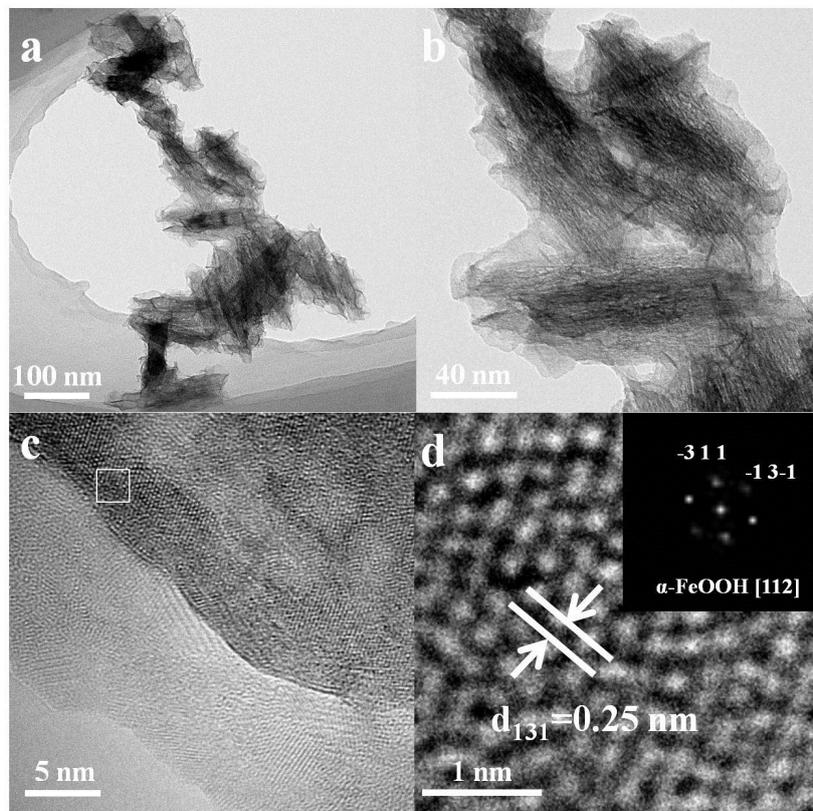


Figure S2 TEM (a, b) and high resolution TEM (c, d) images of the FeOOH/MnO₂ nanorods.

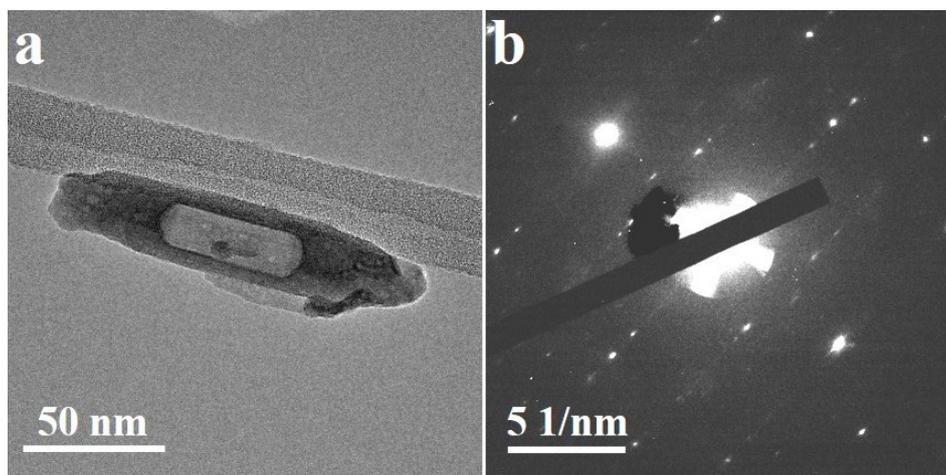


Figure S3 TEM image (a) and SAED pattern (b) of the hollow-structured Fe₂O₃/MnO₂ nanorod.

