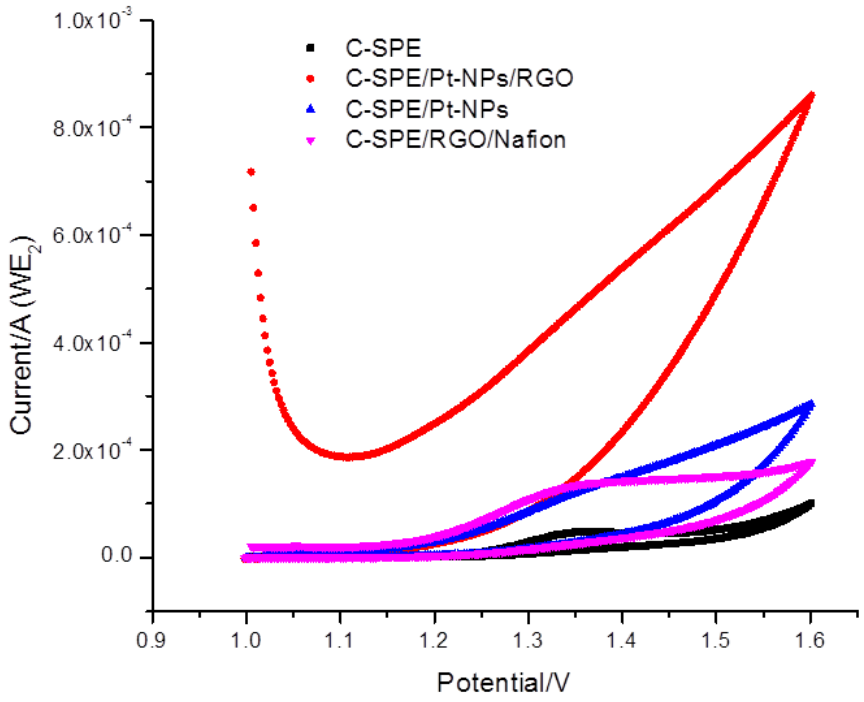
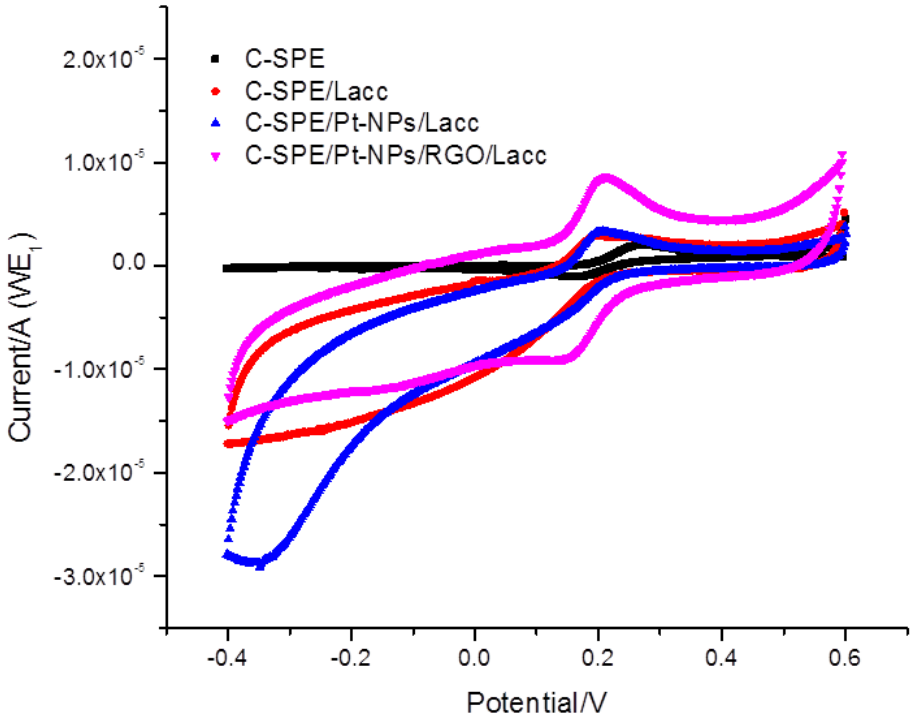
