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Recent Advances and Challenges of Nanotechnology in Food

Guest Editors:

Dr. Mattia Rapa
Department of Management, Sapienza University of Rome, 00185 Rome, Italy

Prof. Dr. Anthony William Coleman
LMI CNRS UMR 5615, Université Lyon 1, 69622 Villeurbanne, France

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Message from the Guest Editors

Dear Colleagues,

In the food sector, nanotechnology can be applied in agricultural production, in the processing of foodstuffs, and in food-contact materials. In agronomy, nanotechnology has been used to recombine DNA and for the nano-modification of fertilizers and pesticides. Nanomaterials have also been widely used in nutraceuticals: nano-micelles for nutrient delivery, nanoencapsulation for the controlled release of nutrients (proteins, antioxidants, and flavors), and food fortification. In the packaging sector, nanotechnologies have been used as barriers, coatings, and release tools; for the modification of permeability; for the growth of barrier properties; to provide increased resistance; and to produce antimicrobial surfaces or hydro- or liporepellent surfaces.

Therefore, nanotechnologies are suitable for food control as well. Many uses are found, including the determination of contaminants and bioactive compounds (mycotoxins, pesticides, drug residues, allergens, probable carcinogenic compounds, etc.).

This Special Issue aims to collect original research papers and review articles addressing all areas mentioned above and all applications of nanotechnology in food.