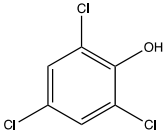
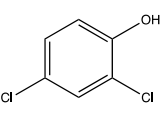
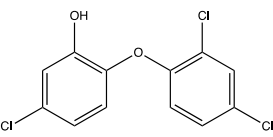
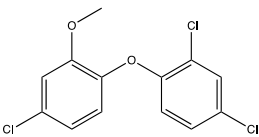


## Supplementary Data

Table S1. Chemical properties of the EOCs under study.

Compound	2,4,6-Trichlorophenol	2,4-Dichlorophenol	Triclosan	Methyl triclosan
Structure				
Formula	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> O	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> O	C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub> O <sub>2</sub>	C <sub>13</sub> H <sub>9</sub> Cl <sub>3</sub> O <sub>2</sub>
Molecular weight (g/ mol)	197.4	163	289.5	303.6
Solubility (mg/L) at 20 °C	500 *	4500	10	0.4
pK <sub>a</sub> <sup>1</sup>	6.23	7.8	7.9	-
Log K <sub>ow</sub> <sup>2</sup>	3.69	3.06	4.76	5.0
k <sub>H</sub> (atm/mol at 25 °C) <sup>3</sup>	4.2 × 10 <sup>-6</sup>	4.29 × 10 <sup>-6</sup>	2.1 × 10 <sup>-8</sup>	-

<sup>1</sup>Ionization constant; <sup>2</sup> Logarithm of the octanol-water partition coefficient; <sup>3</sup> Henry's Law constant; \*25 °C

References: <http://pubchem.ncbi.nlm.nih.gov/>; <https://chemicalize.com/>

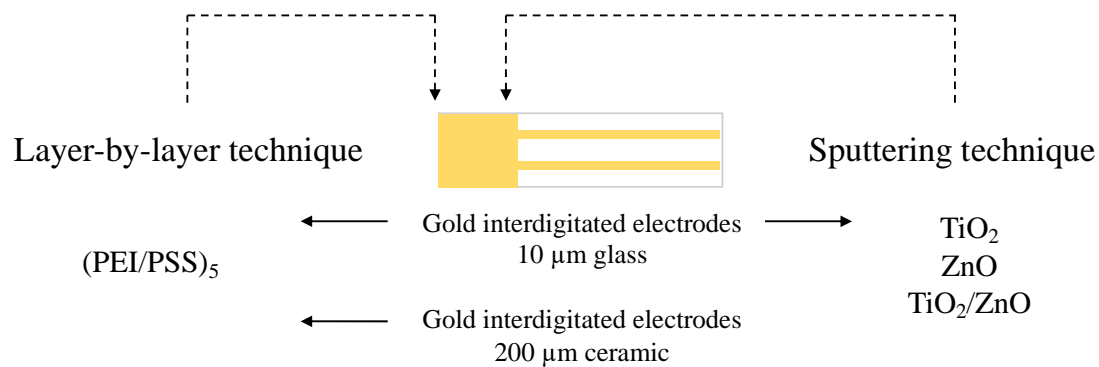
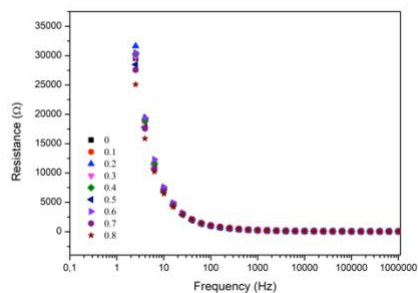
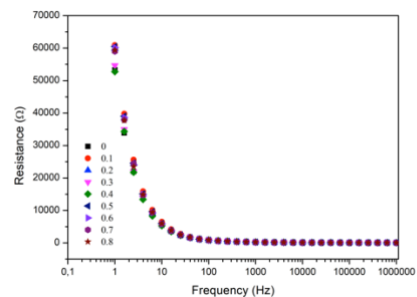


Figure S1. Scheme of the thin films used in the electronic tongue array.

