

## Electronic Supplementary Information

### Micro-scale spherical carbon-coated $\text{Li}_4\text{Ti}_5\text{O}_{12}$ ultra high power anode material for lithium batteries

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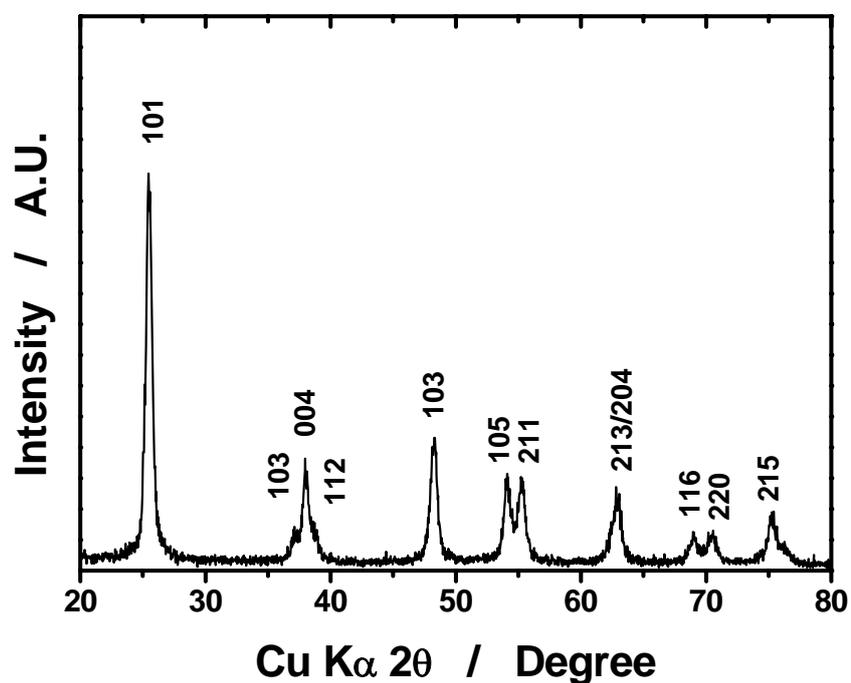
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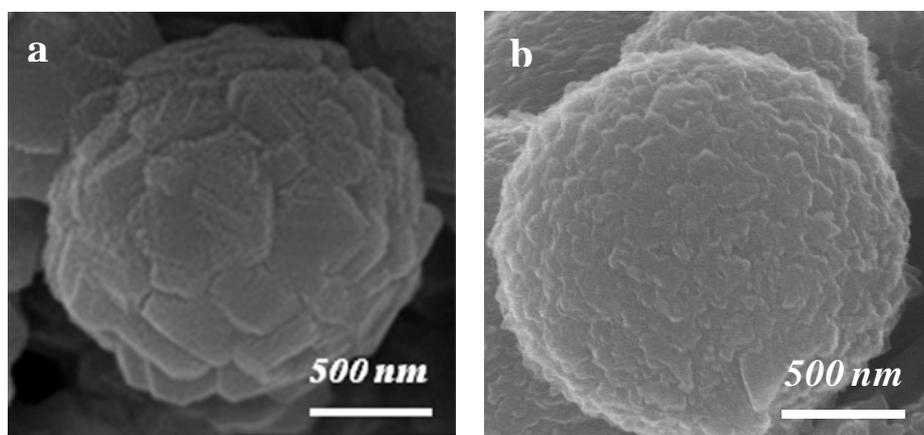
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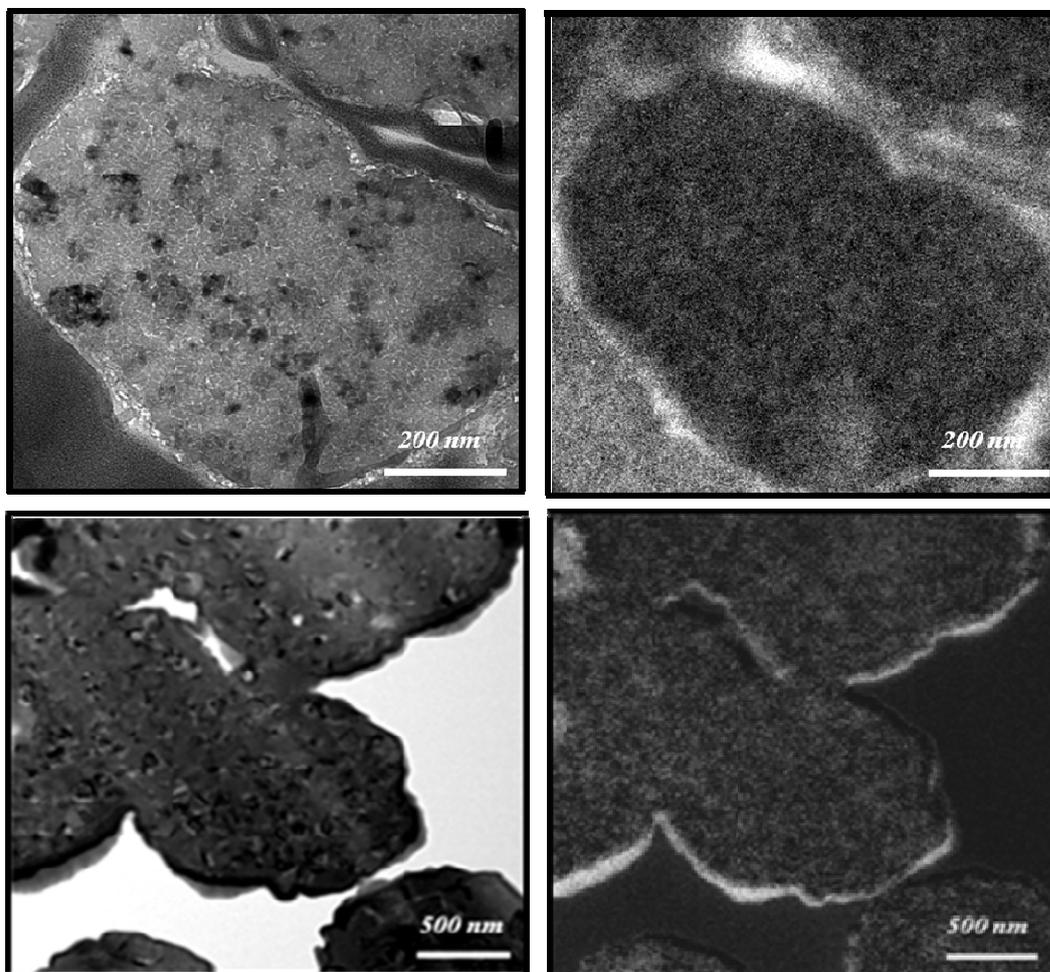


