## Electronic tongue based on voltammetric sensors from electroactive materials

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Several sensor technologies have been used to build electronic tongues. Most of them rely in the use of electrochemical sensors whose electrochemical properties are sensitive to the electrolytic media.

Voltammetric sensors chemically modified with electroactive substances -used as working electrodes in a standard three-electrode configuration- have allowed obtaining sensors with important cross-selectivity and good stability. The origin of the cross selectivity is related to the presence of redox process associated to both the electrodic material and the electroactive compounds present in the solution. In addition, it has been observed that the intensity and position of the redox peaks can be modified by the occurrence of interactions between the electrode material and the solution. For instance, diffusion of ions inside the electrode causes different responses in the presence of different counterions. The variety of electrochemical responses caused by these interactions is the reason of the high capability of discrimination of the array observed using Principal Component Analysis.

In this paper, the state of the art of the voltammetric sensors is revised. Special attention has been paid to the recent advances in voltammetric sensors based on two families of compounds, the phthalocyanines and the conducting polymers. The voltammetric multisensing array has demonstrated its usefulness in the food industry. Using this system, it is possible to discriminate red wines with different organoleptic characteristics, or to detect biogenic amines formed during fish or meet spoilage.

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