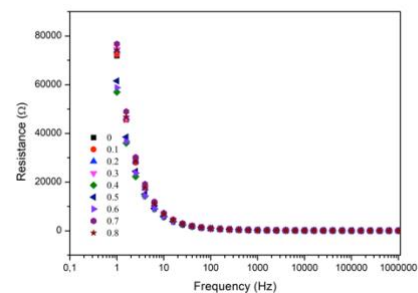
2,4,6-Trichlorophenol



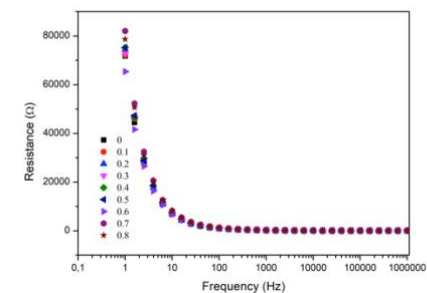
2,4-Dichlorophenol



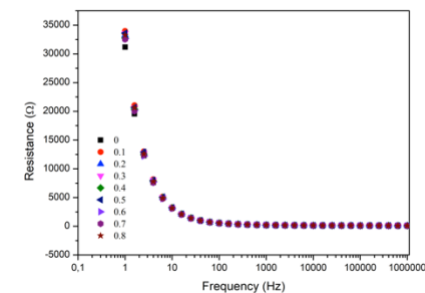
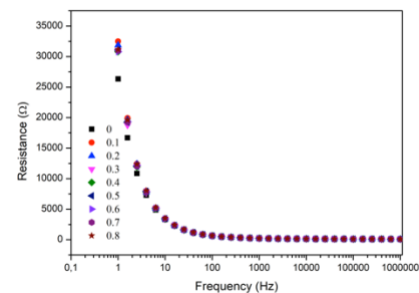
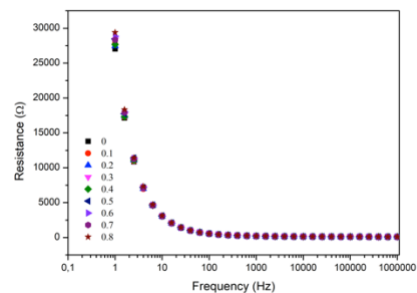
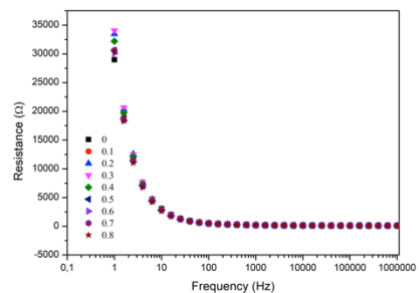
Triclosan



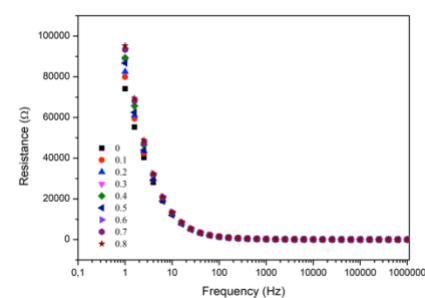
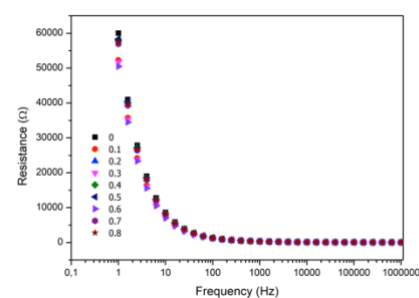
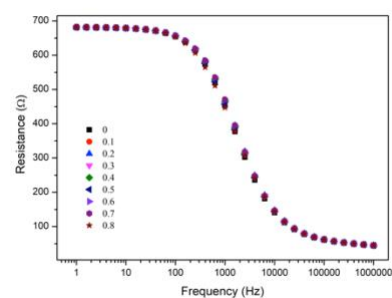
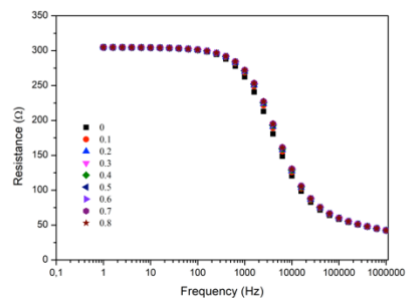
Methyl triclosan



