

## Electronic supplementary information

### Seed-Assisted Synthesis of Highly Ordered $\text{TiO}_2@ \alpha\text{-Fe}_2\text{O}_3$ Core/Shell Arrays on Carbon Textiles for Lithium-ion Battery Applications

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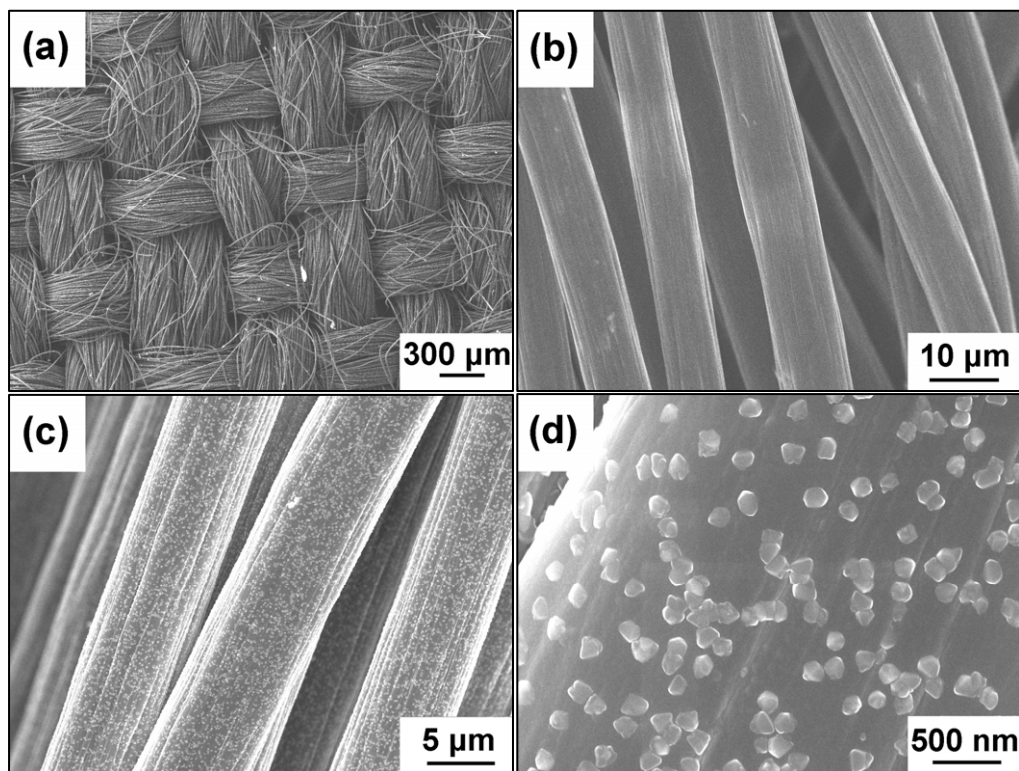
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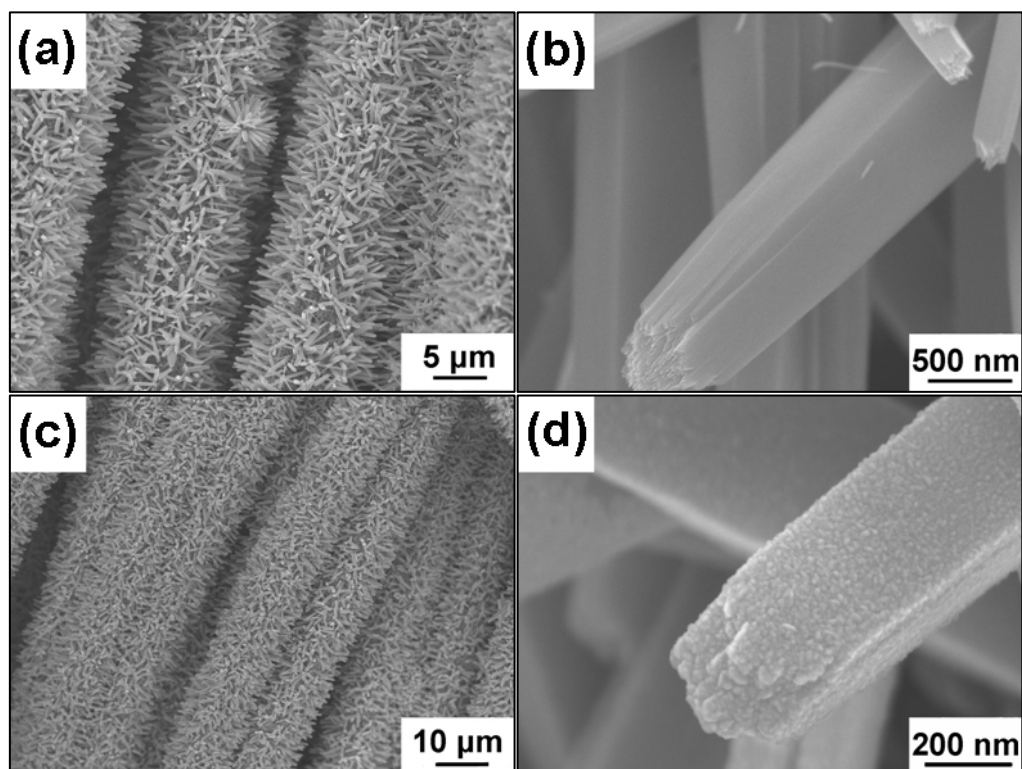
