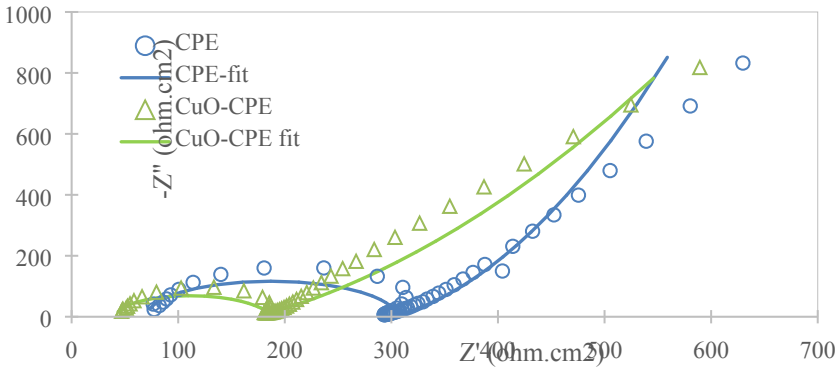
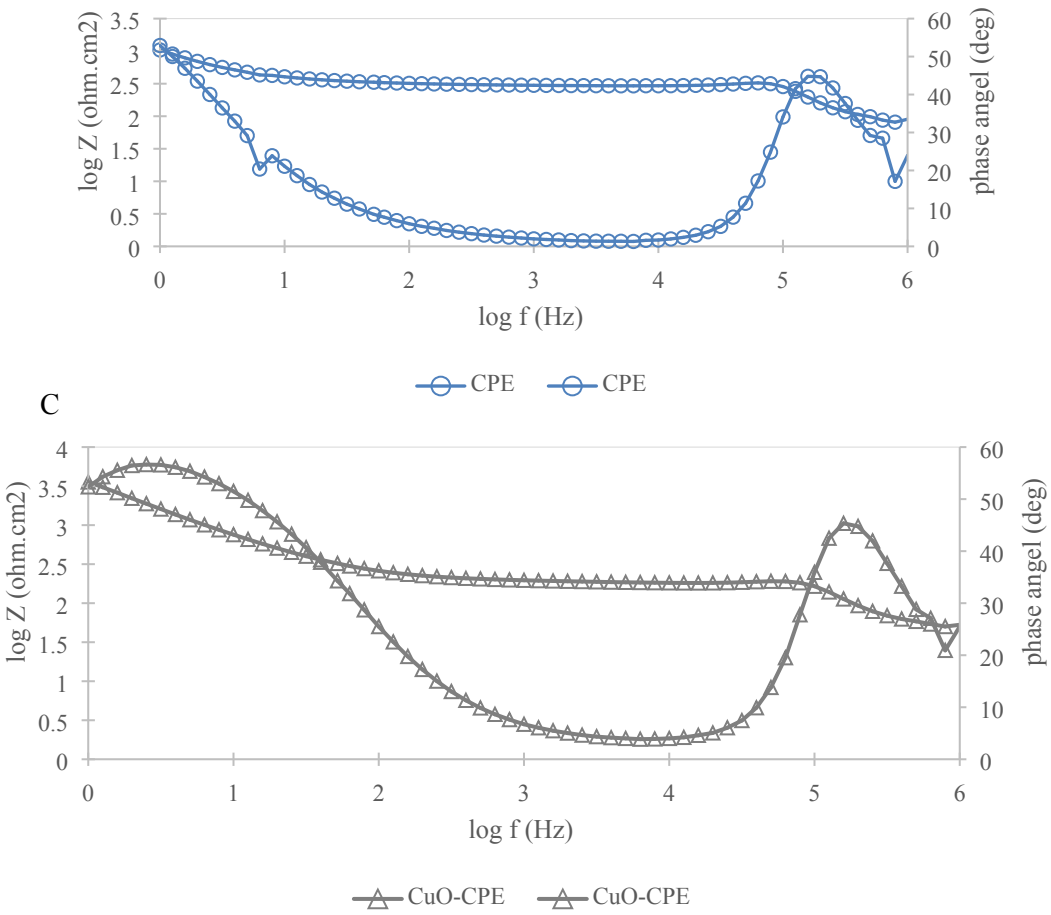
Supplementary materials:

SM1. A Schematic diagram for the constructed carbon paste electrode.

