



Colorimetric method for determination of ethanol in gas phase

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The aim of research is to develop a test strip for determination of gas phase ethanol based on colorimetric method which can be used for indicating the deterioration of fruits. The test strip comprised two parts, a chemical reagent that was specific to ethanol, and a support for the chemical reagent. In this study, ethanol acted as a reducer to a transition metal compound which changed its color due to the reaction. Thus, the amount of ethanol could be monitored through the changes of the test strip colors. This research, the ethanol concentration (0-1000 ppm), types of support (nylon paper, silica plate, and silicon dioxide), types of chemical reagents (KMnO_4 and K_2CrO_7), and the weight ratio of reagent to catalyst, were investigated. It was found that KMnO_4 could be easily reduced by other contaminated compounds, so K_2CrO_7 was chosen to be a reagent because it was more stable. K_2CrO_7 impregnated on silicon dioxide showed the best compatible of reagent and support and the suitable ratio for sensing the ethanol 0-1000 ppm was K_2CrO_7 (0.1M), 3 ml : sulfuric acid (98%), 0.5ml. To specify the change of color in a scientific method, the J Image software was applied

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