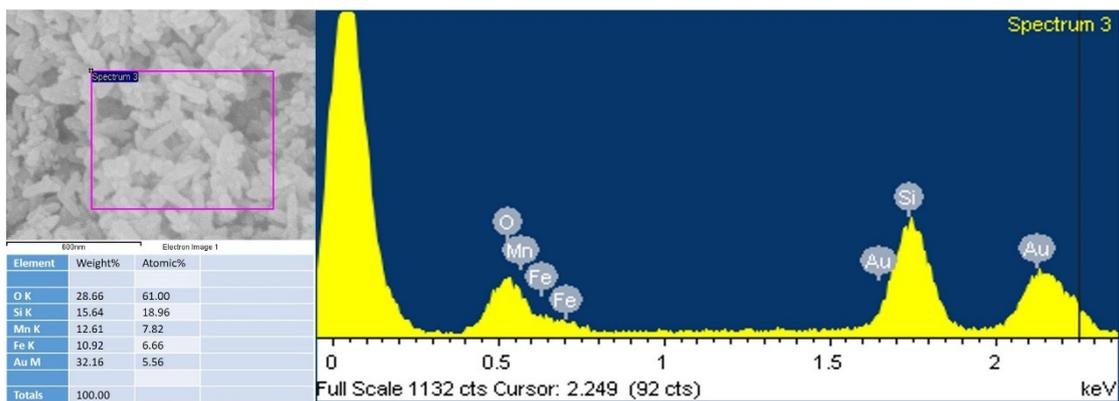


Figure S4 EDX quantitative analysis of the hollow-structured $\text{Fe}_2\text{O}_3/\text{MnO}_2$ composite on the selected region.

