Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting Information

Determination of *L*-Dopa at an Optimized Poly(Caffeic Acid) Modified Glassy Carbon Electrode

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Table S1. Design Matrix and Response for the Factorial Analysis.

Run #	P	S	A	F	i_p (μA)
1	-1	1	1	-1	61.97
2	1	-1	1	-1	18.77
3	1	1	1	1	11.1
4	-1	-1	-1	1	62.01
5	1	-1	-1	-1	12.7
6	1	1	-1	1	8.85
7	1	-1	1	1	23.7
8	-1	-1	1	-1	92.25
9	-1	1	-1	1	47.41
10	1	1	1	-1	13.36
11	-1	-1	1	1	88.12
12	1	1	-1	-1	10.87
13	-1	-1	-1	-1	59.43
14	-1	1	-1	-1	38.52
15	1	-1	-1	1	20.05
16	-1	1	1	1	49.65

Table S2. ANOVA for the Factorial Design.

Source	Sum of Squares	df [a]	Mean Square	F-value [b]	p-value, prob> F [c]	
Model	11605.49	10	1160.55	44.62	0.0003	Significant
P	9022.93	1	9022.93	346.88	<0.0001	
S	1143.95	1	1143.95	43.98	0.0012	
A	613.72	1	613.72	23.59	0.0046	
F	0.57	1	0.57	0.02	0.8879	
PS	335.17	1	335.17	12.88	0.0157	
PA	307.53	1	307.53	11.82	0.0185	
PF	10.54	1	10.54	0.40	0.5524	
SA	91.35	1	91.35	3.51	0.1198	
SF	21.25	1	21.25	0.82	0.4075	
AF	58.46	1	58.46	2.25	0.1941	
Residual	130.06	5	26.01			
Cor Total	11735.55	15				

[a] Degrees of freedom.

[b] Test for comparing model variance with residual (error) variance.

[c] Probability of seeing the observed F-value if the null hypothesis is true.

[d] Total of all information corrected for the mean.

Table S3. Central Composite Design for the Three Significant Variables and the Resulting Response.

Run #	P	S	A	i_p (μA)
1	1	-1	-1	70.71
2	0	0	0	120.67
3	0	0	0	117.32
4	-1	1	-1	67.16
5	1	1	-1	27.89
6	0	0	-α	29.55
7	-1	-1	-1	86.03
8	0	0	0	115.04
9	0	-α	0	111.11
10	0	0	0	114.05
11	0	0	+α	86.29
12	0	0	0	121.38
13	0	0	0	107.19
14	1	1	1	53.71
15	0	0	0	117.27
16	-1	1	1	115.38
17	0	0	0	124.17
18	1	-1	1	94.968
19	-α	0	0	111.62
20	0	+α	0	60.69
21	+α	0	0	55.85
22	0	0	0	122.35
23	-1	-1	1	128.03

Table S4. ANOVA for CCD.

Source	Sum of squares	df[a]	Mean square	F-value[b]	p-value, prob>F[c]	
Model	21187.03	8	2648.38	90.72	<0.0001	significant
P	4328.18	1	4328.18	148.26	<0.0001	
S	2940.65	1	2940.65	100.73	<0.0001	
A	4068.24	1	4068.24	139.35	0.0002	
PS	345.39	1	345.39	11.83	0.0040	
PA	201.38	1	201.38	6.90	0.0199	
P^2	1761.12	1	1761.12	60.32	<0.0001	
S^2	1513.64	1	1513.64	51.85	<0.0001	
A^2	6136.97	1	6136.97	210.21	<0.0001	not significant
Residual[d]	408.72	14	29.19			
Lack of Fit[e]	191.62	6	31.94	1.18	0.4038	
Pure Error[f]	217.09	8	27.14			
Cor Total[g]	21595.74	22				

[a] Degrees of freedom.
[b] Test for comparing model variance with residual variance.
[c] Probability of seeing the observed “F value” if the null hypothesis is true.
[d] Consists of terms used to estimate experimental error
[e] Variation of the data around the fitted model
[f] Amount of variation in the response in replicated design points.
[d] Total for all information corrected for the mean.