Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Hierarchically Structured Carbon Nanofiber-Silsesquioxane-Polyaniline Nanohybrids for Flexible Supercapacitor Electrodes

Weihong Lin,[ab] Kai Xu,[a] Jun Peng,[ab] Yuxiu Xing,[ab] Shuxi Gao,[ab] Yuanyuan Ren,[ab] and Mingcai Chen[a].

[a] Key Laboratory of Polymer Material for Electronics, Guangzhou Institute of Chemistry, Chinese Academy of Sciences, P.O.BOX 1122, Guangzhou 510650, PR China

[b]University of Chinese Academy of Sciences, Beijing 100049, PR China.

* Corresponding author. Tel.: +86 20 85232302; Fax: +86 20 85231058.

E-mail address: xk@gic.ac.cn

Supporting Information

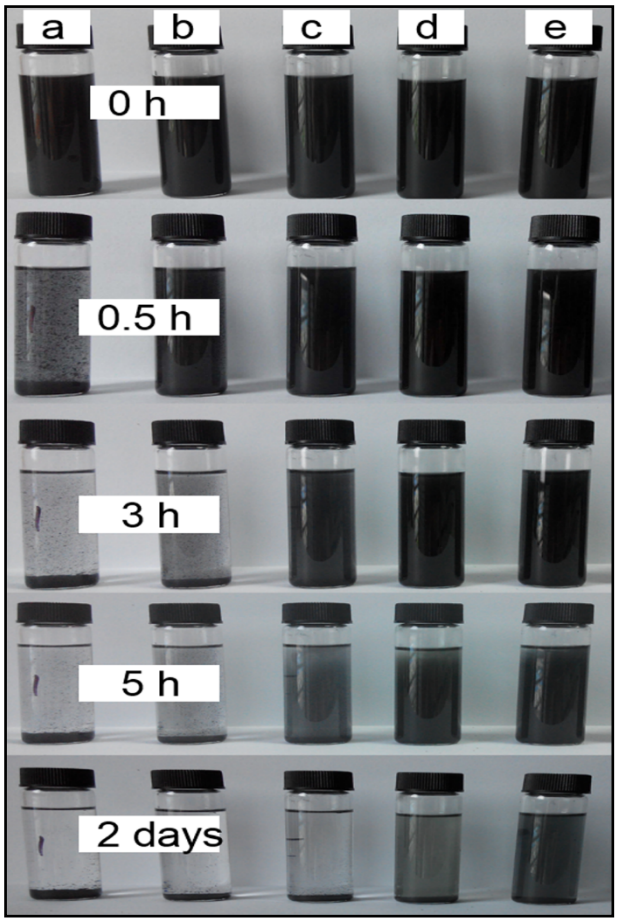

Fig. S1 Photographs of vials containing alcohol dispersions of CNF (a), CNF-SQ (b), CNFS-PANI10 (c), CNFS-PANI30 (d) and CNFS-PANI50 (e) in 0 h, 0.5 h, 3 h, 5 h and 2days (0.1mg/ml).