(PEI/PSS)<sub>5</sub>  
with glass  
substrate  
10 μm



(PEI/PSS)<sub>5</sub>  
with  
ceramic  
substrate  
200 μm



TiO<sub>2</sub>

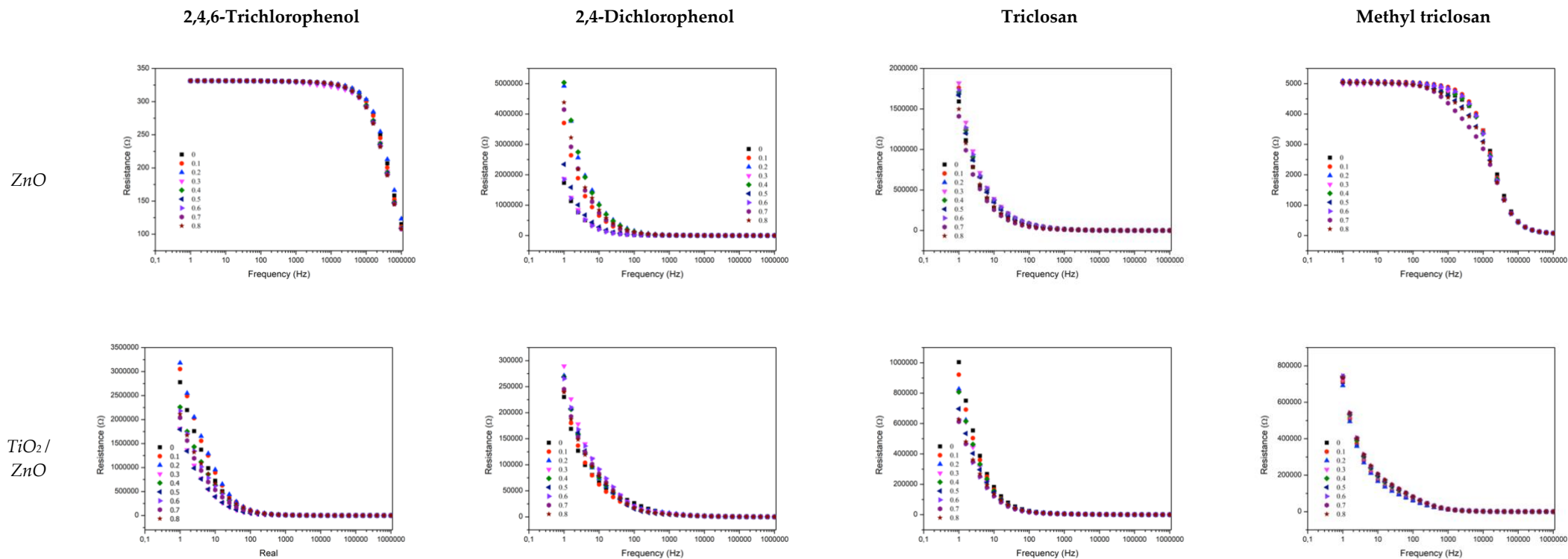
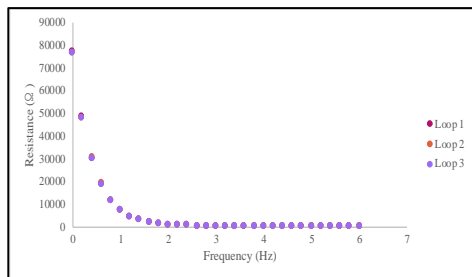


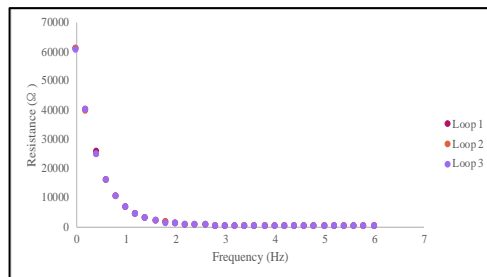
Figure S2. Resistance impedance spectra of each sensor device under study to TCP; DCP, TCS and MTCS.

