Thermal processing, particularly extrusion, is a pivotal technique in food science known for transforming raw materials into structured food products (Photo: Patrick Rühs).

Food Structure Engineering

Advancing structuring processes and uncovering their nutritional and functional benefits.

Research Areas

- Nature-inspired food structuring;
- Dry and high moisture extrusion;
- Solid-state fungal fermentation;
- Nutrition-fermentation-processing relationships;
- Food processing for plant-based food products;
- Mycelium;
- Food processing with enhanced nutritional properties.

Regions

Switzerland.

Partners

Other department (D-MATL); startups; and various small and large companies.

Contact

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Contribution to the WFSC

The Food Structure Engineering group is dedicated to transform food processing by developing simple and effective methods to convert raw materials into nutrient-rich food products. Our goal is to replace conventional food processing techniques with processes that enable us to use entire raw materials and to eliminate contradicting processing steps. To achieve this goal, we combine biological and physical approaches, such as solid-state fermentation, bioinspired structuring, forced alignment, and extrusion to enhance the texture, flavor, and nutrition of food. Fundamentally, we study the microbe-material-processing interface to understand the effects of processing on the nutritional quality of food to contribute to healthier diets and a more resilient global food system.

Prof. Patrick Rühs