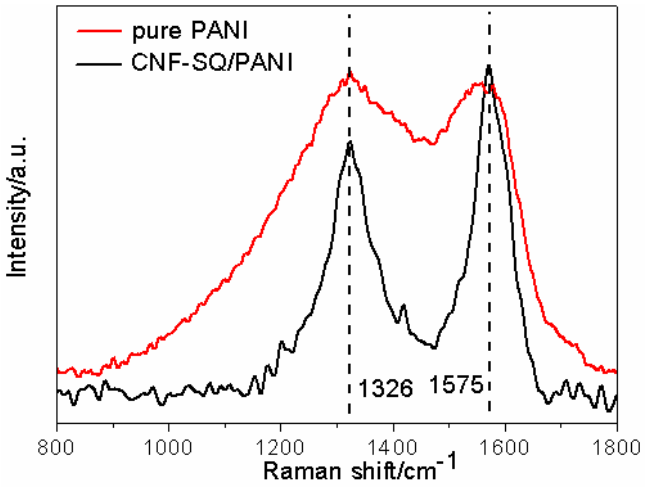

Fig. S2 Raman spectra of pure PANI and CNF-SQ/PANI

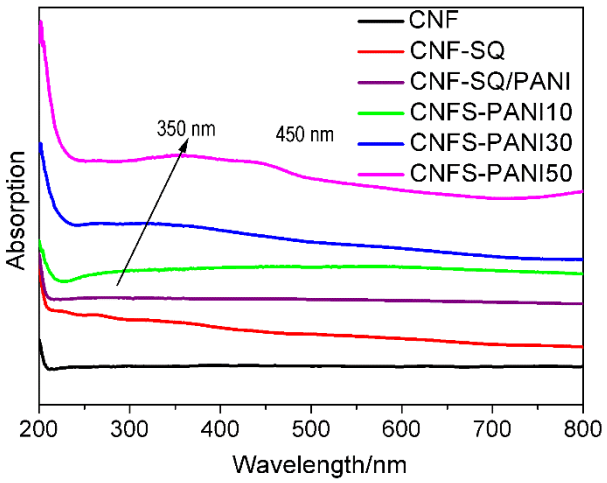

Fig. S3 UV-vis spectra of CNF, CNF-SQ, CNF-SQ/PANI and CNFS-PANIs nanohybrids in alcohol via ultrasounding for 5 min

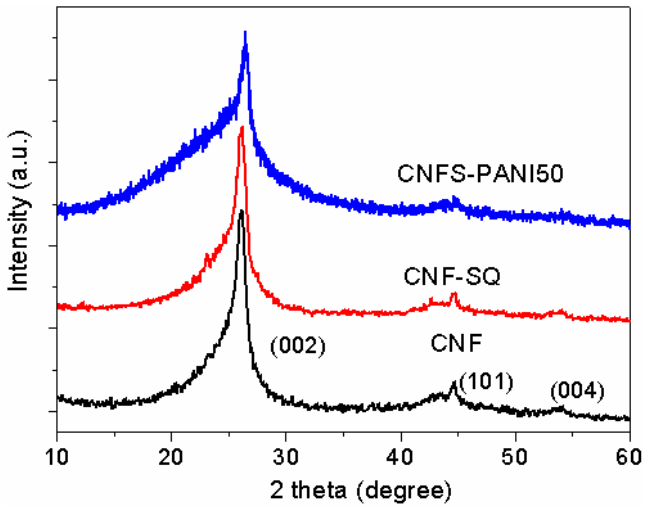

Fig. S4. X-ray diffractions of CNF, CNF-SQ and CNFS-PANI50 nanohybrids.

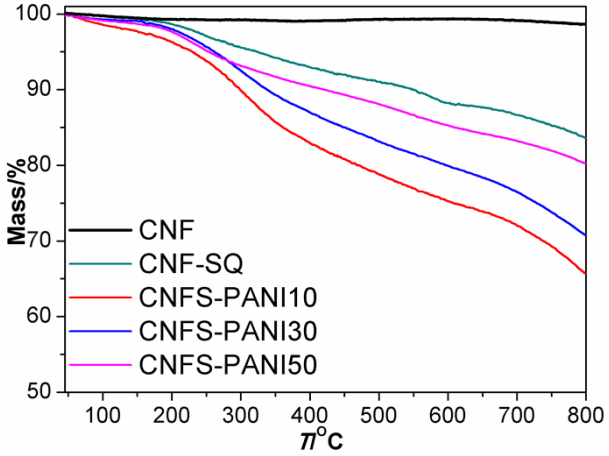

Fig. S5 TGA thermograms of samples obtained with a ramping rate of 10 ◦C/min in nitrogen

