Supplementary **Materials**

Preparation of electropolymerized films for electronic tongue

The peaks (labelled A, C respectively) observed in CV voltammograms confirmed the redox processes occurring during formation of the electropolymerized films onto electrode surface. At the end of electrochemical oxidation, the electrode surfaces had a characteristic colouring.

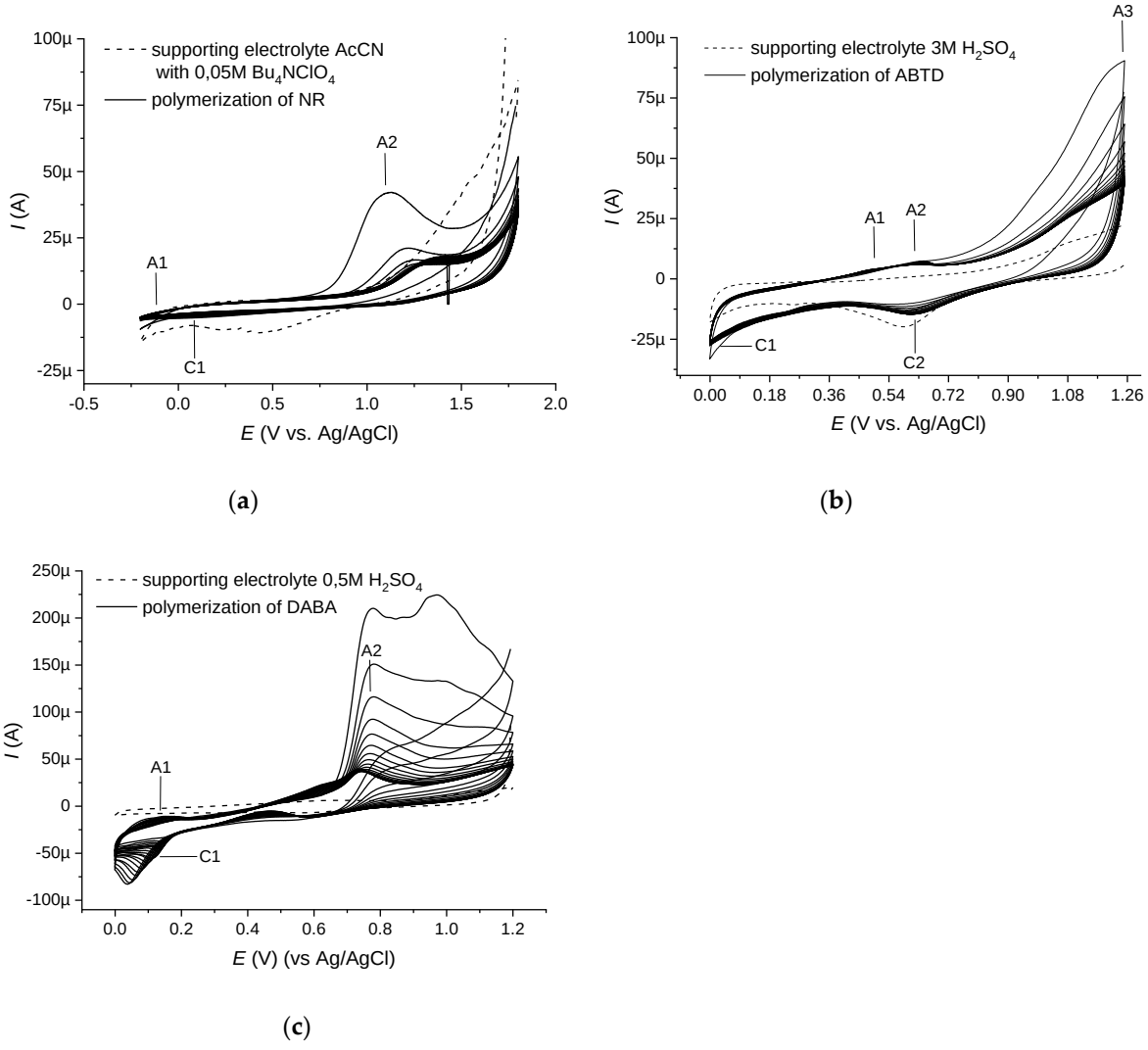

Figure S1. Cyclic voltammograms of polymerization of monomers; a) NR, b) ABTD and c) DABA. The individual figures include curves of supporting electrolytes (dashed line). The detailed conditions of polymerization process are summarized in the Table 1.

The structure of Pt substrates

The structure of Pt substrates was studied with a JSM 6400 scanning electron microscope (JEOL, JAPAN) and with an optical Leica microscope (Germany).

