

Supplementary Material

Voltammetric Determination of Phenylalanine Using Chemically Modified Screen-Printed Based Sensors

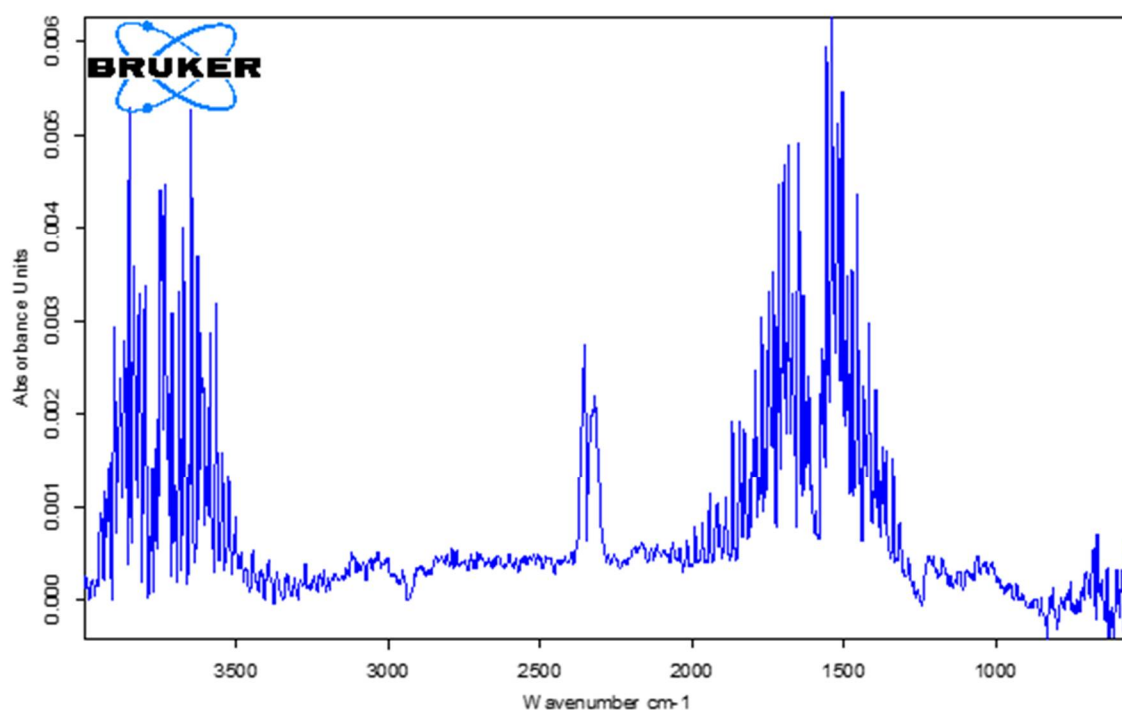
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Supplementary information



(a)

