

## Supporting Information

# **Poly(3,4-ethylenedioxythiophene)/nanotubes hybrid film for electrocatalytic determination of tertiary butylhydroquinone**

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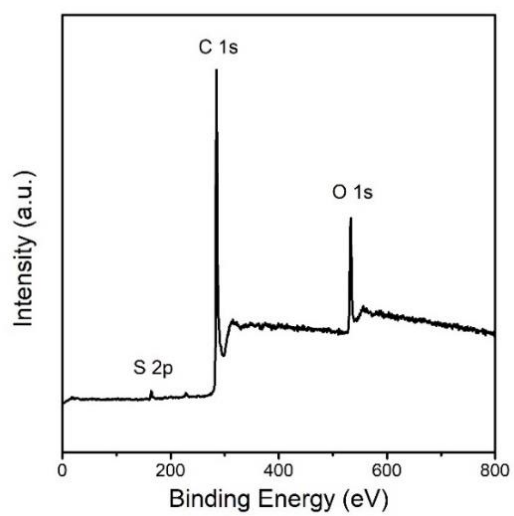


Figure S1. XPS survey spectra of PEDOT-CNT.

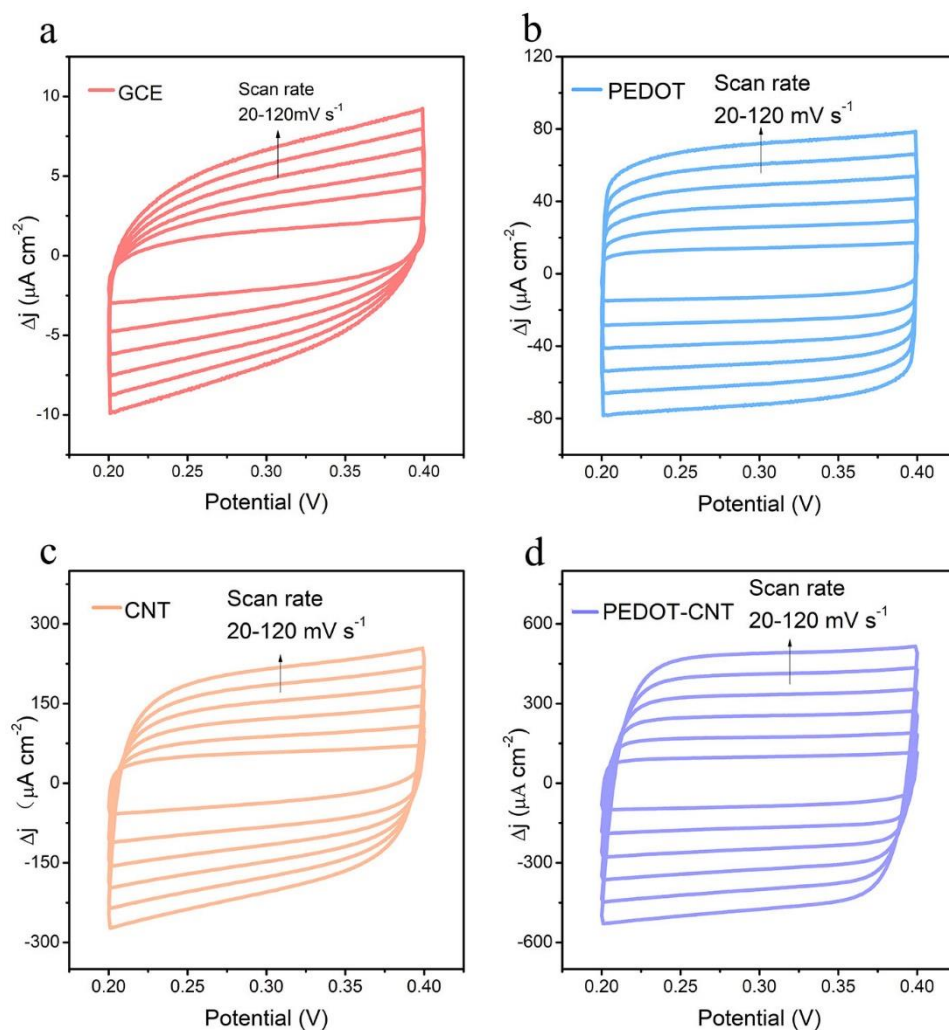


Figure S2. ECSA tests of GCE, PEDOT/GCE, CNT/GCE, PEDOT-CNT/GCE in 0.1 M PBS (pH = 6.5) (a), (b), (c), (d). Cyclic voltammety curves of GCE, PEDOT/GCE, CNT/GCE, PEDOT-CNT/GCE with different scanning rates from 20 to 120  $\text{mV s}^{-1}$ .

