

Supplementary material:

3. Results and discussion

3.3. Optimization of the experimental conditions

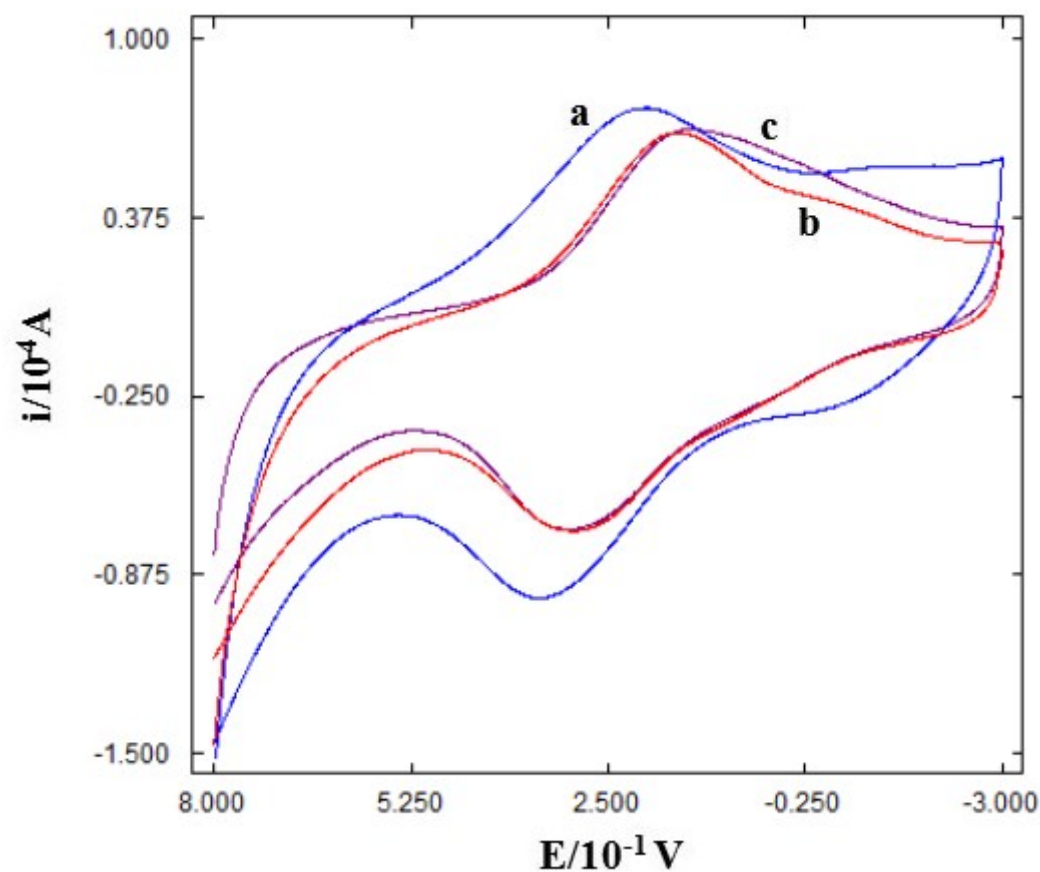


Fig. S1 CVs of the ssDNA/PICA/ERGNO/CPE recorded in 0.3 mol/L PBS (pH 7.0) obtained from different probe ssDNA immobilization time (a) 100 min, (b) 120 min, (c) 140 min

