

Application of nanomaterials for packaging of food products

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Received November 2, 2011 and Accepted January 30, 2012

ABSTRACT : Use of nanomaterials in food packaging is already a reality. One example is bottles made with nanocomposites that minimize the leakage of carbon dioxide out of the bottle; this increases the shelf life of carbonated beverages without having to use heavier glass bottles or more expensive cans. Another example is food storage bins with silver nanoparticles embedded in the plastic. The silver nanoparticles kill bacteria from any food previously stored in the bins, minimizing harmful bacteria. There are other food packaging products currently under development. For example nanosensors in plastic packaging can detect gases given off by food when it spoils and the packaging itself changes color to alert you to food gone bad. Plastic films are being developed that will allow the food to stay fresher longer. These films are packed with silicate nanoparticles to reduce the flow of oxygen into the package and the leaking of moisture out of the package, Nanosensors are being developed that can detect bacteria and other contaminants such as salmonella on the surface of food at a packaging plant. This will allow for frequent testing at a much lower cost than is incurred by sending samples to a lab for analysis. This point-of-packaging testing, if conducted properly, has the potential to dramatically reduce the chance of contaminated food reaching grocery store shelves. There are also nanosensors being developed to detect pesticides on fruit and vegetables.

Key Words : Nanomaterials, food packaging.