ZnS-SnS_2/S-rGO ternary Heterostructure for electrochemical detection of azo toxic dye Sunset Yellow in food samples

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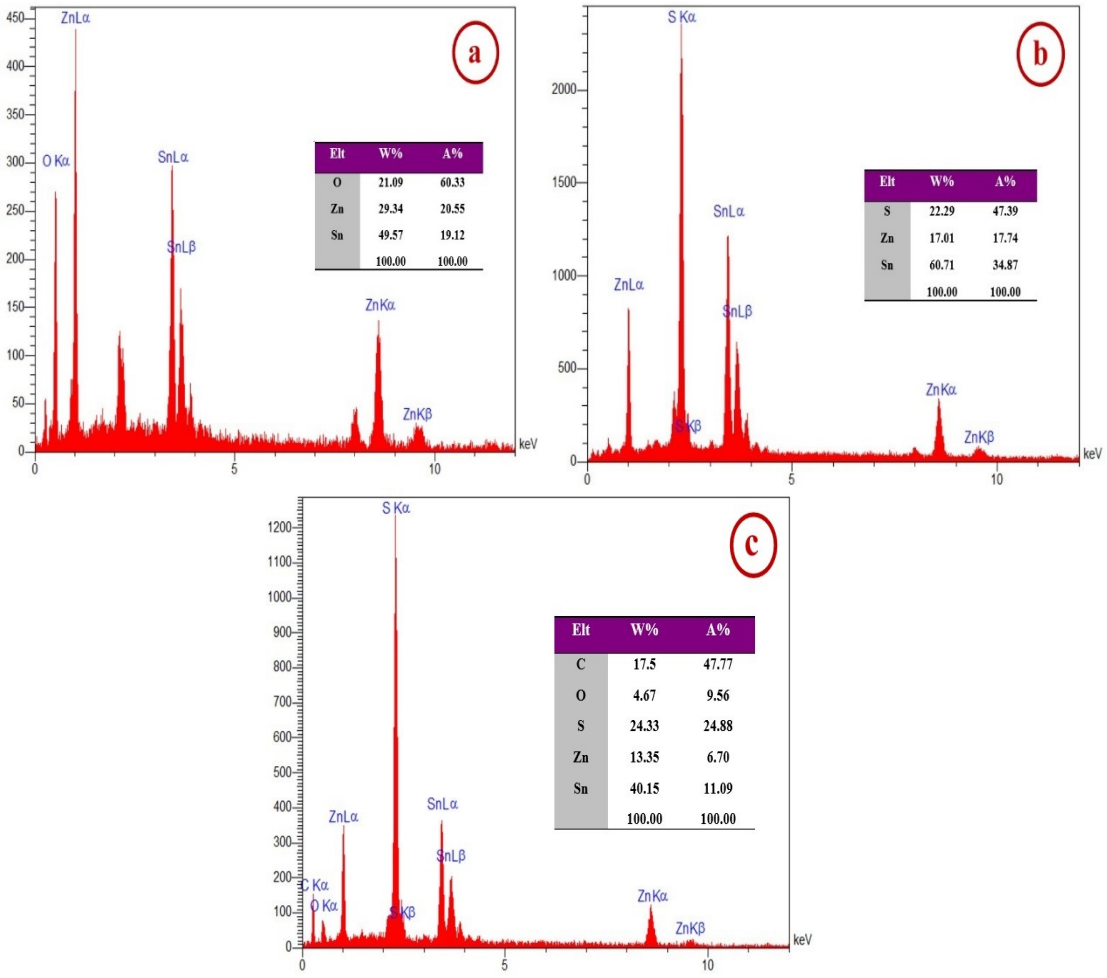

Fig. S1. EDX patterns of (a) $ZnSn(OH)_6$, (b) ZnS-SnS_2, and (c) ZnS-SnS_2/S-rGO.

