Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information For

Polyaniline Nanorods Randomly Assembly on the Sugarcane Bagasse Pith-based Carbon sheets with Promising Capacitive Performance

Kezheng Gao, Shuyan Zhao, Qingyuan Niu *, and Lizhen Wang*

School of Material and Chemical Engineering, Zhengzhou University of Light Industry, Zhengzhou 450002, P. R. China

∗ Corresponding author:

E-mail addresses: niuqingyuan1984@126.com (Q. Niu); wlz@zzuli.edu.cn (Lizhen Wang)

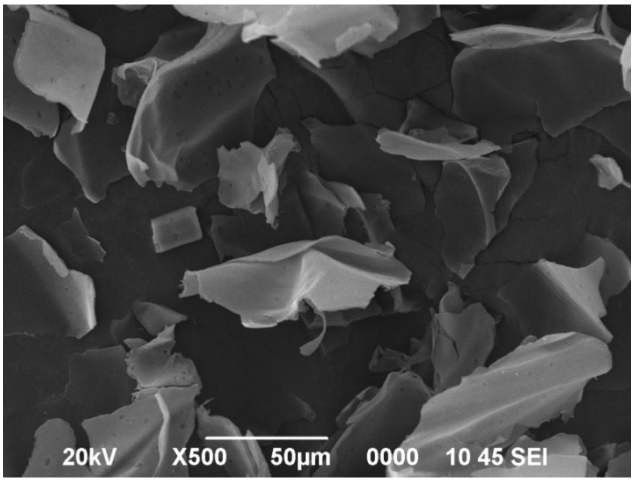

Fig. S1 SEM of the screened sugarcane pith

Table S1 The relative percentages of carbon species

Sample	C-C/C=C (%)	C-O (%)	C=O (%)	O-C=O (%)
SPCN	40.32	34.60	15.38	9.70
oxidized SPCN	49.30	19.62	6.79	24.29

