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Biocompatible film based on corn starch/gelatin and red radish anthocyanin for pH sensing

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The pH-sensitive films were developed using starch/gelatin loaded with red radish anthocyanin for meat spoilage observation. This work combined several benefits which can possibly utilize in food samples, including bio-compatible material and natural dye based, low cost, fast response, and ease of use. The colors of films could be differentiated by naked eye changing from orange to grey-purple at pH 2-12 and captured by smartphone in the studio light box. The color parameters were evaluated by image J software. To confirm that red radish anthocyanin could incorporate to polymers, films were characterized by FTIR, SEM and AFM. Regarding the color stability trial, the results showed the preferable storage temperature of films was refrigeration temperature. Furthermore, the pH-sensitive films were applied to food samples for real-time meat spoilage observation, the results suggested that films could be used as intelligent food packaging.

Biography

Kasitnun Chayavanich is now pursuing his PhD under the supervision of Associate Professor Imyim. His research focuses on bio-based films loaded with plant extract for food and environment applications. This work was funded by Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University.

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