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IOP Conference Series: Materials Science and Engineering

Volume 260, Issue 1, 7 November 2017, Article number 012043

6th International Conference on Mechatronics 2017, ICOM 2017; International Islamic University Malaysia (IIUM) Gombak Campus Kuala Lumpur, Malaysia; 8 August 2017 through 9 August 2017; Code 131673

Rapid lard identification with portable electronic nose (Conference Paper)Latief, M.^a, Khorsidatlab, A.^a, Saputra, I.^b, Akmeliawati, R.^a, Nurashikin, A.^c, Jaswir, I.^b, Witjaksono, G.^d^aDepartment of Mechatronics Engineering, Malaysia^bDepartment of Biotechnology Engineering, Malaysia^cDepartment of Electrical and Computer Engineering, International Islamic University Malaysia, Gombak, Malaysia[View additional affiliations ▾](#)

Abstract

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Human sensory systems are limited in many different regards, yet they are great sources of inspiration for development of technologies that help humans to overcome their restraints. This paper signifies the capability of our developed **electronic nose** in **rapid lard identification**. The developed device, known as **E-Nose**, mimics human's olfactory system's technique to identify a particular substance. **Lard** is a common pig derivative which is often used as a food additive, emulsion or shortening. It's also commonly used as an adulterant or as an alternative for cooking oils, margarine and butter. This substance is prohibited to be consumed by Muslims and Orthodox Jews for religious reasons. A **portable** reliable device with an ability to identify **lard** rapidly can be convenient to users concerned about **lard** adulteration. The prototype was examined using K-Nearest Neighbors algorithm (KNN), Support Vector Machine (SVM), Bagged Trees and Simple Tree, and can identify **lard** with the highest accuracy of 95.6% among three types of fat (**lard**, chicken and beef) in liquid form over a certain range of temperature using KNN. © Published under licence by IOP Publishing Ltd.

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Indexed keywords

Engineering controlled terms: [Emulsification](#) [Forestry](#) [Nearest neighbor search](#) [Oils and fats](#) [Support vector machines](#) [Trees \(mathematics\)](#)Compendex keywords: [Cooking oil](#) [Human sensory system](#) [K-nearest neighbors](#) [Olfactory systems](#) [Portable electronic nose](#)[Sources of inspirations](#)Engineering main heading: [Electronic nose](#)

ISSN: 17578981

Source Type: Conference Proceeding

Original language: English

DOI: 10.1088/1757-899X/260/1/012043

Document Type: Conference Paper

Volume Editors: Rashid M.M., Hamid S.B.A., Akmeliawati R.

Sponsors: Kuliyah of Engineering, International Islamic University Malaysia

Publisher: Institute of Physics Publishing

References (24)

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