Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Self-supported Zn_3P_2 Nanowires Arrays Grafted on Carbon Fabrics as an Advanced Integrated Anode for Flexible Lithium Ion Battery

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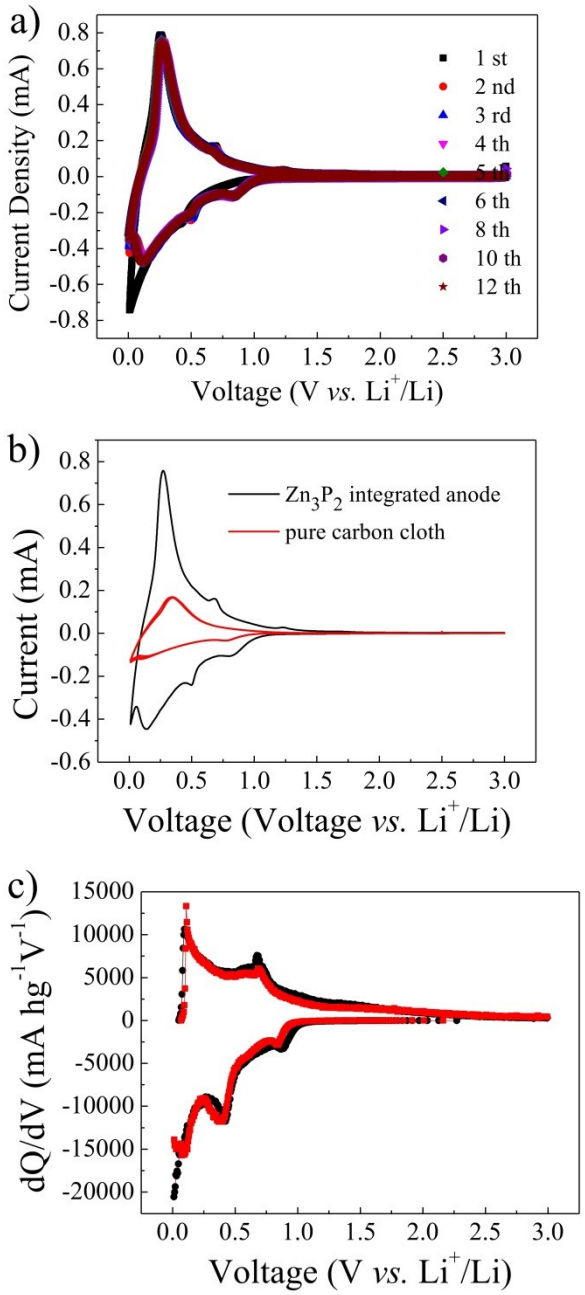

Figure S1. a) Cyclic voltammogram curves of the Zn_3P_2 nanowires arrays/carbon fabrics integrated electrode; b) The CV comparison of Zn_3P_2 integrated anode and the pure carbon cloth collector at the same area, scan rate 0.1 mV s^{-1}, potential cut-off: 0.01-3.0 V; c) the typical differential capacity-voltage plot of the Zn_3P_2 nanowires arrays/carbon fabrics integrated electrode.