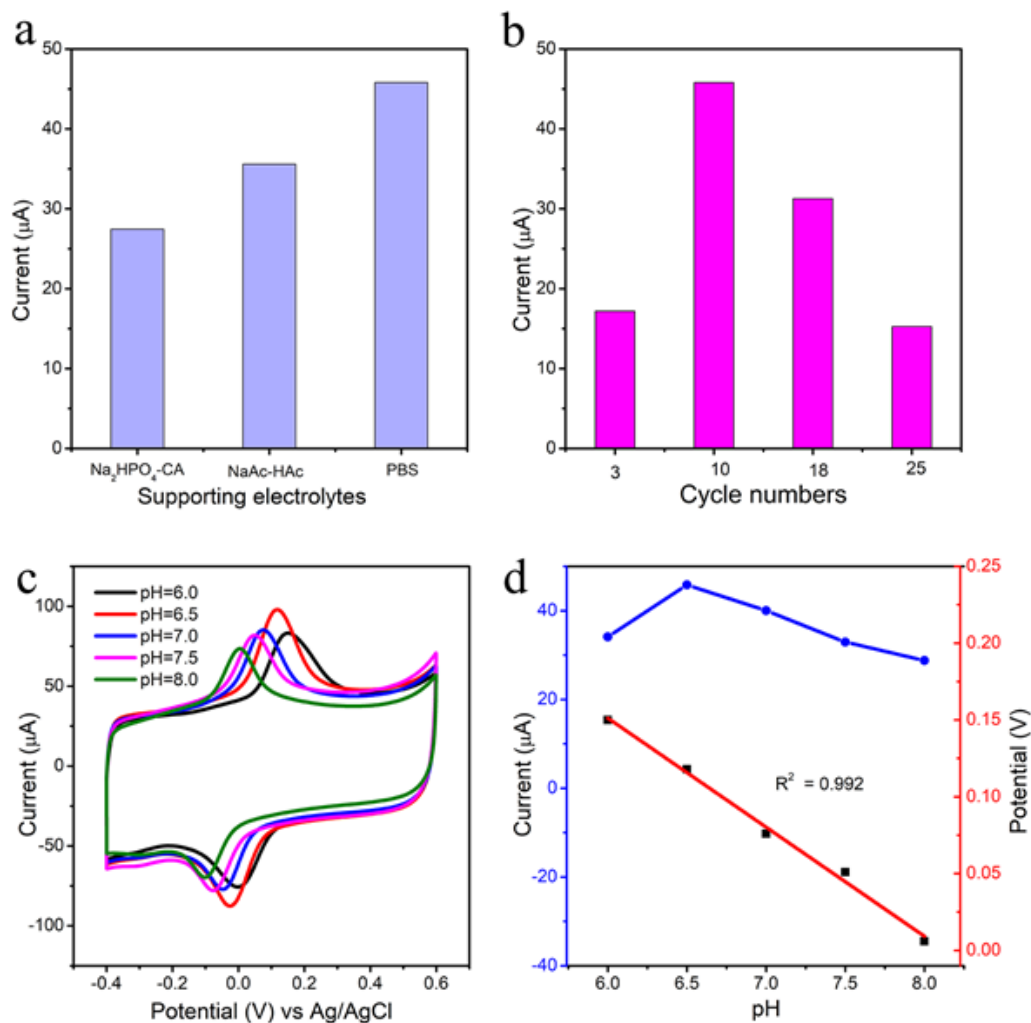


Figure S3. (a) CVs of PEDOT-CNT electrode in the presence of 0.2 mM TBHQ in different buffer solution (pH 6.5). (b) CVs of PEDOT-CNT electrode in the presence of 0.2 mM TBHQ in different cycle numbers. (c) CVs curves of 0.2 mM TBHQ at the PEDOT-CNT/GCE in 0.1 M PBS under different pH values. (d) The relationship between pH and peak potential E, and the effect of pH on the anodic peak currents.

