Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Nitrogen and Oxygen Co-doped Porous Carbon Derived from Waste Yam for High-Performance Supercapacitors

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Table S1. The organic element contents in the YPC-4 sample.

	YPC-4			
Elemental analysis	C (wt%)	H (wt%)	N (wt%)	O (wt%)
	44.89	2.83	0.33	46.42

YPC-4		
Elemental analysis	K (wt%)	Al (wt%)
	1.8	3.5

Table S2. The mass content of ash in the YPC-4 sample.

Table S3. Comparison of the capacitive performance of carbon materials in the literatures.

Materials	Activating Agent	Specific Surface Area ($m^2\ g^{-1}$)	Electrolyte	Current Density	Specific Capacitance ($F \cdot g^{-1}$)	Ref. No.
Tea-waste	KOH	1610	6 M KOH	1 A g^{-1}	332	1
Loofah sponge	KOH	2718	6 M KOH	1 A g^{-1}	309.6	2
Coconut shell	$ZnCl_2$	1874	6 M KOH	1 A g^{-1}	268	3
Oil Palm Kernel Shell	KOH	730	6 M KOH	0.5A g^{-1}	57.3	4
Tree bark	nano-ZnO	1511.91	6 M KOH	0.5 A g^{-1}	286	5
Soybean	KOH	1749	6 M KOH	0.5 A g^{-1}	243.2	6
Albizia flowers	KOH	2757.63	6 M KOH	0.5 A g^{-1}	406	7
Cicada slough	KOH	1676	6 M KOH	1 A g^{-1}	355	8
Elm samara	KOH	1947	6 M KOH	1 A g^{-1}	470	9
straw	KOH	1122	6 M KOH	1 A g^{-1}	337	10
Starch	MgO	2300	6 M KOH	1 A g^{-1}	229	11
Waste potato peel	KOH	1911.5	1 M Na_2SO_4	1 A g^{-1}	323	12
Rotten potatoes	KOH	960	6 M KOH	1 A g^{-1}	269	13
This work	KOH	2382	6 M KOH	0.5 A g^{-1}	423	-

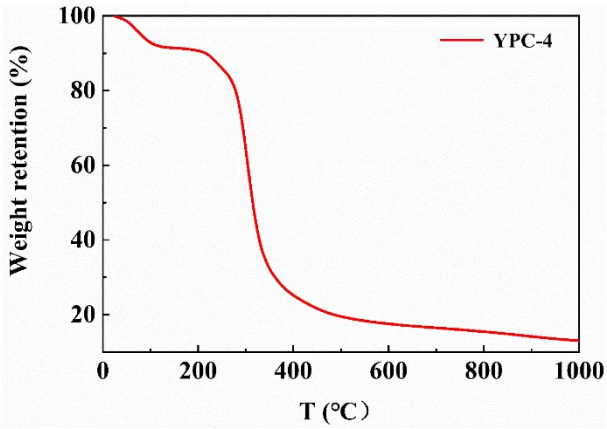

Figure S1. Thermogravimetric curve of YPC-4 sample.

