Electronic Supplementary Material (ESI) for Analytical Methods

Application of an Electronic Tongue towards the analysis of brandies

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Supporting information

This supplementary provides further details of the samples under study as well as showing the voltammetric responses obtained for the both subsets of samples and the whole array of sensors.

Additionally, the number of features used in each model (and from which sensors they came from), which were selected by using the stepwise inclusion method, are summarized in Table S3.

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Table S1. Detailed information for the first subset of samples (section 2.2.1).

Sample	Vintage	Alcohol by volume	Taste classification	Butan-2-ol	Ethyl acetate	Acetaldehyde	Butan-1-ol
A1	2008	65.4	1	-1	-1	-1	1
A2	2009	65.0	1	-1	-1	1	0
A3	2009	77.0	1	-1	-1	0	1
A4	2010	65.0	1	1	-1	0	0
A5	2010	77.0	1	0	0	1	1
A6	2010	65.0	1	0	-1	-1	1
A7	2010	65.4	1	1	-1	1	1
A8	2011	65.0	1	1	1	1	1
A9	2011	65.0	1	-1	1	1	1
A10	2011	65.2	1	0	-1	0	1
A11	2011	65.0	1	-1	1	1	-1
A12	2011	77.2	1	-1	-1	1	1
A13	2011	78.0	1	-1	0	1	1
A14	2012	77.2	1	-1	0	1	1
A15	2010	77.0	2	1	-1	-1	1
A16	2010	65.0	2	1	-1	0	1
A17	2010	65.0	2	0	-1	-1	1
A18	2011	65.0	2	-1	-1	0	1
A19	2011	77.0	2	-1	-1	-1	1
A20	2011	77.2	2	-1	-1	1	1
A21	2011	77.0	2	-1	1	1	1
A22	2011	77.0	2	-1	-1	-1	-1
A23	2012	77.0	2	1	-1	1	1
A24	2010	70.0	2	-1	-1	1	0
A25	2009	65.0	3	-1	-1	-1	0
A26	2009	65.0	3	-1	-1	-1	0
A27	2009	65.0	3	-1	-1	-1	0
A28	2010	65.0	3	0	-1	0	1
A29	2011	65.0	3	-1	-1	0	1
A30	2011	77.0	3	1	-1	-1	1
A31	2011	65.0	3	-1	-1	1	1
A32	2011	65.0	3	-1	-1	1	1
A33	2009	70.0	3	-1	-1	-1	-1
A34	2009	70.0	3	-1	-1	-1	0
A35	2009	70.0	3	-1	-1	-1	0
A36	2009	70.0	3	-1	-1	-1	-1
A37	2009	70.0	3	-1	-1	-1	-1
A38	2009	70.0	3	-1	-1	-1	-1
A39	2009	70.0	3	-1	-1	-1	0
A40	2011	65.0	3	-1	-1	-1	-1
A41	2011	65.0	3	-1	-1	0	-1

Table S2. Detailed information for the second subset of samples (section 2.2.2)

Sample	Vintage	Alcohol by volume	Ageing method	I_{280} index
B1	2009	69.5	Chips	14.1
B2	2008	69.5	New barrel	17.5
B3	2009	69.5	Chips	13.5
B4	2009	69.5	Chips	19.5
B5	2009	69.5	Chips	49
B6	2009	69.5	Chips	25.1
B7	2008	69.5	New barrel	29.4
B8	2009	69.5	Chips	37.9
B9	2009	69.5	Strips	27.6
B10	2009	69.5	Strips	25.6
B11	2009	69.5	Blocks	23.5
B12	2009	69.5	Sticks	16.2
B13	2009	69.5	Sticks	13.7
B14	2009	69.5	Sticks	12.3
B15	2009	69.5	Sticks	13.3
B16	2009	69.5	Sticks	22.3
B17	2009	69.5	Sticks	45.6
B18	2009	69.5	Sticks	64.2
B19	2008	69.5	New barrel	29.8
B20	2009	69.5	Chips	15.3
B21	2009	69.5	Chips	17.1
B22	2009	69.5	Sticks	9.7
B23	2009	69.5	Sticks	16.9
B24	2009	69.5	Sticks	13.5
B25	2009	69.5	Chips	10.6
B26	2009	69.5	Chips	19.6
B27	2009	69.5	Chips	11
B28	2009	69.5	Chips	20.5
B29	2009	69.5	Chips	32
B30	2009	69.5	Chips	79.8
B31	2009	69.5	Chips	99.6
B32	2009	69.5	Strips	20.2
B33	2009	69.5	Strips	30

Table S3. Number of features (FFT coefficients) employed for building the different LDA models.

