

Supporting Information for

**Facile Fabrication of CuS Micro-flower as High Durable Sodium-ion  
battery Anode**

Cuihua An, Yang Ni, Zhifeng Wang, Xudong Li, Xizheng Liu\*

Tianjin Key Laboratory of Advanced Functional Porous Materials, Institute for New  
Energy Materials & Low-Carbon Technologies, School of Materials Science and  
Engineering, Tianjin University of Technology, Tianjin 300384, China

Email: [xzliu@tjut.edu.cn](mailto:xzliu@tjut.edu.cn)

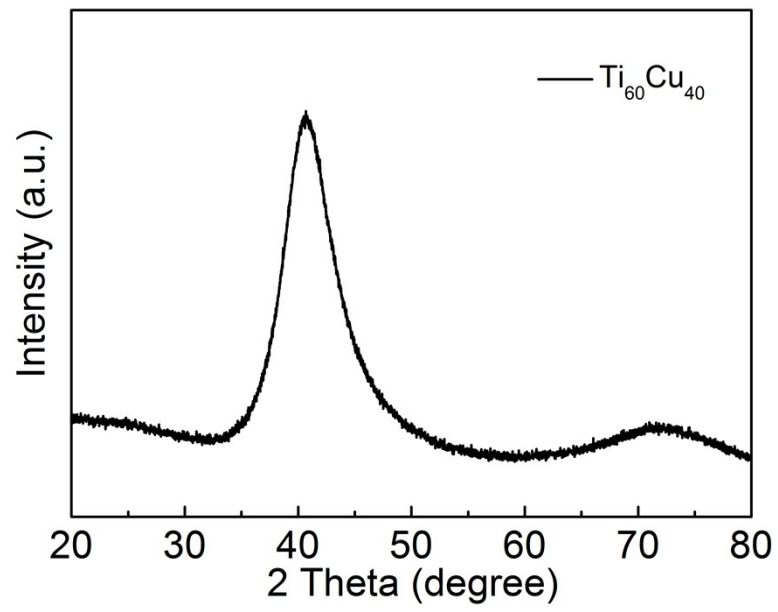


Fig.S1 XRD pattern of the  $\text{Ti}_{60}\text{Cu}_{40}$  ribbon.

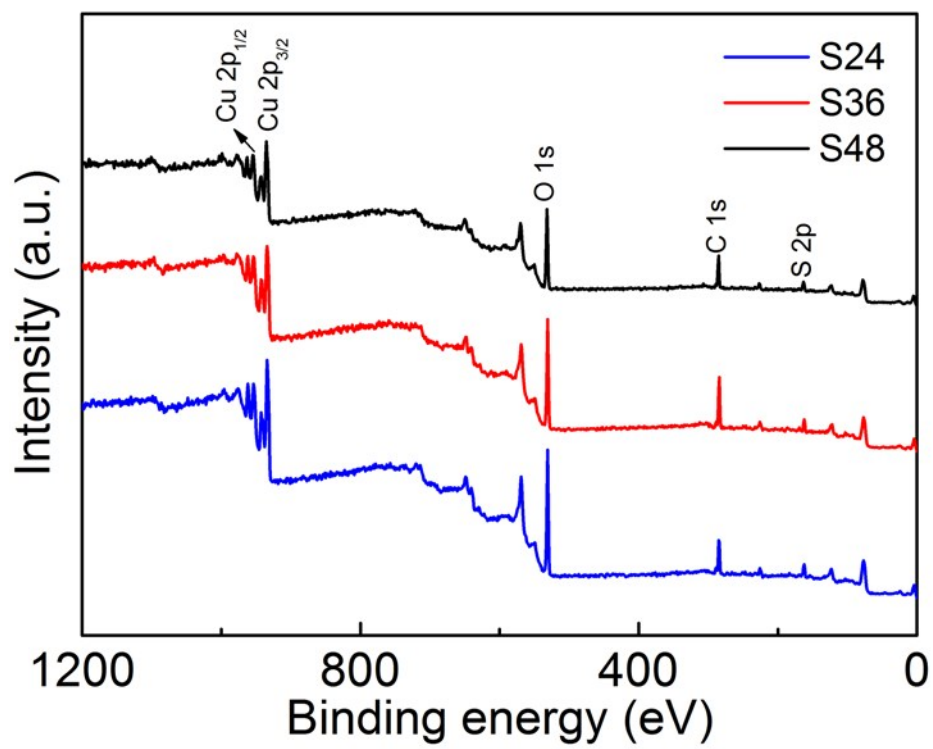


Fig.S2 XPS survey spectra of the S24, S36 and S48 materials.