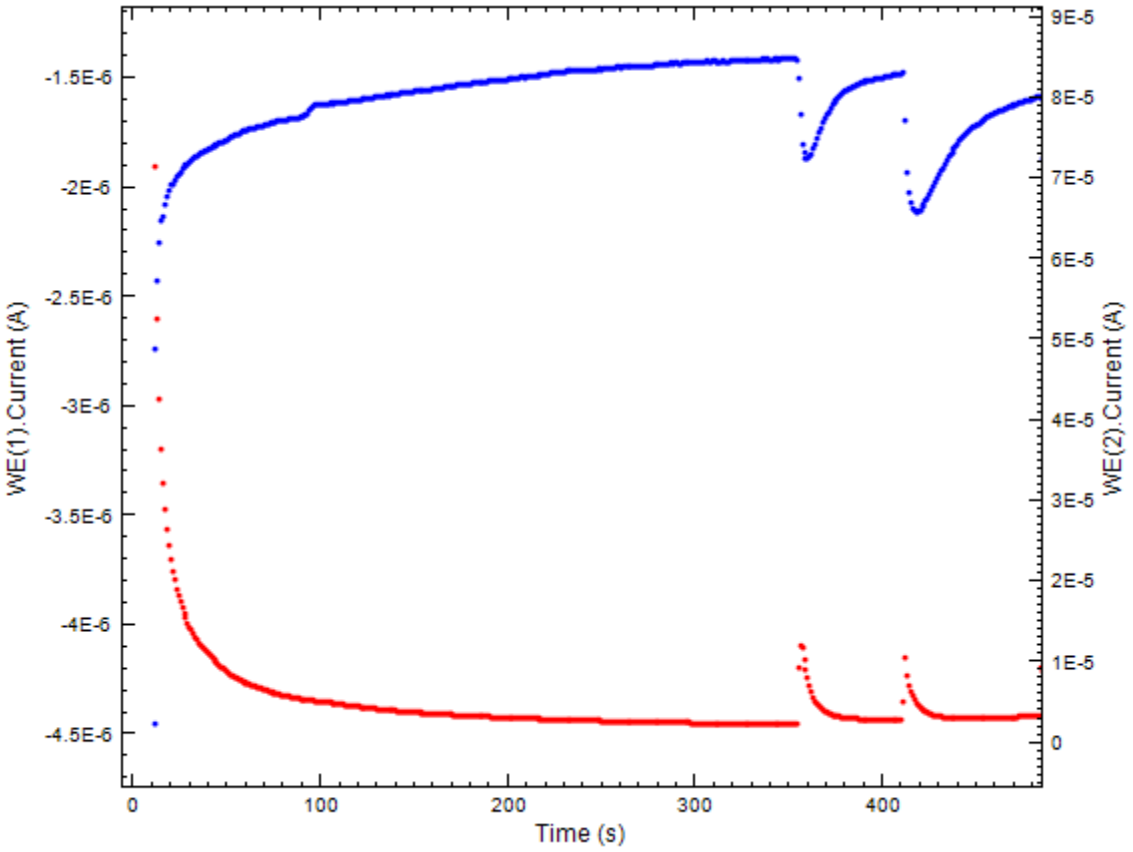
Electronic Supplementary Material (ESI) for RSC Advances.