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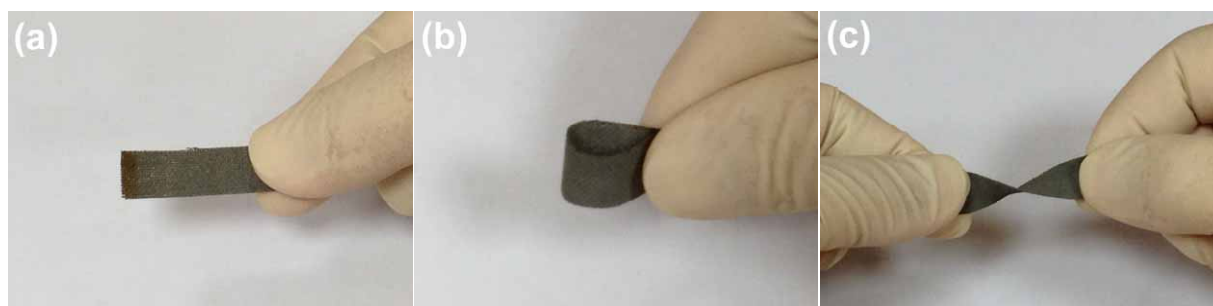
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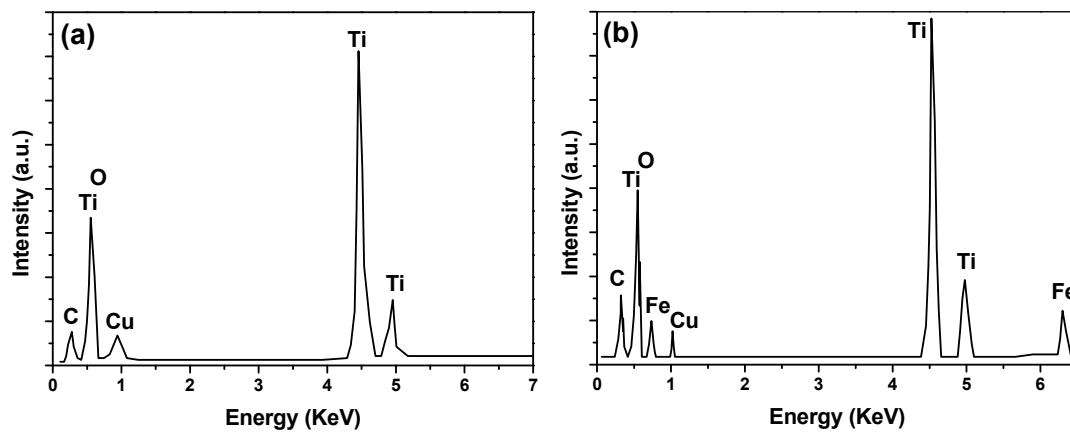
**Fig. S1** (a) Low-magnification SEM image of CTs; (b) High-magnification SEM image of CTs; (c) Low-magnification SEM image of the TiO<sub>2</sub> seed-assisted CTs; (d) High-magnification SEM image of the TiO<sub>2</sub> seed-assisted CTs.