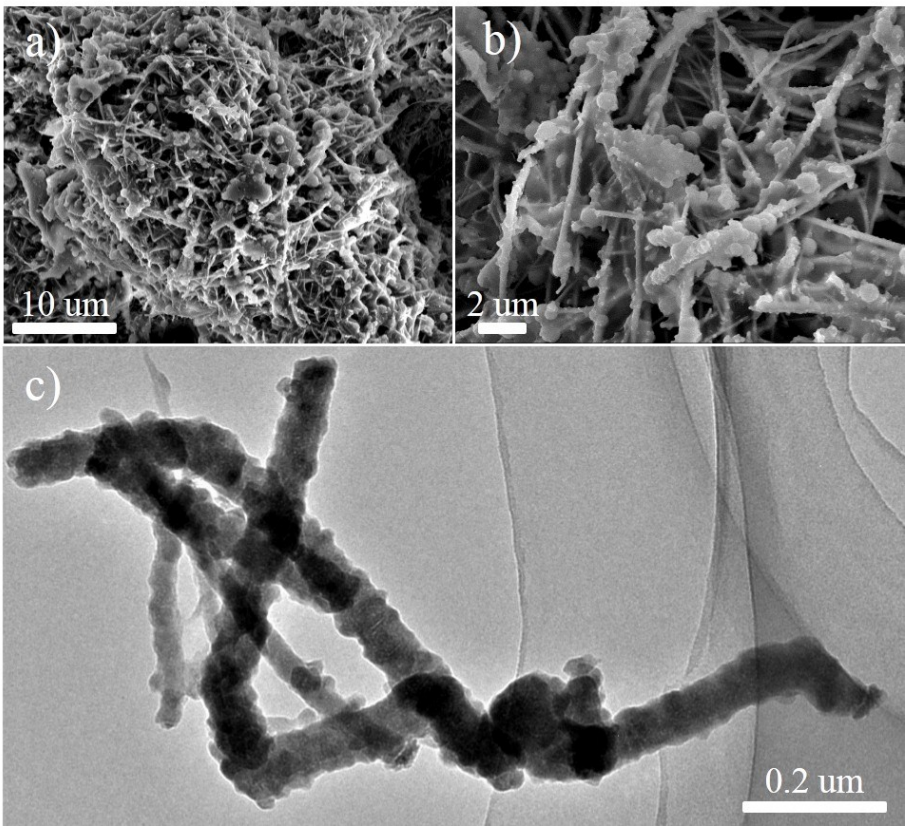

Figure S2. a and b) the low-magnification and high-magnification FSEM images of the integrated anodes after 20 cycles, respectively; c) the TEM images of the integrated anodes after 20 cycles.

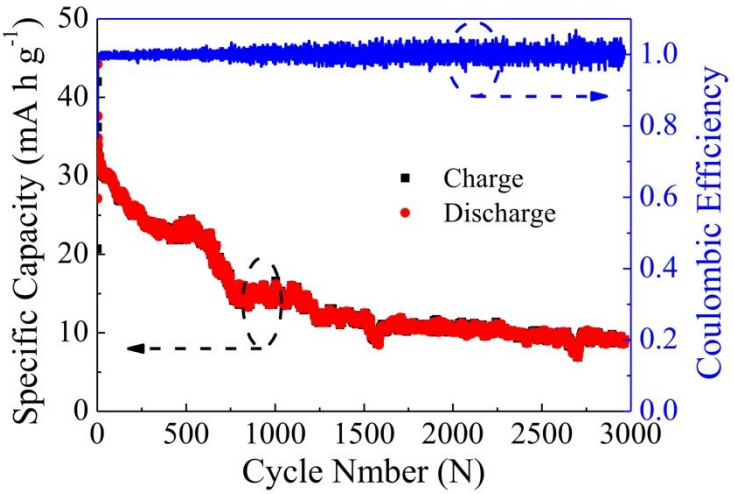

Figure S3. Cycle performance of the pure carbon fabrics electrode at a current density of 400 mA g^{-1}. The low specific capacity (below 30 mA h g^{-1}) further confirms that Zn_3P_2 nanowires contribute main capacity of the integrated electrode.

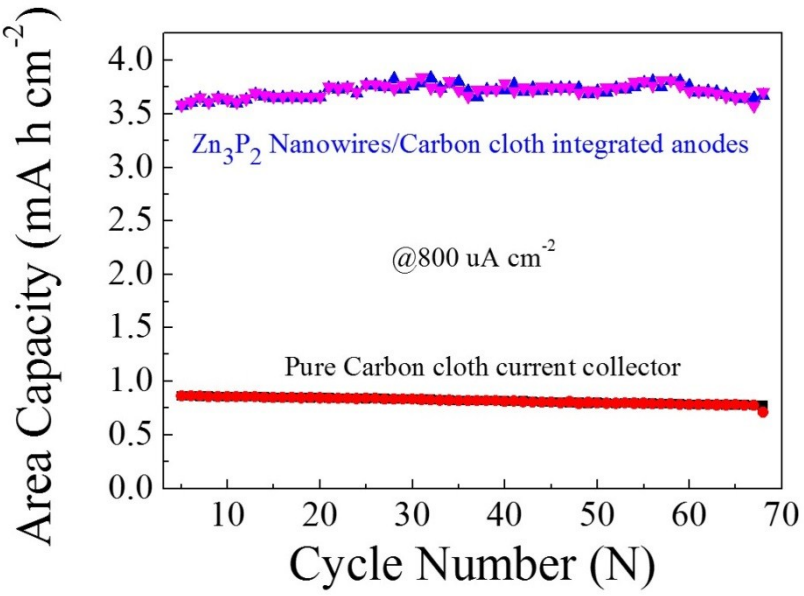

Figure S4. The typical cycling performance of the Zn_3P_2 nanowires arrays integrated anodes and the pure carbon cloth current collector at an area current density of 800 μA cm^{-2}.

