Title Spoiling and formaldehyde-containing detections in octopus with an E-nose

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Abstract

The seafood dipped with formaldehyde to prevent from spoiling by dishonest mongers is a big danger to the physical health of consumer. An E-nose with six TGS gas sensors was used for spoiling and formaldehyde-containing detection of seafood in this paper. Two static features R_0 (resistance in the air), S (sensor response), and one dynamic feature DR (desorption rate) were extracted. Fresh octopus samples dipped in water solutions with different formaldehyde concentrations were measured. In these measurements, the stability of sensors and features was evaluated and compared. The mean relative errors of these three features were 23.6%, 19.7%, and 4.1%, respectively. The results showed that the dynamic feature was more stable. With principal component analysis, the spoilage of seafood could be easily detected. And the correct recognition rate of different octopus samples was 93.1%. The results showed that electronic nose analysis could be an efficient method for seafood quality assessment.