

Optimized food technologies for nutrition and sustainability



The production of powdered milk for baby food is an example of technological food processing.

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ETH Zurich is stepping up research and teaching in the field of food technology and nutrition. It is supported in this by the companies Givaudan, Bühler and Nestlé with initial funding of 5 million Swiss francs over six years. This funding includes the creation of a professorship for researching new technologies to produce safe and sustainable foods of high nutritional quality.

Raw foodstuffs are made suitable for consumption or storage through traditional methods such as cooking, drying and fermentation, or modern methods such as pasteurisation, pressure treatment or the use of enzymes. To feed the ever-growing world population, tasty and nutritious foods that can be safely stored and transported are key. It is vital to apply processing methods that deliver safe and nutritious products in a sustainable, energy-efficient way.

ETH Zurich recognises the importance of strengthening research in this area and aims to drive the development of new food production technologies. It is supported in this by three Swiss companies: Givaudan, Bühler and Nestlé. Together, they are providing ETH Zurich via the ETH Foundation with a total of 5 million Swiss francs over the next six years for research and teaching.

Optimal methods help to avoid losses

“We are grateful that ETH Zurich can expand research on the nutrition of the future, which is important for the

global community, and we are confident that our university can make a key contribution here,” says ETH President Joël Mesot.

Calvin Grieder, Chairman of the Board of Directors of Bühler Group and of Givaudan, says, “Making food for the growing population in a safe, healthy and sustainable way needs new approaches and technologies. Both Bühler and Givaudan are thankful and proud to partner with ETH Zurich in developing the strongest expertise for food!”

Stefan Palzer, Chief Technology Officer at Nestlé, says, “Access to safe and nutritious food is the most important challenge for many people across the world. This new research group’s scientific discoveries will enable the optimisation of important production systems, while minimising nutrient loss and waste along the value chain. To enhance and preserve the natural goodness of raw materials from farm to fork is key for all of us.”

New research group at ETH Zurich

The companies’ contribution will go towards creating a new professorship in food engineering for nutrition at the Department of Health Sciences and Technology (D-HEST). In addition, it will be used to enable scientific work at the doctoral or postdoctoral level and to fund research projects in the newly created research group. The new team is expected to begin its work in 2023/2024 after the positions have been filled.

One of the research goals will be to develop innovative technologies for foods with a long shelf life that retain the high nutritional qualities of raw material ingredients such as milk, cereals, legumes and other plants. The group will not only apply knowledge from the engineering sciences, such as innovative design, state-of-the-art sensor technologies and artificial intelligence, but will also incorporate findings from nutritional sciences and consumer research. Another goal is to use new technologies to contribute to food security and public health, both in industrialised and developing countries, and to combat malnutrition.

<https://ethz-foundation.ch/en/spotlight/news-2022-optimised-food-technologies-for-nutrition-and-sustainability/>