(PEI/P  
SS)<sub>5</sub>  
with  
glass  
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t 10  
μm

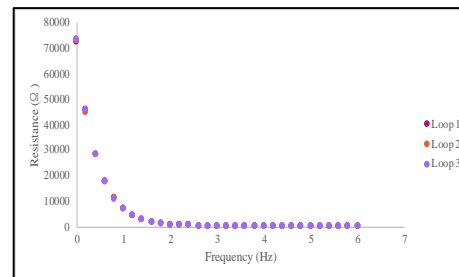
2,4,6-Trichlorophenol



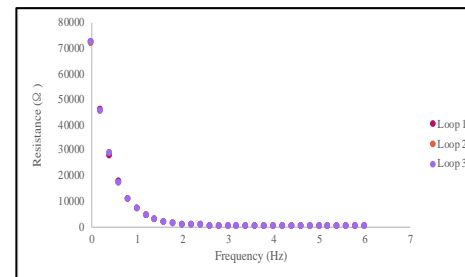
2,4-Dichlorophenol



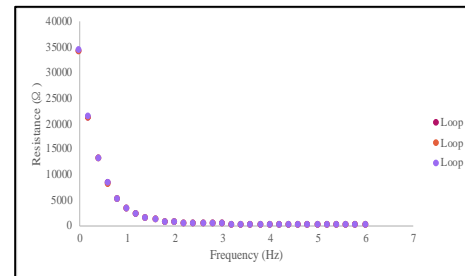
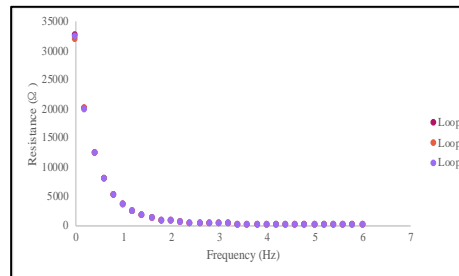
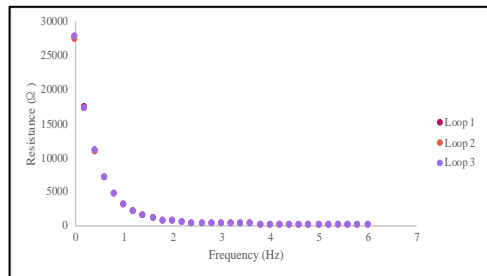
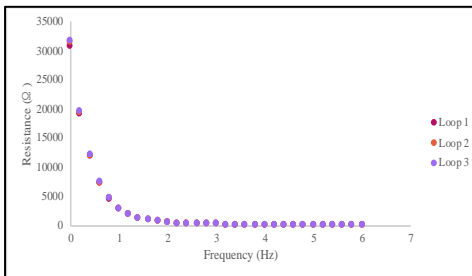
Triclosan



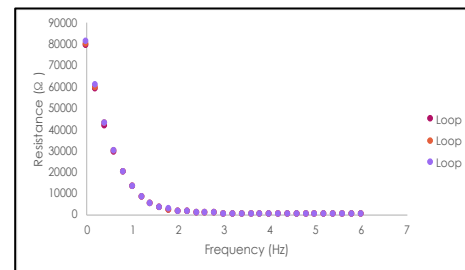
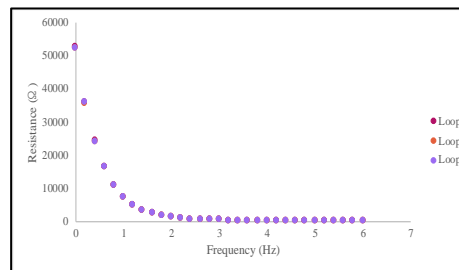
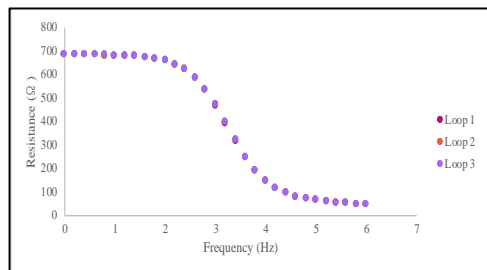
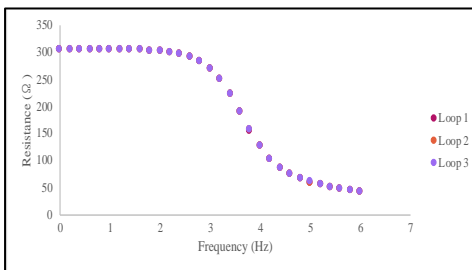
Methyl triclosan