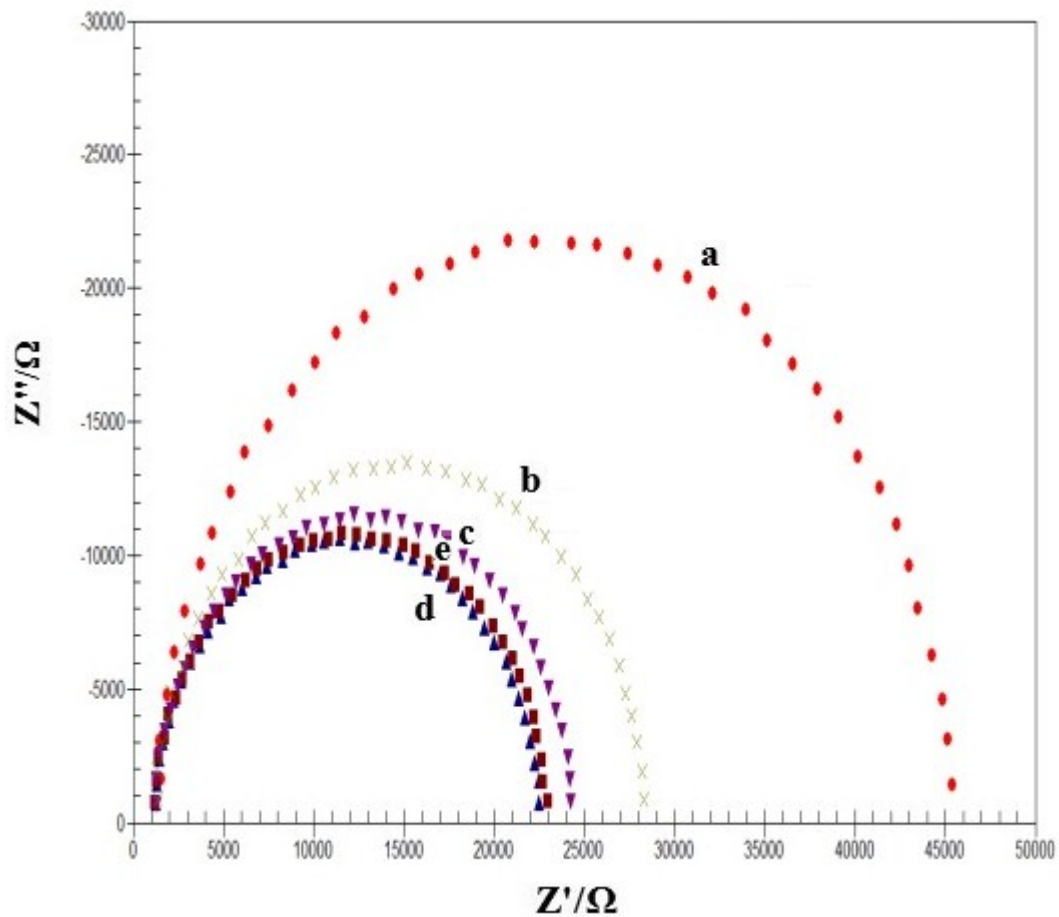


Fig. S2 Nyquist plots recorded at the ssDNA/PICA/ERGNO/CPE (a), dsDNA/PICA/ERGNO/CPE (hybridized with 1.0×10^{-9} mol/L cDNA) obtained from different hybridization time (b) 30 min, (c) 50 min, (d) 70 min, (e) 90 min in 0.3 mol/L PBS (pH 7.0)

