

Quality identification of used cooking oil based on feature fusion of gas sensor and color

ABSTRACT

In Malaysia, a recognition system to identify the hazardous substance in used cooking oil is still at very minimal stage. The presents of HNE in reused cooking oil increases the health concern in our modern community and assessment of the oil quality had received much attention, since such assessment is useful in determining the discarding point of the oils. This paper primarily present the result of quality identification system of used cooking oil through an image analysis that uses RGB color extraction technique and odor extraction techniques to extract a set of feature vectors. The result obtained after implementing an ANN technique to identify quality level of the oil shows the outcome of the trained ANN was successful because of a high regression coefficient of 0.98. Furthermore, the system had successfully classified the randomly selected ten (10) samples for testing correctly.

Keyword: Oil quality classification; Color & odor extraction; Data fusion; Artificial neural network; Physical & chemical properties