**Fig. S1.** XRD pattern of as-prepared mesoporous TiO<sub>2</sub>.

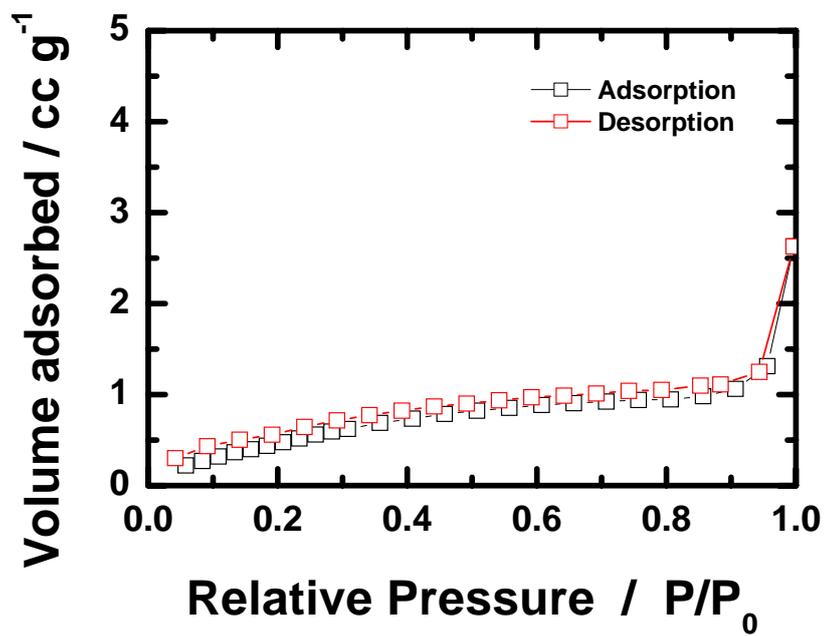
As-prepared mesoporous TiO<sub>2</sub> has a typical anatase type crystal structure. The broad diffraction peaks indicate the smaller crystallite size of the product as shown in Fig. 2a-4. The tetragonal structure belongs to  $I4_1/amd$  space group, and the calculated lattice parameters by a least square method are  $a = 3.780(9) \text{ \AA}$  and  $c = 9.525(20) \text{ \AA}$ .



**Fig. S2** SEM images of (a) 5 wt% pitch coated  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  and (b) 20 wt% pitch coated  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ .



**Fig. S3** TEM image and corresponding carbon elemental mapping image obtained by EELS from 20 wt% pitch coated  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  emphasizing the uniform carbon distribution in the particle interior.



**Fig. S4** Nitrogen sorption isotherms diagram obtained for the C-free Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> powders.