Electronic Supplementary Material (ESI) for Polymer Chemistry

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Supplementary Materials

Electrochemically reduced graphene oxide-enhanced electropolymerization of poly-xanthurenic acid for direct, "signal-on" and high sensitive impedimetric sensing of DNA

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The electroactive surface areas of the electrodes

Also, the electroactive areas of the modified CPEs were obtained according to the Randles-Sevcǐk equation [1]:

$$i_{pa} = 2.69\times10^{5}AD^{1/2}n^{3/2}v^{1/2}C$$

where i_p refers to the anodic peak current, n is the number of electrons participating in the redox reaction and is equal to 1, A is the area of the electrode (cm^2), D is the diffusion coefficient of the molecule and is 6.70×10^{-6} cm^2s^{-1}. C is the concentration of the $[Fe(CN)_6]^{3-/4-}$ in the solution and is 1.0 mmol/L, and v is the scan rate ($V\ s^{-1}$).

Table S1. The voltammetric parameters of CVs and the electroactive areas of the various electrodes in Fig. 1S

Electrodes	i_{pa} [a] [10^{-5}A]	i_{pc} [b] [10^{-5}A]	E_{pa} [c] [V]	E_{pc} [d] [V]	$\triangle E_p$ [e] [V]	Electroactive areas cm^2
ERGNO/CPE	2.940	3.032	0.257	0.050	0.207	0.1377±0.006
PXa/CPE	0.120	0.110	0.345	0.080	0.265	0.0499±0.005
PXa/ERGNO/CPE	2.246	3.084	0.246	0.058	0.188	0.1401±0.008

[a] The oxidation peak current. [b] The reduction peak current. [c] The oxidation peak potential. [d] The reduction peak potential. [e] The peak-potential separation.

The active surface areas of ERGNO/CPE, PXa/CPE, PXa/ERGNO/CPE can be calculated to be (0.1377±0.006), (0.0499±0.005) and (0.1401±0.008) cm^2 (average of three measurements), respectively.

1 X. X. Wang, T. Yang, X. Li and K. Jiao, *Biosens. Bioelectron.*, 2011, **26**, 2953.