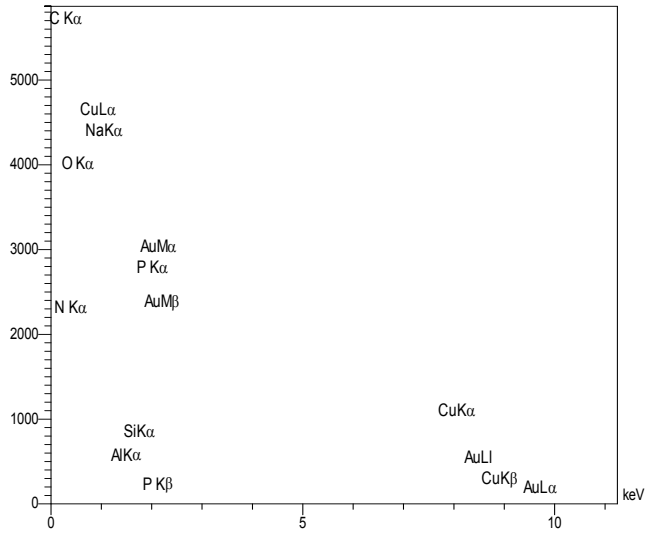


A

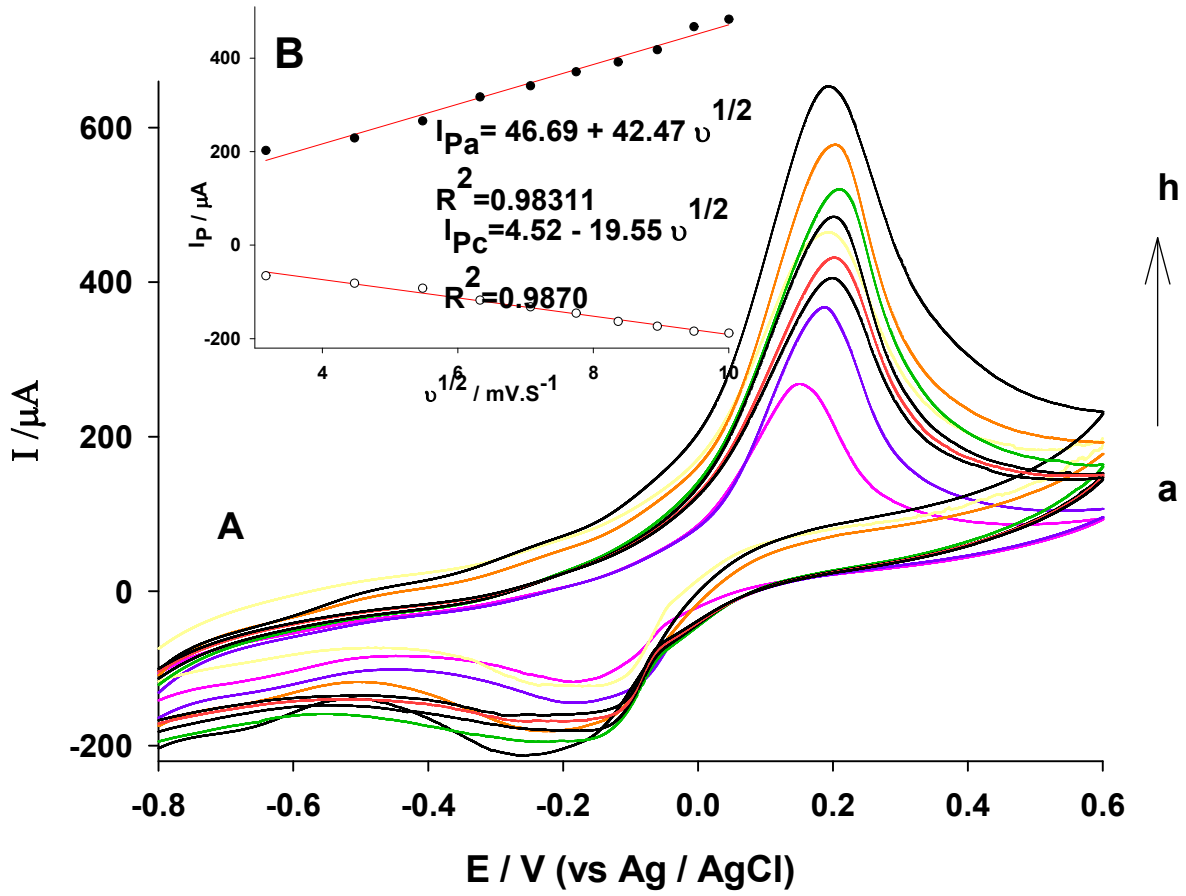
B



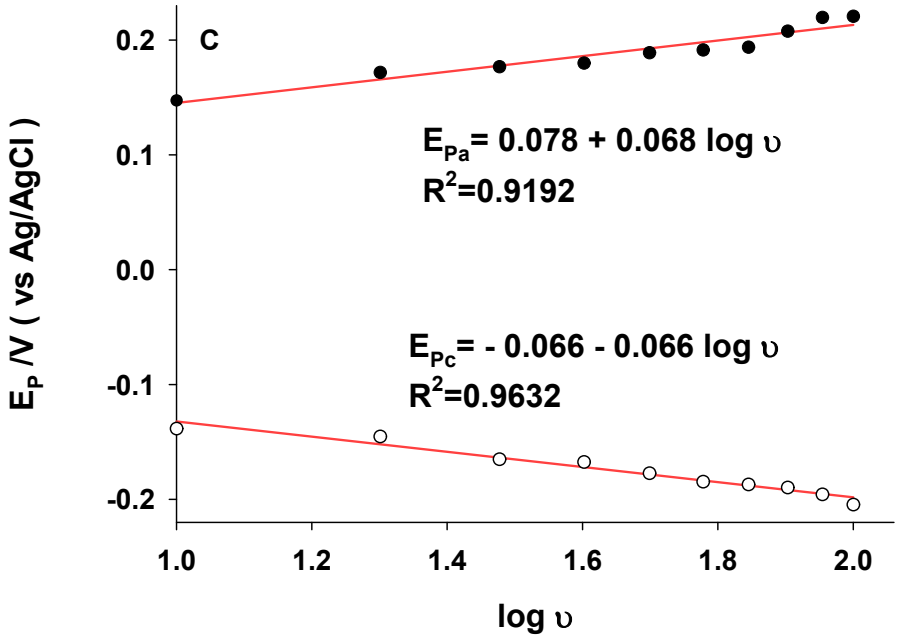
SM2. **A)** Fitted Nyquist data onto the equivalent electrochemical circuits; **B and C)** The corresponding Bods' plots for the raw and modified electrodes.



SM3. EDX spectrum of CuO-CPE electrode.



SM4 A, B. CVs of CuO NPs-CPE (25% CuO) in PB solution (pH 3.3) containing 2 mM fructose at different potential scan rates (a–h correspond to: 10-100 mV s^{-1}), Inset: Plots of anodic and cathodic peak currents versus square root of potential scan rate



SM4 C. Plots of anodic and cathodic peak currents versus Log potential scan rate;in CuO NPs-CPE (25% CuO) in PB solution (pH 3.3) containing 2 mM fructose

SMT1: Experimental results for RSM design

Std	Run	Factors				Y= ΔI (μA)
		A:Modifier%	B: pH	C:Ampli (V)	D:Step (V)	
21	1	17.50	6.15	0.0250	0.0070	4.143
25	2	17.50	6.15	0.2750	0.0070	97.19
26	3	17.50	6.15	0.2750	0.0070	94.29