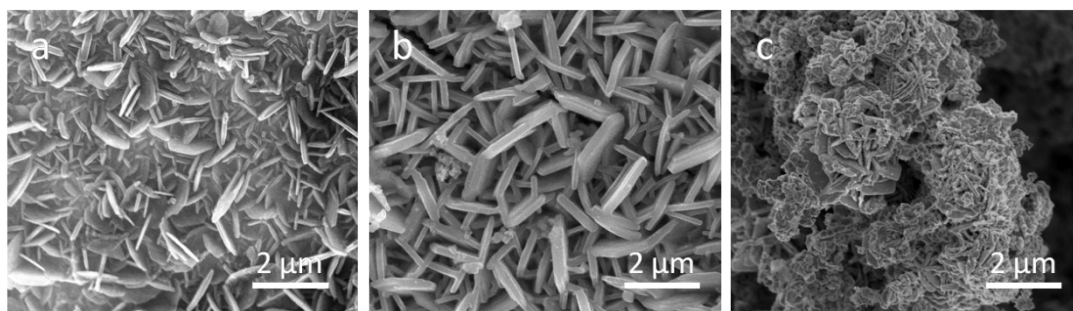


Fig.S3 SEM images of the S24, S36 and S48 materials.

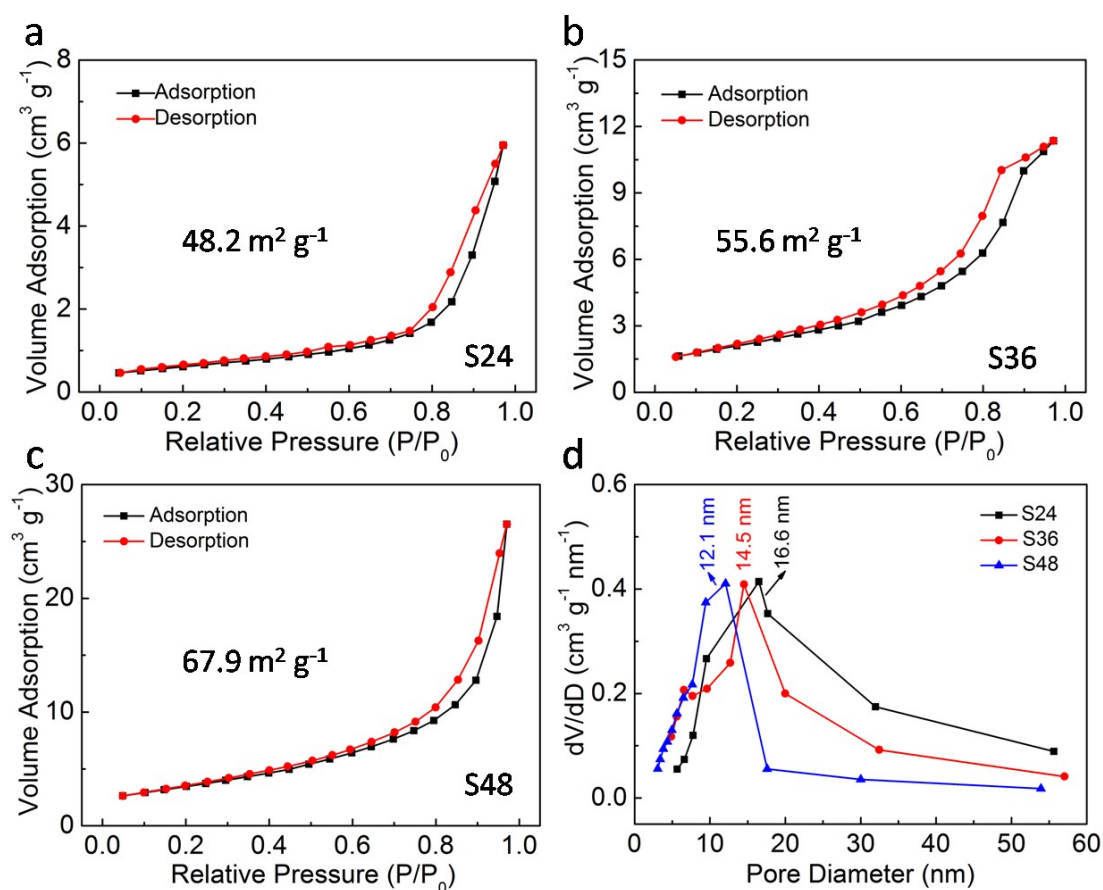


Fig.S4 N<sub>2</sub> adsorption and desorption isotherms of S24 (a), S36 (b) and S48 (c). BJH pore size distribution curves of S24, S36 and S48 (d).