Sensor	***Taste attributes***	***Ageing method***	***Vintage identification***
Graphite-epoxy	6	4	5
Cobalt (II) phtalocyanine	2	1	3
Platinum nanoparticle	4	4	4
Silver nanoparticle	9	5	5
Polypyrrole	3	4	3
Copper nanoparticle	6	3	5
Total coefficients	30	21	25

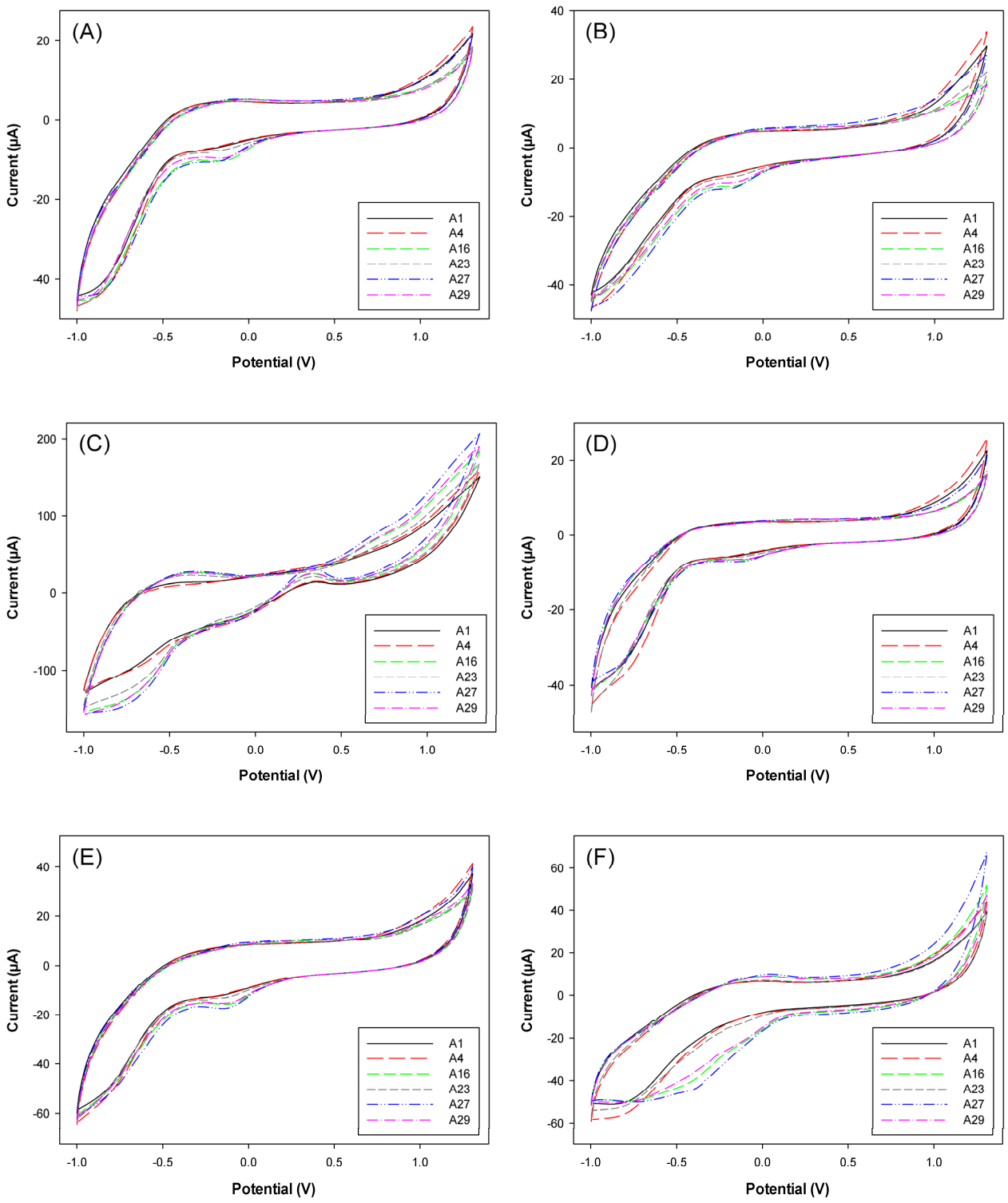

Figure S1. Example of the different obtained voltammograms for the first data set (section 2.2.1) obtained with the sensor array: (A) graphite-epoxy, (B) phtalocyanine, (C) platinum nanoparticle, (D) silver nanoparticle, (E) polypyrrole and (F) copper nanoparticle.

