

Supplementary Information

A lab-made screen-printed sensing strip for sensitive and selective electrochemical detection of butylated hydroxyanisole

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†Electronic supplementary information (ESI) available: cross-sectional SEM images of LabSPE before and after modification, FT-IR spectrum of g-C₃N₄-Fe₃O₄ nanocomposite, XRD pattern of g-C₃N₄ and g-C₃N₄-Fe₃O₄, WCA measurements of electrodes, CVs of LabSPE and commercial SPE, selectivity test of sensor, DPVs of mixture of BHA and other antioxidants, and stability test of sensor.

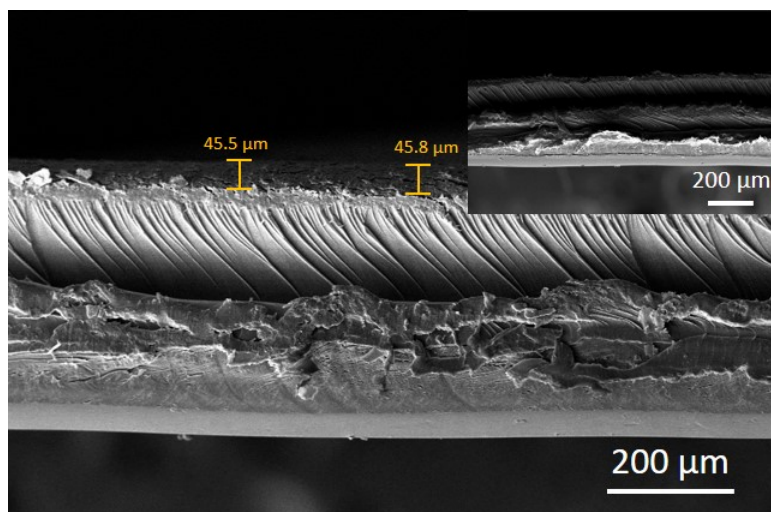


Fig. S1. Cross-sectional SEM images of LabSPE before and after modification.

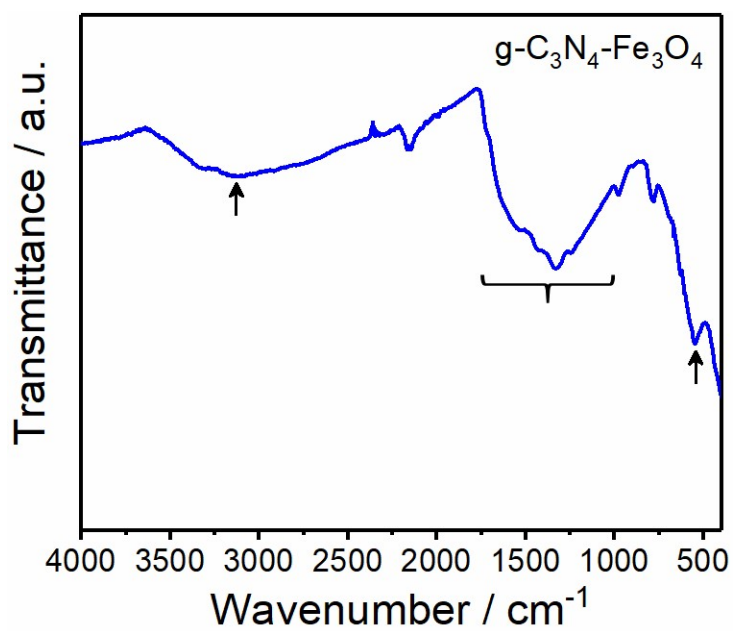


Fig. S2. FT-IR spectrum of g-C₃N₄-Fe₃O₄ nanocomposite.