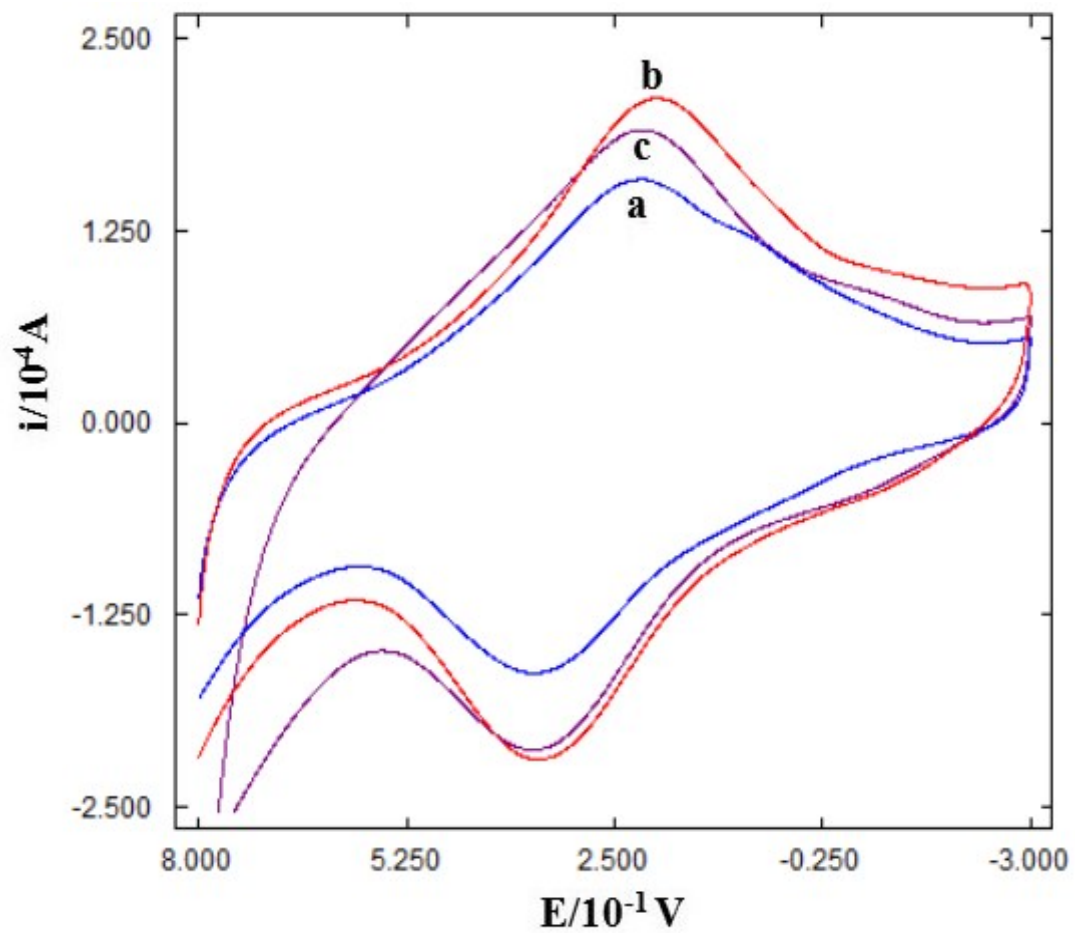


Fig. S3 CVs of the PICA/ERGNO/CPE recorded in 0.3 mol/L PBS (pH 7.0) obtained from different electrochemical reduction time (a) 250 s, (b) 300 s, (c) 350 s

