

Electronic Tongue as an Alternative Tool for Classifying Oil-Based Products

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Current electronic noses have limitations in olfaction of oil-based compounds, owing to their low responses for metal oxide gas sensors. This research is aimed to develop an alternative method to classify oil-based products, including fragrance, by using derivatizing agent to derivatize oil-based compounds followed by measurements with an in-house electrochemical electronic tongue (e-tongue). The electronic tongue has been designed and constructed based on the pattern classification of cyclic voltammograms. Cooking oil and oil-based fragrance samples were mixed with an aqueous solution of citric acid and characterized by e-tongue. The electronic tongues were also compared to measurements by an electronic nose based on metal oxide gas sensors. Preliminary results indicates that the e-tongue in combination with the derivatization method is able to classify the oil-based compounds in terms of type and quantity, outperforming the e-nose.

Summary

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