SUSTAINABLE PACKAGING INSTITUTE

Foundation
- 2019

Branches
- Life Science Industry

Hochschule Albstadt-Sigmaringen
Albstadt-Sigmaringen University

Who we are

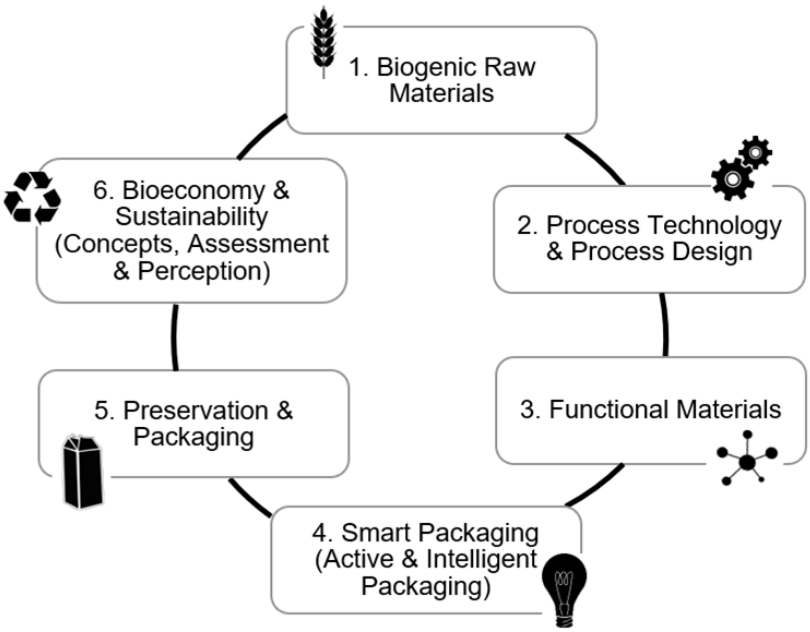
The **Sustainable Packaging Institute SPI** is part of the faculty of Life Sciences of the Albstadt-Sigmaringen University. We research and teach in six subject areas, focusing our main research on **sustainable packaging concepts** for the entire Life Science Industry.

Our mission statement

"To competently & holistically support all actors in the packaging industry along the entire value chain in the Life Science Industry on their way towards a more sustainable, circular bioeconomy."

Content excerpts from our 6 thematic areas:

1. **Biogenic Raw Materials:**
   Identification & exploitation of currently unused biogenic raw materials through physical, chemical & biochemical processes & modifications with the aim of creating additional value.
2. **Process Technology & Process Design:**
   Development & modification of material- & energy-efficient processes & technologies.
3. **Functional Materials:**
   Develop more ecologically sustainable, highly functional packaging materials; ensuring product protection.
4. **Smart Packaging:**
   Theoretical reduction of product waste through intelligent & active packaging.
5. **Preservation & Packaging:**
   Identification of specific product requirements & optimised packaging design based on these requirements.
6. **Bioeconomy & Sustainability:**
   Holistic conceptualisation of more sustainable (ecological / economic / social) solutions along the entire packaging value chain.



Our research expertise – your benefit

- Characterisation of food & (bio)plastics
- Scientific knowledge of the process-structure-property relationships of (bio-)polymers
- Determination of property & processing profiles of packaging materials
- Adaptation of packaging concepts to the requirements of the packaged goods
- Extraction & functionalisation of packaging materials from renewable raw materials (e.g. from residues & by-products of the food & agricultural industry)
- Packaging design for recycling
- Smart packaging solutions (active & intelligent packaging concepts)
- Concepts for optimal packaging: ecological, economical, functional
- Life Cycle Assessment; Life Cycle Costing; social Life Cycle Assessment
- Consumer perception studies

More sustainable packaging concepts for circular bioeconomy

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Contact

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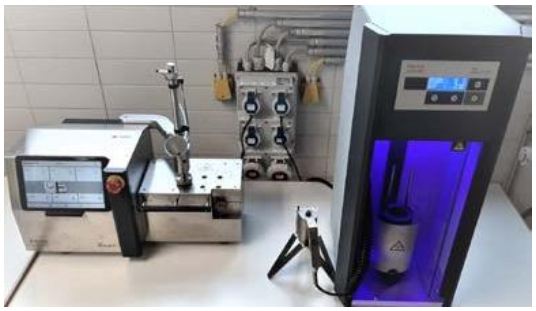
Our equipment / measurement methods (extract):

With our equipment and facilities, we can carry out relevant processes from the production and processing of packaging materials from laboratory to pilot plant scale. Furthermore, we have the equipment to carry out chemical-physical analyses of packaging materials.

- Atomic Force Microscopy
- Differential Scanning Calorimetry
- Fourier-transform infrared spectroscopy
- Gas permeability
- Mechanical energy
- Microtome cutting device
- Light microscopic analysis
- Raman spectroscopy
- Surface energy
- Thermogravimetric analysis
- Water or oil absorption

Gas permeation analyzer



Lab-Compounder & -Injection moulding

Infrared moisture meter

Pilot scale compounder & flat film extrusion line

Current projects

Project presentations and project updates can be found at: www.hs-albsig.de/spi