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ACCEPTED MANUSCRIPT

STOCHASTIC MODELING OF THE TRANSIENT REGIME OF AN ELECTRONIC NOSE FOR WASTE COOKING OIL CLASSIFICATION

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ABSTRACT

The present work aims to propose an empirical kinetic model based on sorption and the precursor state, which is capable of describing the variation in electrical resistances of olfactory sensors used in assembling a device known as the e-nose. In addition, a new approach to model its noise has been proposed by means of a stochastic differential equation. As regards its application, waste cooking oil from different sources was better characterized by this new model when compared to traditional techniques of data analysis for such device.

Keywords: Biofuel, electronic nose, stochastic model, waste cooking oil

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