## **Supplementary Information**

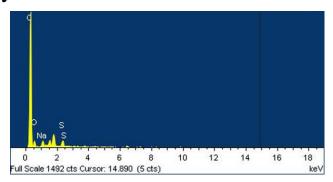


Fig. S1 EDS spectra of CNSs xanthate.

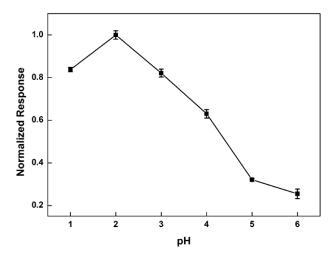


Fig. S2 Plots of SWSVs relative peak current against pH (deposition potential: -0.4 V, deposition time: 180s) obtained from the modified CPE for 2  $\mu$ M Cu<sup>2+</sup> in 0.01 M HNO<sub>3</sub> solution.

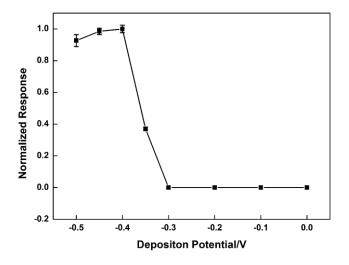


Fig. S3 Plots of SWSVs relative peak current against deposition potential (deposition time: 180s) obtained from the modified CPE for 2  $\mu$ M Cu<sup>2+</sup> in 0.01 M HNO<sub>3</sub> solution.

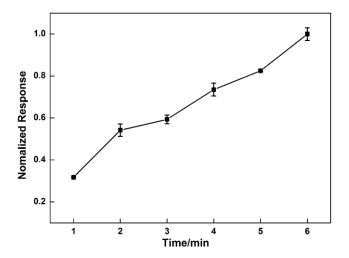


Fig. S4 Plots of SWSVs relative peak current against deposition time (deposition deposition: -0.4 V) obtained from the modified CPE for 2  $\mu$ M Cu<sup>2+</sup> in 0.01 M HNO<sub>3</sub> solution.

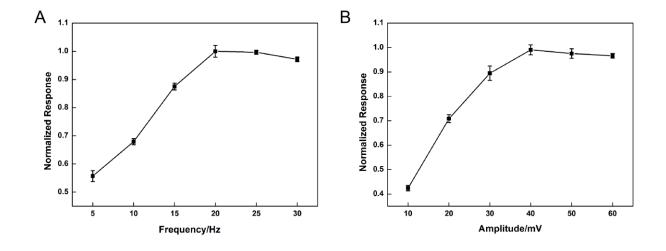


Fig. S5 Plots of SWSVs relative peak current against (A) frequency (amplitude: 40 mV); (B) amplitude (frequency: 20 Hz), respectively, obtained from the modified CPE for 2  $\mu$ M Cu<sup>2+</sup> in 0.01 M HNO<sub>3</sub> solution.