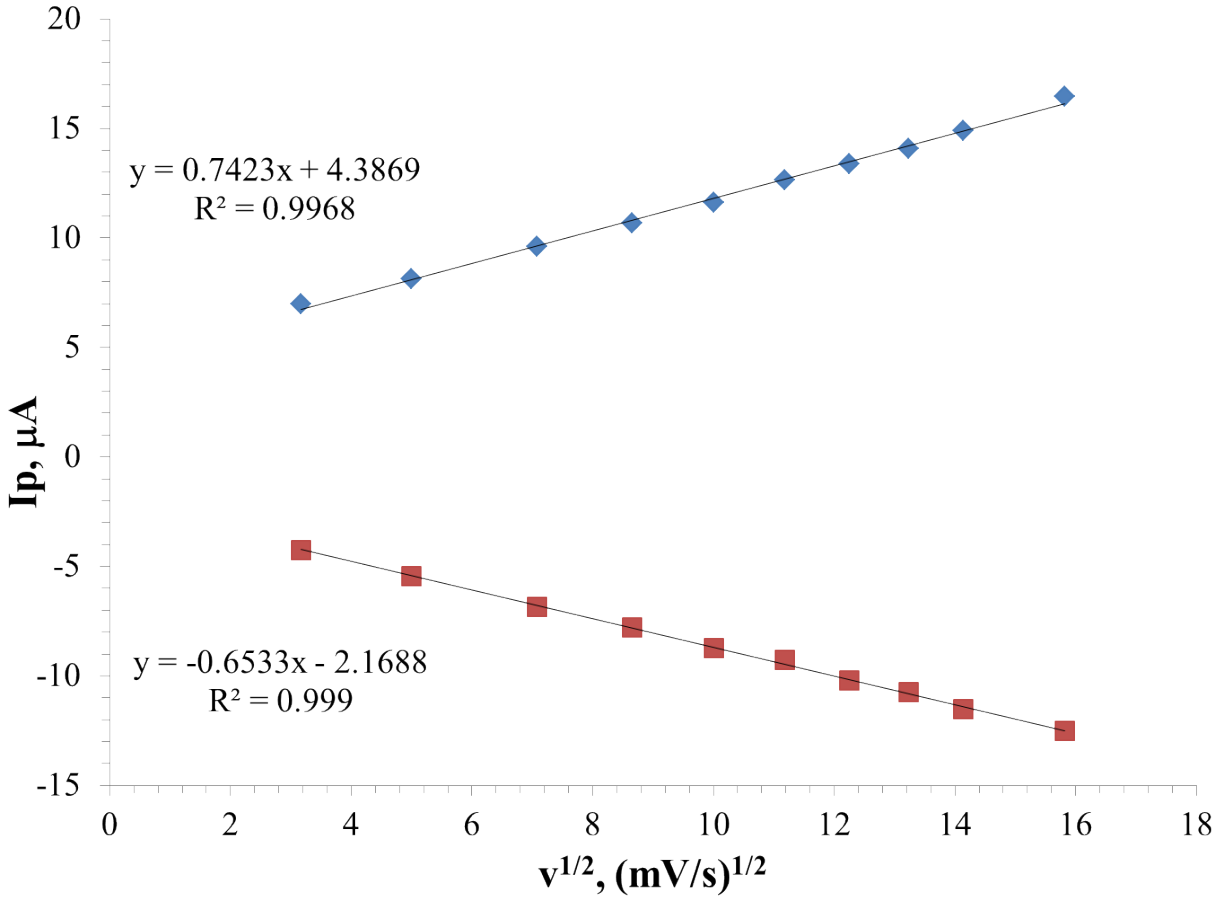
S 1. Cyclic voltammograms of 1 mM caffeine in 0.1 M acetate buffer pH 5.00 (with 0.1 M KCl) on bare carbon screen-printed electrode (black), on carbon modified with RGO and Nafion 0.05 wt% (magenta), carbon modified with Pt-NPs (blue) and carbon modified with Pt-NPs and RGO (red); scan rate of 50 mV/s.