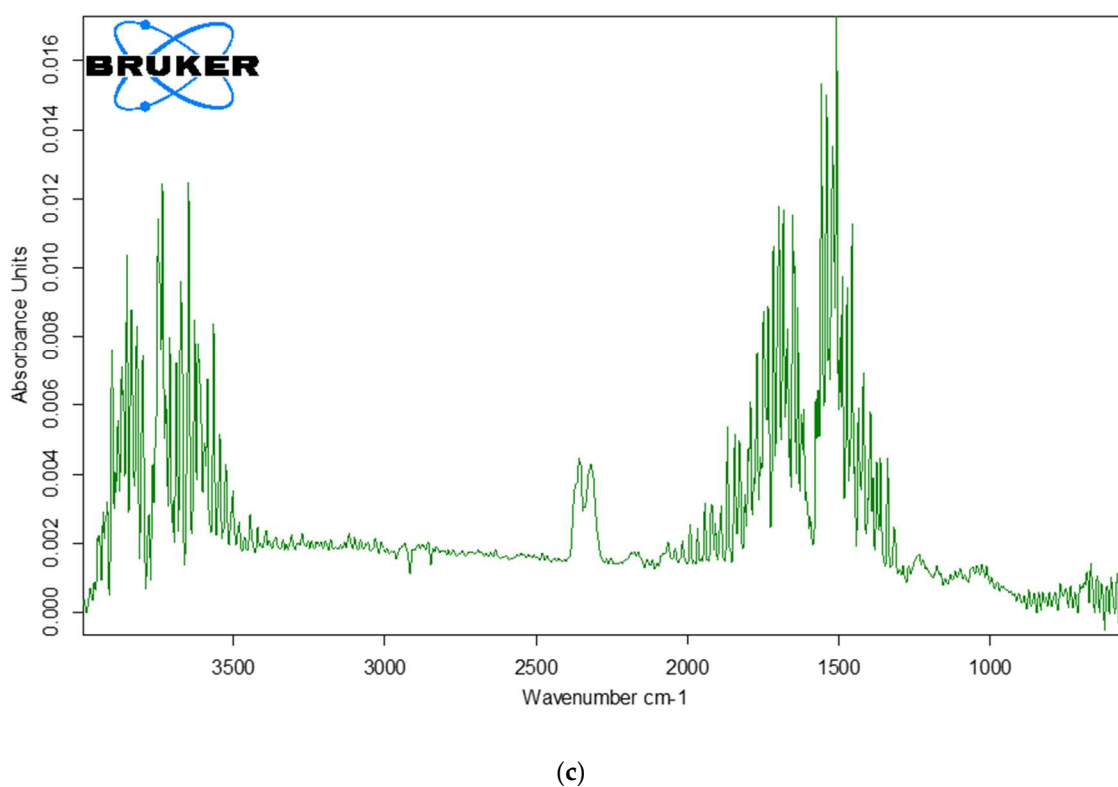
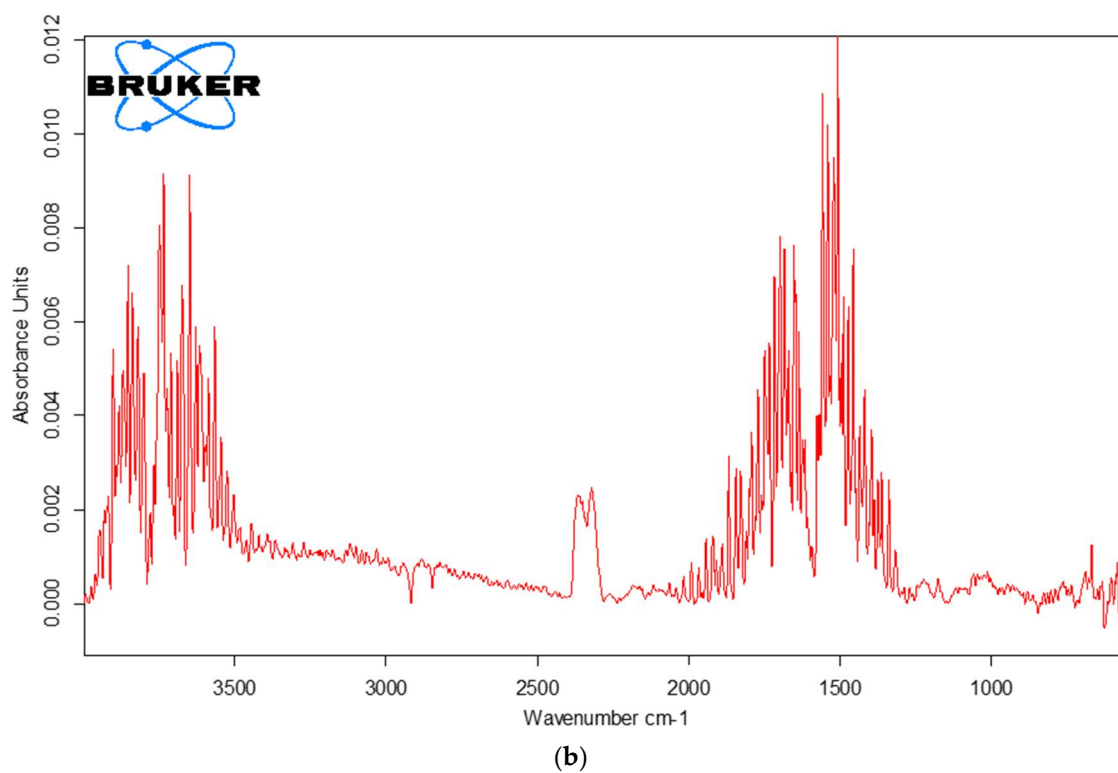


Figure S1. (a) FTIR spectra of CoPc-SPCE; (b) MB-SPCE; (c) PB-SPCE.