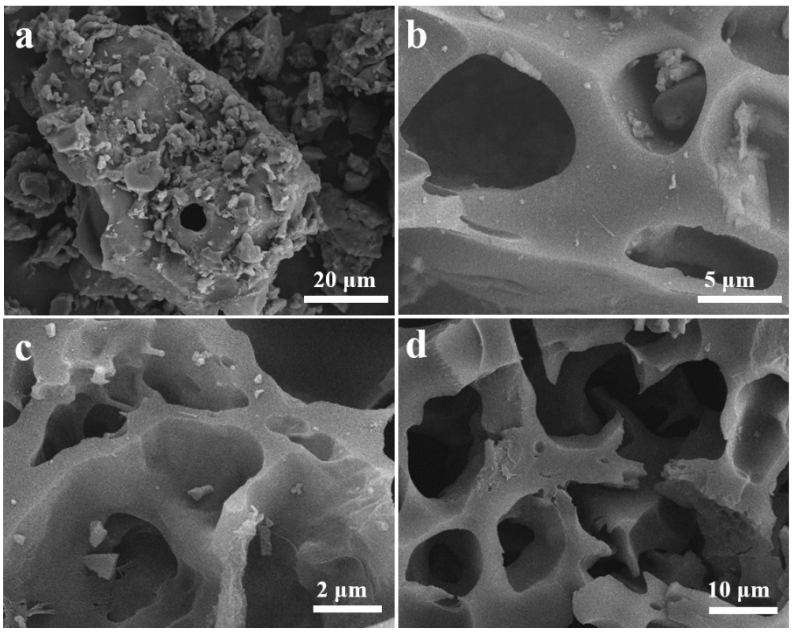

Figure S2. Morphology of the samples before and after activation. (a) SEM image of the YPC-4 sample before activation; (b) SEM image of the YPC-2 sample after activation; (c) SEM image of the YPC-3 sample after activation; (b) SEM image of the YPC-5 sample after activation.

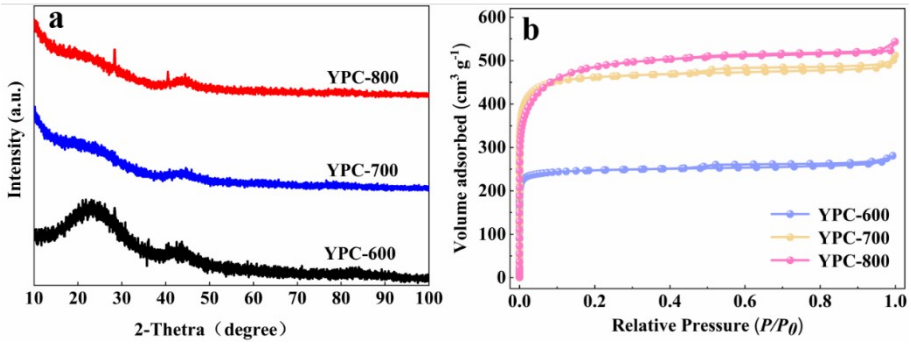

Figure S3. (a) XRD patterns and (b) N_2 adsorption-desorption isotherms of the YPC-600, YPC-700, and YPC-800 samples.