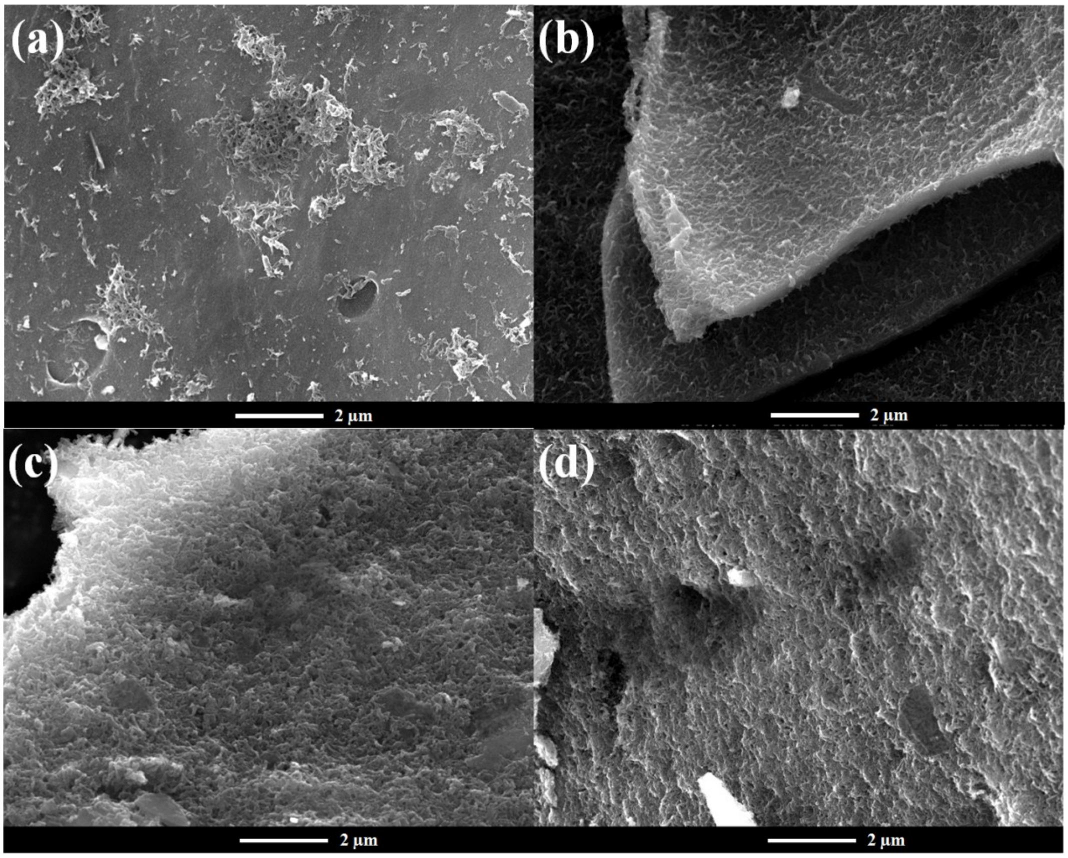

Fig. S2 FE-SEM of the oxidized SPCN/PANI-0.005 (a), the oxidized SPCN/PANI-0.01 (b), the oxidized SPCN/PANI-0.02 (c) and the oxidized SPCN/PANI-0.04 (b).

Table S2 Chemical composition of Oxidized SPCN/PANI-X by combustion analysis

Sample	C(wt%)	N(wt %)	PANI(wt %)
Oxidized SPCN/PANI-0.005	73.2	1.9	12.8
Oxidized SPCN/PANI-0.01	70.6	5.1	33.9
Oxidized SPCN/PANI-0.02	62.4	8.1	54.1
Oxidized SPCN/PANI-0.04	62.8	9.8	65.3

Calculation method: PANI(wt %)=N(wt %)/14×93.14.

Table S3 The pore structure parameters of the the SPCN, oxidized SPCN and oxidized SPCN/PANI-0.02

Sample	S_{BET}(m^2 g^{-1})	V_{total}(cm^3 g^{-1})	$D_{average}$(nm)
SPCN	417	0.22	2.2
Oxidized SPCN	127	0.11	3.7
Oxidized SPCN/PANI-0.02	51	0.31	24.5
Oxidized SPCN/PANI-0.04	53	0.10	7.3

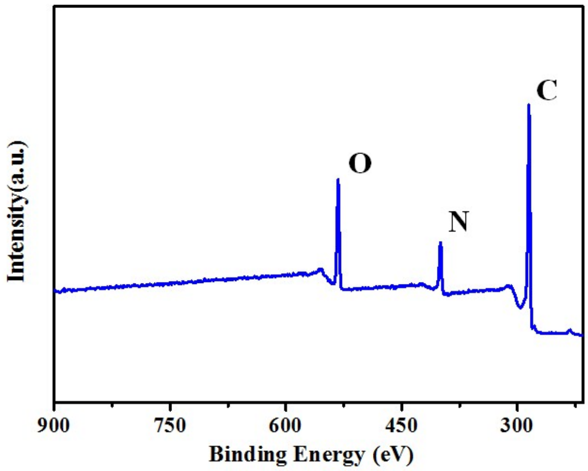

Fig. S3 XPS survey spectrum of the Oxidized SPCN/PANI-0.02.

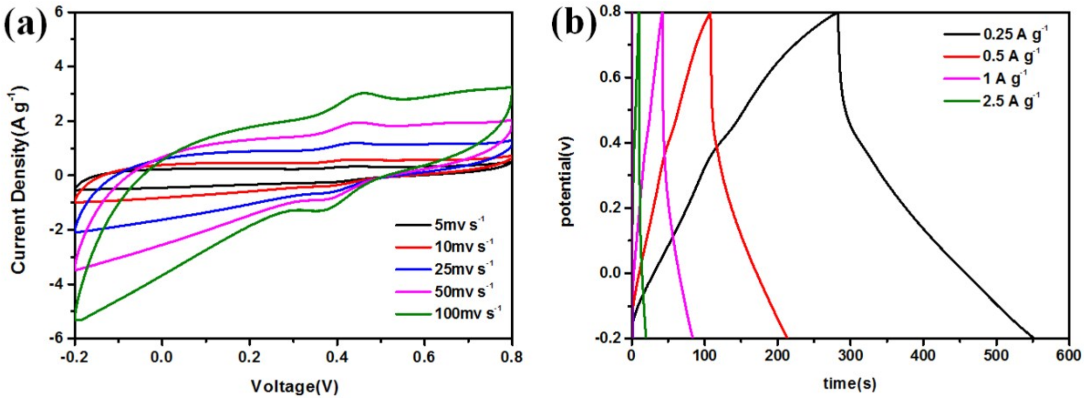

Fig. S4 CV curves of SPCN sample at different scan rates; (b) GCD curves of SPCN sample at different current densities (1 M H_2SO_4).

