**Polymer- and Lipid-based Nanosensors for Food and Health Monitoring**

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The detection of target chemical and biological molecules in a specific and sensitive manner is critical for the development of disease diagnostic devices. Nanoparticle sensors have the potential to enhance or supersede current analytical techniques, and their introduction could have a great impact in industries and in clinical practice.1 Polymer and lipid assemblies in the form of spherical vesicles have played a key role in the design of biosensing assays.2 They offer advantageous physical and chemical properties as biosensors; they have a large internal cavity for encapsulation of signal markers and a high surface area for conjugation of recognition elements that allows for the detection of a wide variety of biomolecular analytes. This talk will describe a number of examples of polymer- and lipid-based sensors. We recently developed an assay for food spoilage monitoring and for the detection of disease biomarkers.3-5 By tuning the recognition elements, this platform may be used for sensing other chemical and biological targets, including proteins, drugs, cells, and metal ions.

**References**

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