

ANSWERS to REFEREE'S COMMENTS

Anonymous Referee #1

ITEM	Observations	Response
General comments:		
1	Language should be checked by a native speaking person, also in relation to order of words, and punctuation (commas, etc.)	The language was checked
2	Use past tenses for own work	Past tenses were used in the manuscript
3	Redundant and irrelevant (and speculative) information should be avoided	Redundant and irrelevant information removed
4	Discussion should be provided on the results also in relation to other literature (how does this work compare to other studies).	References that support the discussion of the results were included.
5	Avoid subjective wordings as "very", "excellent", "undoubtful", "In general", etc.	Subjective expressions were removed
6	Explain better the variation in water quality in the network. Is the system fed by different sources e.g.? Can precipitation or dissolution be expected?	A paragraph explaining the variation in the quality of the water in the network was included.
Specific comments:		
1	Line 36-37, should be "Monitoring the quality of drinking water is an issue of global concern and therefore the new analytical approaches are relevant". Line 38, "For this a" = "The"	Corrected sentence
2	Line 39, delete "used"	Deleted word
3	Line 41, "aqueduct" = "water supply"	Corrected word
4	Line 44-46, rephrase sentence (not clear what is meant)	Corrected sentence
5	Line 47, "constitutes"? what is meant?	Corrected word
6	Line 47, indicate the parameters here.	Included parameters
7	Line 50-51, rephrase sentence (not clear what is meant)	Corrected sentence
8	Line 58, "have led to search new technological alternatives cheaper,.. " not clear what is meant, rephrase..	Corrected sentence
9	Line 58, give also references (where does this statement come from..)	References included
10	Line 64-69, delete Figure 1 and references to Figure 1 (not own work)	Figure 1 is own work
11	Line 70-72, rephrase sentence (not clear what is meant)	Corrected sentence
12	Line 74-76, rephrase sentence (not clear what is meant)	Corrected sentence
13	Line 80, "household" = "distribution"	Corrected word

14	Line 83, should be "The reported electronic tongue devices are..."	Corrected word
15	Line 84, should be "of a miniaturized.."	Corrected word
16	Line 85, explain "PSoC"	Term explained
17	Line 88-90, delete sentence	Deleted sentence
18	Line 93, should be "in the drinking water supply network.."	Corrected words
19	Line 94, "communes" = "communities"	Corrected word
20	Line 94, numbering of communities does not make sense to readers, when localization is not given	The geographic location was included in table 1.
21	Line 96, what is the reference and unit of the altitude?	Altitude units included (MSL)
22	Line 98, "aqueduct" = "water supply"	Corrected words
23	Line 105, "Health of Sucre"?	Corrected words
24	Line 106, should be "analyzed parameters"	Corrected words
25	Line 111, "S."	
26	Line 112, introduce "PPy" here and then always use de abbreviation	Corrected word
27	Line 112-113, rephrase "sensor array a portable multipotentiostat controlled.." (not clear what is meant)	Corrected sentence
28	Line 140, should be "obtained signals"	Corrected words
29	Line 152, should be "a different group of samples"	Corrected sentence
30	Line 153-154, should be "and the same sampling protocol, measurement with the smart electronic tongue and treatment of data were applied".	Corrected sentence
31	Line 154, also explain the purpose of this exercise here	A paragraph explaining the purpose of the experiments was included.
32	Line 157-158, should be "eight physicochemical parameters related to drinking water Quality (alkalinity, calcium, residual chlorine, chlorides, total hardness, phosphates, magnesium and sulphates) were evaluated".	Corrected sentence
33	Line 157, not true that they are the "most important" parameters..	Corrected sentence
34	Line 160, should be "created prediction models"	Corrected words
35	Line 165, explain how calibration/validation is performed..	A paragraph on the calibration and validation process was included and a supporting reference was included
36	Line 170, "made" = "done"	Corrected word
37	Line 172-173, delete "which.... Purpose"	Corrected sentence
38	Line 173-174, rephrase sentence	Corrected sentence
39	Line 174, should be provided"	Corrected word
40	Line 175, "which constitutes the fingerprint"? (not clear what is meant)	Paragraph clarified and supporting reference included
41	Line 176, should be "showed"	Corrected word
42	Line 175-186, not clear how anodic/cathodic, oxidation and redox processes can we concluded from the figure 3. Explain (with reference to literature).	Paragraph clarified and supporting reference included
43	Line 187-188, rephrase sentence (not clear what is meant)	Corrected sentence