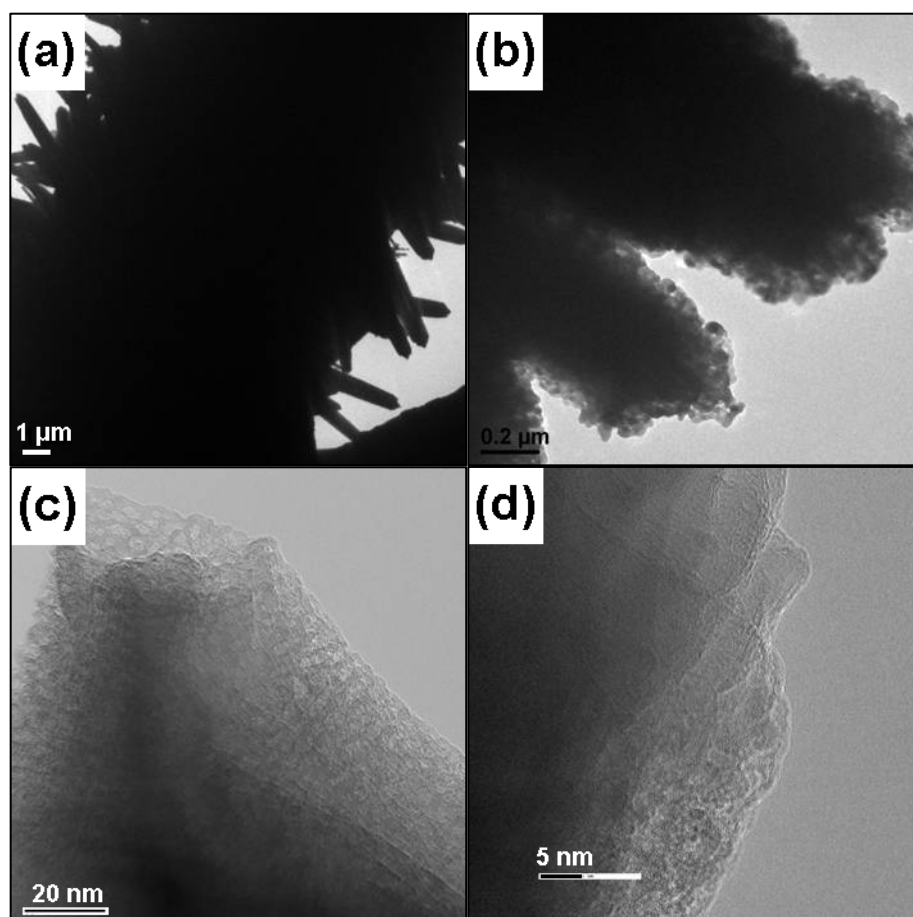
**Fig. S2** (a) Low-magnification SEM images of TRAs; (b) Enlarged SEM images of TRAs; (c) Low-magnification SEM images of TRAs were coated with ZnO nanoparticles; (d) Enlarged SEM images of TRAs were coated with ZnO nanoparticles.