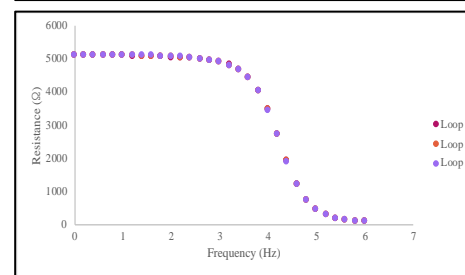
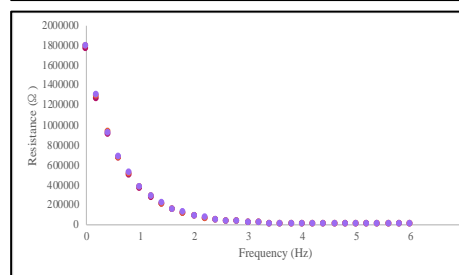
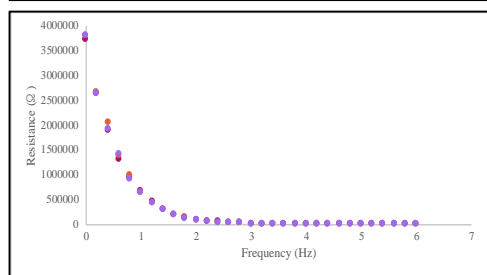
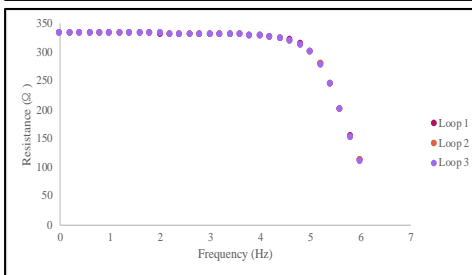
(PEI/P  
SS)<sub>5</sub>  
with  
cerami  
c  
subtrac  
t 200  
μm



TiO<sub>2</sub>



ZnO



$TiO_2 / ZnO$

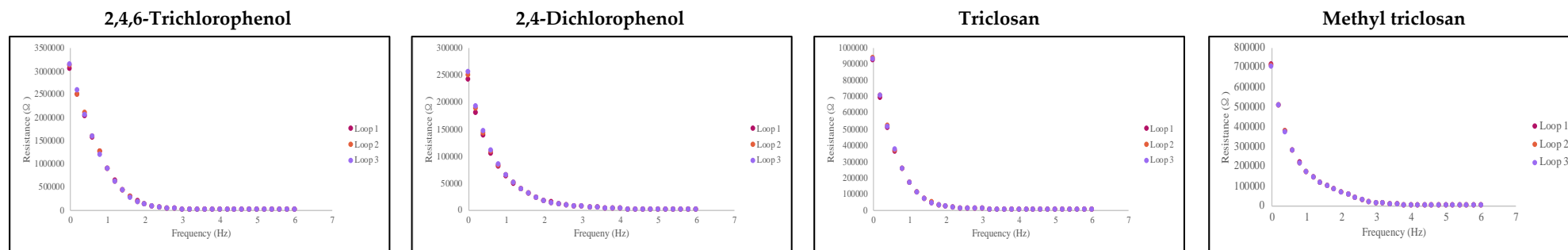


Figure S3. Resistance impedance spectra of each sensor device under study to the effluent spiked with 0.1 mg/L of TCP; DCP, TCS and MTCS (Reproducibility of n=3 impedance measurements).

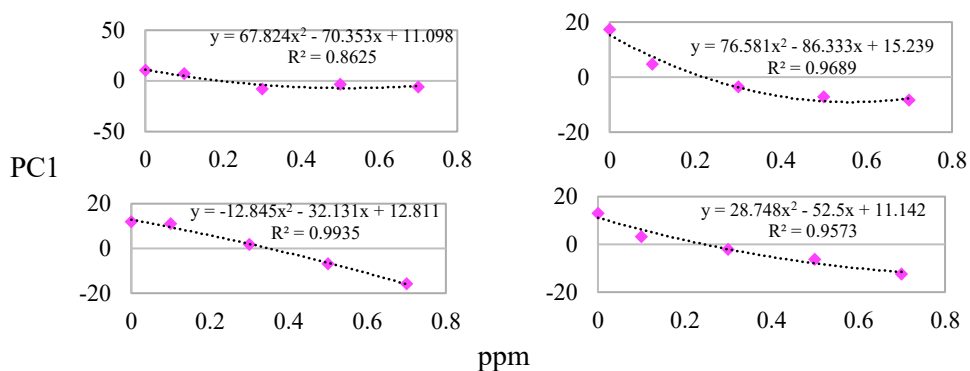


Figure S4. Electronic tongue calibration curves for each EOCs under study: TCP, DCP, TCS and M-TCS, in the range of concentration: 0-0.8 ppm (x axis): data from Figure 3, first component PC1 (y axis).

