

4^o Simpósio Nacional



Promoção de uma Alimentação Saudável e Segura
Do Nutriente à Embalagem – Inovação e Desafios

Livro de resumos

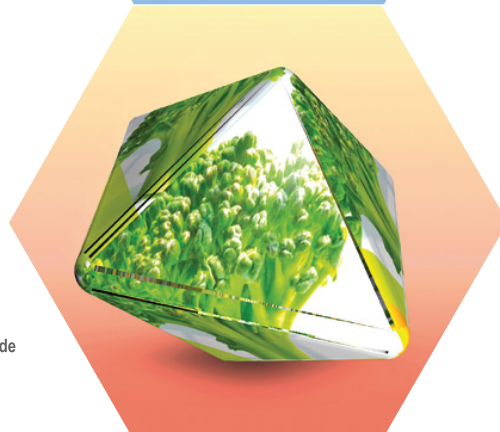


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SPASS

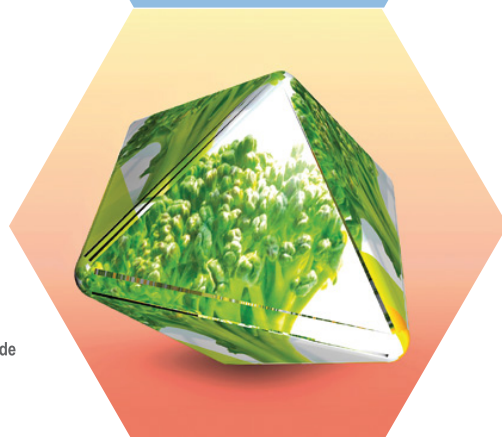
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Promotion of a Healthy and Safe Diet

From the Nutrient to Packaging

– Innovation and Challenges –

Book of Abstracts



OVERVIEW OF SAFETY ASSESSMENT OF NANOMATERIALS USED IN FOOD PACKAGING

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The application of nanotechnology in the food sector is increasing worldwide and packaging and other food contact materials represents one of the largest potential markets (Peters et al 2016). The nanotechnology-derived materials are used to improve physical properties, namely barrier to gases and vapours, thermal and light stability as well as mechanical performance. They are also used in active and intelligent systems, such as controlled release of substances, rendering the material antioxidant and antimicrobial properties, nanosensors and smart labels. More sophisticated uses such as food modification, according to nutritional needs or preferences, by the consumer, are under study (Liang et al. 2012).

It is generally accepted that a nanomaterial (NM) refers to a material with at least one dimension between approximately 1 and 100 nm (ISO, 2008). It is also recognised that nano particles (NP) exhibit chemical and physical properties that significantly differ from those at a larger scale. Consequently, the mechanisms of mass transfer and interaction with the supporting materials and with the food may be different than those known at the non-nanoscale. From the safety point of view, these two aspects are most relevant because may lead to different toxicological properties and different exposure. Therefore, it is considered that these substances should be assessed on a case-by-case basis. EFSA authorisations which are based on the risk assessment of the conventional particle size of a substance, do not cover engineered nanoparticles and the concept of functional barrier should not be applied.

The objective of this presentation is to give an overview of the current knowledge, principles and tools for the assessment of the safety of nano-based materials. The cases of NM already authorised in Europe, e.g. nano-clays, titanium nitride nanoparticles or BAA copolymer cross-linked with DVB in nanoform are discussed.

Short biography

Senior Researcher and Prof. (eq.) at Faculty of Biotechnology Universidade Católica Portuguesa at Porto. Coordination of the packaging laboratory since 1990 and Centre for Food Quality and Safety of Faculty of Biotechnology since 2013. Development, coordination and teaching food packaging courses at undergraduate and master level since 1992. Works in the field of mass transfer processes applied to safety and quality of packaged food, in particular barrier properties and chemical hazards and migration from packaging systems. She integrated the team of several (13) research projects national and European and led 2 national research projects. Supervision of 8 master thesis and co-supervision of PhD thesis in subjects related to food packaging. Ca. 25 published papers in referred journals. Represents Portugal in the European Network of Food Contact Materials Laboratories since 2004 and is member of EFSA Panel CEF since 2012.