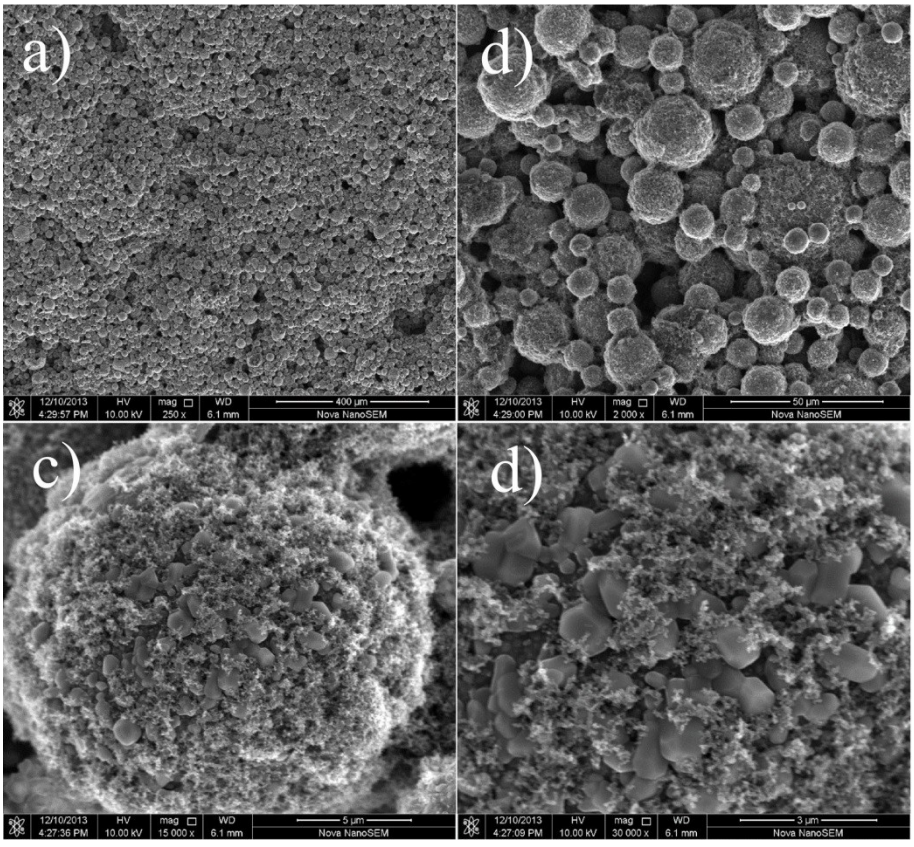

Figure S5. SEM images of $LiFePO_4$/Al foil. (commerically available)

