电子鼻与电子舌在食品检测中的应用研究进展

Research and application of electronic nose and electronic tongue in food inspection

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中文摘要：

随着嗅觉与味觉传感器技术的发展，电子鼻与电子舌技术在食品检测中得到了不断研究与应用。电子鼻由气敏传感器、信号处理和模式识别系统等功能器件组成。电子舌是用类脂膜作为味觉传感器，以类似人的味觉感受方式检测味觉物质。着重阐述了电子鼻与电子舌技术的结构组成，重点介绍了其在食品新鲜度检测、果蔬成熟度评价及饮料、酒类识别等轻工业中的应用现状与发展趋势，并指出了这些信息新技术实现过程中所需要解决的问题。

英文摘要：

With the development of olfaction sensors and taste sensors, many researches and applications have been made in the electronic nose and electronic tongue. The electronic nose consists of an array of gas sensors with different selectivity patterns, signal processing and pattern recognition and decision strategy. The electronic tongue, which was developed for the taste analysis of liquids, is based on pulsed voltammetry. Measurement data from the artificial smell and taste sensors are used to produce sensor-specific opinion about these two human-like sensing modalities. This paper introduced the configuration and basic principle of electronic nose and tongue at the same time. The current research situation and applications of the electronic nose and electronic tongue in the food inspection were introduced in details. It is also given that the theoretical and technological problems which should be solved.

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