17	4	2.50	6.15	0.2750	0.0070	15.67
7	5	10.00	9.00	0.4000	0.0040	89.78
18	6	32.50	6.15	0.2750	0.0070	57.46
3	7	10.00	9.00	0.1500	0.0040	1.06
22	8	17.50	6.15	0.5250	0.0070	27.40
30	9	17.50	6.15	0.2750	0.0070	92.63
6	10	25.00	3.30	0.4000	0.0040	55.65
23	11	17.50	6.15	0.2750	0.0010	91.69
14	12	25.00	3.30	0.4000	0.0070	46.14
20	13	17.50	11.85	0.2750	0.0040	23.63
2	14	25.00	3.30	0.1500	0.0100	89.92
12	15	25.00	9.00	0.1500	0.0130	11.05
24	16	17.50	6.15	0.2750	0.0100	78.33
13	17	10.00	3.30	0.4000	0.0040	25.17
1	18	10.00	3.30	0.1500	0.0040	38.81
5	19	10.00	3.30	0.4000	0.0070	38.89
19	20	17.50	0.45	0.2750	0.0100	63.34
16	21	25.00	9.00	0.4000	0.0100	34.36
9	22	10.00	3.30	0.1500	0.0070	54.45
27	23	17.50	6.15	0.2750	0.0070	94.29
29	24	17.50	6.15	0.2750	0.0070	96.04
8	25	25.00	9.00	0.4000	0.0040	76.87
4	26	25.00	9.00	0.1500	0.0040	16.08
10	27	25.00	3.30	0.1500	0.0100	110.31
28	28	17.50	6.15	0.2750	0.0070	98.49
15	29	10.00	9.00	0.4000	0.0100	47.67
11	30	10.00	9.00	0.1500	0.0100	0.65