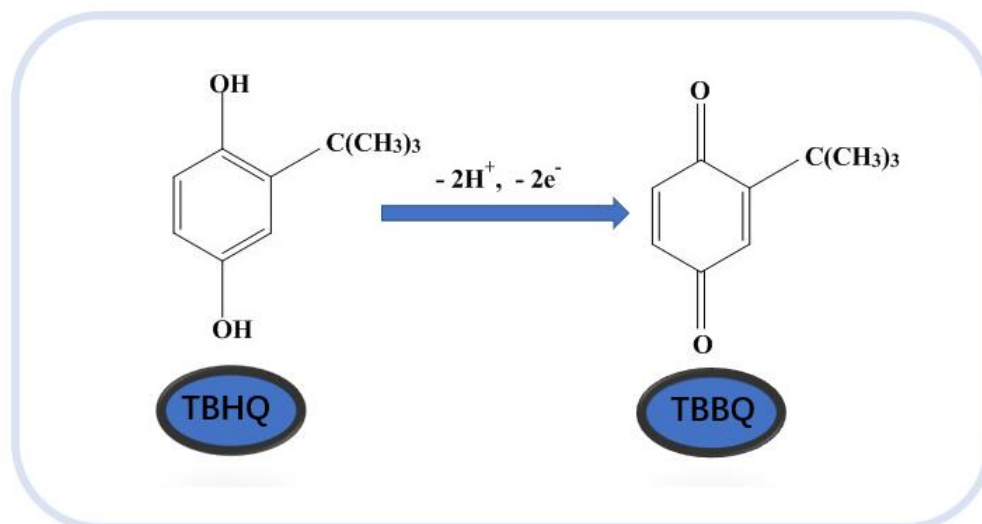


Figure S4. The reaction mechanism of TBHQ.

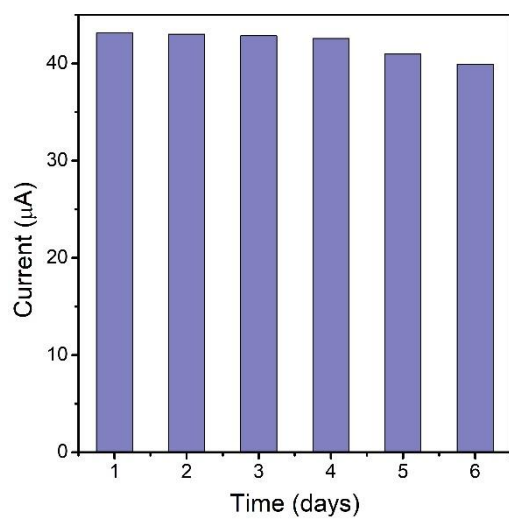


Figure S5. Stability test of PEDOT-CNT/GCE to 0.2 mM of TBHQ in 0.1 M PBS (pH 6.5) after one day, two days, three days, four days, five days and six days, respectively.

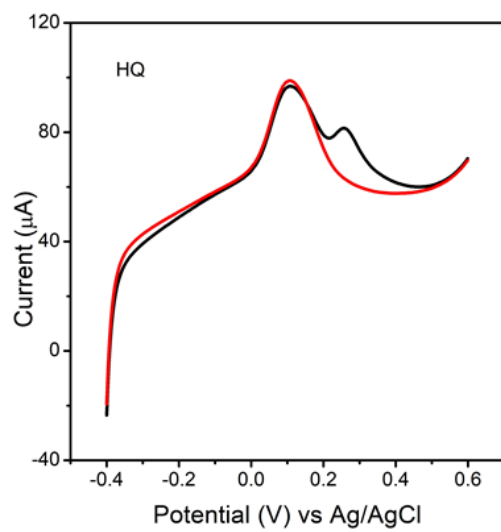


Figure S6. LSV at PEDOT-CNT/GCE in 100  $\mu\text{M}$  TBHQ with absence (red curve) and presence of HQ interferences (black curve).