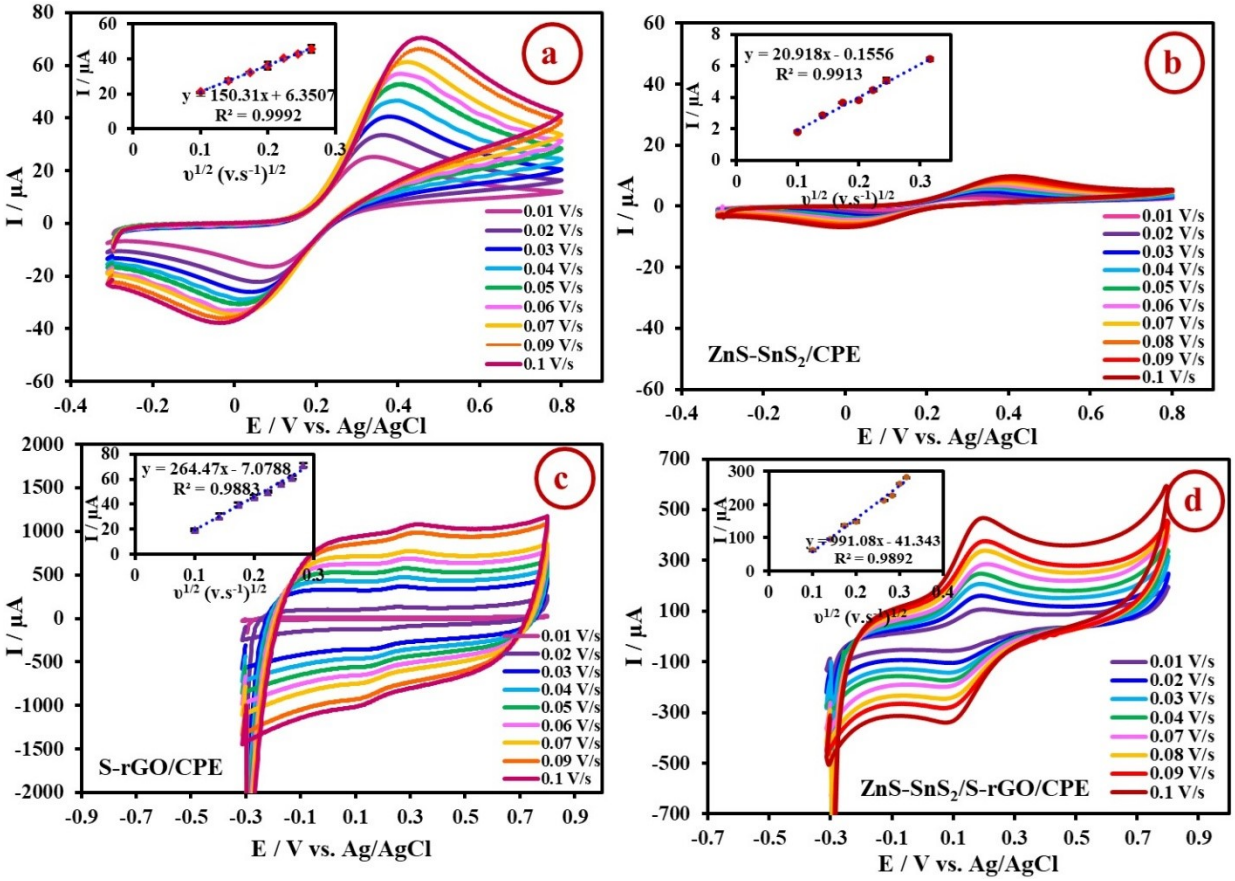

Fig. S2. Cyclic voltammograms of 0.1 M KCl solution containing 1.0 mM $Fe(CN)_6^{3-/4-}$, at different scan rates (10 to 100 mV s^{-1}) at the surface of (a) bare CPE, (b) ZnS-SnS_2/CPE, (c) S-rGO/CPE, and (d) ZnS-SnS_2/S-rGO/CPE. Insets: a plot of I_p vs. $\upsilon^{1/2}$ obtained from cyclic voltammograms.

