

BIOFOODPACK

Biocomposite Packaging for Active Preservation of Food

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BIOFOODPACK is a **M-era.NET** project aiming to develop a sustainable biocomposite food packaging material to actively interact with foodstuffs, leading to improved food safety with minimal processing, reducing food loss and waste.

Antimicrobial and antioxidant properties of natural resources are combined with different fillers to achieve water resistant materials with enhanced mechanical and gas barrier properties and electrically conductive for *in-pack* low temperature sterilization by pulsed electric fields (PEF).

Requirements:

- ✓ **Biodegradable** packaging material;
- ✓ **Bioactive** properties to extend food shelf-life, reducing food loss and waste;
- ✓ **Electrical conductive material** to allow *in-pack* food sterilization at low temperature using pulsed electric fields, which maintains the nutritional quality and enhance the shelf-life of the food.

Needs

Technological demands for reduced processing and food quality control

Active packaging:
- Antimicrobial and antioxidant action
- Gas permeability
- Electrical conductivity

Food quality and long shelf life

Sustainable & biodegradable materials,
Reduce food waste
Food safety for all

Environmental and social issues

Objectives

Development of an active biocomposite for food packaging

In-pack sterilization by PEF

Risk assessments
- Spoilage
- Antimicrobial action
- Toxicology

Biocomposite development



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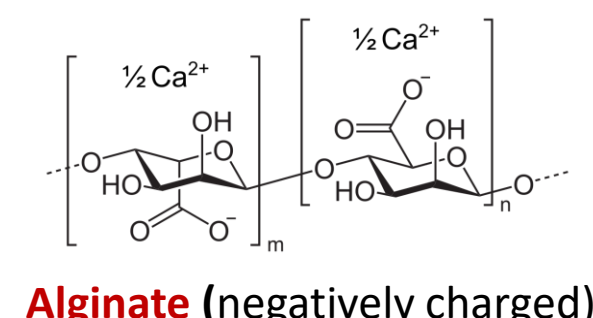
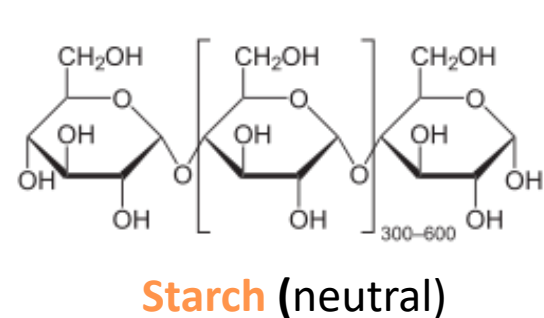
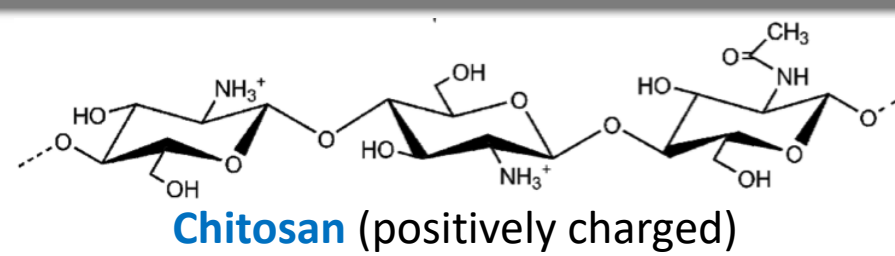
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Up-Scale

