For Industry

Eco-friendly food packaging

Scientists and engineers from the National Institute of Chemistry (NIC) intend to completely transform the world's dependency to excessive use of single-use plastic through raising the consumers' awareness and providing more efficient and sustainable alternatives. NIC proposes the use of biocompatible, fully biodegradable biopolymers for packaging, particularly focusing on single-use and disposable packaging for premium fresh food products. Biopolymers are eco-friendly materials synthesized by nature and their applications as smart and active food packaging, storage containers or composite material can be seen as a realistic potential to replace the single-use plastics and can lead to a sustainable economy and clean environment.

Technology

Biopolymers are nature-based, non-toxic and possess antimicrobial and antifungal activities together with good mechanical properties. Furthermore, the technology can be updated with biopolymer based smart sensors for moisture, temperature and microbiological contamination. All these characteristics are advantageous in food packaging industry, since our smart packaging involves a combination of specialized materials, science and technology, and has the power to reduce food waste, increase the shelf life of foodstuffs, reduce loss, damage, waste and cost in supply chain.

Advantages/novelties

- Packaging is produced from a natural, widely available raw material,
- Packaging is biocompatible with incorporated active properties,
- Edible packaging options are available,
- After use the packaging can be disposed on site or in the bio-waste in days.

Developed by:

Department of Catalysis and Chemical Reaction Engineering

Research team:

- dr. Uroš Novak

Cooperation type

R&D cooperation and technology licensing opportunity

State of the Technology

Laboratory tested

- Heterogeneous catalyst
- Faster bio-ethanol production
- Bio-fuels
- One-step synthesis of glycidol from glycerol
- Sustainable production of allyl alcohol
- Producition of muconic, hexedonic and adipic acid
- Eco-friendly food packaging
- Active and biodegradable packaging
- Nanocellulose
- Flame retardant polyamide 6
- Catalysts for hydrogen fuel cells
- Silylated cellulose
- Photocatalytic filter
- Electrocatalyst
- Graphene oxide
- Temperature indicator
- Cotton textiles
- Catalyst
- BiAR process

Research and development expertises

Tradition

Service search

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