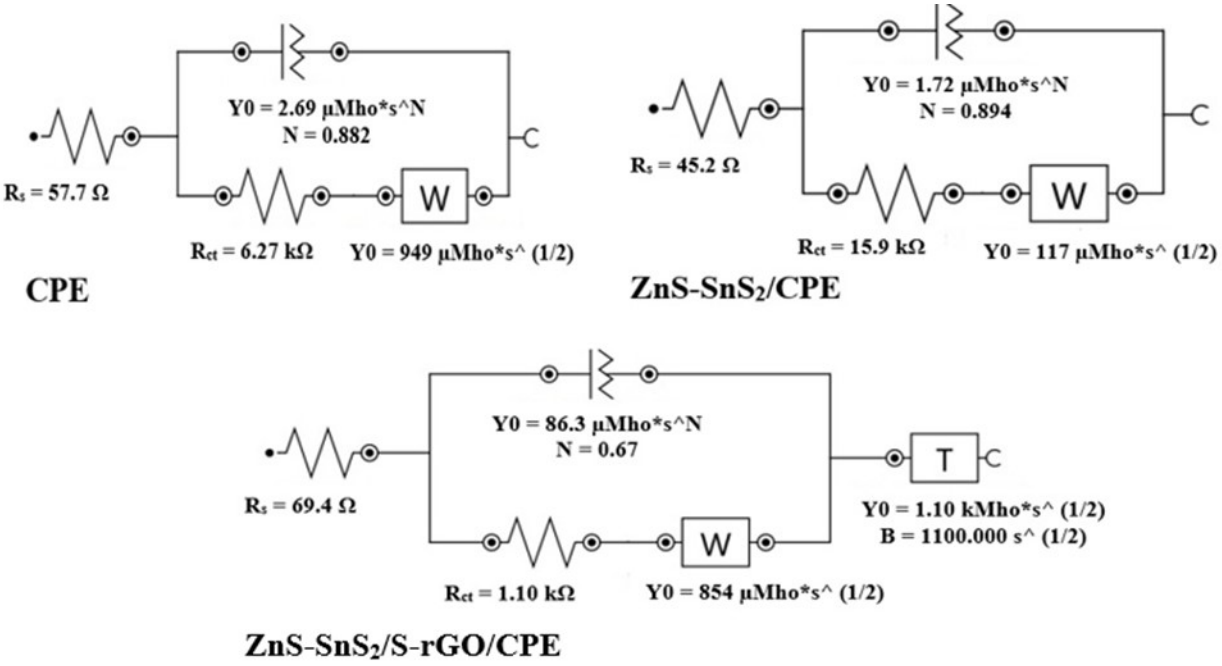

Fig. S3. Equivalents circuits for bare CPE, ZnS-SnS_2/CPE, and ZnS-SnS_2/S-rGO/CPE

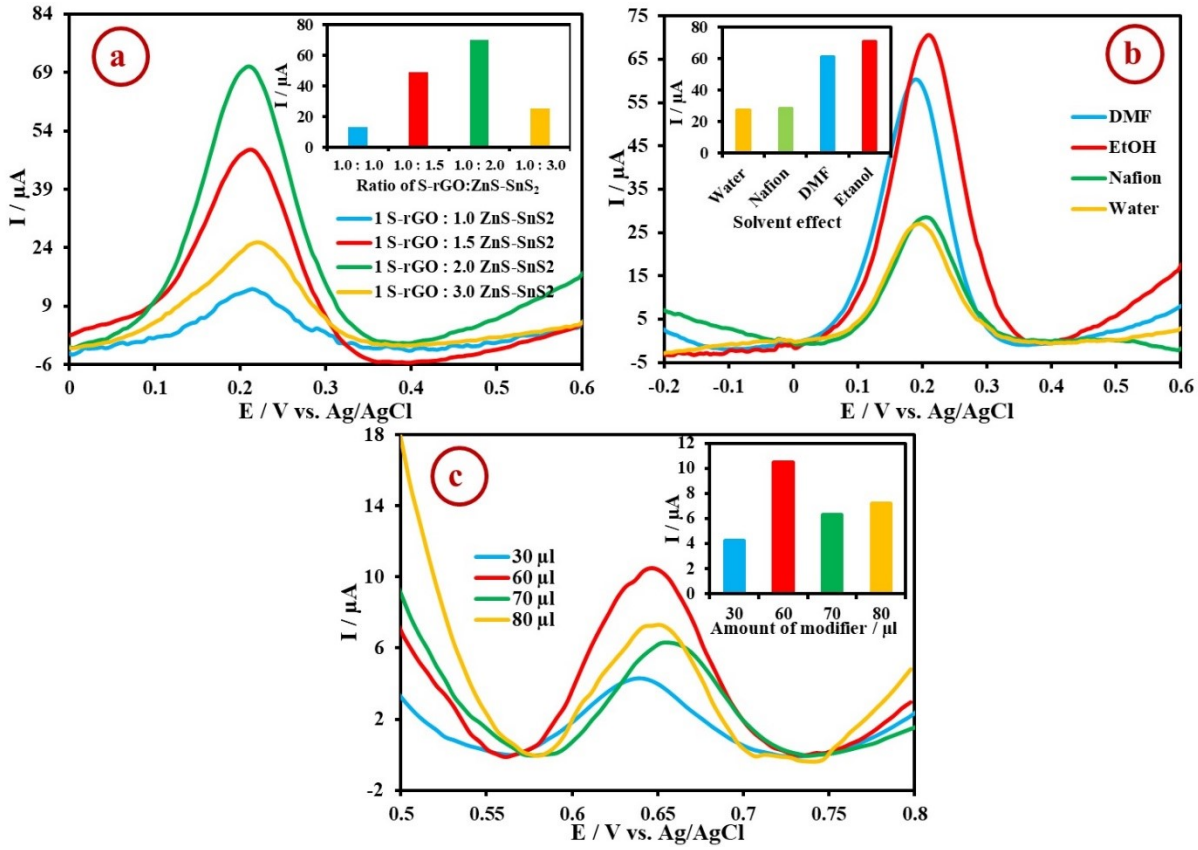

Fig. S4. Differential pulse voltammograms and peak currents (inset) at investigation effect of (a) the ratio of S-rGO to ZnS-SnS_2 and (b) the kind of solvent for drop casting on the electrode surface in 0.1 M KCl solution containing 1.0 mM $K_3Fe(CN)_6$, (c) the amount of drop-casting of 100 µM SY in 0.1 M PBS solution (pH=7.5)