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Electronic Supplementary Information

Enzymatic synthesis and electrochemical characterization of sodium 1,2-naphthoquinone-4-sulfonate-doped PEDOT/MWCNT composite

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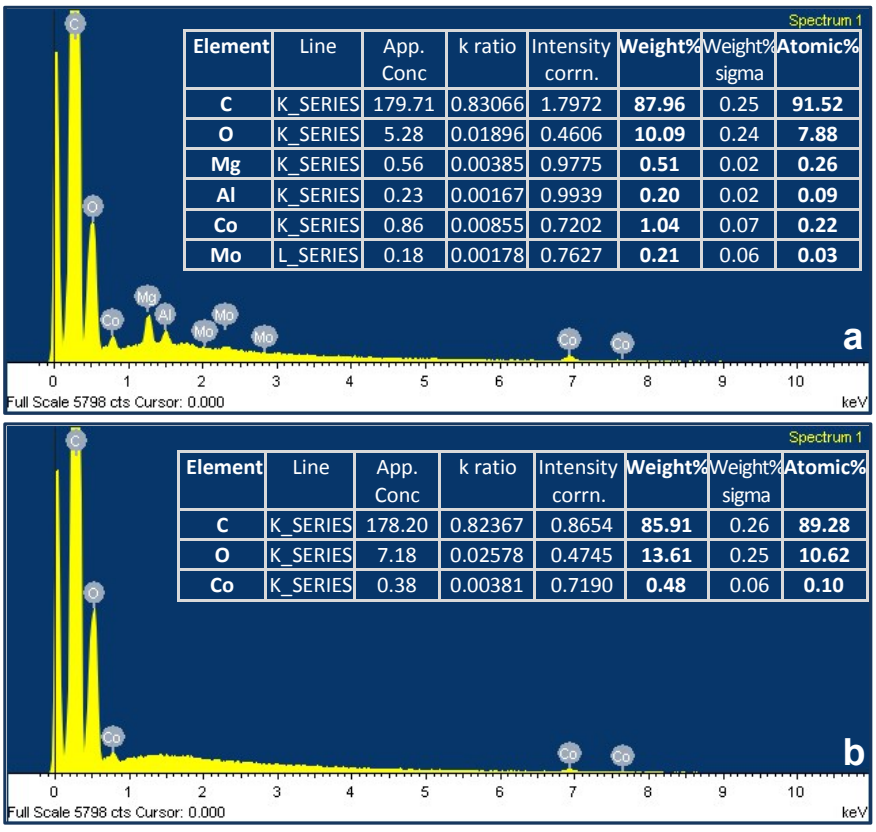

Fig. S1 EDX spectra of untreated (a) and acid-treated (b) MWCNTs.

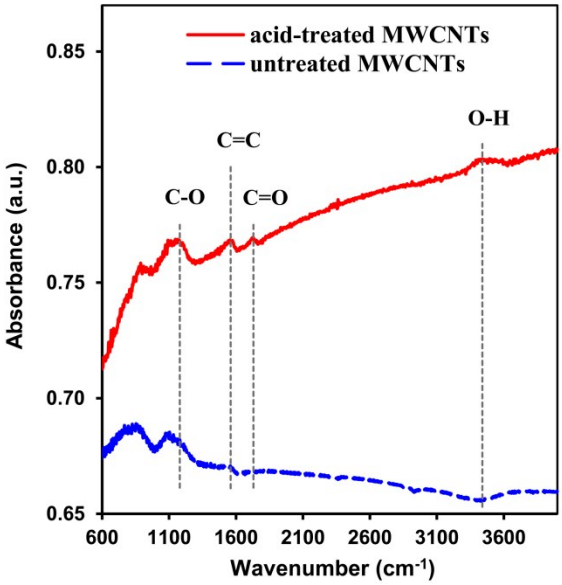

Fig. S2 FTIR spectra of untreated and acid-treated MWCNTs.