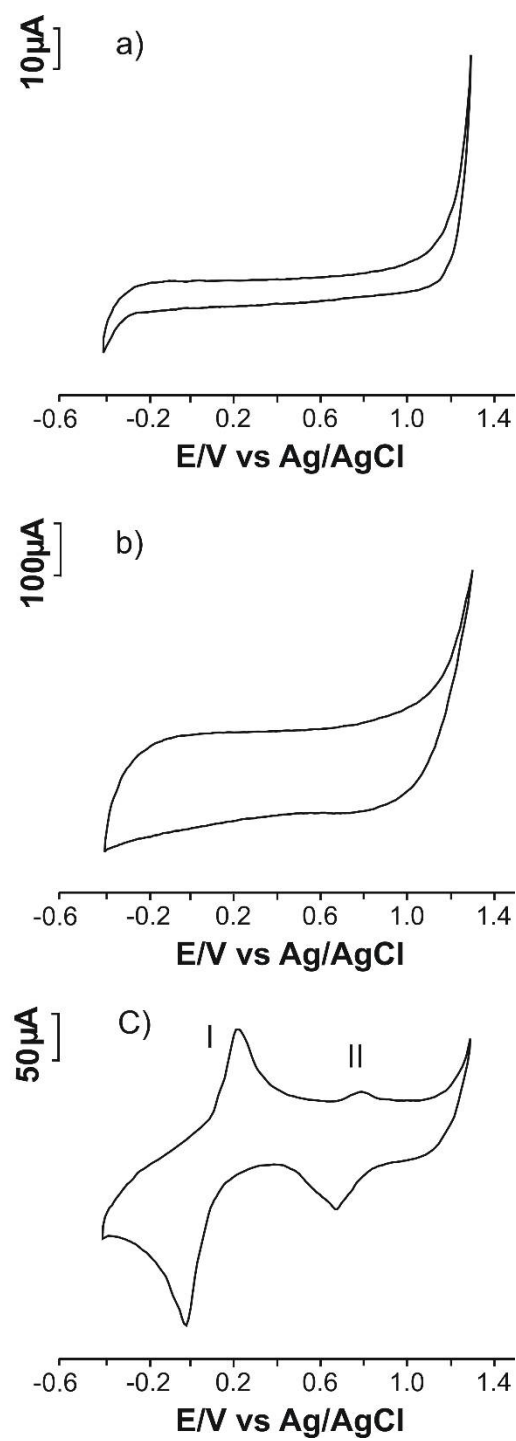


Figure S2. Cyclic voltammograms of (a) CoPc-SPCE; (b) MB-SPCE; (c) PB-SPCE immersed in 10^{-1} M KCl solution; scan rate $0.6 \text{ V}\cdot\text{s}^{-1}$.