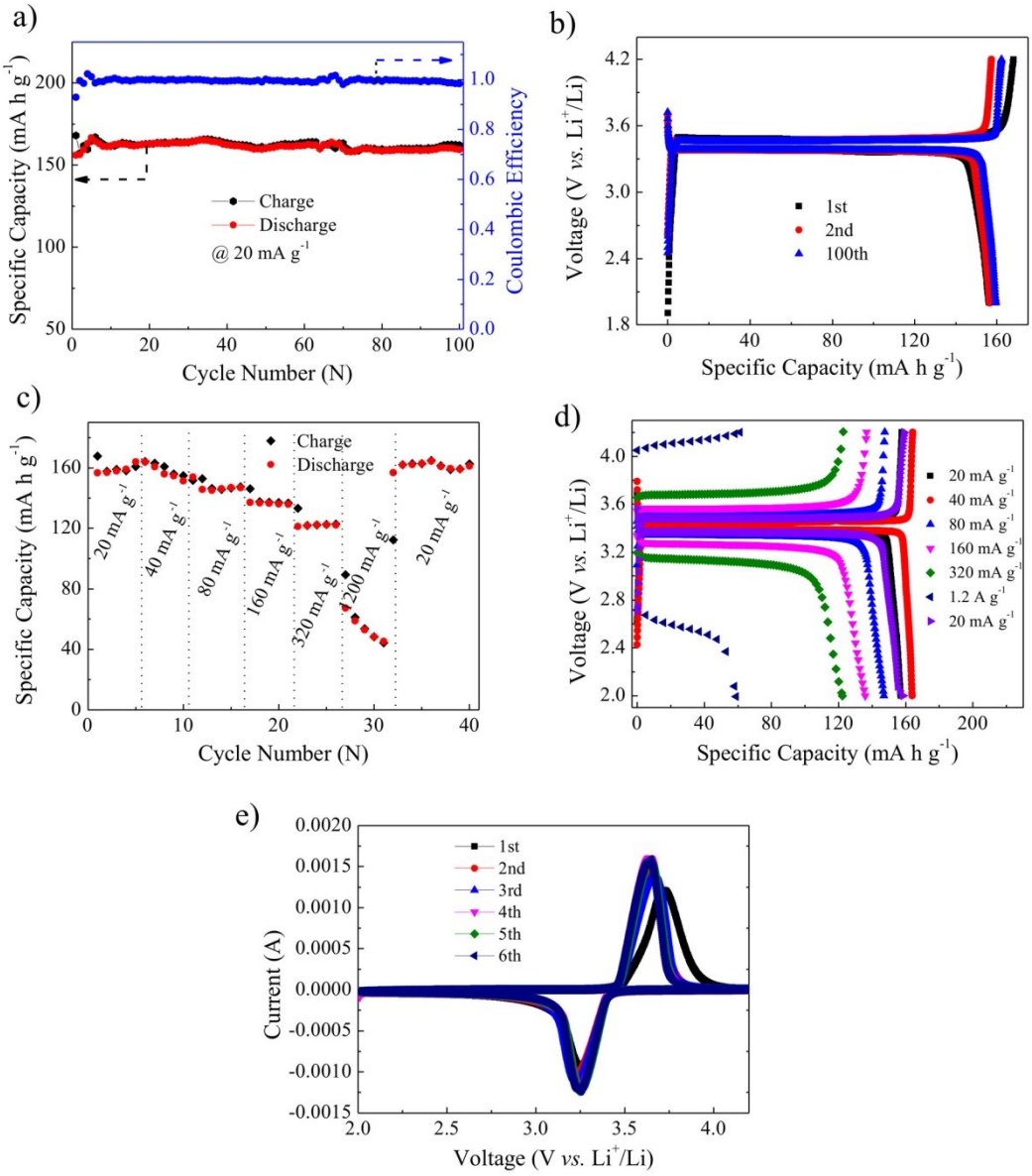

Figure S6. Electrochemical performances of $LiFePO_4$. It is worth noting that the first coulombic efficiency of the cathode is 93%.

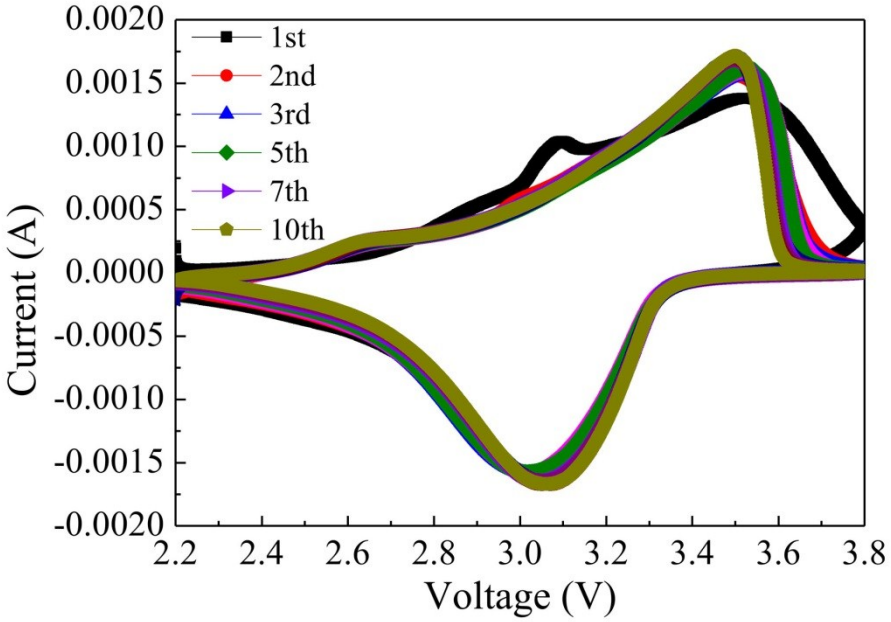

Figure S7. The CV curves of the flexible LIB full cell device.