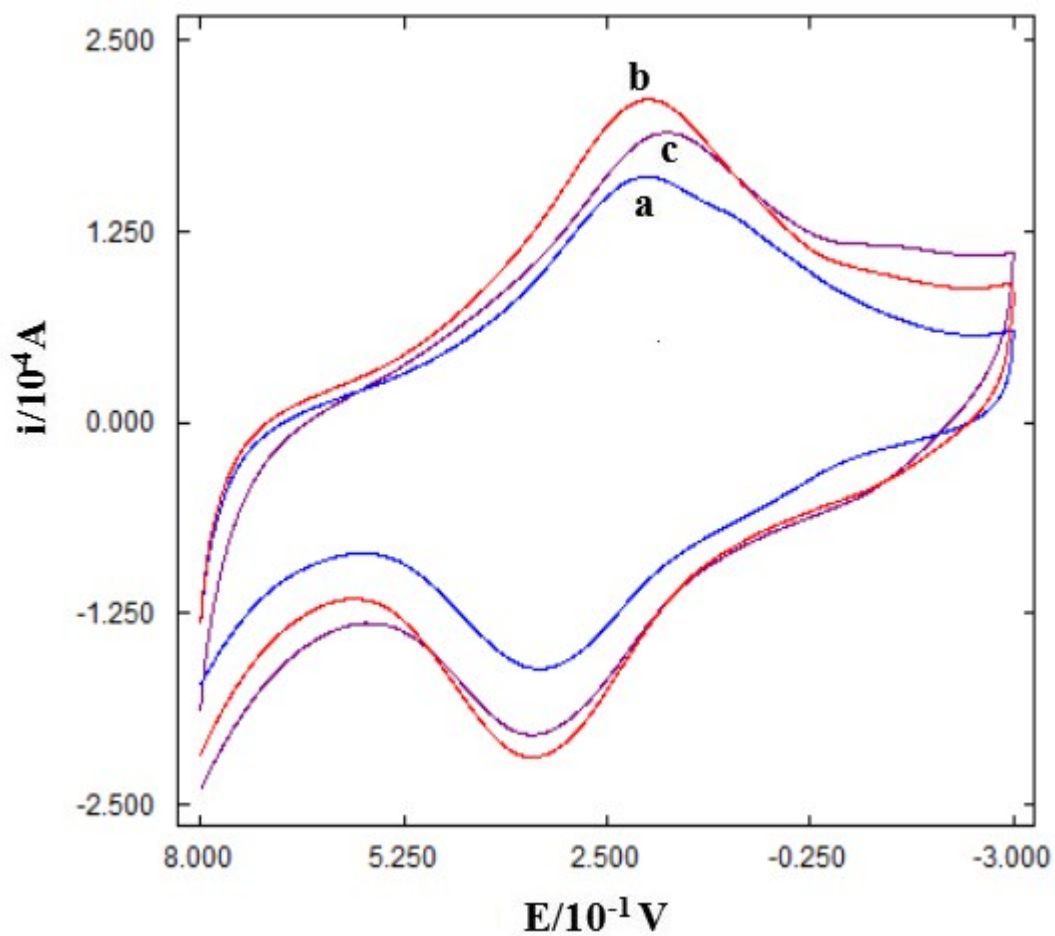


Fig. S4 CVs of the PICA/ERGNO/CPE recorded in 0.3 mol/L PBS (pH 7.0) obtained from different electropolymerization cycles (a) 8 cycles, (b) 10 cycles, (c) 12 cycles

