

# Supplementary Information

## Tailored $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Nanofibers with Outstanding Kinetics for Lithium Rechargeable Batteries

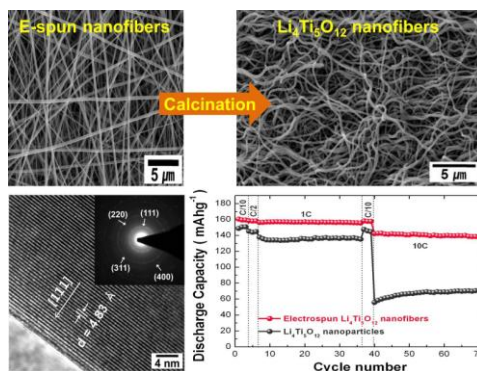
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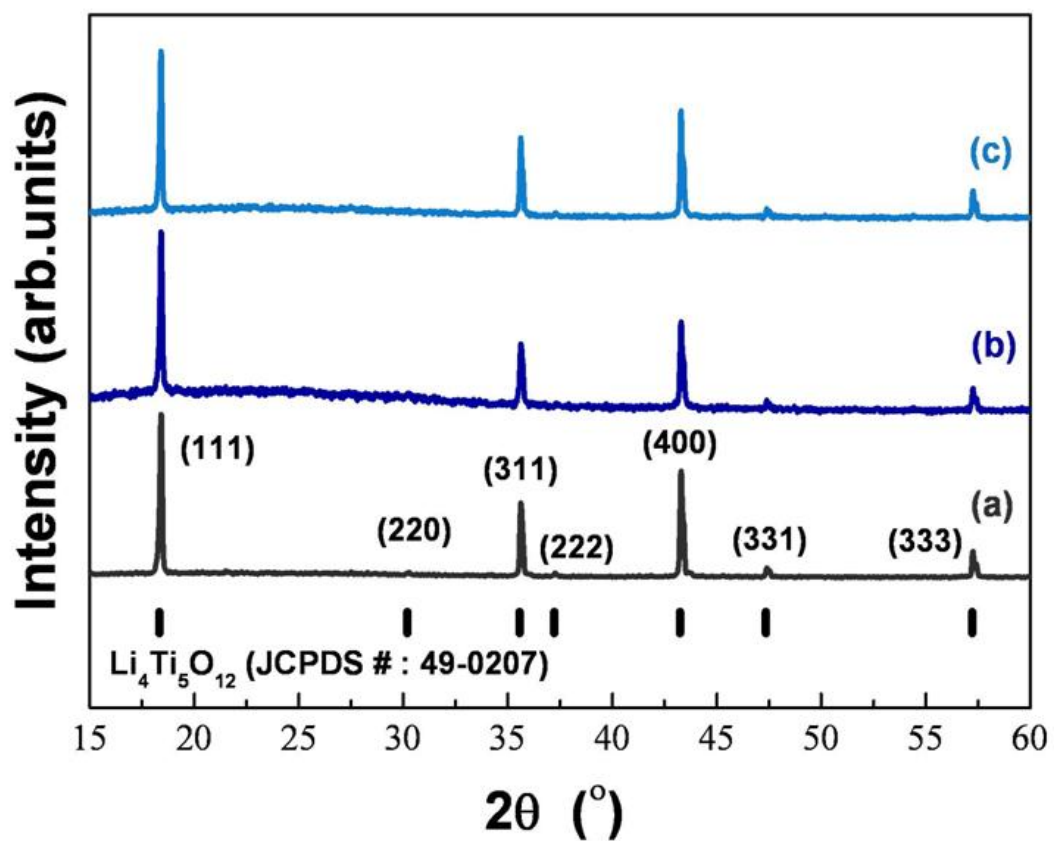
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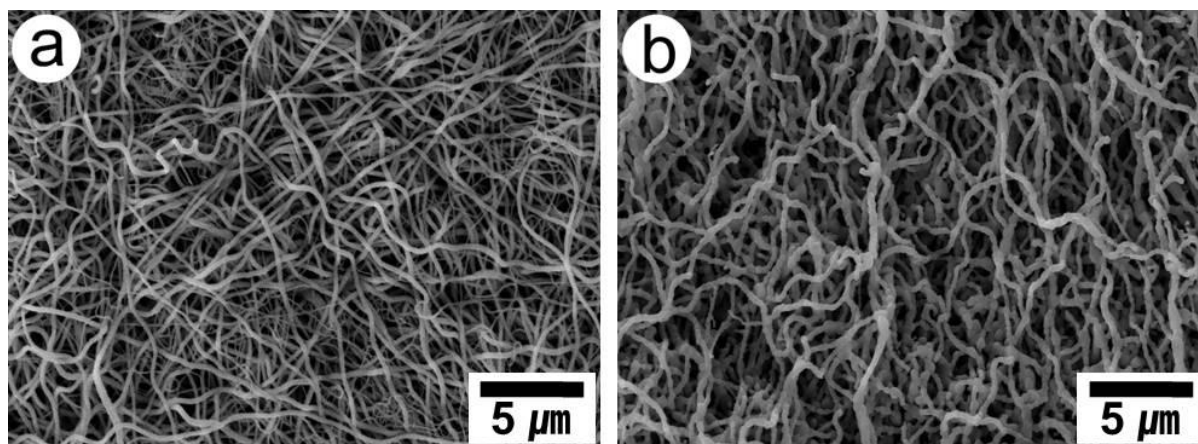
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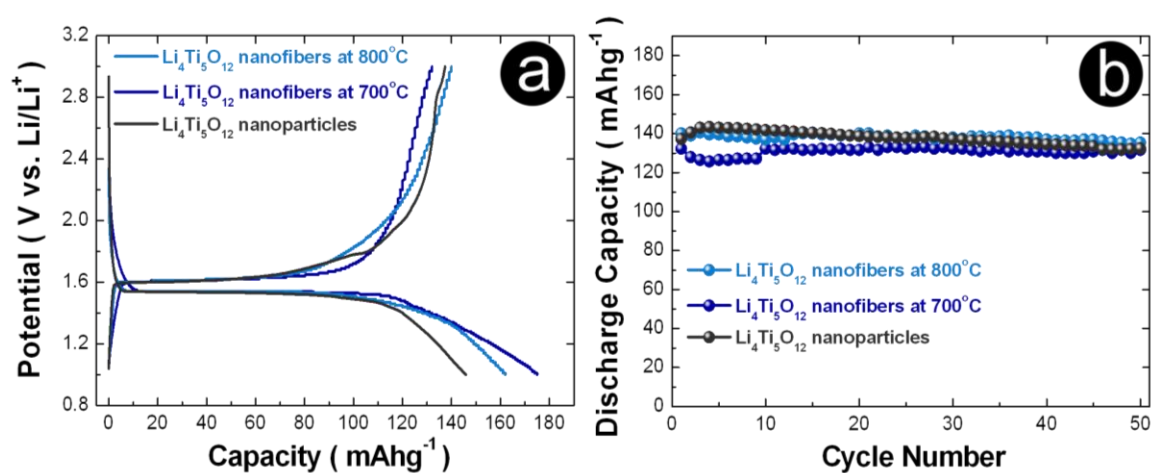




