

**Bio-derived 3D TiO₂ hollow spheres with mesocrystal
nanostructure for achieving improved electrochemical
performance of Na-Ion Batteries in ether-based electrolytes**

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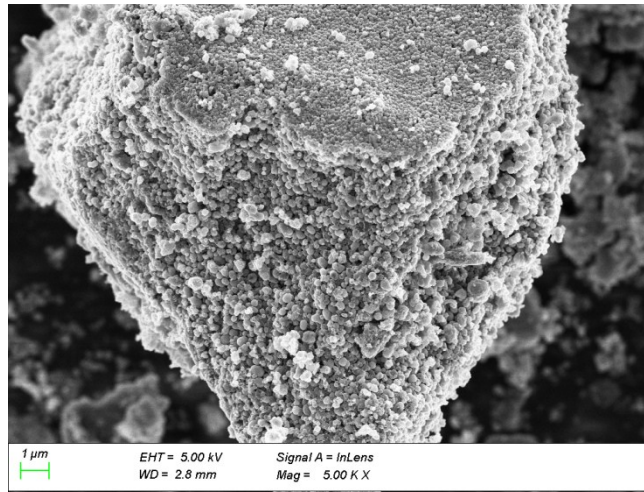


Figure S1. SEM image of the aggregated squid ink spheres.

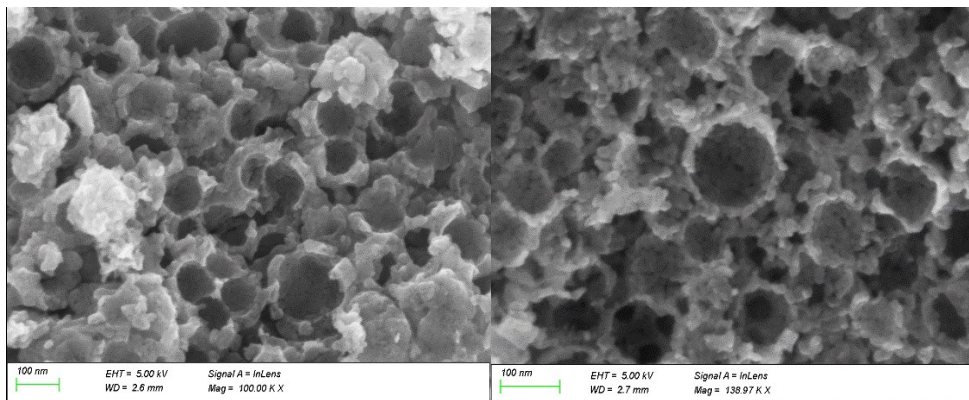


Figure S2. SEM images of TiO₂ spheres with hollow structure.



Figure S3. High-magnification TEM of the MTHP sample.

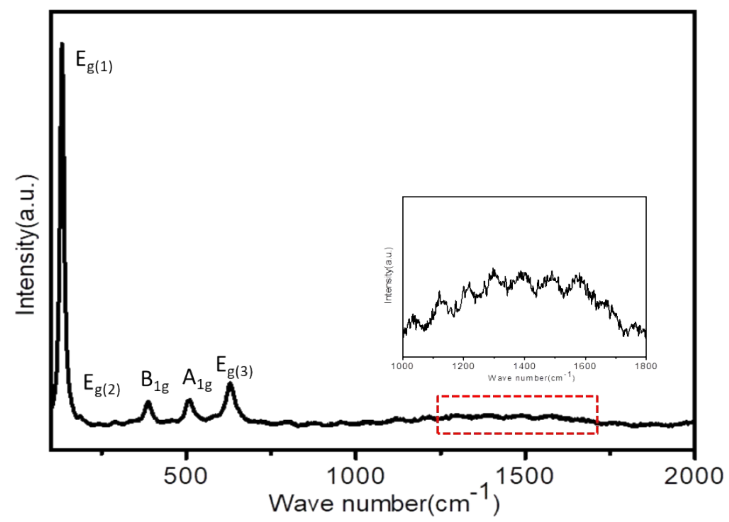


Figure S4. RM spectrum of the MTHP sample.

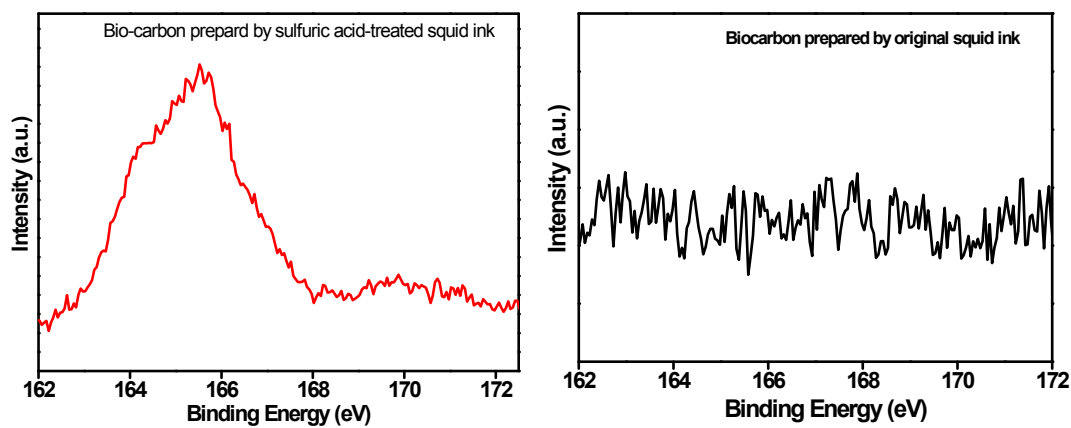


Figure S5. High-resolution S2p XPS spectra of biocarbon prepared by sulfuric acid treated squid ink and original ones.

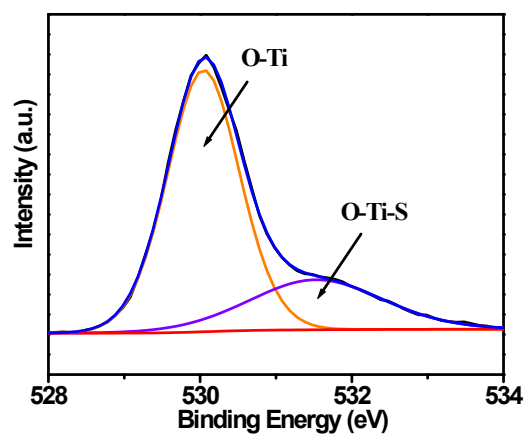


Figure S6. High-resolution O2p XPS spectra of MTHS-500.

Table S1. The comparison of sodium ion storage performance reported in recent literature

samples	Capacity (mAh g ⁻¹)		ICE	Ref.
	50 mA g ⁻¹	1A g ⁻¹		
TiO _{2-x} /NCFs	230 (50 mA g ⁻¹)	120 (1A g ⁻¹)	44%	1
R-TiO ₂ -S	264 (50 mA g ⁻¹)	138 (2A g ⁻¹)	48%	2
A-TiO ₂	217(50 mA g ⁻¹)	142 (2A g ⁻¹)	56%	3
TiO ₂ /C	277 (50 mA g ⁻¹)	163 (2A g ⁻¹)	48%	4
TiO ₂ @RGO	248 (50 mA g ⁻¹)	118 (2A g ⁻¹)	60%	5
Free-carbon TiO ₂	177 (50 mA g ⁻¹)	83 (1A g ⁻¹)	37%	6
MTHS-500	255 (50 mA g ⁻¹)	142 (2A g ⁻¹)	59%	In this work

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