

## An Overview of Smart and Active Packaging in The Food Industry

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The emergence of many new food products in the market, along with the consumer's need to continuously check on the products' quality until consumption, and the necessity to enhance shelf life and decrease food spoiling during storage, resulted in the expansion of some new technologies in packaging. During the last century, some innovations in this field such as smart packaging and active packaging have been developed. The advantages of smart packaging include defect tracking, quality monitoring and tracking of packaged food products to control the storage conditions from the production to the consumption using various sensors and indicators such as time-temperature indicators, gas indicators, humidity sensors, optical biosensors, colorimetric, and electrochemical sensors. Active packaging, by using absorption and transfer systems of various materials such as carbon dioxide, oxygen, and ethanol, helps to increase the shelf life of the product. Despite the advantages of these packages, there are important issues such as cost, marketing, consumer acceptability, organoleptic quality, and safety of food and environment in connection with these technologies, solving these issues and increasing the use of these packages in the food industry requires research and more reviews. The purpose of this article is to review these two types of packaging as well as the status and position of the country in their use.

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