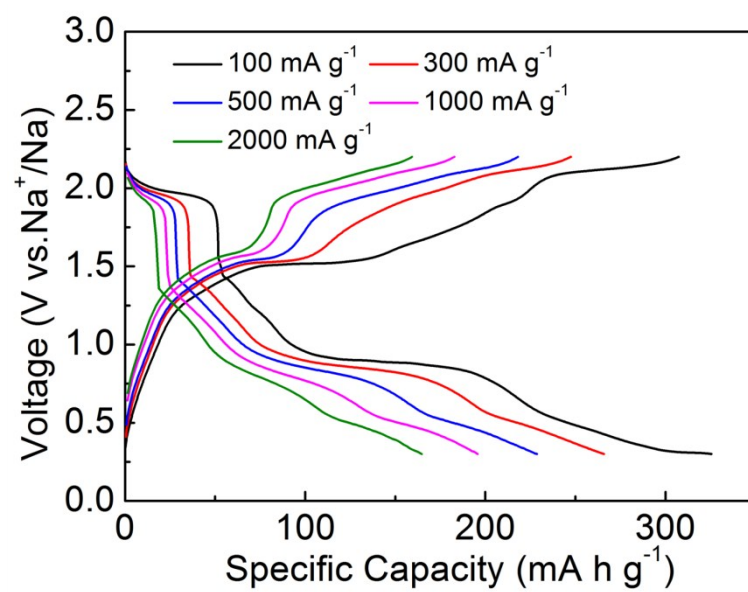


Fig.S5 The charge-discharge plots of S48 electrode at various current densities.

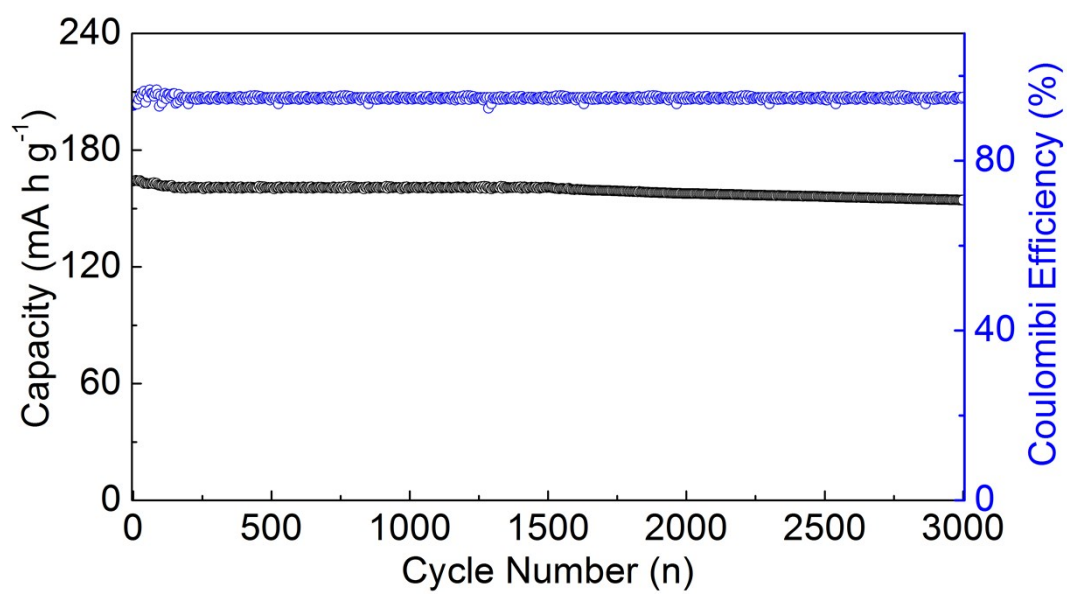


Fig.S6 Cycling performance of S48 electrode at 2 A g<sup>-1</sup>.

