

Supplementary Information

High supercapacitive performance of Ni(OH)₂/XC-72 composite prepared by microwave-assisted method

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Ni(OH)₂/XC-72 composite with no conductive agent are as follows:

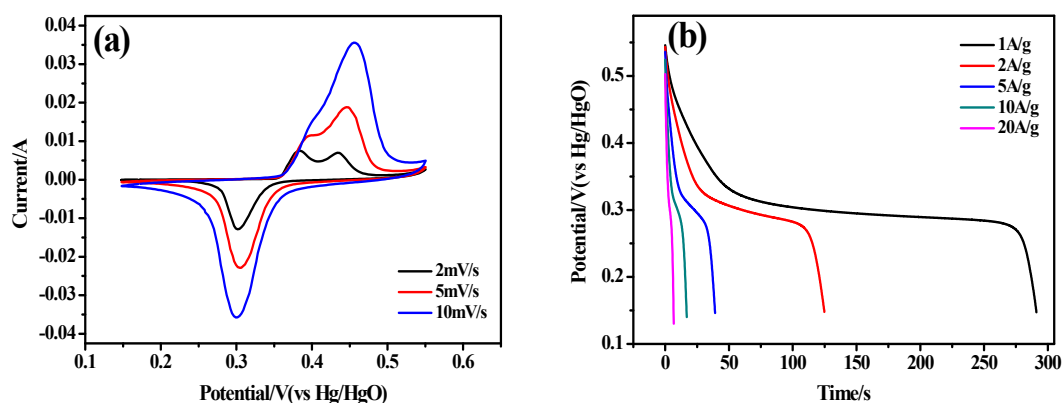


Fig.S1 Electrochemical performances of Ni(OH)₂/XC-72 with no conductive agent. (a) CV curves at different scan rates (b) Discharge curves at various current densities.

Data of Ni(OH)₂/XC-72 with no conductive agent at various current densities.

Current density	A/g	1	2	5	10
Specific capacitance	F/g	728	624	489	403

About the data reproducibility, we have prepared three 60 wt% Ni(OH)₂/XC-72 samples under identical experimental conditions, the results are shown as follows:

Note: The three samples of Ni(OH)₂/XC-72 composite were measured using CNTs as conductive agent.

1. Composite synthesized Date : 2014-5-20

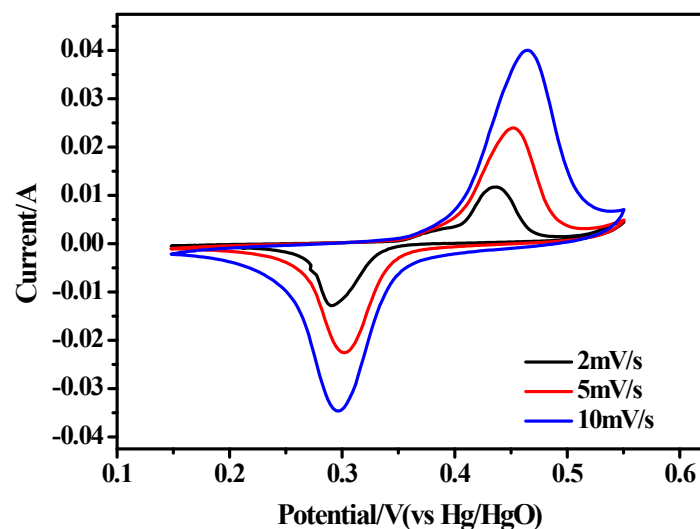


Fig. S2 CV curves of XC-CNT electrode at different scan rates. Active material is 1 mg/cm²

Scan rate (mV/s)	2	5	10
Specific capacitance (F/g)	1278	1096	945

2. Composite synthesized Date : 2014-5-28

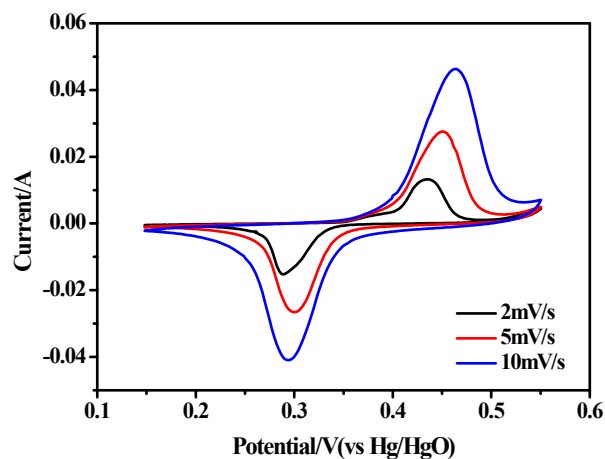


Fig. S3 CV curves of XC-CNT electrode at different scan rates. Active material is 1 mg/cm²