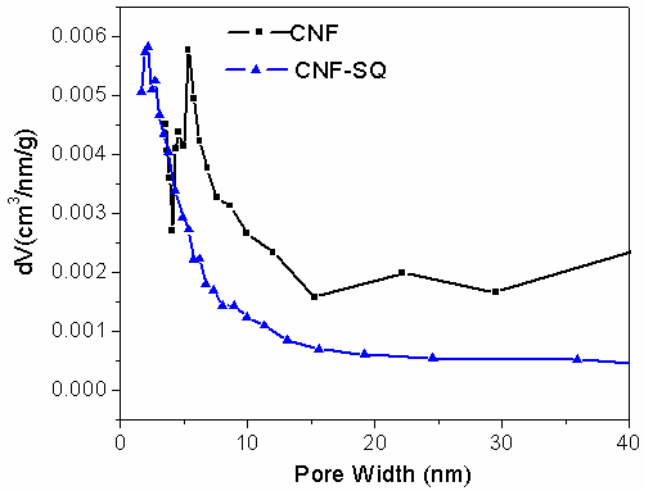

Fig. S6 Pore size distributions of CNF and CNF-SQ conjugates, respectively

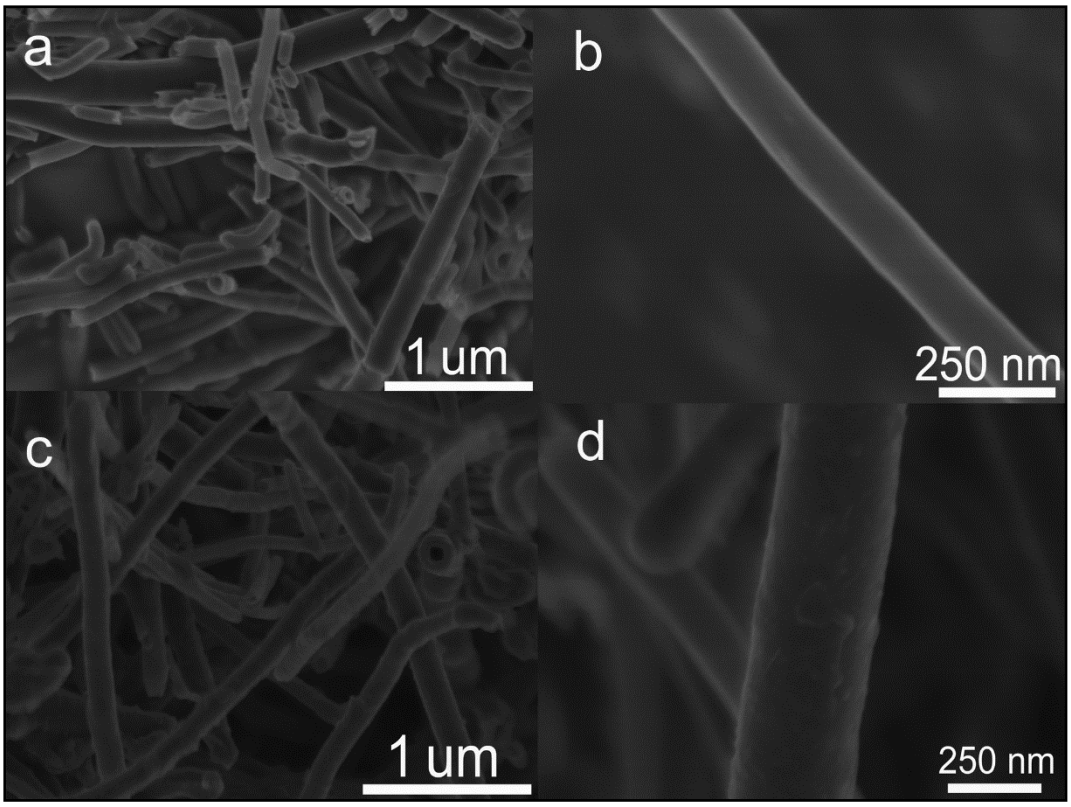

Fig. S7 FE-SEM images of CNF at a) low and b) high magnifications. FE-SEM images of synthesized CNF-SQ hybrid materials at c) low and d) high magnifications.

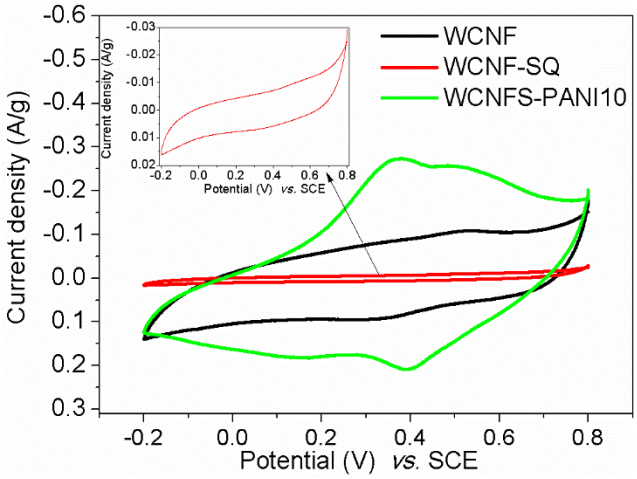

Fig. S8 Cyclic voltammograms of the pure CNF, CNF-SQ and CNFS-PANI10 electrode in 1 M HSO_4 at a sweep rate of 10 m V s^{-1}

Table S1 Energy-Dispersive X-ray Spectroscopy analysis data of the CNFS-PANI nanohybrides

Sample	C (at.%)	N (at.%)	Si (at.%)	Cl (at.%)	Cl/ N (molar ratio)	N/ Si (molar ratio)
CNF-SQ	75.71±3.49	5.92±0.71	2.94±0.52	N/A	N/A	2.03±0.18
CNFS-PANI10	87.36±1.74	3.20±0.12	1.50±0.18	0.80±0.04	0.25±0.02	2.15±0.18
CNFS-PANI30	75.33±0.58	5.79±0.28	2.74±0.33	2.92±0.19	0.50±0.02	2.11±0.28
CNFS-PANI50	74.46±0.10	6.49±0.24	2.68±0.10	2.55±0.25	0.39±0.01	2.43±0.17