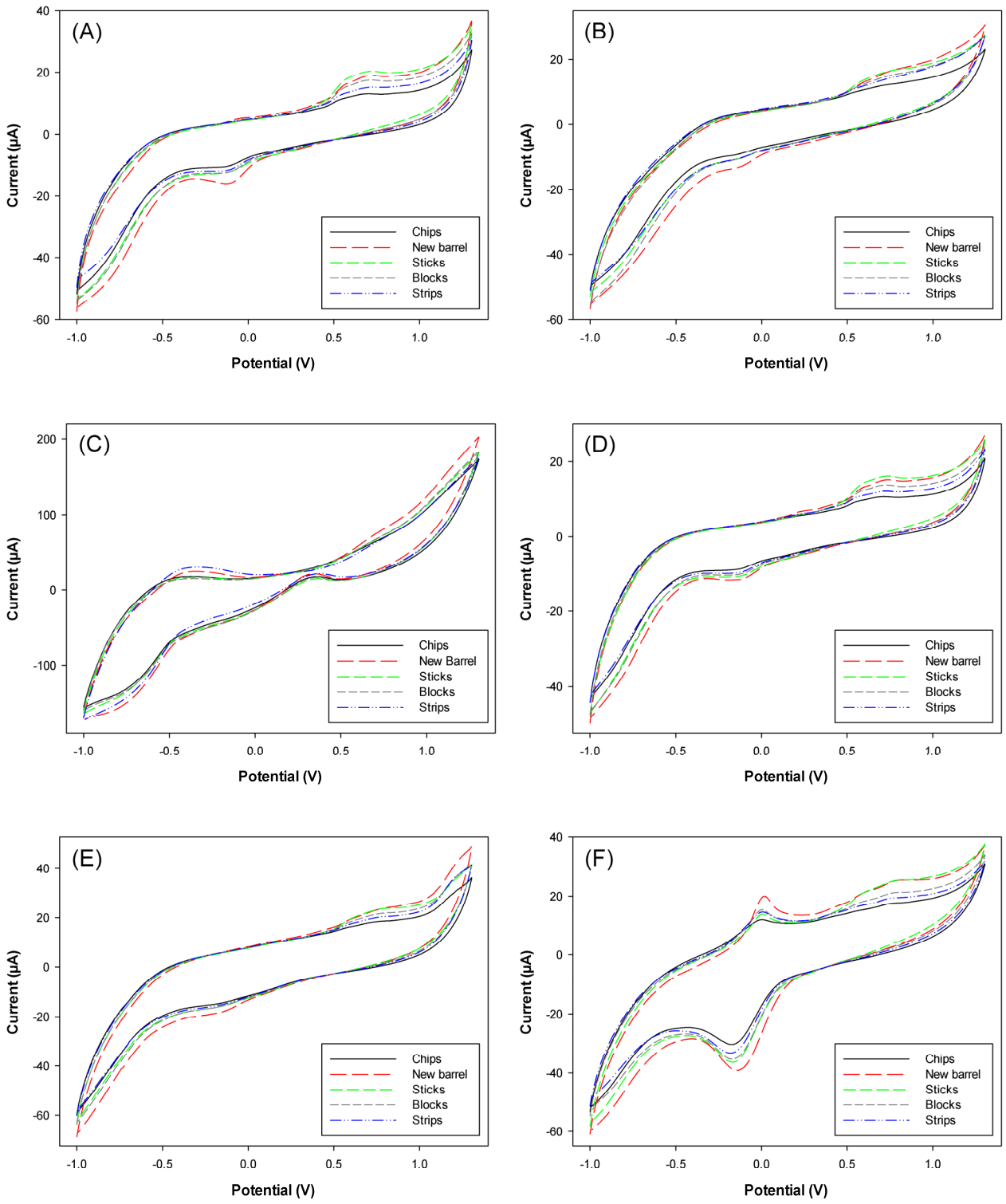

Figure S2. Example of the different obtained voltammograms for the second data set (section 2.2.2) obtained with the sensor array: (A) graphite-epoxy, (B) phtalocyanine, (C) platinum nanoparticle, (D) silver nanoparticle, (E) polypyrrole and (F) copper nanoparticle.