Scan rate (mV/s)	2	5	10
Specific capacitance (F/g)	1343	1154	954

3. Date : 2014-6-8

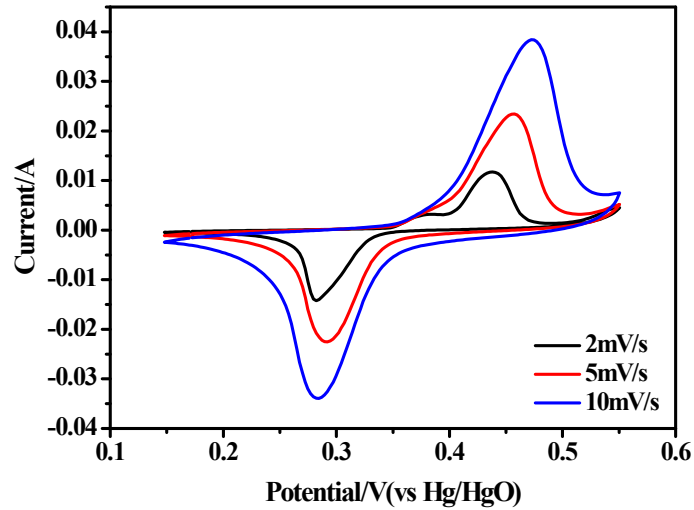


Fig. S4 CV curves of XC-CNT electrode at different scan rates. Active material is 1 mg/cm²

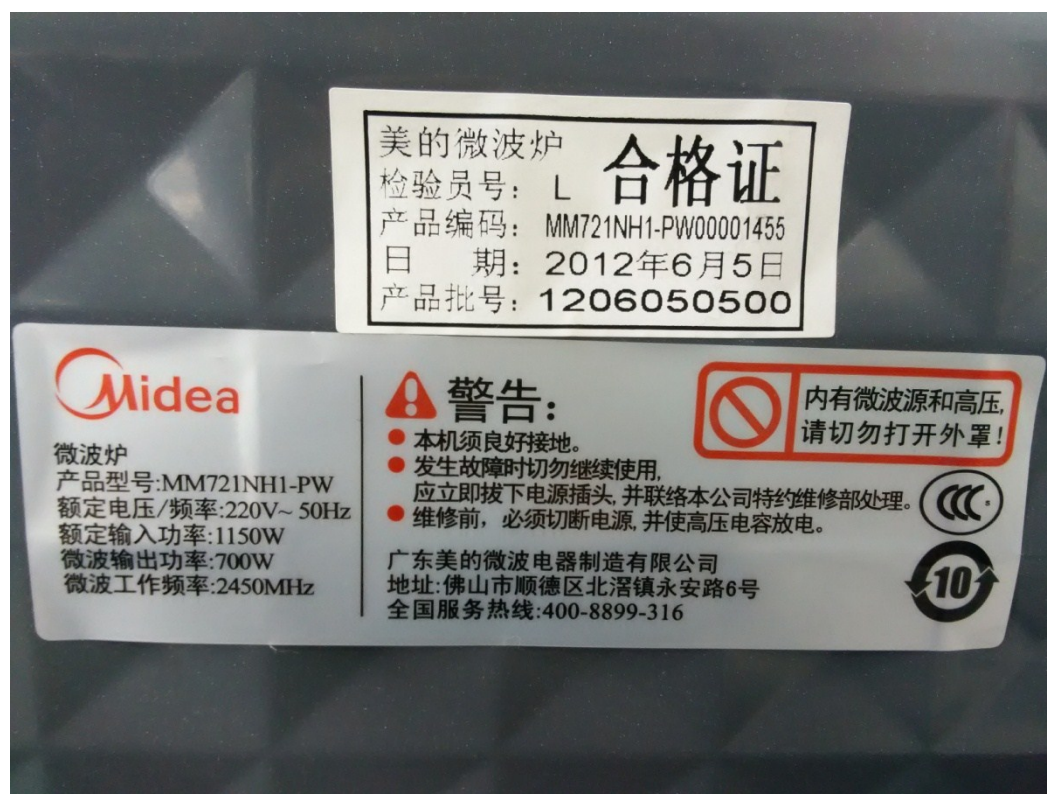
Scan rate (mV/s)	2	5	10
Specific capacitance (F/g)	1250	1088	930

SD & RSD are calculated by the specific capacitances of three samples at scan rate of 2 mV s⁻¹

Sample No.	1	2	3
Specific capacitance (F/g)	1278	1343	1250
Average specific capacitance:	1290.3 F/g		
Standard Deviation:	47.7 F/g		
Relative Standard Deviation:	3.7%		

From the data above, we can draw a conclusion that the reproducibility is good enough.

The details of the microwave oven used are as bellow:



The Manufacturer:	Midea Group Co. Ltd.
Product Model:	MM721NH1-PW
The Rated Voltage/Frequency:	220 V- 50 Hz
The Rated Power Input:	1150 W
The Output Power of Microwave:	700 W
Microwave Working Frequency:	2450 MHz

In our experiments, the Ni(OH)₂/XC-72 composite were synthesized by power of 700 W during the microwave heating process.