Support information

Cu-modified biomass-derived activated carbons for high performance supercapacitors

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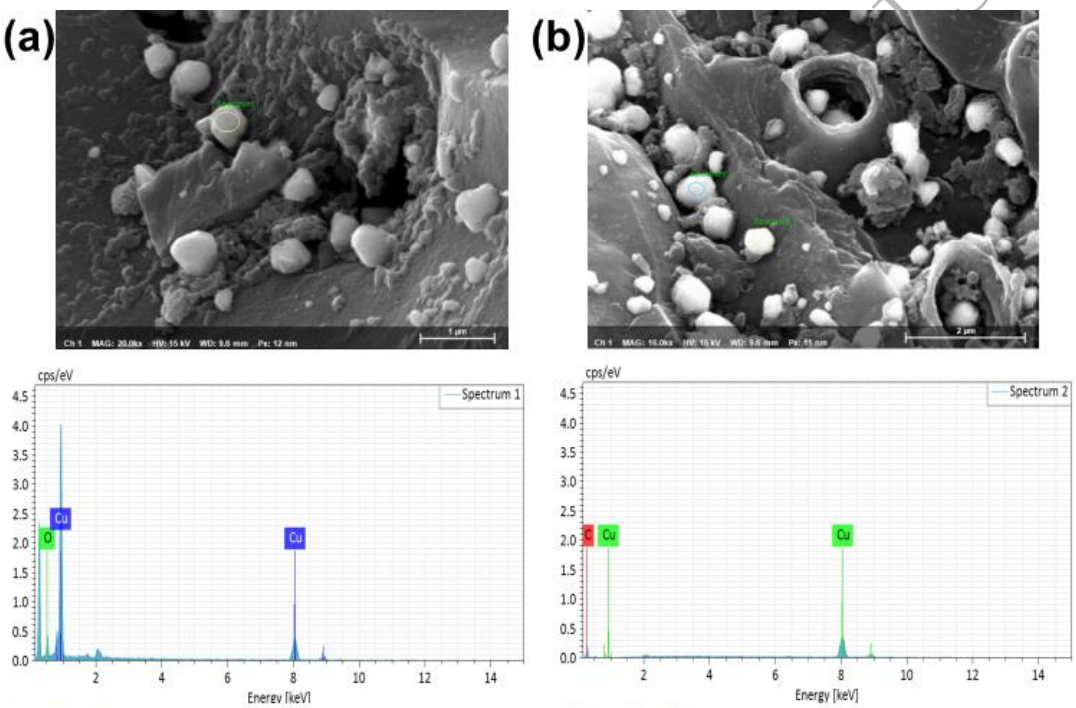


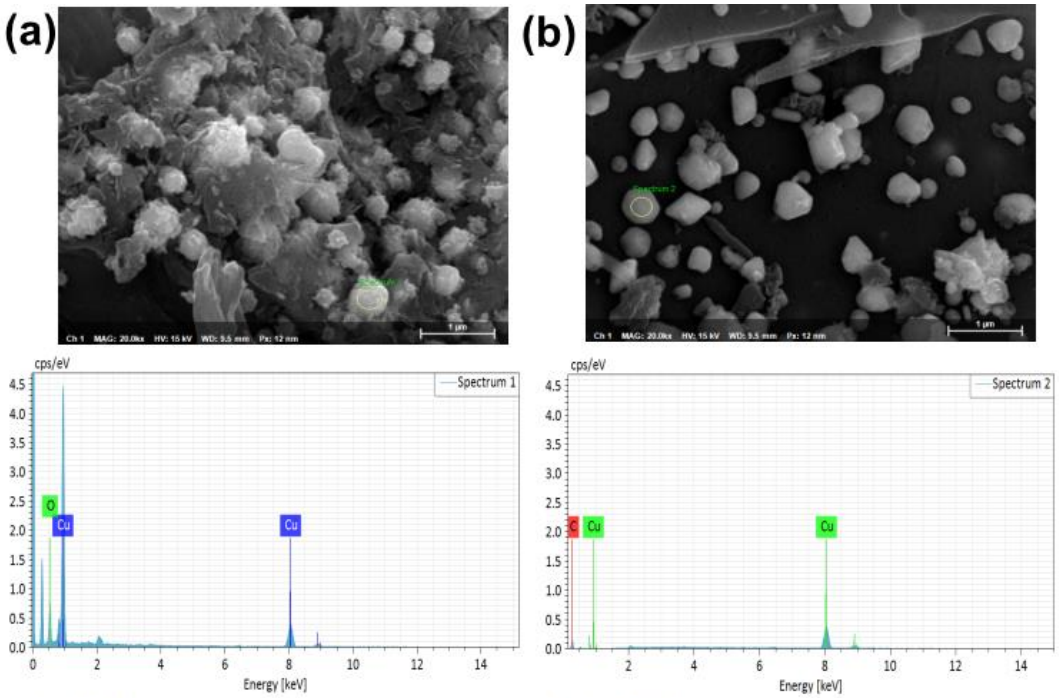
Spectrum 1

元素	原子数	质量 [%]	归一化质量 [%]	原子 [%]	abs. error [%] (1 sigma)
O	8	6.4	7.4	24.1	1.7
Cu	29	79.8	92.6	75.9	3.3
		86.2	**100.0**	**100.0**	

Spectrum 2

元素	原子数	质量 [%]	归一化质量 [%]	原子 [%]	abs. error [%] (1 sigma)
C	6	12.2	13.3	44.8	3.2
Cu	29	79.7	86.7	55.2	3.1
		91.9	**100.0**	**100.0**	

Fig. S1 EDS results of Cu-AC-1.



Spectrum 1

元素	原子数	质量 [%]	归一化质量 [%]	原子 [%]	abs. error [%] (1 sigma)
O	8	11.2	13.4	38.0	2.1
Cu	29	72.5	86.6	62.0	2.7
		83.7	**100.0**	**100.0**	

Spectrum 2

元素	原子数	质量 [%]	归一化质量 [%]	原子 [%]	abs. error [%] (1 sigma)
C	6	8.9	9.9	36.7	2.3
Cu	29	81.7	90.1	63.3	2.9
		90.6	**100.0**	**100.0**	

Fig. S2 EDS results of Cu-AC-2.

Table S1 A quantitative analysis of Cu^0, Cu_2O and CuO in Cu-AC-x based on XPS results

Sample	XPS (at%)		
	Cu^0	Cu_2O	CuO
Cu-AC-1	39.9	27.7	32.4
Cu-AC-2	40.3	24.1	35.6

Table S2 ICP results of walnut shell, AC-1 and Cu-AC-x

sample	Element content (wt%)						
	Al	Ca	Fe	K	Mg	Na	Cu
walnut shell	0.07	0.15	0.05	0.26	0.04	0.05	-
AC-1	0.05	0.35	0.06	0.14	0.06	0.11	-
Cu-AC-1	0.03	0.36	0.08	0.02	0.07	0.04	11.05
Cu-AC-2	0.30	0.45	0.11	0.06	0.09	0.05	18.97