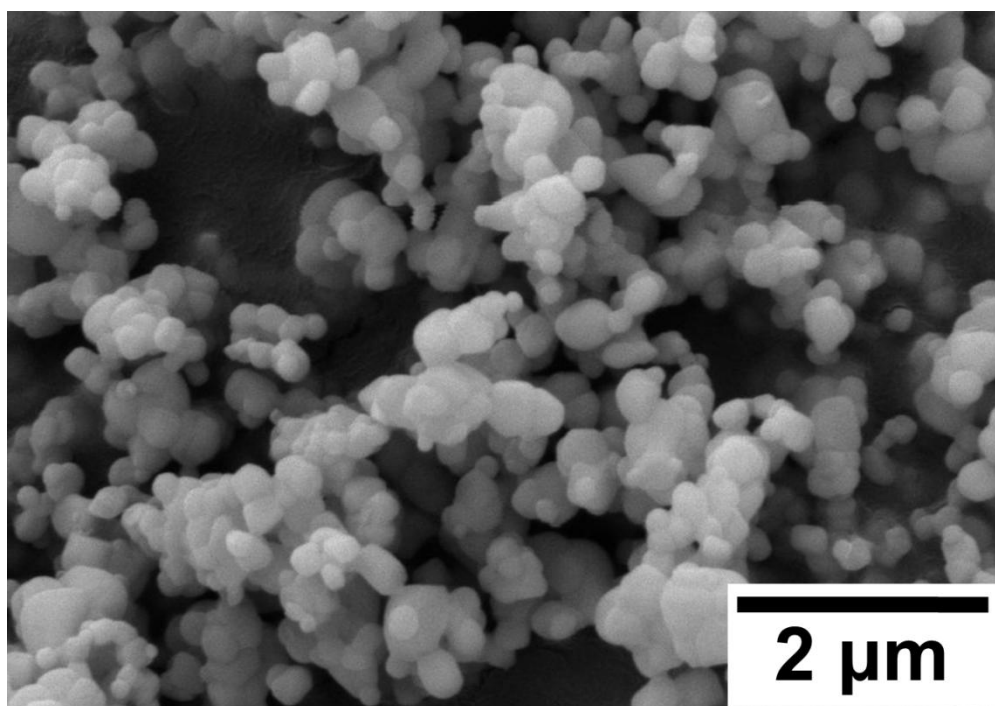
**Fig. S1.** XRD patterns of (a)  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanoparticles, polymer/inorganic composites nanofibers calcined at (b) 700°C and (c) 800°C