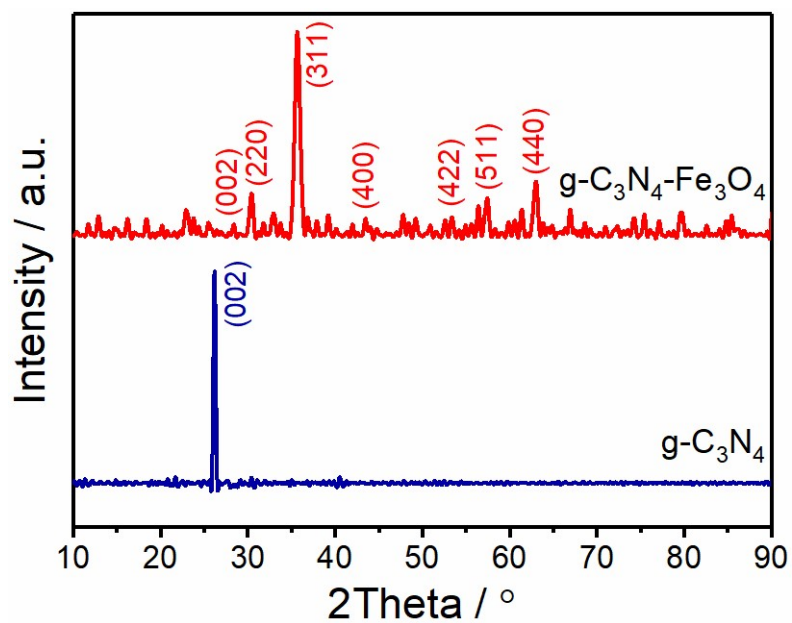


Fig. S3. XRD pattern of $g\text{-C}_3\text{N}_4$ and $g\text{-C}_3\text{N}_4\text{-Fe}_3\text{O}_4$ nanocomposite.

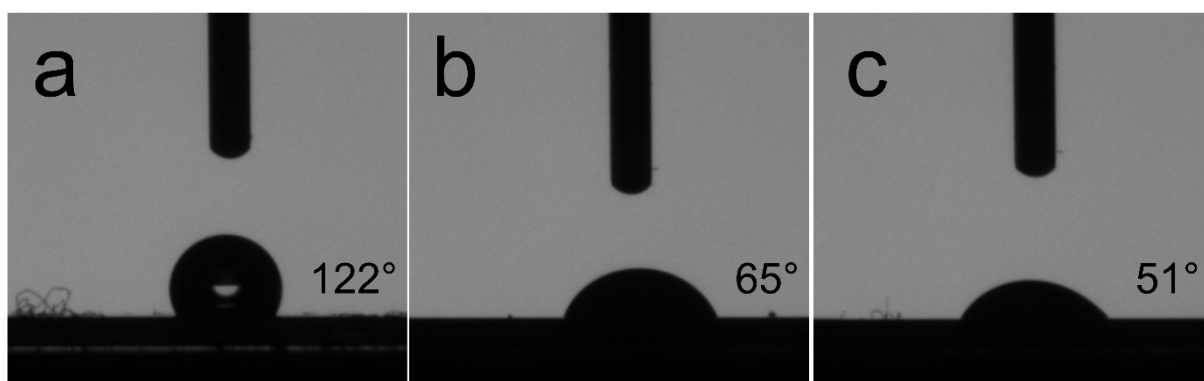


Fig. S4. WCA measurements of bare LabSPE (a), $g\text{-C}_3\text{N}_4\text{-Fe}_3\text{O}_4/\text{LabSPE}$ (b), and $\text{Pt}/g\text{-C}_3\text{N}_4\text{-Fe}_3\text{O}_4/\text{LabSPE}$ (c) surfaces.

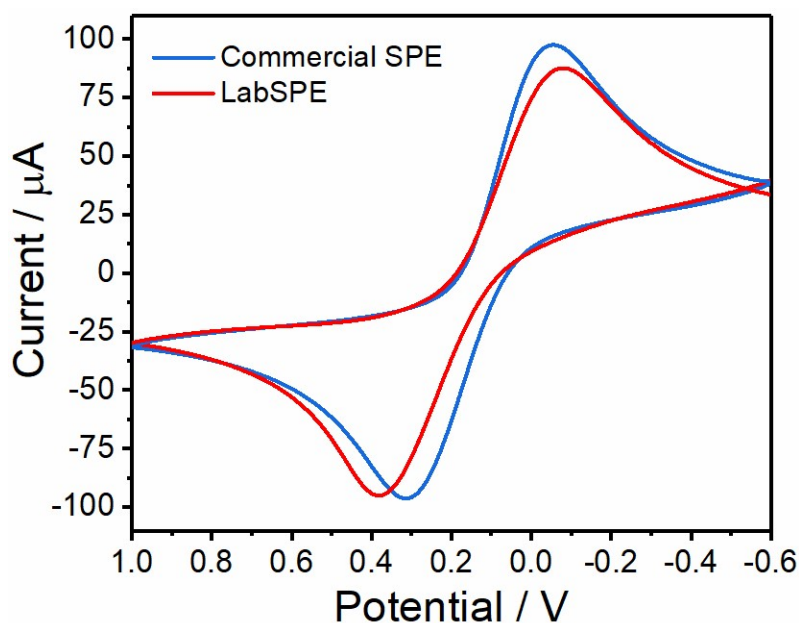


Fig. S5. CVs of LabSPE and commercial SPE in 0.1 M KCl solution containing 5 mM $\text{Fe}(\text{CN})_6^{3-/4-}$.