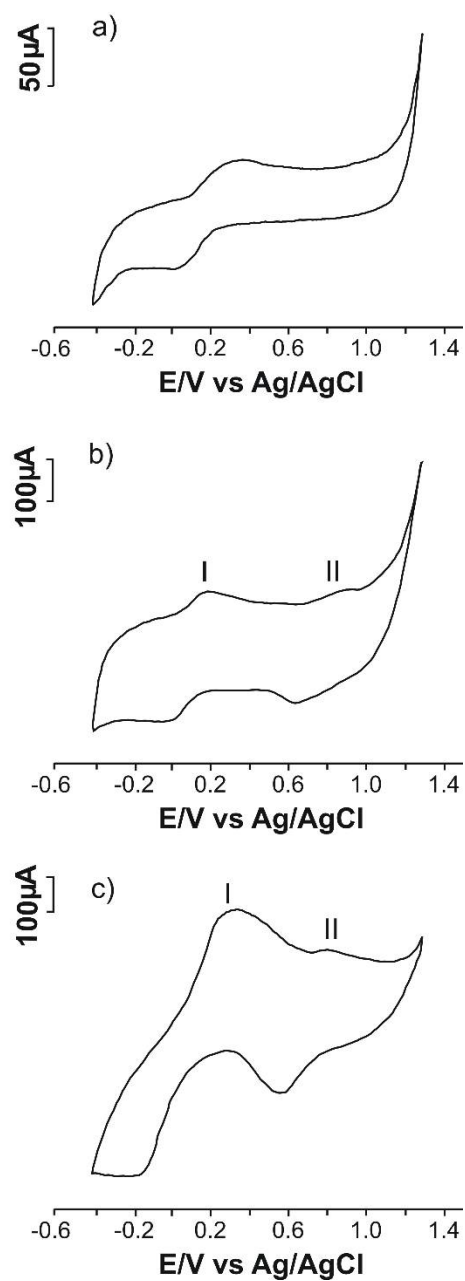


Figure S3. Cyclic voltammograms of the (a) CoPc-SPCE; (b) MB-SPCE; (c) PB-SPCE immersed in 10^{-3} M $K_4[Fe(CN)_6]$ – 10^{-1} M KCl solution registered with the scan rate of $0.6 V \times s^{-1}$.