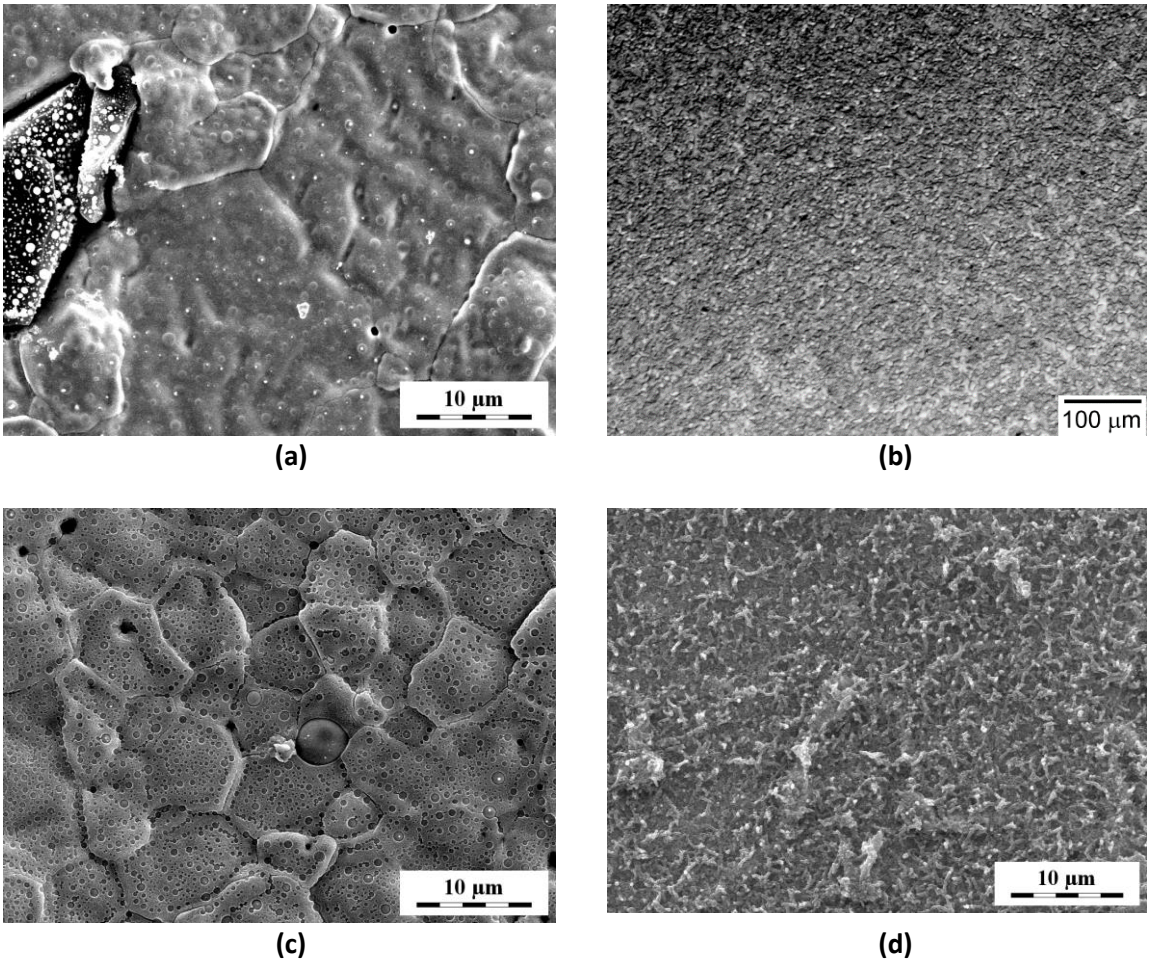

Figure S2. SEM (a, c, d) and optical microscopy images of (b) of different unmodified and modified relatively homogenous Pt surfaces: (a) Pt (bare electrode as inhomogeneous surface with visible defects (grooves)), (b) PABTD on Pt, (c) PNR on Pt and (d) PDABA on Pt substrate.

The real samples of effervescent tablets contain, in addition to vitamin C, a number of other substances such as citric acid, cations, sugars and fillers which are summarized in Table S1.

Table S1. Composition of effervescent tablets (labeled S_A – S_E)

Tablet	Producer/ Manufacturer	Substances present in the tablet declared by the manufacturer on the packaging
S_A	Haas	Citric acid, sugar, acidity regulator (sodium carbonates), natural aroma (citric), **L-ascorbic acid**, sweetener (aspartame), colorant (riboflavin)
S_B	Haas	Citric acid, sugar, acidity regulator (sodium carbonates), aromas (orange, mandarin), **L-ascorbic acid**, sweetener (aspartame), natural dye (betanin), DL-alpha-tocopheryl acetate, nicotinamide, Calcium D-pantothenate, riboflavin-5-phosphate sodium, pyridoxine hydrochloride, thiamine mononitrate, cyanocobalamin
S_C	Haas	Citric acid, acidity regulator (sodium bicarbonate), sugar, calcium carbonate, colorant (betanin), vitamins (**L-ascorbic acid**, DL-alpha-tocopheryl acetate, D-biotin, nicotinamide, Calcium D-pantothenate, pyridoxine hydrochloride, riboflavin-5-phosphate sodium, thiamine mononitrate, pteroylmonoglutamic acid), flavor, sweetener (aspartame)
S_D	MaxiVita	Citric acid, acidity regulator - sodium bicarbonate, sweetener - sorbitol, vitamin premix and active ingredients (guarana extract**, L-ascorbic acid**, D-biotin, DL-alpha-tocopheryl acetate, thiamine hydrochloride, riboflavin, pyridoxine hydrochloride, cyanocobalamin, nicotinamide, pantothenic acid, folic acid, aroma, anti-caking agent - polyethylene glycol (PEG 6000), guarana seed extract), sweeteners - aspartame and sodium saccharin, dye - beta-carotene
S_E	MaxiVita	Sweetener - sorbitol, citric acid, acidity regulator - sodium bicarbonate, **L-ascorbic acid**, anti-caking agent - polyethylene glycol (PEG 6000), aroma, acerola extract, aroma, zinc citrate, sweeteners - aspartame and sodium saccharin, colorant - riboflavin

