



Supporting Information

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Efficient Charging of Li-Ion Batteries with Pulsed Output Current of Triboelectric Nanogenerators

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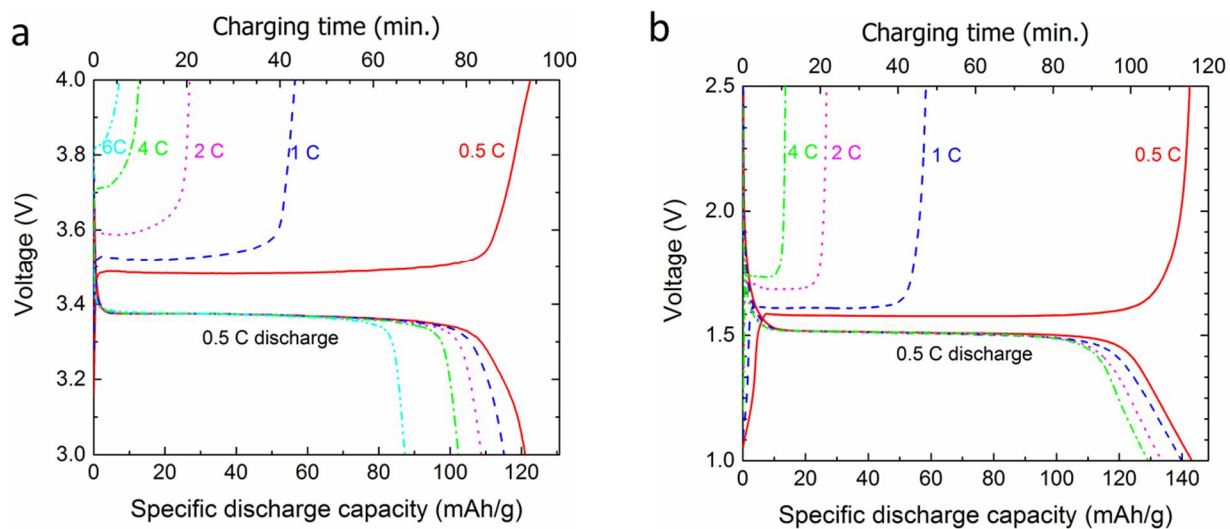


Figure S1. Voltage profiles of LiFePO_4 (a) and $\text{Li}_4\text{Ti}_5\text{O}_{12}$ (b) half cells charged at different C rates and discharged at 0.5 C rate.

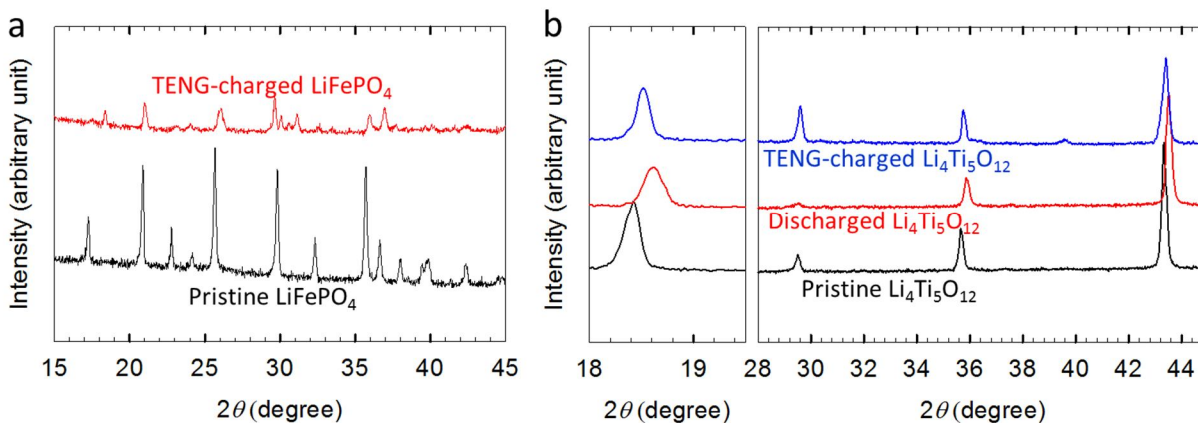


Figure S2. X-ray diffraction patterns of LiFePO_4 (a) and $\text{Li}_4\text{Ti}_5\text{O}_{12}$ (b) before and after the charge by TENG.

