Supporting Information

Integrated Fast Assembly of Free-Standing Lithium Titanate/Carbon Nanotube/Cellulose Nanofiber Hybrid Network Film as Flexible Paper-Electrode for Lithium-ion Batteries

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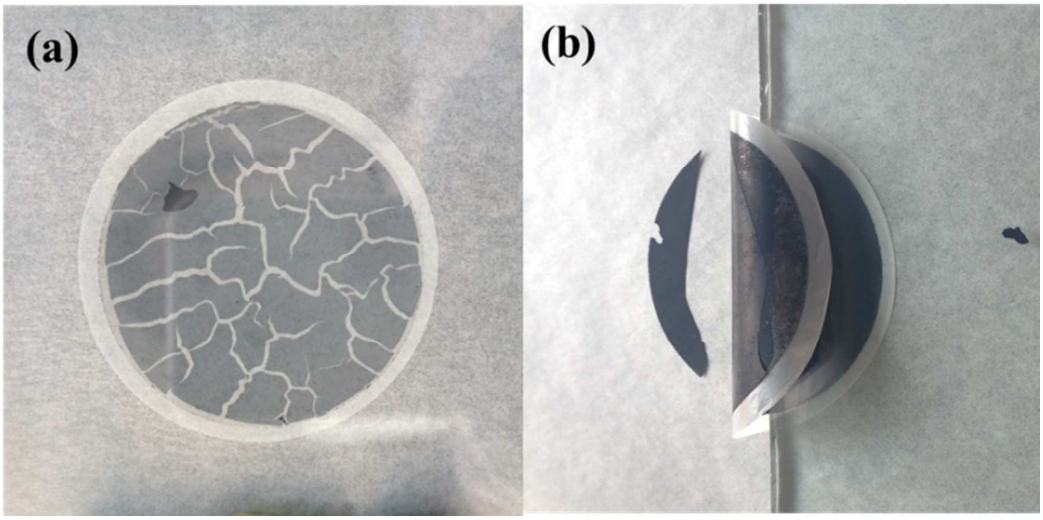

Figure S1. (a) Photograph of LTO/CNT/CNF film with LTO percentage of 80%; (b) Photograph of LTO/CNT film on a PC membrane.

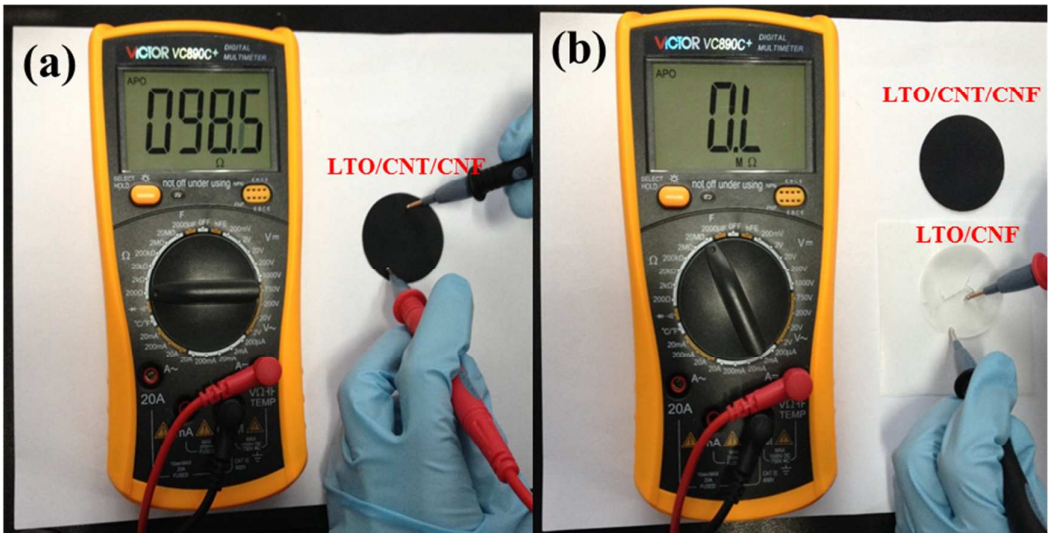

Figure S2. Resistance test of (a) LTO/CNT/CNF film and (b) LTO/CNF film using an ohmmeter. The ohmic resistance of LTO/CNF film is too large to be tested, while the resistance of LTO/CNT/CNF film is 98.5 Ω.