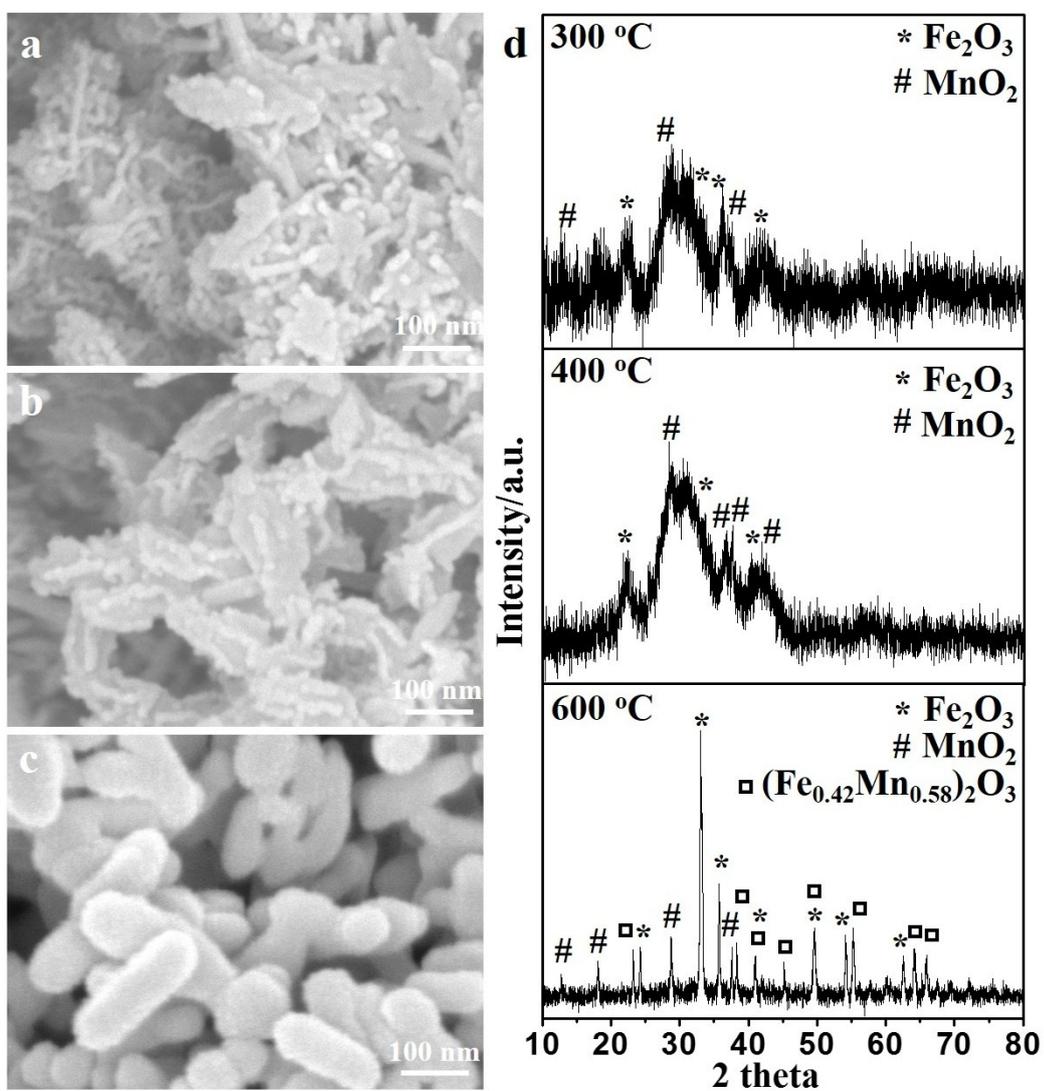


Figure S5 SEM images and XRD patterns (d) of the as-obtained products from the subsequent annealing treatment of 300 (a), 400 (b) and 600 (c) °C.

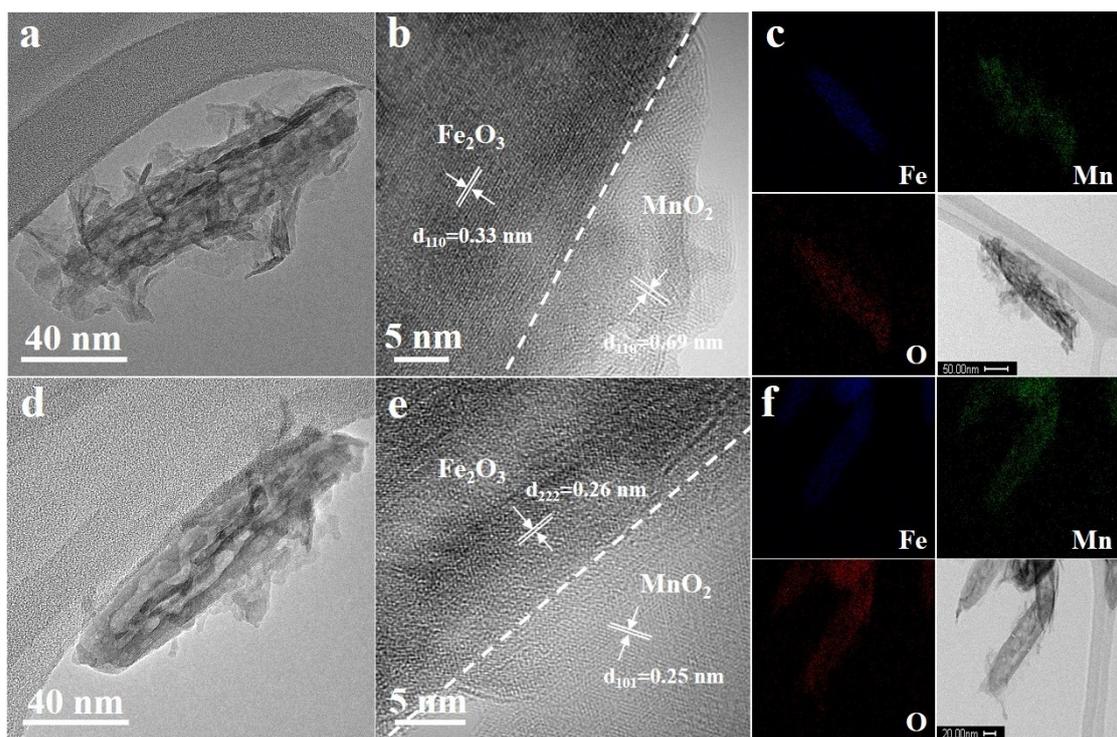


Figure S6 TEM (a and d) and high resolution TEM (b and e) images and elemental mapping (c and f) of the as-obtained products at 300 and 400 °C, respectively.