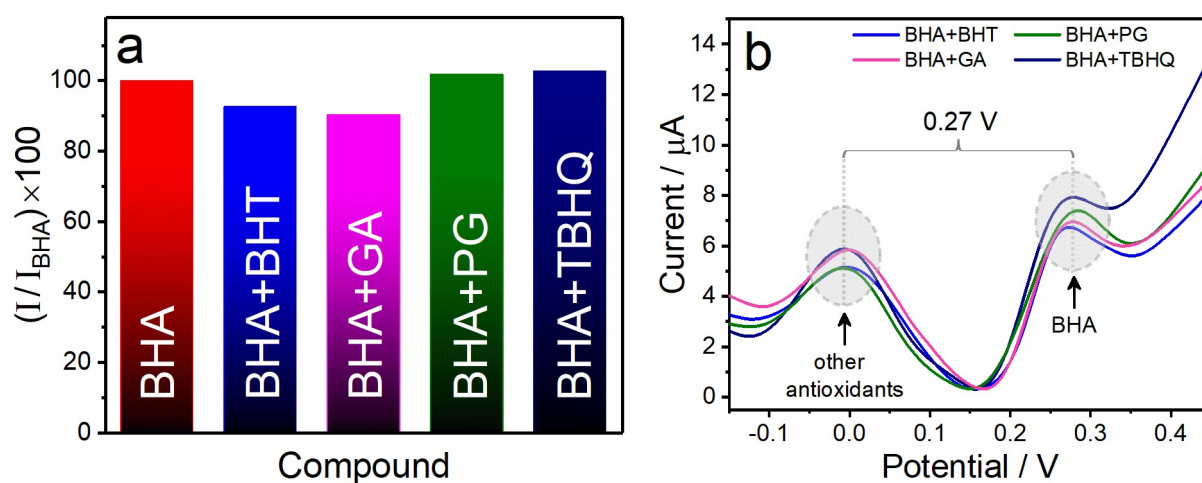


Fig. S6. (a) Selectivity test of Pt/g- C_3N_4 - Fe_3O_4 /LabSPE in the presence of 25 μM BHA, 25 μM BHA + 25 μM BHT, 25 μM BHA + 25 μM GA, 25 μM BHA + 25 μM PG, 25 μM BHA + 25 μM TBHQ in pH 4.0 citric acid- Na_2HPO_4 buffer solution. (b) DPVs of Pt/g- C_3N_4 - Fe_3O_4 /LabSPE in the presence of 25 μM BHA + 25 μM other antioxidant compound (BHT, GA, PG or TBHQ) in pH 4.0 citric acid- Na_2HPO_4 buffer solution.

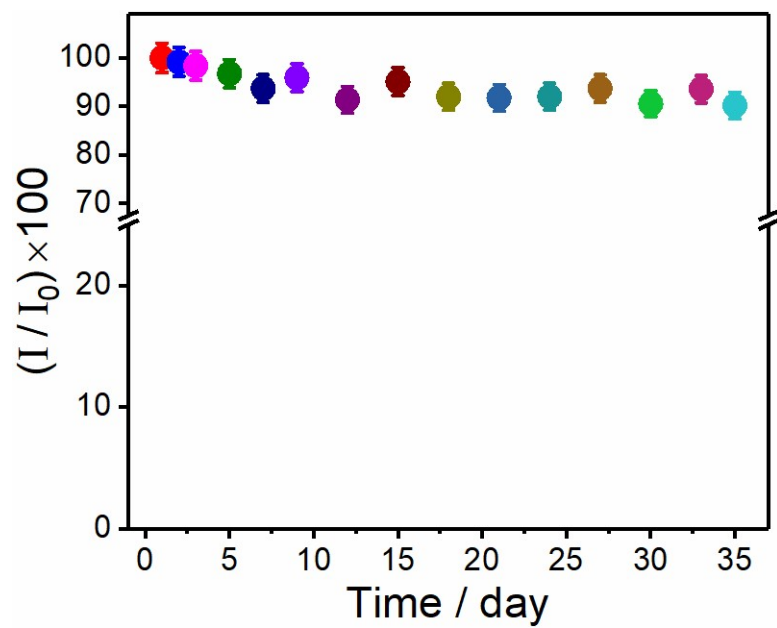


Fig. S7. Stability test of Pt/g-C₃N₄-Fe₃O₄/LabSPE in the presence of 10 μM BHA for 35 days.