Ni$_{0.33}$Mn$_{0.33}$Co$_{0.33}$Fe$_2$O$_4$ nanoparticles anchored on oxidized carbon nanotubes as advanced anode materials in Li-ion batteries

Zailei Zhang,* a Guangwei Kan,a Wenfeng Ren,a Qiangqiang Tan,*a Ziyi Zhongb and Fabing Sua

a State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China 100190,
b Institute of Chemical Engineering and Sciences, A*Star, 1 Pesek Road, Jurong Island, Singapore 627833

* To whom correspondence should be addressed. E-mail address: zhangzl@ipe.ac.cn (Z. Zhang); qtan@ipe.ac.cn (Q. Tan); fbsu@ipe.ac.cn (F. Su), Tel.: +86-10-82544850, Fax: +86-10-82544851.
Fig. S1 XPS spectra for the OCNT.
Fig. S2 Elemental mapping images of Ni, Mn, Co, Fe, and O for NMCFO nanoparticles.
Fig. S3 TEM images of (a) Ni$_{0.2}$Mn$_{0.4}$Co$_{0.4}$Fe$_2$O$_4$ and (b) Ni$_{0.4}$Mn$_{0.4}$Co$_{0.2}$Fe$_2$O$_4$. 
Fig. S4 XRD pattern (a) and TEM images (b and c) of NMCFO/OCNT precursors.
**Fig. S5** SEM image (a), and TEM images of NMCFO/OCNT-4 (b and c).
**Fig. S6** The first discharge-charge curves of NMCFO, NMCFO/OCNT-1, NMCFO/OCNT-2, NMCFO/OCNT-3, and NMCFO/OCNT-4.
Fig. S7 Cycling property of OCNT at a current density of 50 mA g\textsuperscript{-1}. 
Fig. S8 The cycling property of NMCFO/OCNT-1 at current densities of 50 and 500 mA g\(^{-1}\).
Fig. S9 Rate performance of NMCFO/OCNT-2 at different current densities.
Fig. S10 Nyquist plots of NMCFO and NMCFO/OCNT-1 samples at the electrode potentials from 0.70 to 0.10 V.