MKF-ERGIS

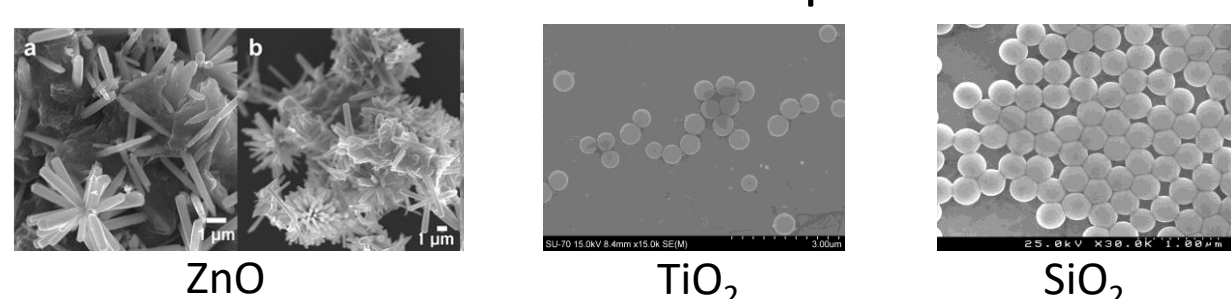
Low-temperature sterilization and risks

Biopolymers

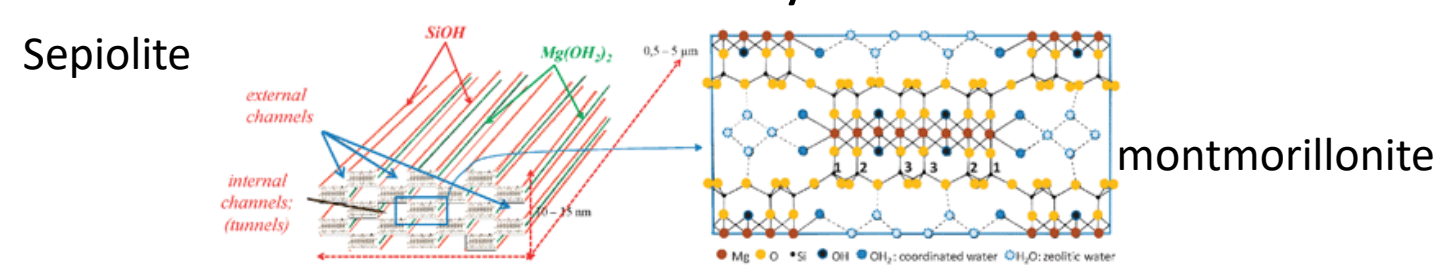


Fillers

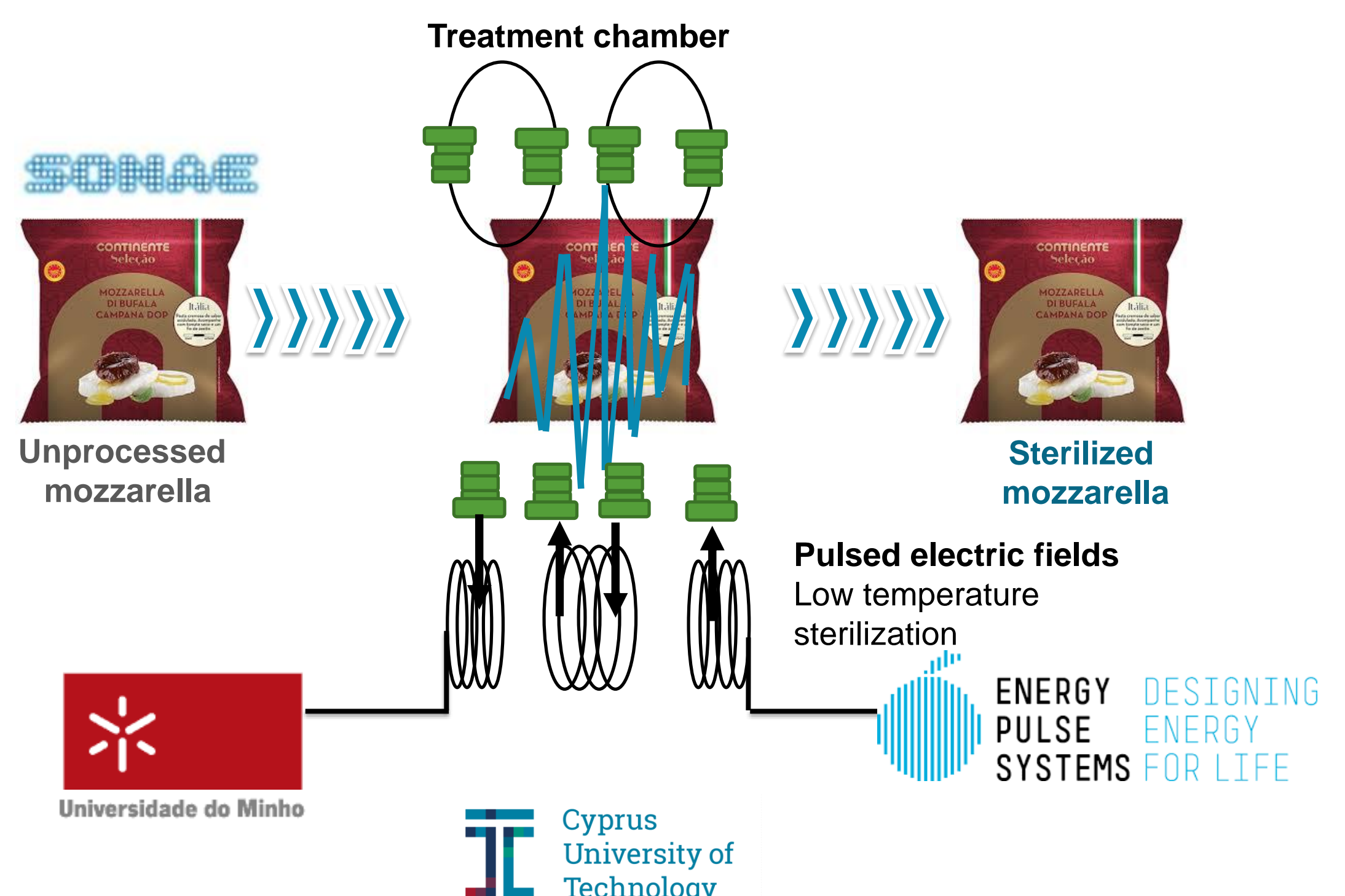
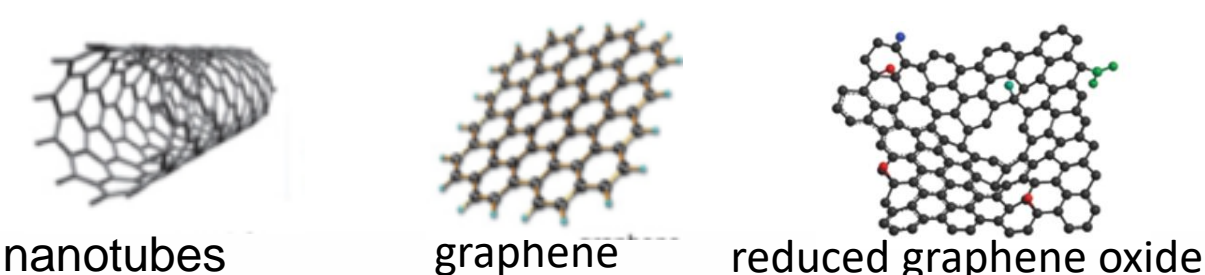
Metal oxide nanoparticles



Clays



Carbon nanostructures



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