Using nanoscience to enhance the capabilities of e-tongues dedicated to food analysis

Maria Luz RODRIGUEZ-MENDEZ

Group UVASens. Institute BioecoUVA. Industrial Engineering School –
University of Valladolid – Valladolid, Spain
E-mail: mluz@uva.es

In the last years electronic tongues (ET) have been developed and applied to the analysis of a variety of foods. In many cases, it is necessary to develop instruments dedicated to a specific application. This requires the search of sensors dedicated to a particular application, using the appropriate sensing materials and transduction methods adapted to a specific problem.

Important advances in the field have been carried out by incorporating nanomaterials in the sensing units that enhance the sensitivity thanks to their excellent electrocatalytic properties. Furthermore, the development of bioelectronic tongues (bio-ETs) combining in the same array unspecific sensors and biosensors, has been an important innovation: bio-ETs provide simultaneously overall information about the sample (as classical ETs do) plus information about specific compounds provided by the biosensors included in the array

Here, the new strategies in bioETs applied to the analysis of milk and wine will be presented, paying special attention to the new developments based on nanobiosensors and the combinations of enzymes with nanomaterials.

References
1. *Rodríguez-Méndez, M.L., Electronic noses and tongues in the food industry. Elsevier-Academic press, 2016*