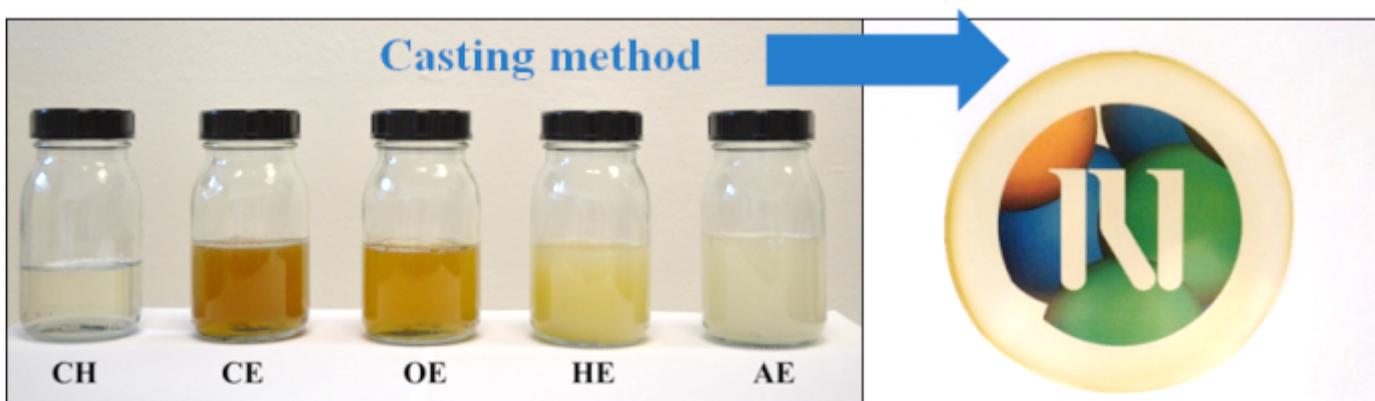


For Industry

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Active & biodegradable packaging made from biopolymers and plant extracts



Foils made out of natural biopolymers that can be used as an eco-friendly packaging material were prepared. Low-cost and widely in bulk available raw material: chitosan and commercial plant extracts were used. The added plant extract provides for active packaging with UV protection, antimicrobial and antioxidant properties, which can significantly extend the shelf life of quickly perishable foods. The use of this type of packaging would also greatly contribute to replacing and reducing environmental pollution caused by the conventional, non-degradable, fossil fuel based plastics. The foils were tested for its biodegradability in the soil and water environment and showed a completed demineralization after 2 and 4 weeks regarding soil and water, respectively.

Technology

Prototype films from chitosan with added plant extract are prepared and tested for UV-resistant, mechanical, antimicrobial and antioxidant properties. The biopolymers are also soluble in slightly acidic conditions, allowing an easy manufacturing of films using casting method; therefore, no thermal extrusion is required. The technology was validated at the laboratory level. The foil's sealing properties were optimized and thereafter the packaging prototypes were available.

Advantages/novelities

- Completely safe
- Antimicrobial and antioxidant properties with UV protection
- Extends the shelf life of fresh foods
- Biodegradable in soil and water environment

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Research team:

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