Electronic Supplementary Material (ESI) for Analytical Methods.

SUPPLEMENTARY MATERIAL

Electrochemical Microfluidic Device for Non-Enzymatic Cholesterol determination using a Lab-made Disposable Electrode

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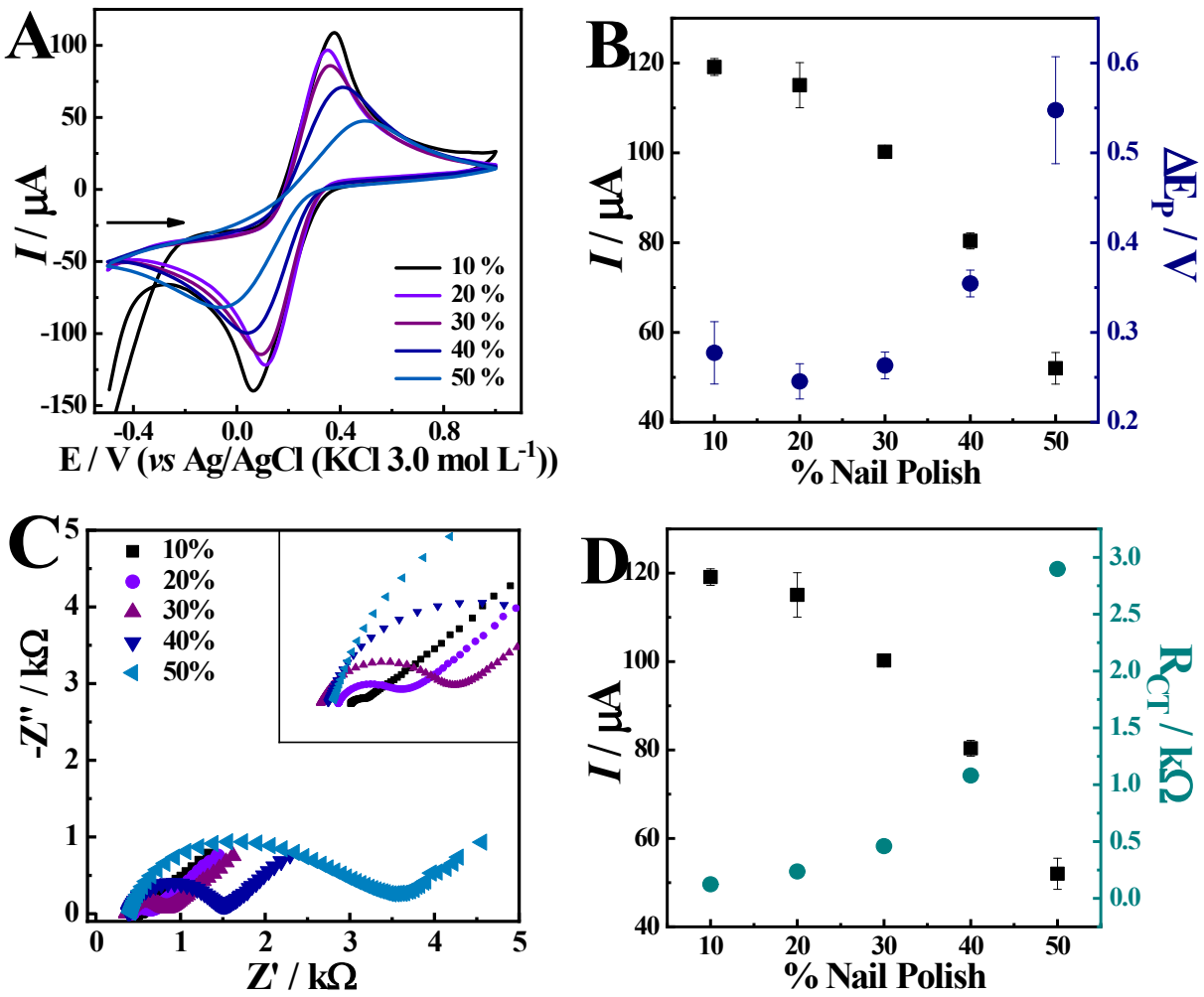