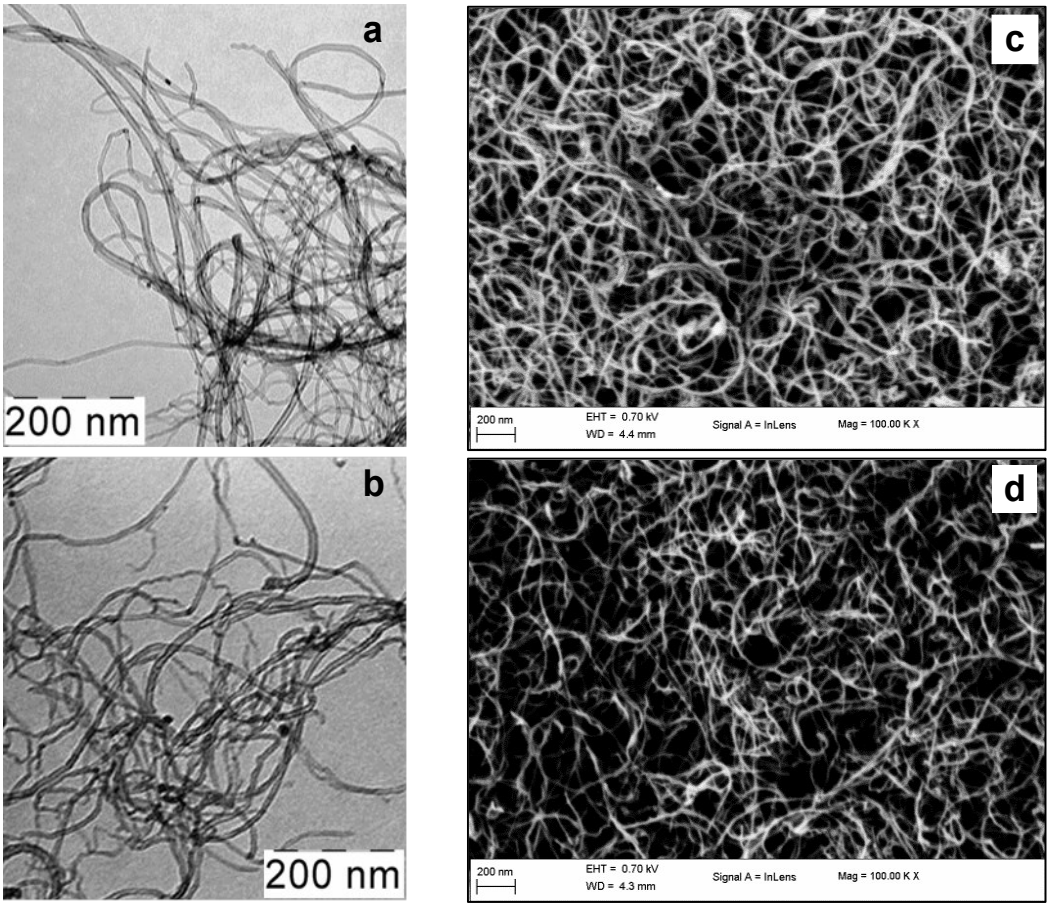

Fig. S3 TEM and SEM images of untreated (a,c) and acid-treated (b,d) MWCNTs.

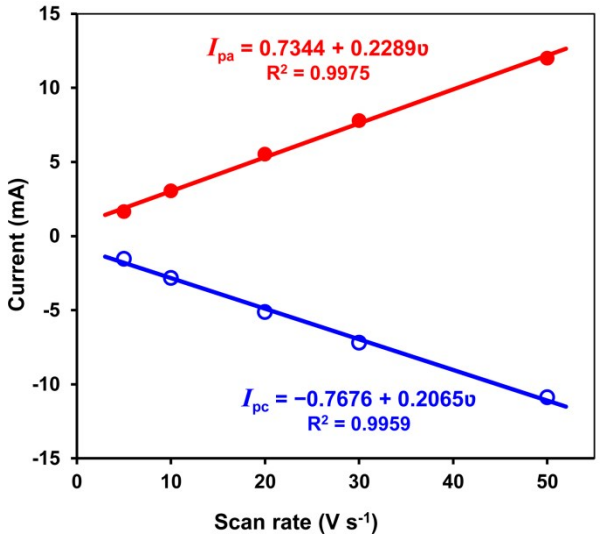

Fig. S4 The linear dependence of the cathode and anode currents of couple II of redox peaks on the scan rate.

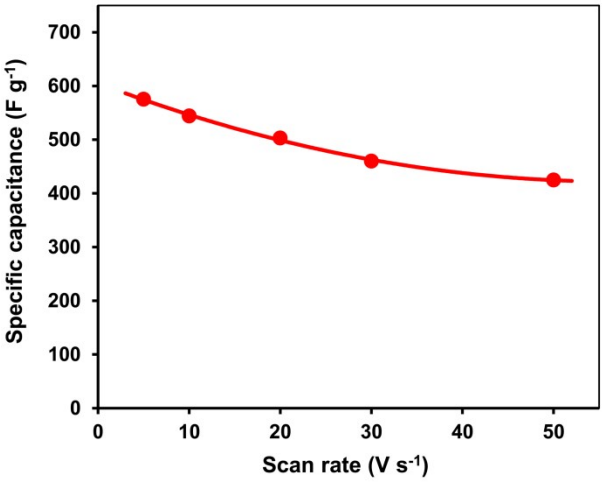

Fig. S5 The specific capacitance of the PEDOT-NQS/MWCNT composite as a function of the potential scan rate.