3.6. Quantitative detection of BCR/ABL fusion gene target sequences

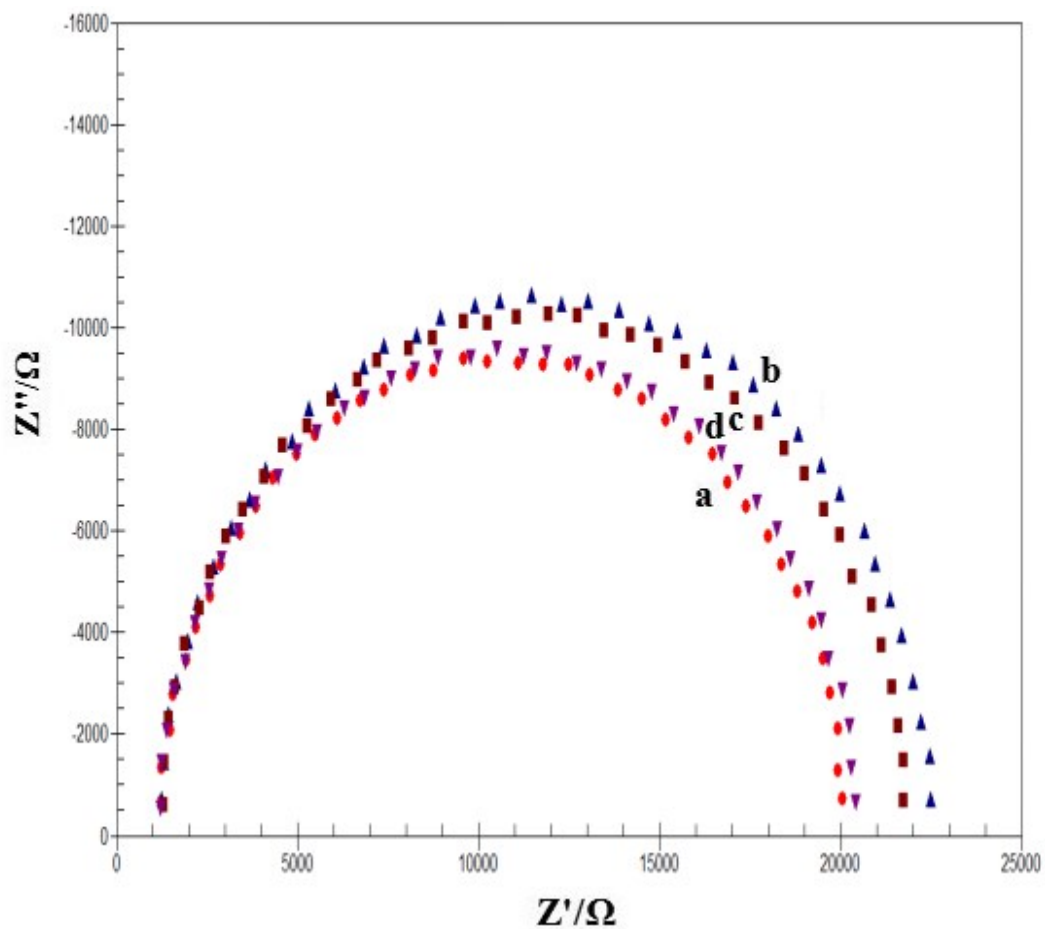


Fig. S5 Nyquist plots recorded at the PICA/ERGNO/CPE (a) and dsDNA/PICA/ERGNO/CPE obtained from hybridized for 70 min with different concentrations of target sequences: (b) 1.0×10^{-9} , (c) 3.0×10^{-9} , (d) 5.0×10^{-9} mol/L in 0.3 mol/L PBS (pH 7.0)

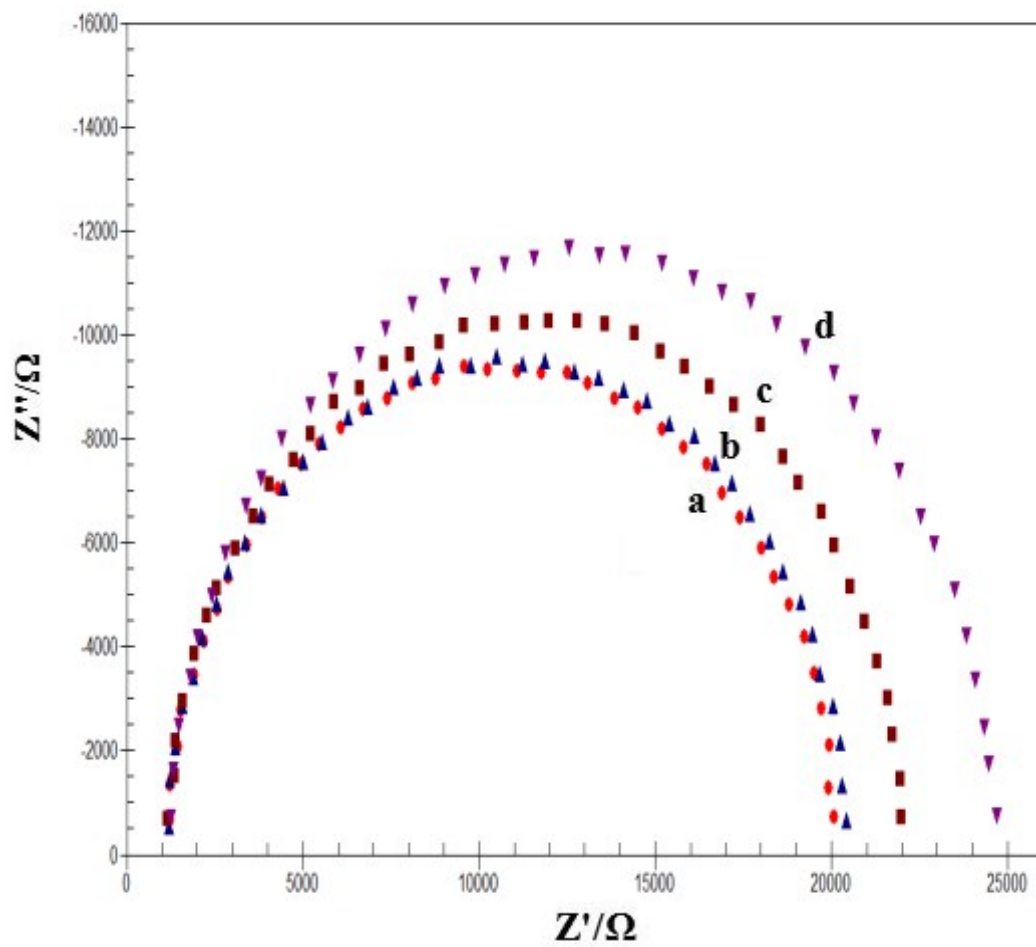


Fig. S6 Nyquist plots recorded at the PICA/ERGNO/CPE (a) and dsDNA/PICA/ERGNO/CPE (hybridized with 5.0×10^{-9} mol/L cDNA) obtained from different hybridization time (b) 70 min, (c) 80 min, (d) 90 min in 0.3 mol/L PBS (pH 7.0)