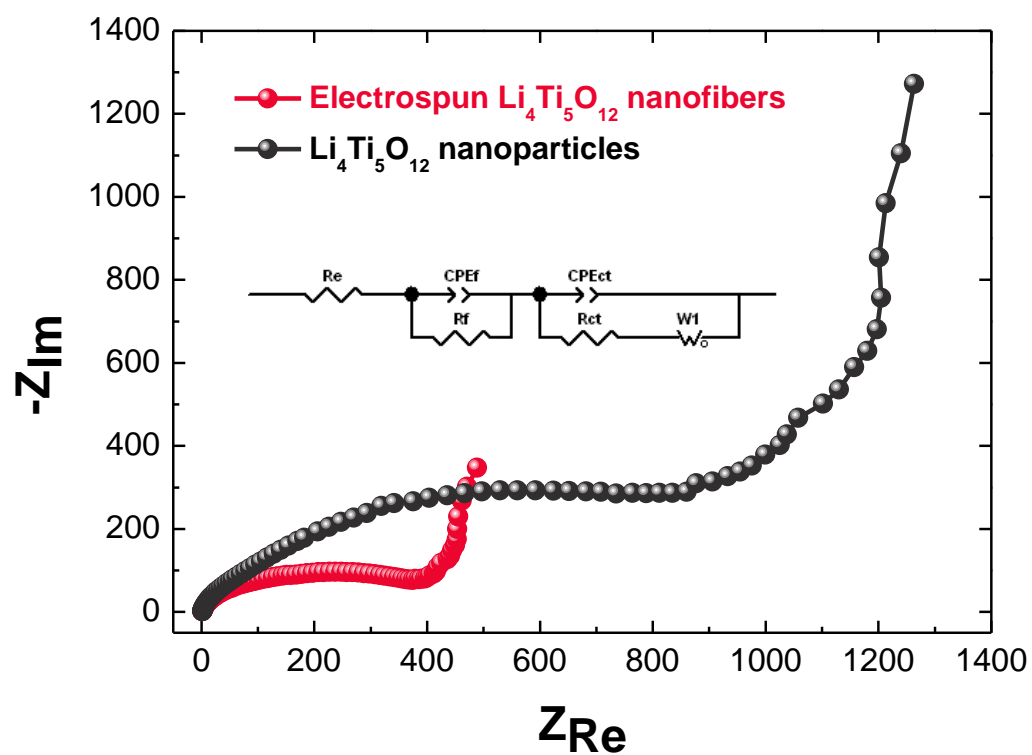
**Fig. S2.** SEM image of electrospun  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanofibers after calcination at (a) 700 °C and (b) 800 °C



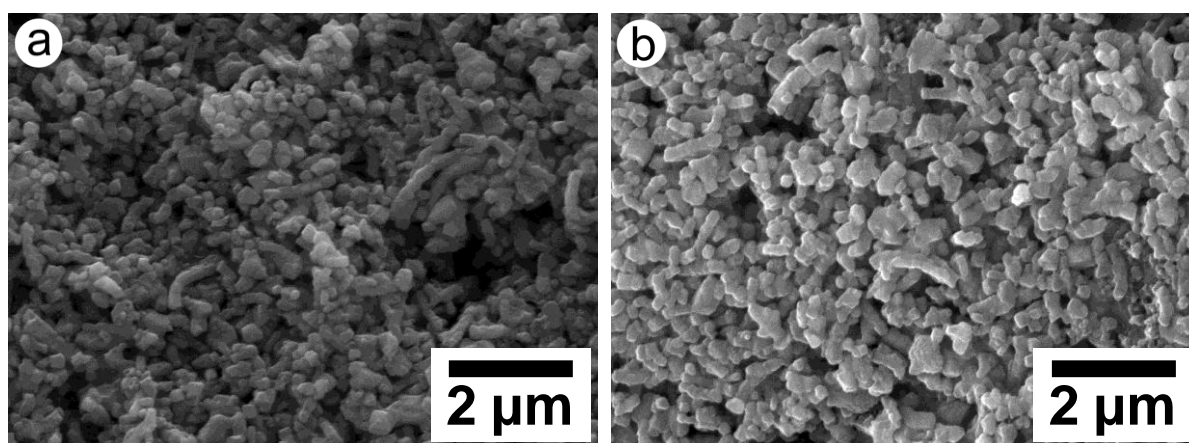
**Fig. S3.** The electrochemical performance of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanofibers and  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanoparticles; (a) the initial galvanostatic charge/discharge curves at 0.1C. (b) Cycle performance at 0.1C



**Fig. S4.** SEM image of as-prepared Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> nanoparticles by solid-state reaction.



**Fig. S5.** Nyquist plots of electrospun  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanofibers and  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanoparticles.



**Fig. S6.** SEM images of (a) as-prepared  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanofibers electrode and (b)  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanofibers electrode after 50 cycles.

Sample	BET ( $\text{m}^2 \text{g}^{-1}$ )	Average pore diameter (nm)	Total pore volume at 0.303 of relative pressure ( $\text{cm}^3 \text{g}^{-1}$ )
$\text{Li}_4\text{Ti}_5\text{O}_{12}$ nanoparticles	2.7458	1.9946	0.0013692
Electrospun $\text{Li}_4\text{Ti}_5\text{O}_{12}$ nanofibers	9.7128	1.9492	0.0047332

**Table S1.** BET surface area and pore concentration of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  nanoparticles and nanofibers.