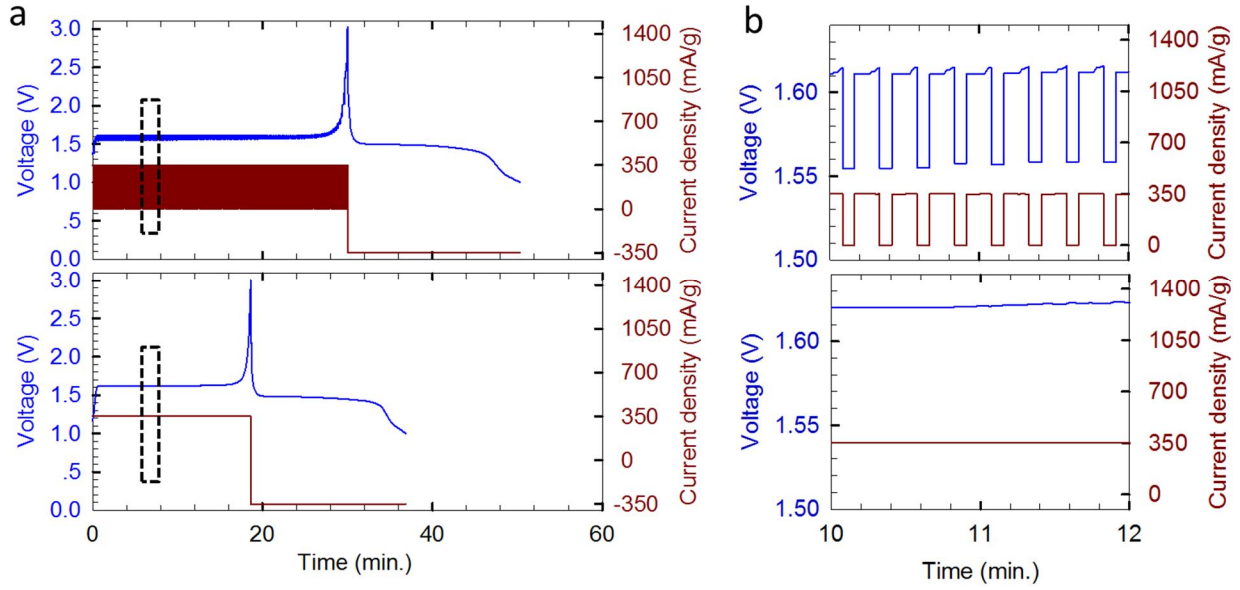


Figure S3. Voltage profiles of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ half cell charged by pulsed current (the upper plot) and constant current (the bottom plot) at 350 mA/g. (b) is the enlarged view of the rectangular area in (a).

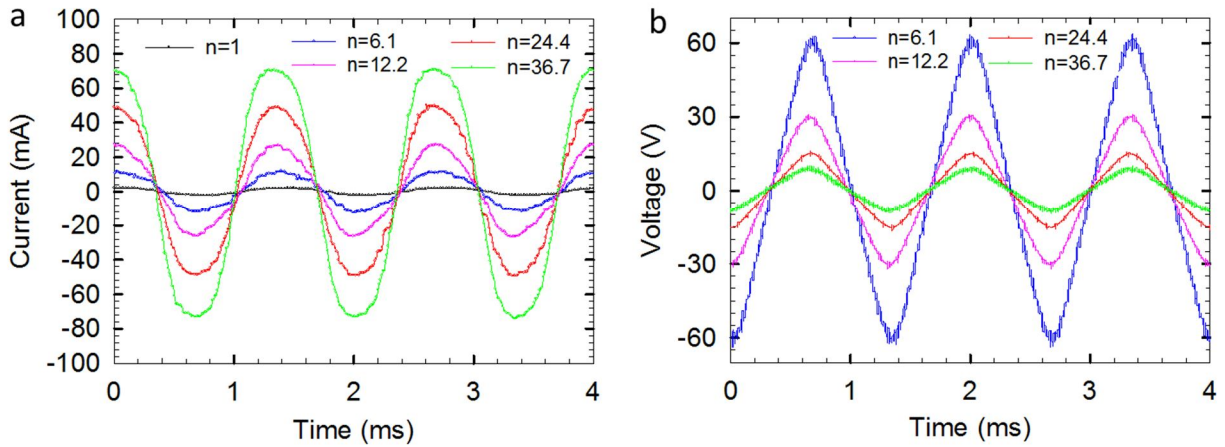


Figure S4. Short-circuit current (a) and open-circuit voltage (b) of the TENG at 250 rpm with different transformer coil ratio n .

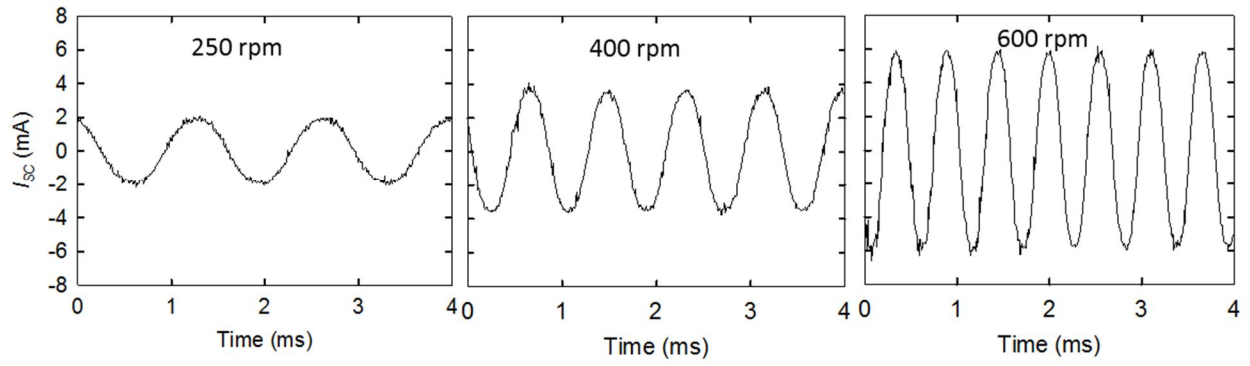


Figure S5. Short-circuit current of the TENG at different rotation speed without transforming, i.e 250 rpm, 400 rpm, 600 rpm.