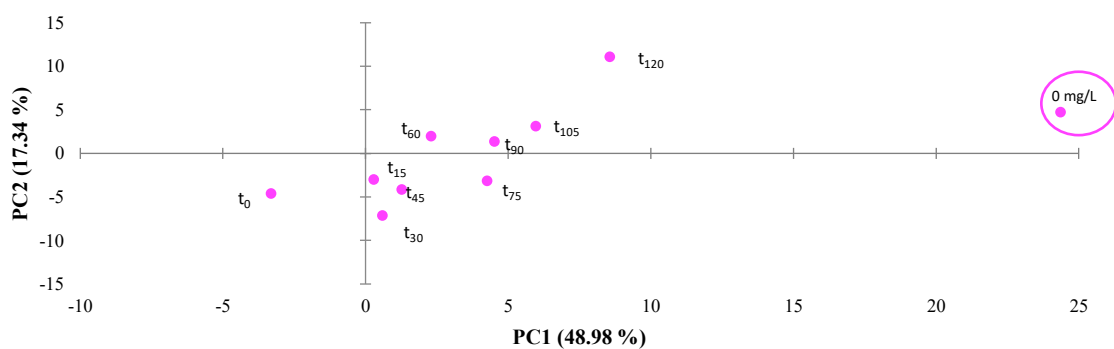


Figure S5. EFR degradation path measured by an electronic tongue in the effluent with the 4 EOCs: 0 mg/L (non-spiked;  $t_0$  to  $t_{120}$  (spiked with the 4 EOCs) sampled every 15 min.

Table S2. Average and standard deviation error to the electronic tongue presented at Figure 4.

	PC1		PC2	
<i>Sampling every 15 min *</i>	<u>X</u>	<u>SD</u>	<u>X</u>	<u>SD</u>
$t_0$	-19.1	4.9	-4.4	5.6
$t_{15}$	-6.5	4.8	-1.0	4.9
$t_{30}$	-1.5	1.7	0.4	3.7
$t_{45}$	0.1	4.1	-3.3	4.9
$t_{60}$	2.2	0.1	1.9	0.3
$t_{75}$	2.0	1.6	-0.7	2.0
$t_{90}$	3.3	0.8	1.3	0.4
$t_{105}$	7.3	1.1	5.5	1.9
$t_{120}$	9.3	0.8	5.9	3.7

$N=2$ ;  $X$  – Average;  $SD$  – standard deviation

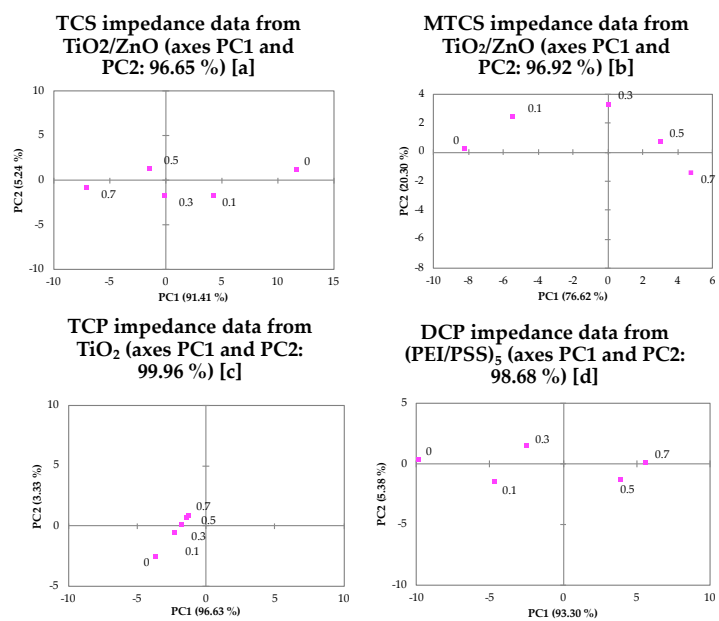


Figure S6. PCA Score plot for the best sensors, concerning effluent spiked (0-0.7 mg/L) with the 4 EOCs.