Figure S1

Figure S1: A) Cyclic voltammograms of DunkE covered with different percentages composition of graphite and nail polish (10% to 50%; containing 5 layers of deposited ink), performed in presence of 5.0 mmol L^{-1} $[Fe(CN)_6]^{4-}$ in KCl pH 3.0 at 100 mV s^{-1}. B) Relation of anodic peak current and the variation between peak potential (ΔE) as function of increase of nail polish at conductive ink composition obtained. C) EIS profile of DunkE covered with different percentages of graphite and nail polish (10% to 50%), performed in presence of 5,0 mmol L^{-1} $[Fe(CN)_6]^{4-}$ in KCl pH 3.0 from 100 kHz to 1 MHz. D) Anodic peak current and charge transfer resistance as function of nail polish content in conductive ink composition.

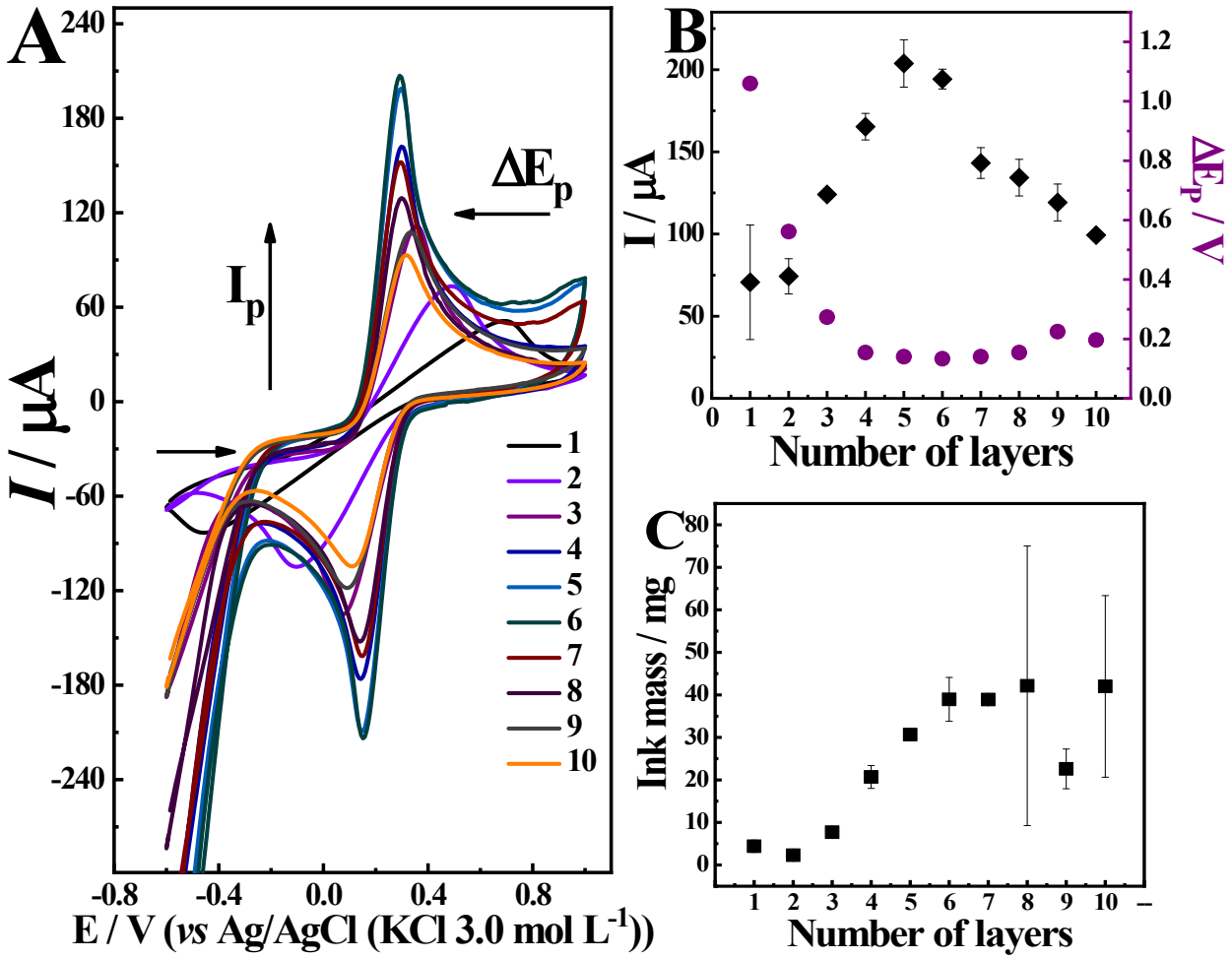

Figure S2. A) Cyclic voltammograms of DunkE covered with HMI varying from 1 to 10 layers recorded in 5.0 mmol L^{-1} $[Fe(CN)_6]^{4-}$ in KCl pH 3.0 at 100 mV s^{-1}. B) Anodic peak current and variation between peak potential as function of number of deposited layers. C) Final HMI mass as function of number of layers.

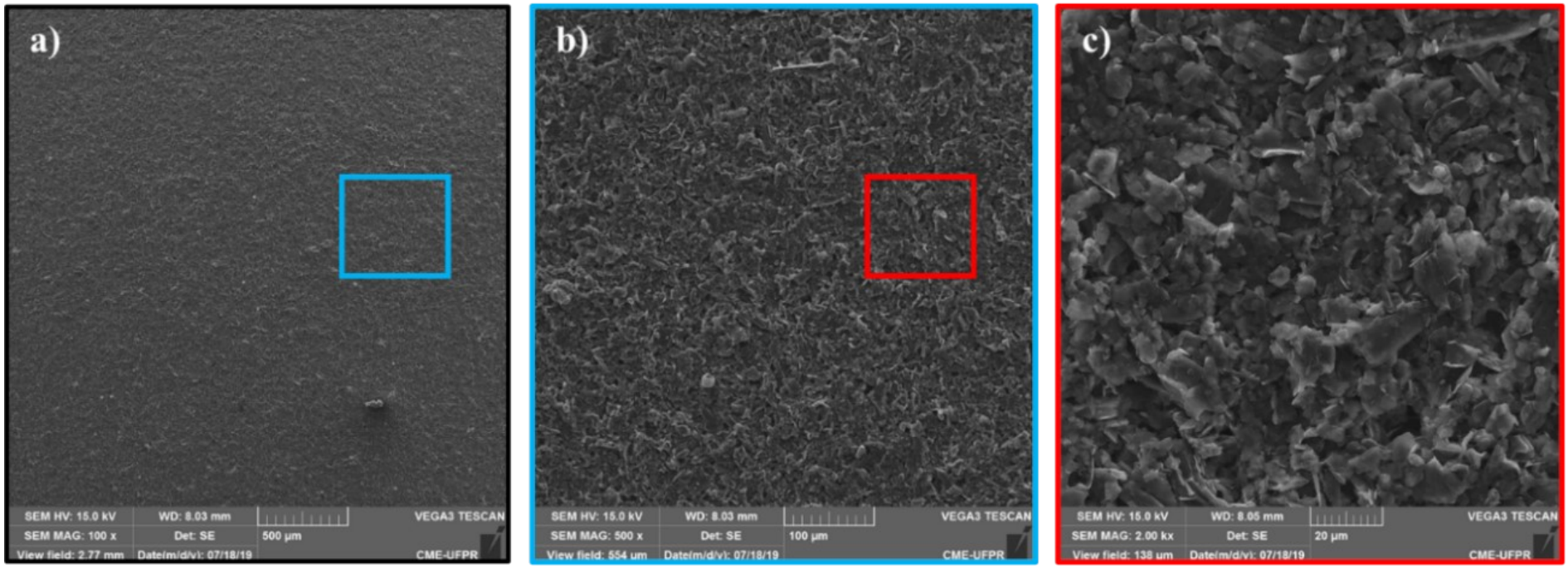

Figure S3. Representative images of scanning electronic microscopy (SEM) technique from optimized HMI graphite:nail polish (80:20) material.

