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## Application of nanotechnology to food packaging

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Novel packaging materials, systems, and the process provide an opportunity to introduce innovative strategies that extend the shelf life of food products by improving food safety and quality, thus reducing food waste and cost. Novel systems may also minimize packaging materials while improving material functionality. One such innovative packaging strategy is the use of engineered nanoparticles (ENPs) in polymer packaging. The addition of ENPs to polymeric materials can result in polymer nanocomposites with improved mechanical, physical and barrier properties over the original polymers. As a result, less polymer can be used due to a unique synergism between the ENPs and the polymer matrix, and in some instances polymer nanocomposites with specific activities can be developed. Although the benefits of ENPs are significant, it is important to develop a basic understanding of the interactions between specific ENPs and the polymer matrix. With this knowledge it would be possible to predict the coarsening, clustering, and migration of the ENPs in the physical and biological environments that the particles may be in contact with. In this section it will be discussed about the application and safety of nanoparticles and nanocomposite systems as they applied to food packaging.

### Biography

Maria Rubino is an Associate Professor in the School of Packaging and has been at Michigan State University since 2004. Before her academic career, she also spent over 15 years in industry as a Scientist for chemical and food companies. She teaches courses on packaging permeability, shelf life, and application of instrumental analysis for packaging material characterization and performance.

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**Notes:**

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