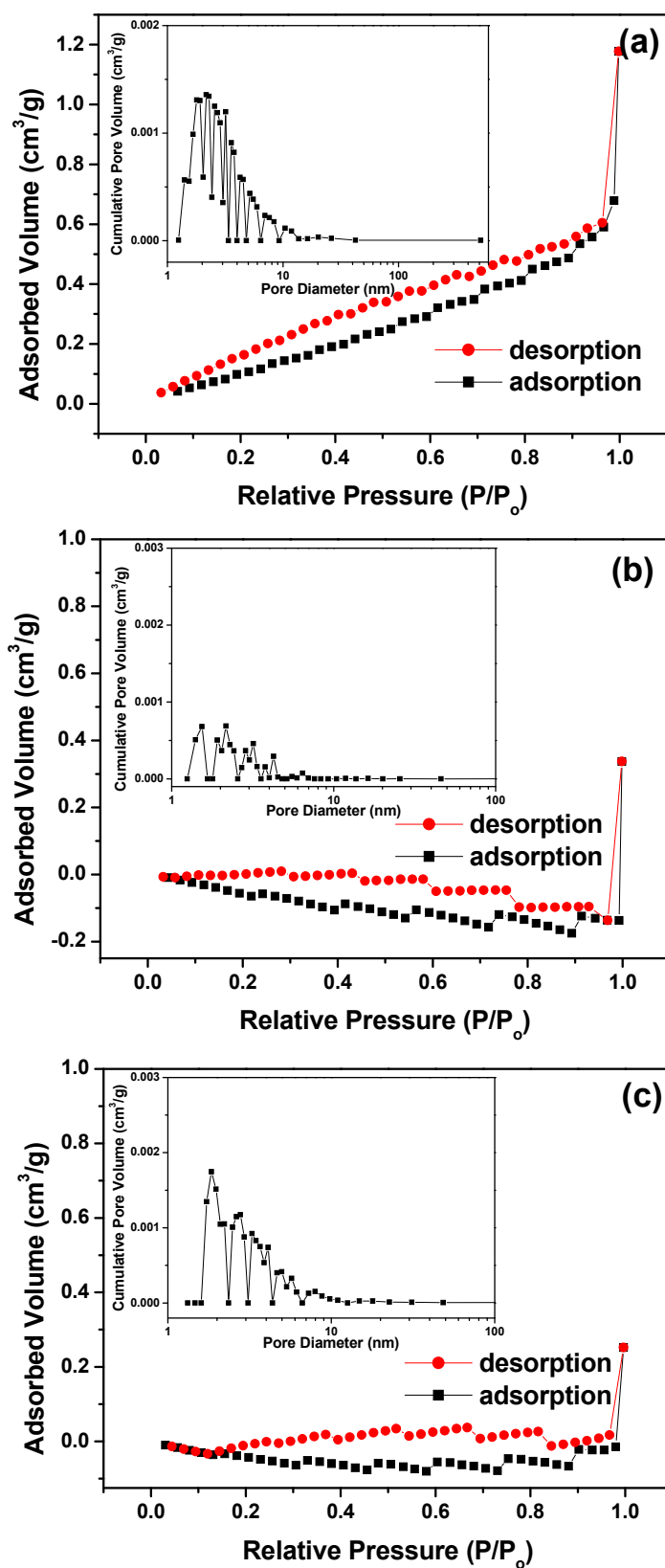
**Fig. S3** Optical images for the flexible electrode material.



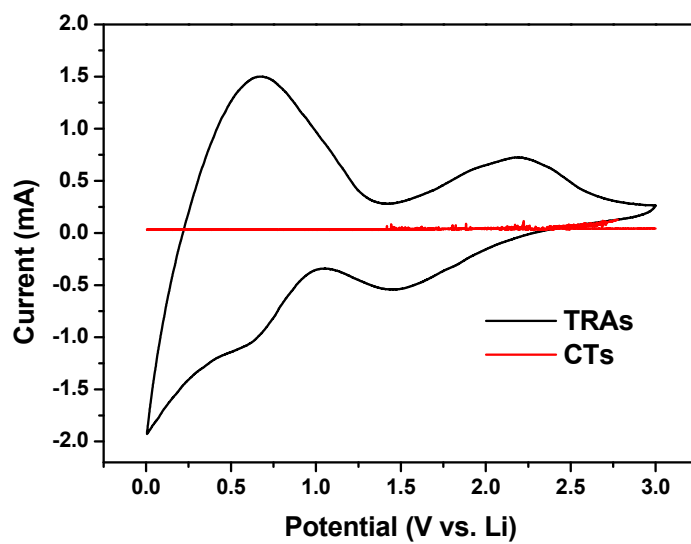
**Fig. S4** EDX spectra of the TRAs (a) and TFAs (b)



**Fig. S5** (a, b) Low-magnification TEM images of TFAs; (c, d) HRTEM images of the head and edge part of one  $\text{TiO}_2@ \alpha\text{-Fe}_2\text{O}_3$  core/shell nanorod.



**Fig. S6** Nitrogen adsorption-desorption and pore-size distribution isotherm for the electrode materials for (a) TFAs, (b) CTs and (c) TRAs.



**Fig. S7** Cyclic voltammograms of TRAs and CTs in the potential range of 0.005-3.0 V at a scan rate of  $0.5 \text{ mV s}^{-1}$ .