The gravimetric capacitance of the SPCN sample is 67 F g^{-1} at current density of 0.25 A g^{-1}.

Table S4. Electrochemical performances of different PANI-based electrodes.

Electrode materials	Electrolyte	Capacitance (F g^{-1})	References
PANI hydrogels	1 M H_2SO_4	636 (at 2 A g^{-1})	S1
G/PANI nanorods/CNT	1 M H_2SO_4	638 (at 0.5 A g^{-1})	S2
3D RGO/S-PANI	1 M H_2SO_4	480 (at 1 A g^{-1})	S3
RGO/PANI/Vulcan carbon	1 M H_2SO_4	446 (at 5 mV s-1)	S4
CGR/CNT/PANI	1 M H_2SO_4	456 (at 1 A g^{-1})	S5
RGO/PANI nanoarrays	1 M H_2SO_4	727 (at 1 A g^{-1})	S6
RGO/PANI nanoarrays	1 M H_2SO_4	555 (at 0.2 A g^{-1})	S7

RGO/PANI	**1 M H_2SO_4**	**385 (at 0.5 A g^{-1})**	**S8**
PANI /GrapheneNanoribbons	**1 M H_2SO_4**	**340 (at 0.25 A g^{-1})**	**S9**
G/ PANI nanoarrays/CF	**1 M H_2SO_4**	**1145 (at 1 A g^{-1})**	**S10**
G/PANI/CNT	**PVA/H_2SO_4 gel**	**511 (at 1 A g^{-1})**	**S11**
RGO/PANI	**1 M H_2SO_4**	**480 (at 1 A g^{-1})**	**S12**
PANI/CNT	**1 M H_2SO_4**	**424 (at 0.1 A g^{-1})**	**S13**
PANI nanorods	**1 M H_2SO_4**	**297(at 1 A g^{-1})**	**S14**
PANI hydrogel	**1 M H_2SO_4**	**252(at 0.5 A g^{-1})**	**S15**
This work	**1 M H_2SO_4**	**513(at 0.25 A g^{-1})**	

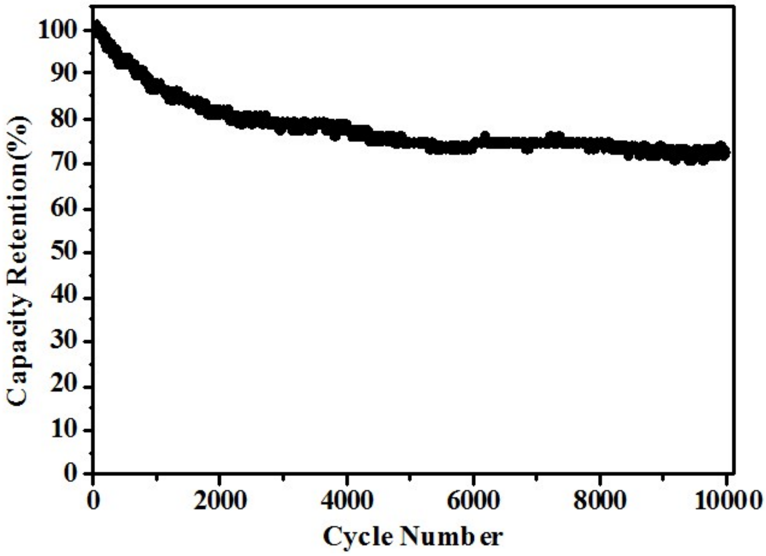

Fig. S5 The cycling stability of the Oxidized SPCN/PANI-0.02 at 5 A g^{-1}.

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