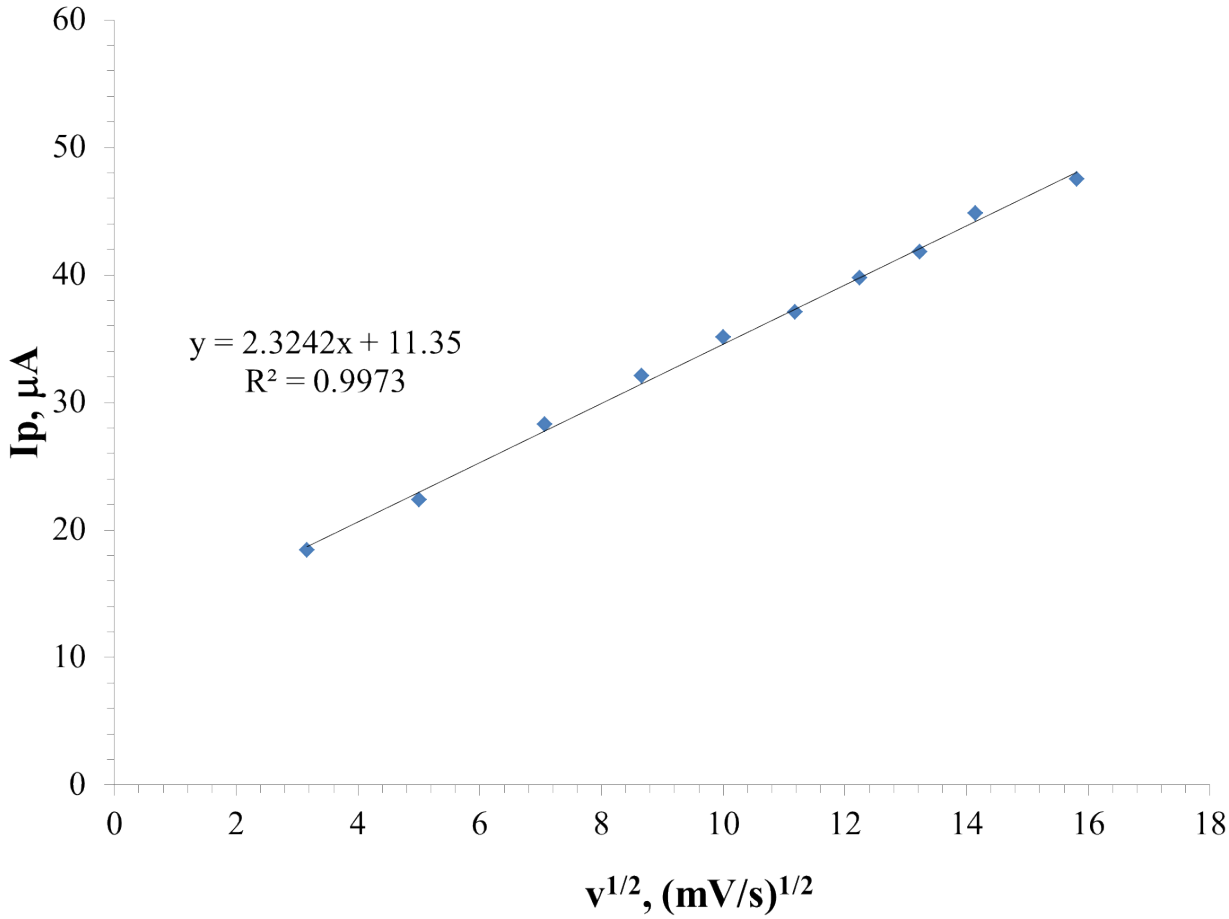
S2. Cyclic voltammograms of 0.5 mM chlorogenic acid in 0.1 M acetate buffer pH 5.00 (with 0.1 M KCl) on bare carbon screen-printed electrode (black), on carbon modified with laccase (red), carbon modified with Pt-NPs and laccase (blue) and carbon modified with Pt-NPs, RGO and laccase (magenta); scan rate of 50 mV/s.



S3. Chronoamperometric responses recorded simultaneously for chlorogenic acid (blue) at the C-SPE/Pt-NPs/RGO/lacc, working potential: -0.05 V *vs.* Ag pseudo-reference electrode and for caffeine (red) at the C-SPE/RGO/Nafion, working potential +1.3V *vs.* Ag pseudo-reference electrode in 0.1 M acetate buffer pH 5.00 (with 0.1 M KCl).



S4a. Linear dependence of peak current *vs.* the square root of scan rate for 0.5 mM chlorogenic acid redox couple at C-SPE/Pt-NPs/RGO/lacc in 0.1 M acetate buffer pH 5.00 (with 0.1 M KCl).



S4b. Linear dependence of peak current *vs.* the square root of scan rate for 1 mM caffeine at C-SPE/RGO/Nafion in 0.1 M acetate buffer pH 5.00 (with 0.1 M KCl).