Coulometric titrations with iodine at a constant 10 mA generating current and at polarization voltage of 200 was used as a comparative method to determine the exact content of ascorbic acid in effervescent tablet samples S_A – S_E. First, the titrating agent iodine (I_2) is formed, which is obtained by anodic oxidation from sodium iodide (NaI) as the basic electrolyte as follows: $2I^- = I_2 + e^-$. Iodine then reacts with AA to form dehydroascorbic acid and hydrogen iodide in a stoichiometric ratio of 1: 1 according to the equation: $H_8C_6O_6 + I_2 = H_6C_6O_6 + 2HI$ [10]. A solution of oxalic acid maintains a low pH (around 4) and also has a weak complexing ability.

The titration record is shown in the figure S2. Coulometric measurements of effervescent tablets A – E showed that the samples contained ascorbic acid in the range of 39.7 – 263.0 mg with a percentage in the range of 0.99 – 8.36%. The measured and calculated average data for individual tablets are summarized in Table S2, The data are represented as follows: weights of individual tablets m_{weight}, t_{BE} time at equivalence point (BE), $Q_{BE} - \bar{Q}_{Bl}$ representing the difference between the charge of the sample and the average charge of the blank in BE, m_{AA} in the sample is the mass of ascorbic acid in the sample and w_{AA} is the mass fraction of ascorbic acid in the sample.

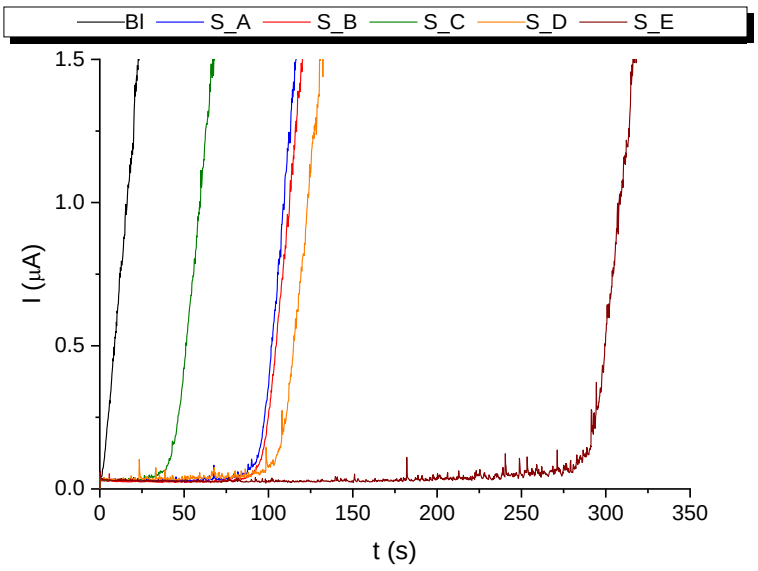

Figure S3. Dependence of the indication current on the time in the blank experiment (Bl) and in the analysis of samples of effervescent tablets A – E (marked S_A – S_E).

Table S2. Measured and calculated data of coulometric titration of ascorbic acid (AA) in effervescent tablet samples (labeled S_A – S_E) for n = 6. The volume 1 ml was pipetted to the cell.

Effervescent tablets	$\mathbf{m}_{\text{weight}}$ **[g]**	t_{BE} **[s]**	$Q_{BE} - \bar{Q}_{Bl}$ **[mC]**	m_{AA} **in sample [g]**	w_{AA}
S_A	3.9970	95.30	920.5	0.0858	0.0215
S_B	3.9548	96.68	934.4	0.0871	0.0220
S_C	4.0054	44.04	434.4	0.0397	0.0099
S_D	2.5566	107.94	1065.2	0.0972	0.0380
S_E	3.1461	291.96	2861.8	0.2630	0.0836

The highest content of ascorbic acid 8.4% was found in tablet E, on the contrary the lowest found content of 0.99% was in tablet C. The tablets differed in composition, color and appearance of the aqueous solution after dissolution.