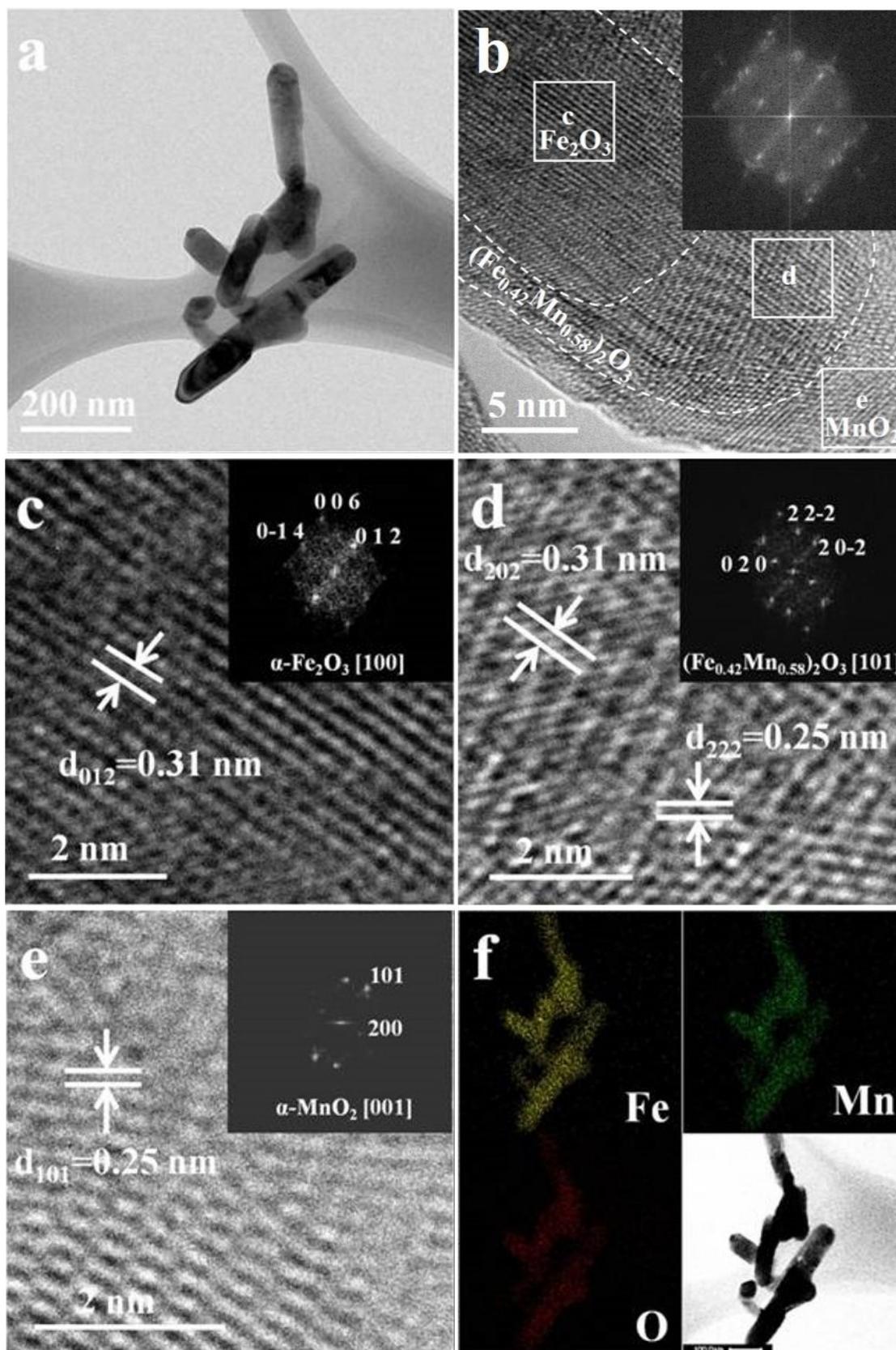


Figure S7 TEM (a), high resolution TEM (b-e) images and elemental mapping (f) of the as-obtained product at 600 °C.