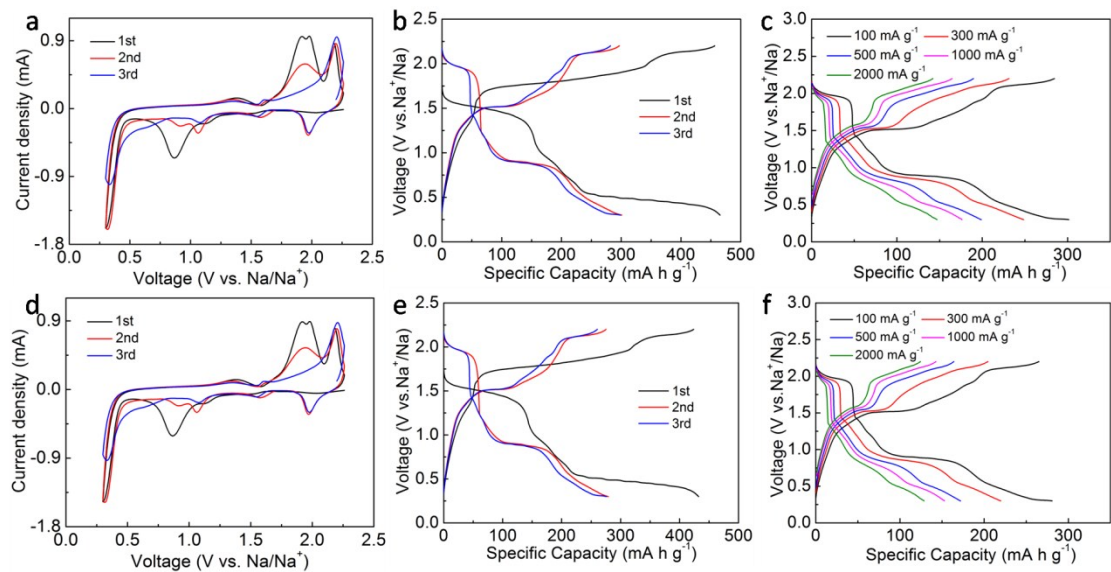


Fig.S7 CV curves (a, d), GCD curves at 0.1 A g<sup>-1</sup> (b, e) and GCD curves at different current densities (c, f).



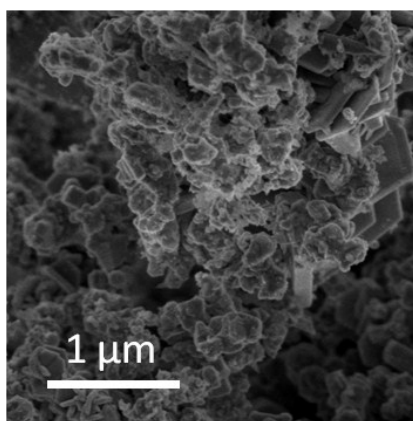


Fig.S8 SEM image of the S48 electrode after 5000 cycles at 5 A g<sup>-1</sup>.

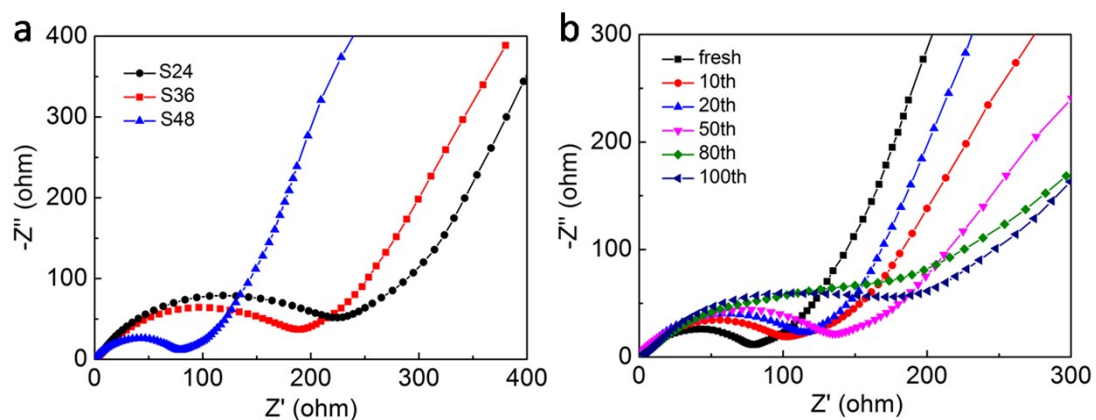


Fig.S9 Nyquist plots of the S24, S36 and S48 electrodes at the fresh state (a), S48 electrode at different cycling stages (b).

Table S1 The EIS fitting results of S24, S36 and S48 electrodes at the fresh state.

	$R_s$ ( $\Omega$ )	$R_{ct}$ ( $\Omega$ )
S24	16.2	288.8
S36	16.0	220.1
S48	5.7	83.3

Table S2 The EIS fitting results of S48 electrodes at different cycling state.

	$R_s$ ( $\Omega$ )	$R_{ct}$ ( $\Omega$ )
fresh	5.7	83.3
10th	5.7	115.7
20th	9.1	135.1
50th	9.7	148.8
80th	22.6	210.9
100th	25.5	220.8