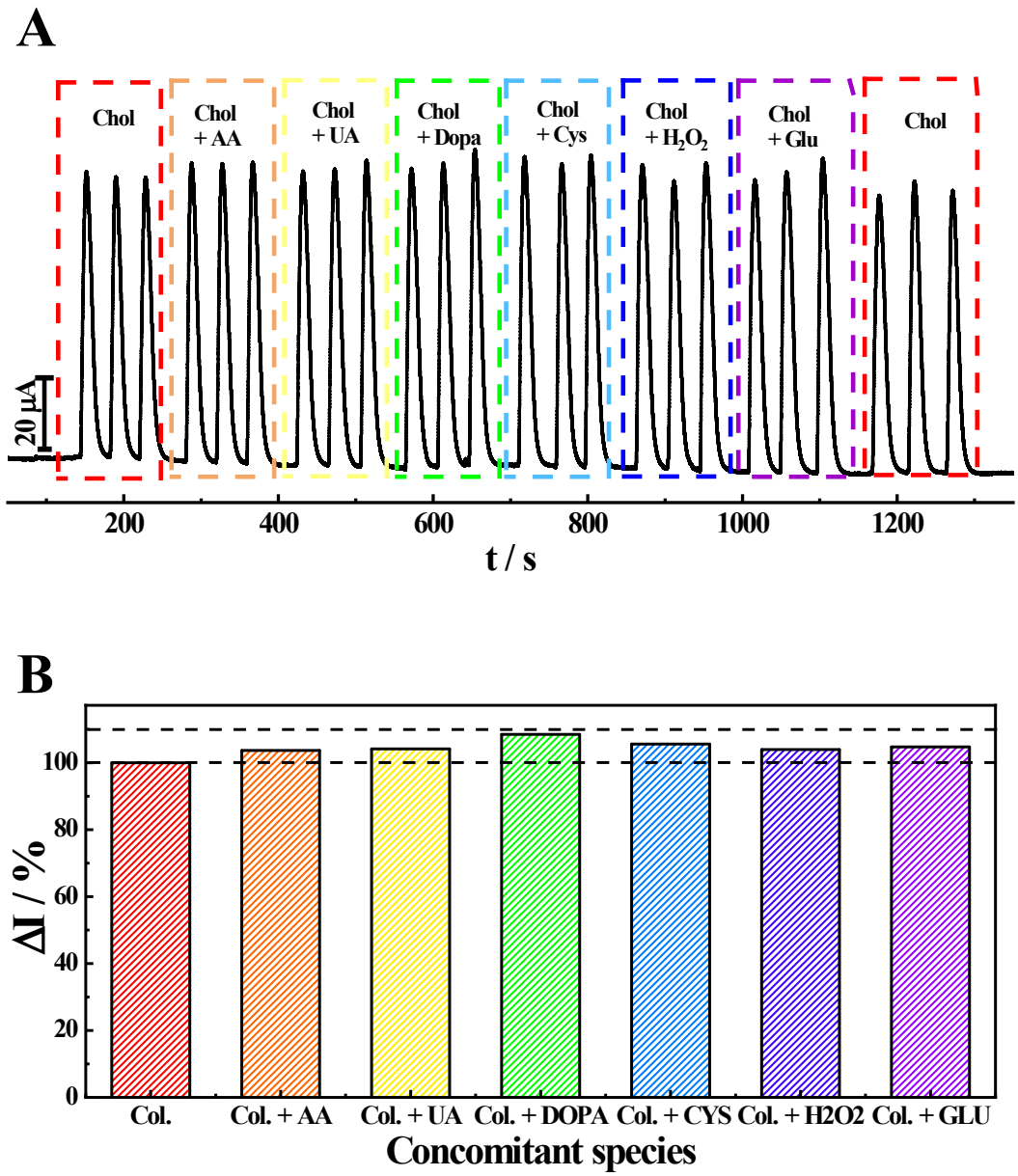

Figure S4: Potentially interfearing concomitant species that potentially affect the sample analysis and their electrochemical responses. AA = ascorbic acid, UA = uric acid, DOPA = dopamine, CYS = cysteine, H_2O_2 = hydrogen peroxide and GLU = glucose (A). Consecutive addition of CHOL 5.0 µmol L^{-1}. in equal concentrations of 5.0 µmol L^{-1}, and superior concentration of 10.0 µmol L^{-1} (B) of interferent species.