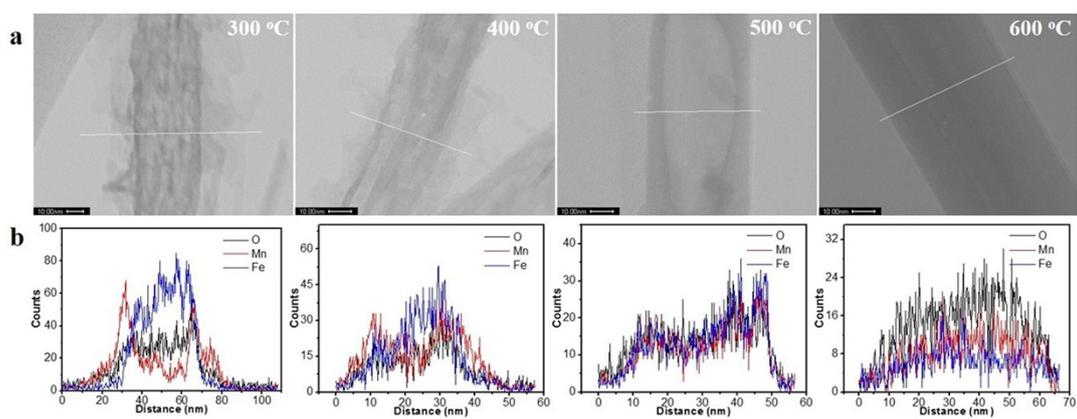


Figure S8 Bright-field scanning TEM images (top) and corresponding EDX line-scanning profiles (bottom) of the products annealed at 300, 400, 500 and 600 °C.