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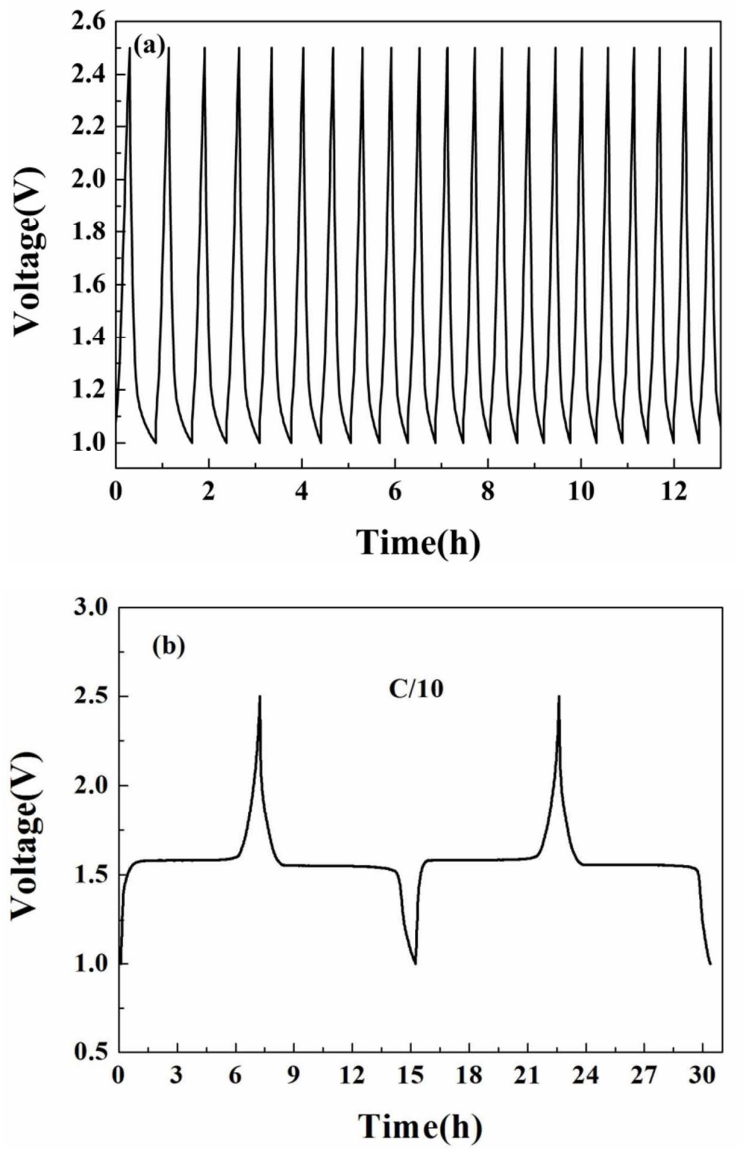

Figure S3. The galvanostatic charge/discharge curves of CNT/CNF film (a) and LTO/CNT/CNF film (b).

To evaluate the contribution of CNT to the capacity of the paper-electrode, the performances of the coin half-cells using CNT/CNF film and LTO/CNT/CNF film as electrode were compared. The CNT/CNF cycled with 10 $\mu A \cdot mg^{-1}$ current density and the LTO/CNT/CNF cycled at C/10 (17.5 $\mu A \cdot mg^{-1}$) between 1.0 and 2.5V, respectively. As a result, the charge and discharge capacity of CNT/CNF is about 3 $mAh \cdot g^{-1}$ (~0.01$mAh \cdot cm^{-2}$), which can be negligible when compared to that of LTO/CNT/CNF (160 $mAh \cdot g^{-1}$).

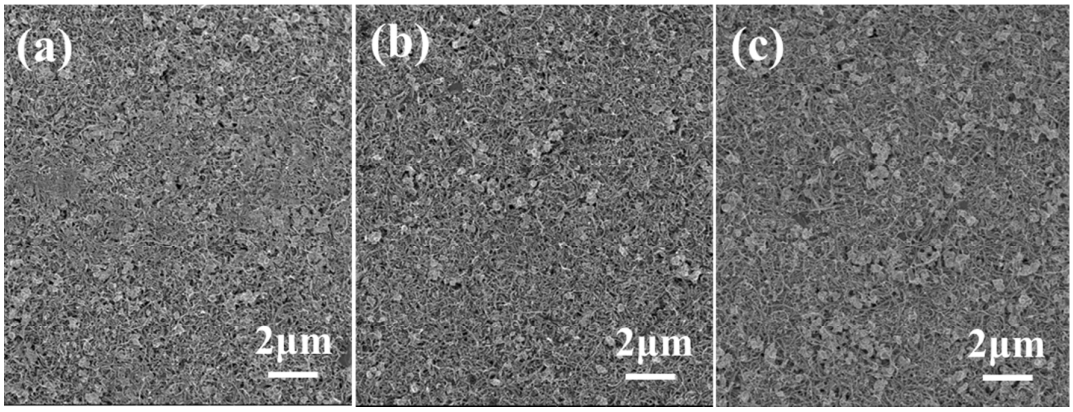

Figure S4. Low-magnification FESEM images of (a) LCC-50, (b) LCC-60 and (c) LCC-70 after cycling at 10 C for 500 cycles.