44	Line 188-189, should be "In Figure 4 the behavior of S1 sensor (PPy/SO4) against some water samples taken at different sampling points (M1, M2, M3, M4 and M5) is shown as an example".	Corrected sentence
45	Line 189-190, delete sentence	Deleted sentence
46	Line 191, not clear from the figure	The figure was taken from the Android app and edited as clear as possible
47	Line 201-202, delete sentence	Deleted lines
48	Line 204, should be "obtained signals"	Corrected words
49	Line 204, discuss with other literature	Added related reference (literature)
50	Line 210, what is meant by "values"?	For better clarity, the term "values" was changed to "data"
51	Line 211-213, delete sentence from "this procedure" onwards..	Deleted sentence
52	Line 217-218, delete sentences	Deleted sentence
53	Line 220, should be "analyzed samples"	Corrected words
54	Line 224, explain what is meant by "separation" (separated from what?) Line 228, "made" = "done"	It was clarified that there is talk of the separation of the samples in the plane of principal components. Rephrased paragraph
55	Line 228, explain better (with literature) why change in water composition is expected. When it is the same source then salt content, hardness, alkalinity hardly change.. (maybe only chlorine concentration)	Re-pumping is carried out in the city network, which allows small changes in the composition due to the storage that is carried out in these re-pumping points. Rephrased paragraph
56	Line 230, aeration processes are not to be expected in a distribution network and maintenance and cleaning could have been noticed during sampling..	This paragraph does not speak of aeration in the network, but of a re-pumping process that is carried out at different points of the distribution network. Rephrased paragraph
57	Line 231-233, delete sentence from "which" onwards	Deleted sentence
58	Line 243-248, Figure 6 does not add to the story so delete (including references to the figure)	The figure was deleted
59	Line 253-254, delete sentence	Deleted sentence
60	Line 256, what is meant by "quase-quantitative". It is quantitative or not..	The term quasi-quantitative is a term coined for bio-inspired analysis systems (electronic tongues and electronic noses) and engages in unconventional analysis. Refers to simultaneous and approximate quantitative determinations. However, for greater clarity, the term quasi-quantitative was changed to quantitative.
61	Line 257-260, delete sentences	Deleted sentence
62	Line 267, explain how calibrated and validated	A line was included where it is mentioned that the experimental section was included, a paragraph on calibration and validation is explained.
63	Line 267-269 delete "(the results... presented"	Deleted lines

64	Line 270-275, explain the “outliers” in hardness, alkalinity, calcium etc.. Did this water come from a different source?	They do not come from a different source. The “outliers” of the values may be due to the fact that the samples were taken from different points, in which these parameters can be affected by the type of pipes in the area and maintenance work carried out.
65	Line 278-279, delete sentence	Deleted sentence
66	Line 291-297, delete sentences (too speculative)	Deleted lines
67	Line 299, start conclusion with small introduction about purpose of the study	A short introduction about the purpose of the study was included at the beginning of the conclusion.
68	Line 302, should be “analyzed sample”	Corrected words
69	Line 309, should be “provided”	Corrected word
70	Line 314-315, delete sentence	Deleted line

Anonymous Referee #2

ITEM	Observations	Response
General comments:		
1	It is advised to perform a language check. Quite some sentences should be rephrased and the use of commas is chaotic.	The language was checked
2	For the qualitative analysis you repeat the measurements with new samples from the same sampling points 15 days later. Can you make a statistical comparison between these samples and the original samples in terms of chemical composition? Is that in agreement with the observed difference between figure 5 and figure 6?	Carrying out a statistical comparison between the results of the chemical parameters analyzed with the differences observed between figure 5 and figure 6 would not make much sense, because in these figures a qualitative discrimination is presented that results from the global particularities of the samples. In other words, the smart electronic tongue responds to the global composition of the samples as a whole (as a taster does, who is not capable of knowing or correlating their assessment o discrimination directly with chemical parameters). The use of chemical analyzes allowed to determine the capacity of the smart electronic tongue to provide approximate quantitative information of the parameters under study through a regression model by partial least squares (PLS) based on artificial neural networks (section 2.3).
3	Can you explain in more detail how the extraction of the quantitative information was performed (paragraph 3.3)? Which type of regression model was used?	A paragraph was included in the methodology section. Section 2.3

4	It would have been an added value if the sensor was validated with measurements from a distribution net with a different drinking water source. In this way you capture a higher variation.	The observation will be taken into account for future studies.
5	Can you add to the discussion how your results can be compared with other studies?	References that support the discussion of the results were included.
Specific comments:		
1	Rephrase line 50	Corrected sentence
2	Line 55: this equipment	Corrected sentence
3	Rephrase line 58	Corrected sentence
4	Line 90: delete '!	Deleted
5	Line 112 '...array and a portable'	Corrected sentence
6	Rephrase line 151, starting from 'To validate....'	Corrected word
7	Line 171: delete '!	Deleted
8	Rephrase line 187 until 189	Corrected sentence
9	Line 227, starting from 'This trend....!'. Can you elaborate more on this?	Rephrased paragraph
10	Rephrase line 231	Corrected sentence
11	Line 256: why quasi?	The term quasi-quantitative is a term coined for bio-inspired analysis systems (electronic tongues and electronic noses) and engages in unconventional analysis. Refers to simultaneous and approximate quantitative determinations. However, for greater clarity, the term quasi-quantitative was changed to quantitative.
12	Rephrase line 305 until 307	Corrected sentence