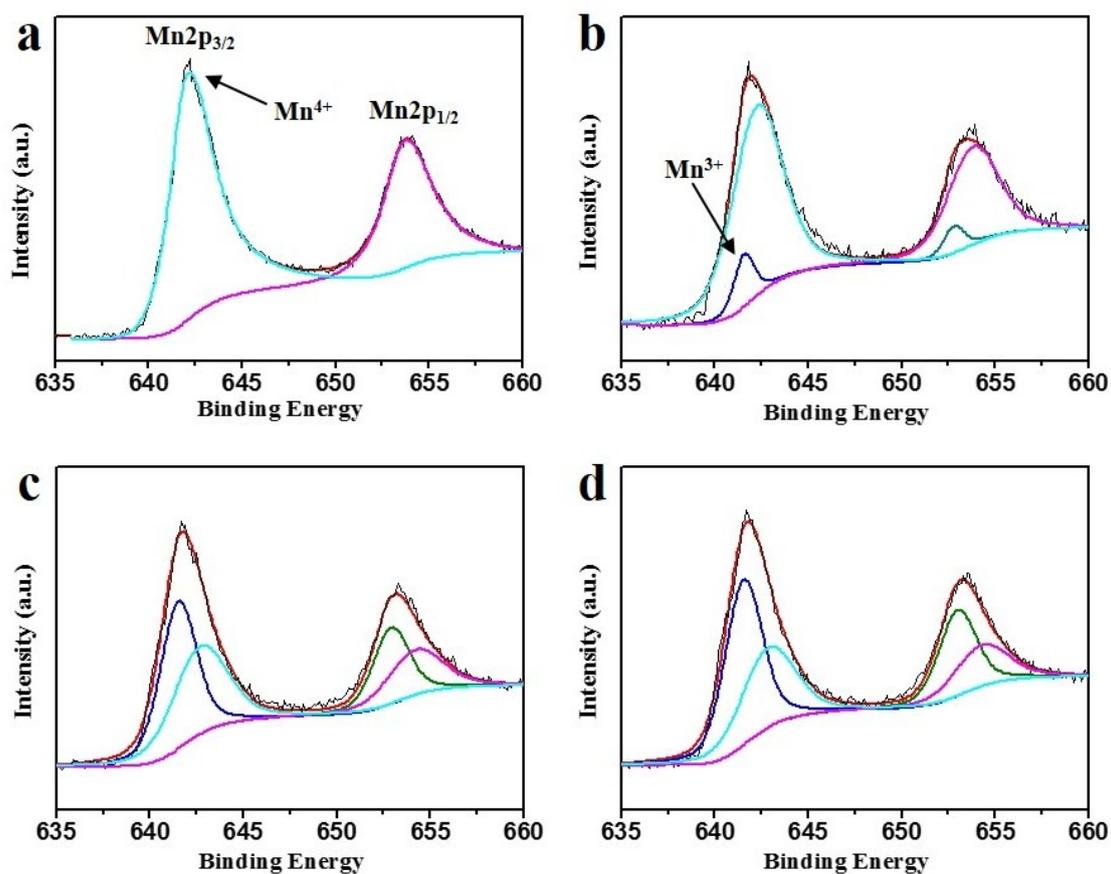


Figure S9 High resolution Mn_{2p} XPS spectrum for the products annealed at 300 (a), 400 (b), 500 (c) and 600 (d) °C.

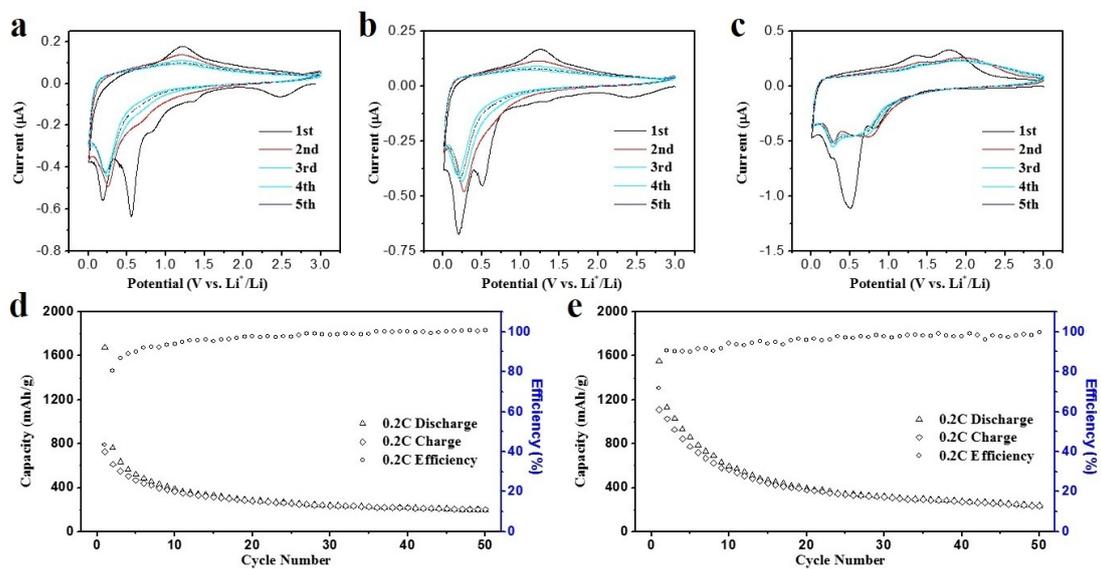


Figure S10 the first five cyclic voltammogram (CV) curves of the Fe-Mn-300 (a), Fe-Mn-400 (b) and Fe-Mn-600 (c) anodes and cycling performance of the Fe-Mn-300 (d), Fe-Mn-400 (e) electrodes at a current of 0.2C.