3.7. Stability, reproducibility and regeneration of the DNA sensing platform

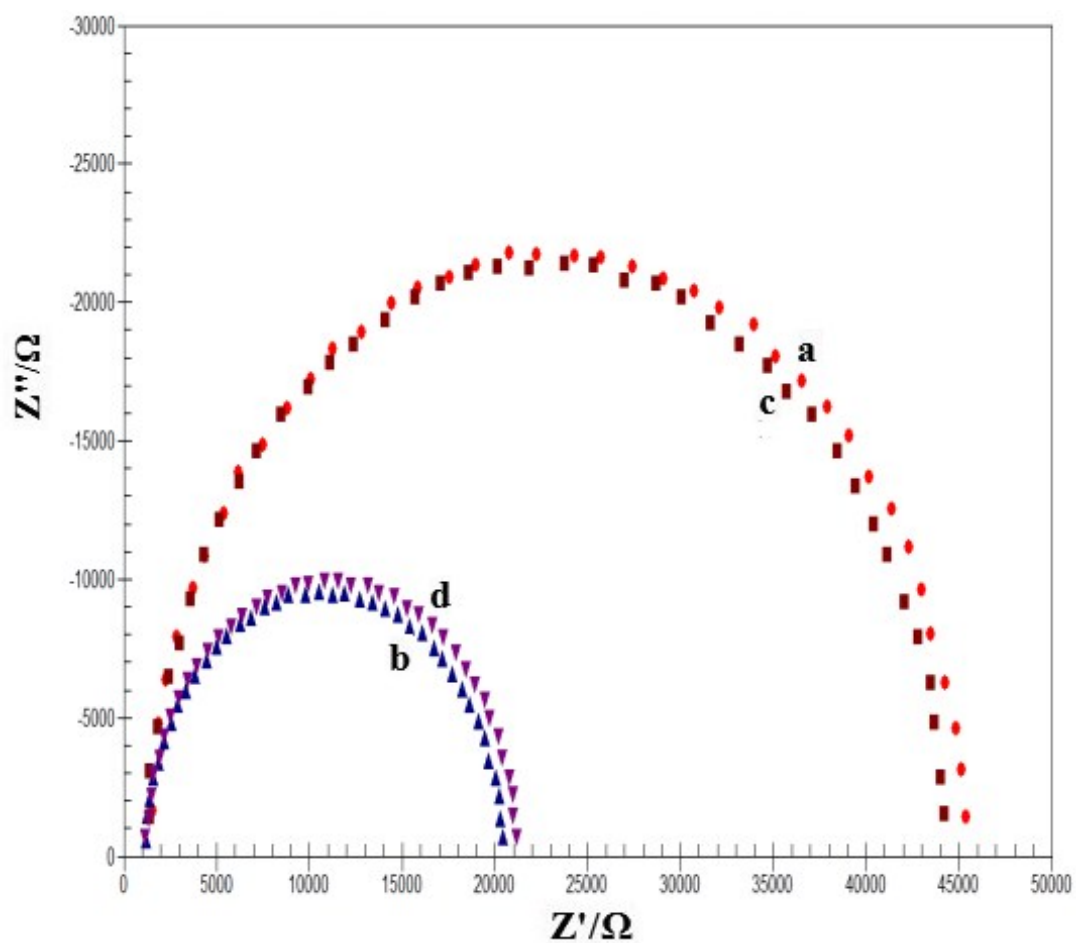


Fig. S7 Nyquist plots recorded at the ssDNA/PICA/ERGNO/CPE (a) and its hybridized dsDNA/PICA/ERGNO/CPE (b), the third-time regenerated ssDNA/PICA/ERGNO/CPE (c) and its hybridized dsDNA/PICA/ERGNO/CPE (d) in 0.3 mol/L PBS (pH 7.0)
(Note: the ssDNA concentration is 1.0×10^{-9} mol/L, the cDNA concentration is 5.0×10^{-9} mol/L, and the hybridization time is 70 min)