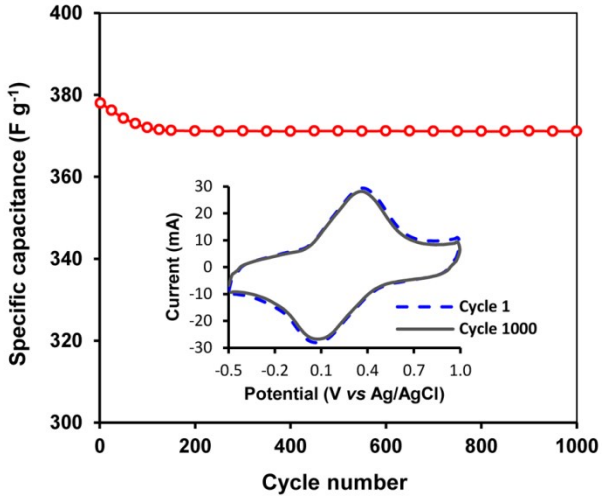

Fig. S6 The dependence of the specific capacitance of the PEDOT-NQS/MWCNT composite on CV cycle numbers within a potential window from –0.5 to 1.0 V at a potential scan rate of 100 mV s^{-1}. The inset exhibits the CV curves at cycle 1 and cycle 1000.

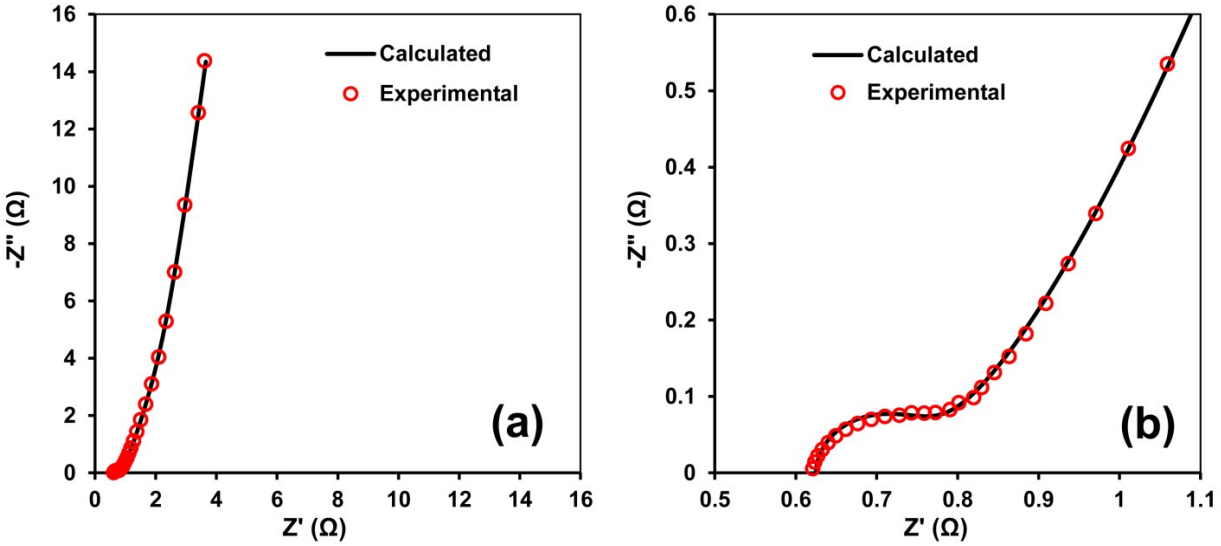

Fig. S7 (a) Comparison of the experimental EIS spectrum at 0.235 V (hollow circles) and the spectrum calculated by the equivalent circuit (solid line). (b) The plot shows the extended high-frequency region.

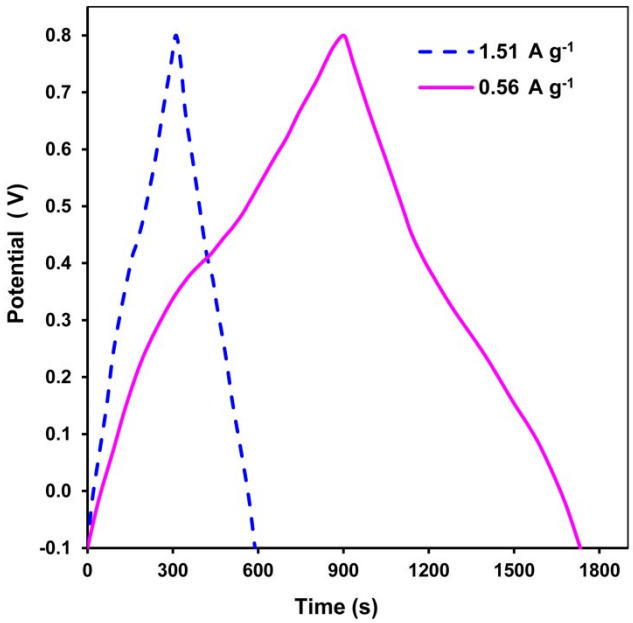

Fig. S8 Galvanostatic charge/discharge curves of the PEDOT-NQS/MWCNT composite in 1 M H_2SO_4 at different current densities.