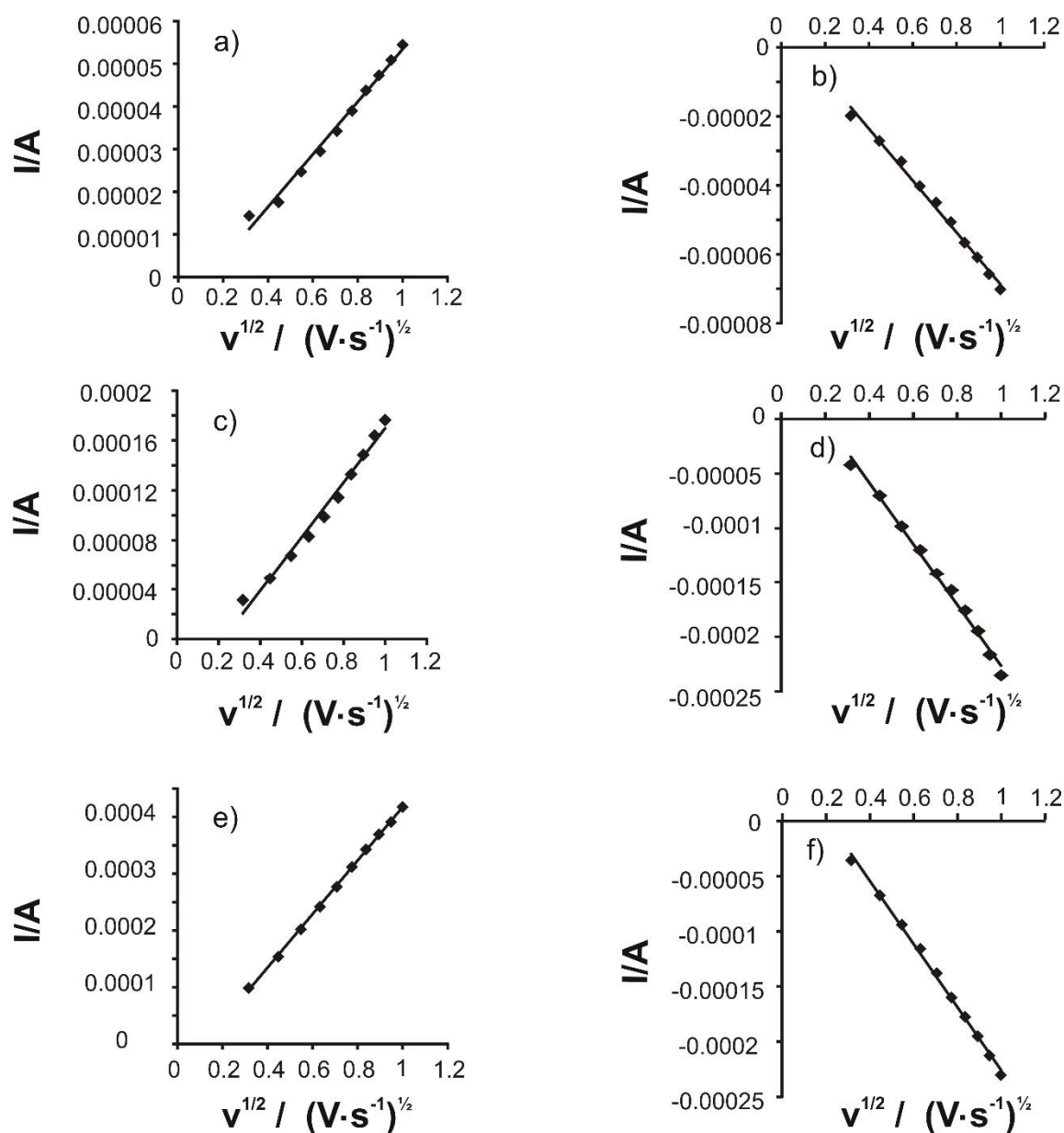


Figure S4. Plots of linear adjustment between the currents of the anodic peak, respectively cathodic peak vs square root of the scan rates for: (a) and (b) CoPc-SPCE; (c) and (d) MB-SPCE; (e) and (f) PB-SPCE.

Table S1. Electrochemical parameters obtained from the cyclic voltammogram of PB-SPCE immersed in 10^{-1} M KCl solution; scan rate $0.6 \text{ V}\cdot\text{s}^{-1}$.

Electrode	peak pair	E_{pa} (V)	E_{pc} (V)	$E_{1/2}$ (V) ($E_{pa}+E_{pc}/2$)	ΔE_p (V) ($E_{pa}-E_{pc}$)	I_{pa} (μA)	I_{pc} (μA)	I_{pc}/I_{pa}
PB-SPCE	I	0.221	-0.009	0.115	0.230	136.1	-186.5	1.36
	II	0.855	0.676	0.765	0.179	64.7	-60.5	1.07

Table S2. Electrochemical parameters of the CoPc-SPCE, MB-SPCE and PB-SPCE, respectively, immersed in 10^{-3} M $\text{K}_4[\text{Fe}(\text{CN})_6]$ – 10^{-1} M KCl solution obtained by cyclic voltammetry at $0.6 \text{ V}\cdot\text{s}^{-1}$.

Electrode		E_{pa} (V)	E_{pc} (V)	$E_{1/2}$ (V)	ΔE_p (V)	I_{pa} (μA)	I_{pc} (μA)	I_{pc}/I_{pa}
CoPc-SPCE		0.342	0.026	0.184	0.315	39.25	-49.65	1.26
MB-SPCE	Peak pair I	0.214	0.356	0.285	0.142	114.49	-158.70	1.38
	Peak pair II	0.720	0.621	0.670	0.099	103.73	-119.58	1.15
PB-SPCE	Peak pair I	0.315	-0.104	0.205	0.419	312.09	-330.34	1.05
	Peak pair II	0.869	0.563	0.716	0.306	203.26	-159.41	0.78

Table S3. Electrochemical parameters obtained from the cyclic voltammogram of PB-SPCE immersed in 10^{-3} M Phe – 10^{-1} M KCl solution at $0.6 \text{ V}\cdot\text{s}^{-1}$.

Sensor	peak pair	E_{pa} (V)	E_{pc} (V)	$E_{1/2}$ (V)	ΔE_p (V)	I_{pa} (μA)	I_{pc} (μA)	I_{pc}/I_{pa}
PB-SPCE	I	0.210	-0.024	0.117	0.234	122.5	-158.2	1.29
	II	0.824	0.697	0.760	0.127	46.3	-43.2	0.93

