

SEMESTER PROJECT

Color response of intelligent packaging for food freshness monitoring

Description

The stage of food freshness can be determined by the change in pH values, which is caused by the release of volatile gases in the food product. This change can be indicated by the use of intelligent packaging. The main mechanism of the food freshness indicator is based on the color response of the pH-sensitive dye in the intelligent packaging films. The measurements of the degree of color change when exposing the intelligent films to different pH conditions are essential to correlate between the observed color and the food quality during storage.

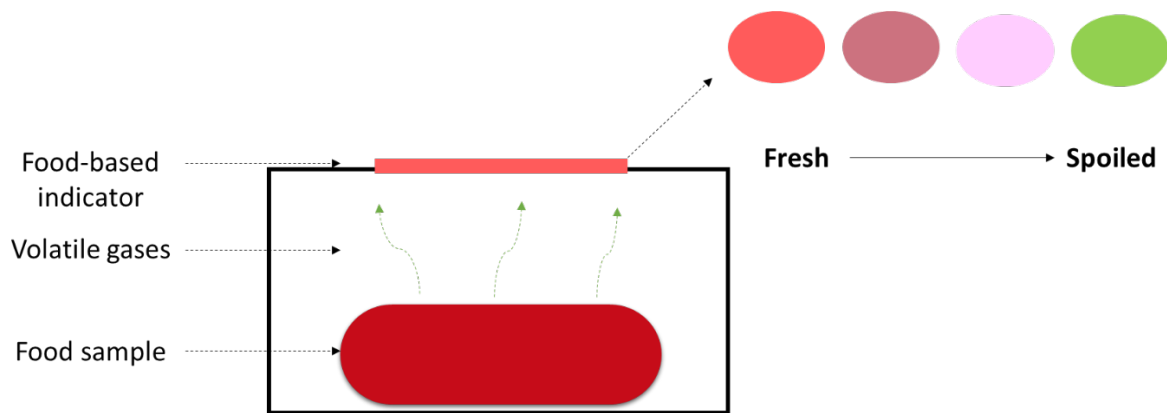


Figure 1. Color indicator for food freshness monitoring

Methodology

The intelligent films will be made via solvent casting method. Different concentrations of pH-sensitive dye will be incorporated into the polymer films. The color-changing ability of the films will be tested using ammonia solutions at different concentrations as well as real meat product. The color values and the degree of color change will be measured using a colorimeter. The CIELAB color space will be used to express the color values of the films.

Remarks

Students will have the opportunity to carry out the experimental works in the Polymers Laboratory (LP) labs.

Contact

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