Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Material

Porphyrin based nano-sized imprinted polymer as an efficient modifier for design of potentiometric carbon paste electrode

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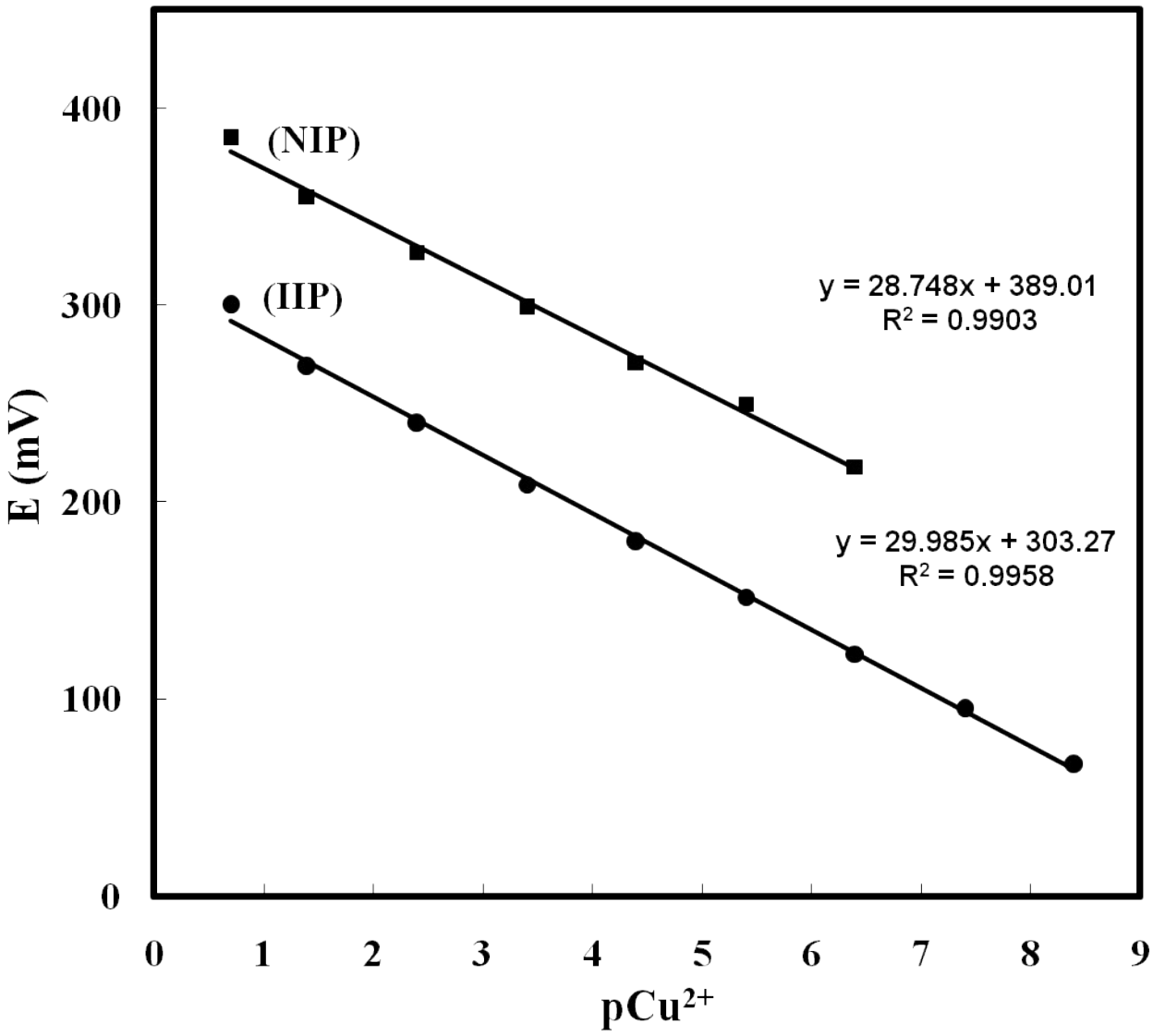

Fig. S1. Potentiometric response of the CPE based on NIP and IIP under optimum conditions.