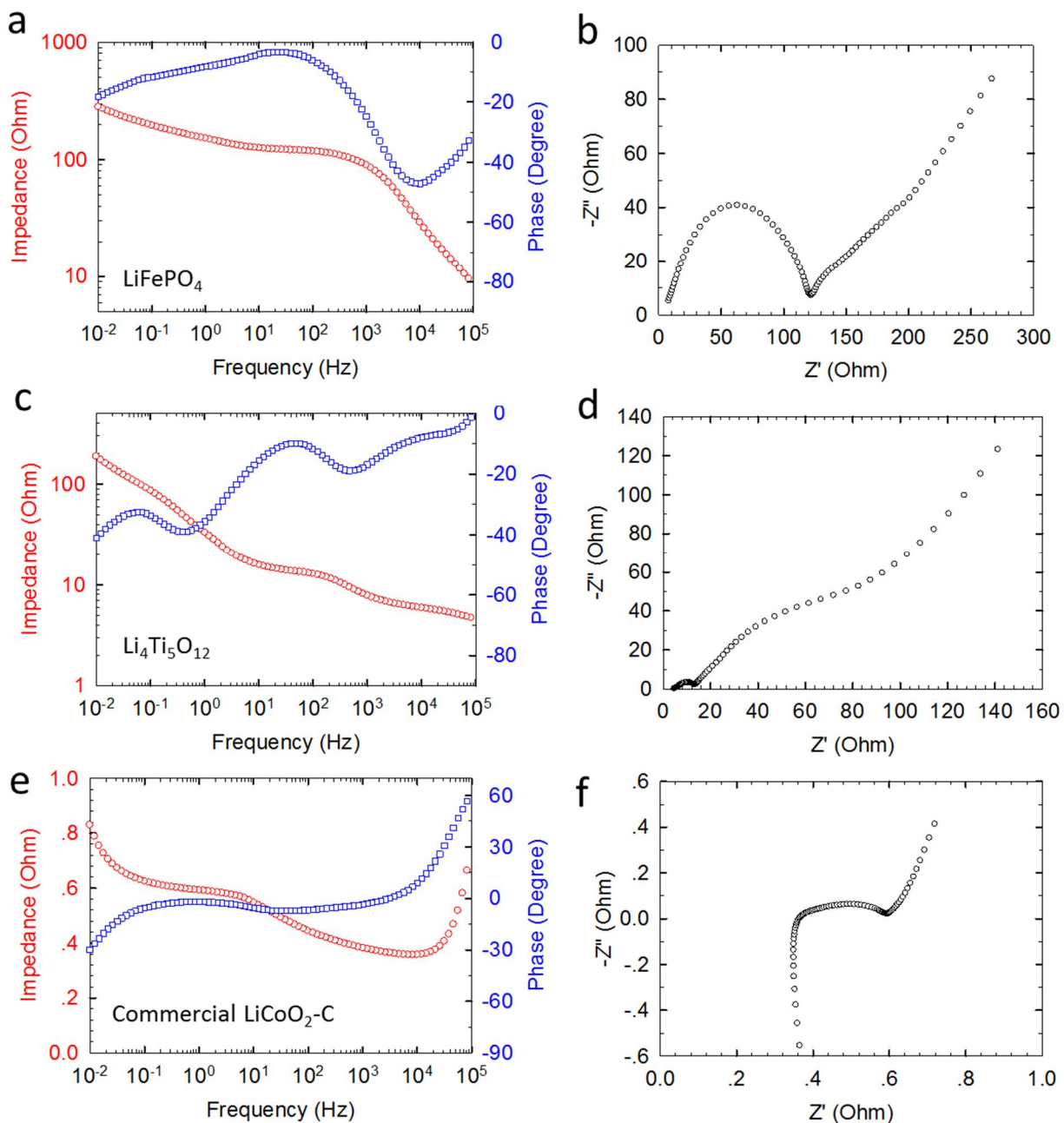


Figure S6. Bode plot (a, c and e) and Nyquist plot (b, d and f) of the impedances of LiFePO_4 (a and b) half cell, $\text{Li}_4\text{Ti}_5\text{O}_{12}$ (c and d) half cell, and a commercial $\text{LiCoO}_2\text{-C}$ full cell (~ 200 mAh) at discharged state.