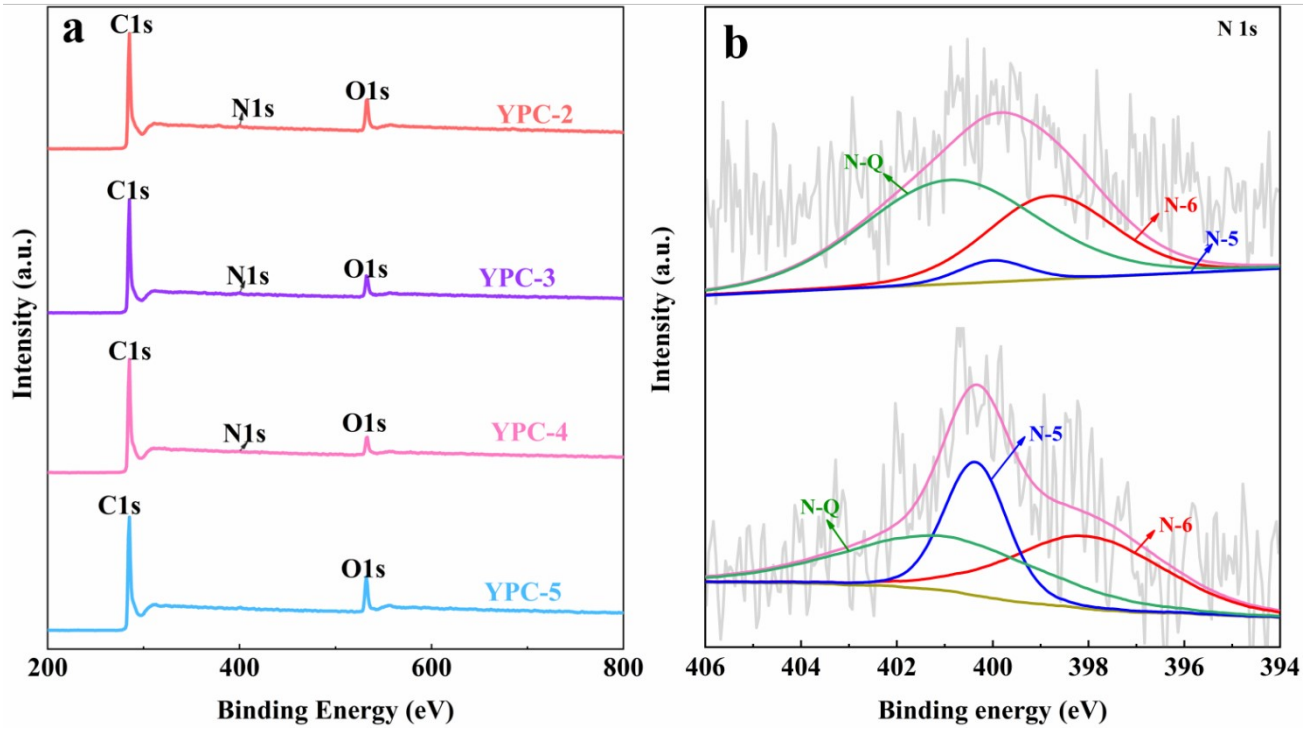

Figure S4. XPS spectra of (a) the YPC-2, YPC-3, YPC-4, and YPC-5 samples and (b) N 1s for YPC-2, YPC-3 samples.

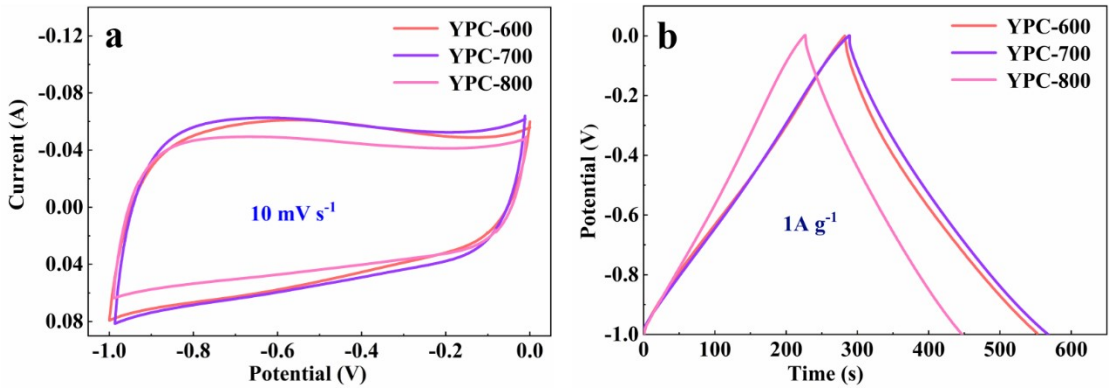

Figure S5. Electrochemical performance of the YPC-600, YPC-700 and YPC-800 samples in three-electrode system. (a) CV curves at 10 $mV \cdot s^{-1}$; (b) GCD profiles at 1 $A \cdot g^{-1}$.

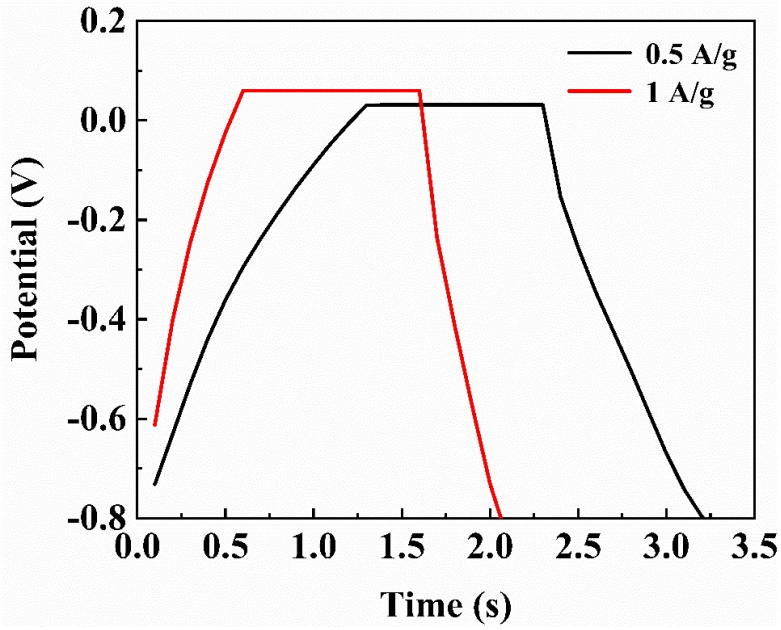

Figure S6. The GCD curves with ash as the electrode materials.

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