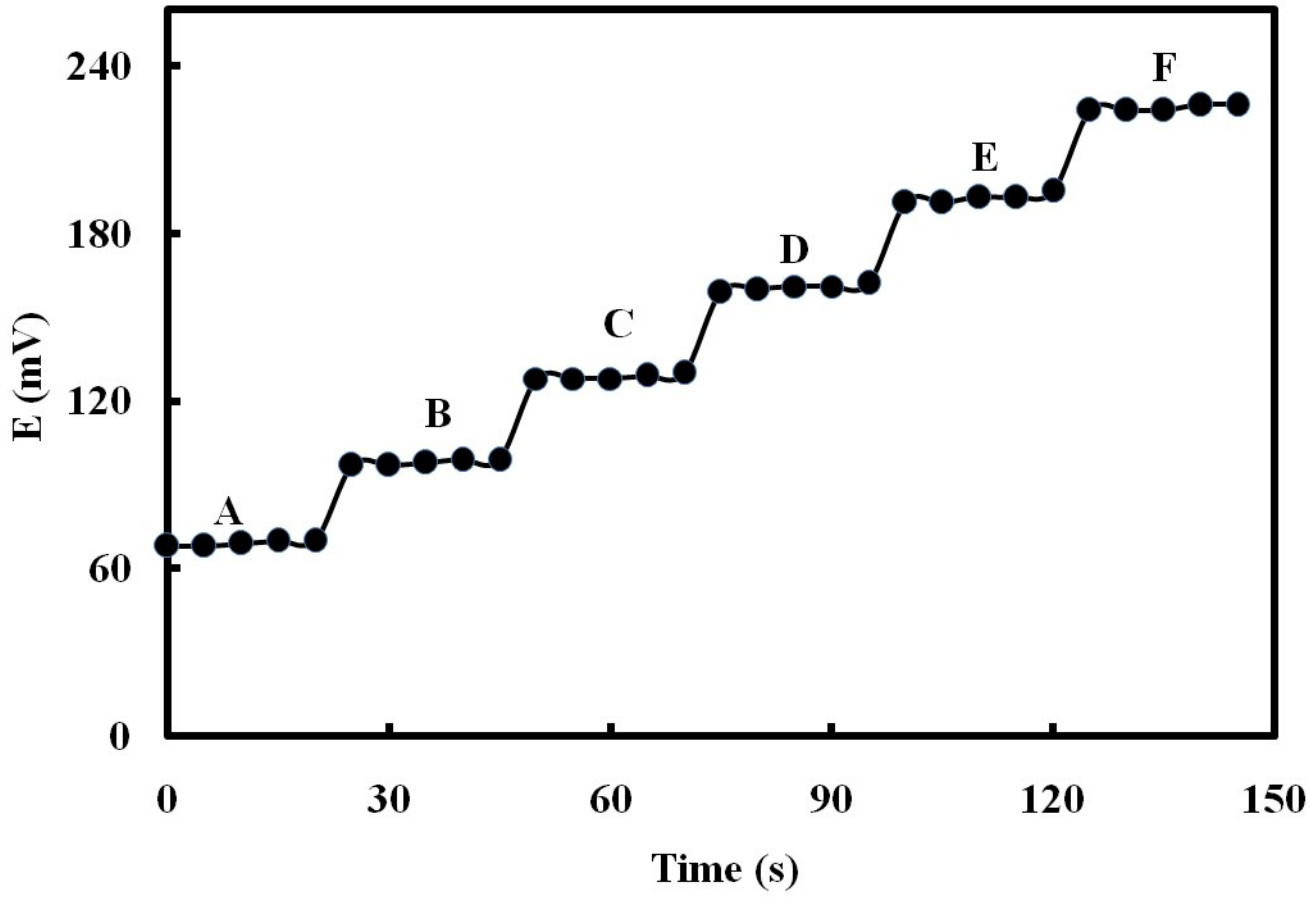

Fig. S2. Potential-time plot for the response of the modified electrode for step changes of Cu^{2+} ion concentration: (A) 1.0×10^{-5}, (B) 1.0×10^{-4}, (C)1.0×10^{-3}, (D)1.0×10^{-2}, (E) 1.0×10^{-1} and (F) 5.0×10^{-1} mol.L^{-1}. Conditions: pH= 4.5 and μ=0.10; NaCl.

Table S1. Results of the temperature effect for modified carbon paste copper selective electrodes.

No.	Temperature (°C)	Slope (mV/decade of concentration)	Concentration linear range (mol.L^{-1})	R^2
1	15	27.78	1.0×10^{-8}- 5.0×10^{-1}	0.988
2	25	30.50	4.0×10^{-9} –2.0×10^{-1}	0.995
3	35	31.27	4.0×10^{-9} –2.0×10^{-1}	0.995
4	45	33.15	1.0×10^{-8}- 2.0×10^{-1}	0.998

Table S2. Stability of the constructed CPE.

Time (day)	Slope (mV/decade)	linear Range (mol.L^{-1})	R^2
1	29.80	4.0×10^{-9} –2.0×10^{-1}	0.996
30	29.64	4.0×10^{-9} –2.0×10^{-1}	0.995
60	30.09	4.0×10^{-9} –2.0×10^{-1}	0.992
90	33.45	4.0×10^{-8} –2.0×10^{-1}	0.981
100	34.86	4.0×10^{-7} –2.0×10^{-1}	0.975

Table S3. Reproducibility results of the IIP based modified CPE.

Electrode	Slope (mV/decade)	Linear Range (mol.L^{-1})	R^2
1	29.37	4.0×10^{-9} –2.0×10^{-1}	0.998
2	30.25	4.0×10^{-9} –2.0×10^{-1}	0.996
3	29.84	4.0×10^{-9} –2.0×10^{-1}	0.995
4	29.45	4.0×10^{-9} –2.0×10^{-1}	0.997
5	30.33	4.0×10^{-9} –2.0×10^{-1}	0.996
Average	29.85	4.0×10^{-9} –2.0×10^{-1}	0.996

Table S4. Repeatability results of the IIP based modified CPE.

Electrode	Slope (mV/decade)	Linear Range (mol.L^{-1})	R^2
1	29.88	4.0×10^{-9} –2.0×10^{-1}	0.991
2	29.04	4.0×10^{-9} –2.0×10^{-1}	0.992
3	30.57	4.0×10^{-9} –2.0×10^{-1}	0.994
4	29.42	4.0×10^{-9} –2.0×10^{-1}	0.990
5	30.13	4.0×10^{-9} –2.0×10^{-1}	0.996
Average	29.80	4.0×10^{-9} –2.0×10^{-1}	0.992