P80. Active and Intelligent Materials for Food Packaging Applications

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World Health Organization (WHO) reveals the growing problem of food-borne illness around the world. Hundreds of millions of people worldwide are getting sick from contaminated food, because 1/3 - 1/2 of food products are not consumed (EC Directives 80/590/EEC and 89/109/EEC). Therefore, the preservation of food freshness and shelf life extension is important task for researchers around the world. In the last decade, much attention is paid to active and intelligent packaging investigation, development and practical application.

Active packaging (AP) is defined as a type of packaging that changes the condition of the packaging to extend shelf life or to improve safety or sensory properties while maintaining the quality of the packaged food. Several AP systems have been widely reported, such as O_2 and ethylene scavengers, moisture regulators, CO_2 emitters, antioxidant and antimicrobial controlled-release packages, and devices to control the release or adsorption of flavours and odours [1].

Intelligent packaging (IP) is defined as technology that uses the packaging system communication function to monitor changes in the internal and external environments. IP aims to convey information to the stakeholders of the food supply chains (e.g., manufacturers, retailers, and consumers) related to the food's quality. Basically there are three intelligent systems: sensors, indicators and radiofrequency identification (RFID) [1].

The perspective goal for the future is the integration of several functions within only one device (multi-functional intelligent packaging), as well as the development of new functions.

Keywords: active packaging, intelligent packaging.

References:
1. M. Ghaani et al. *Trends in Food Science & Technology* **51** (2016)