



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Institute of Food Nutrition and Health

ETH Zürich
CH-8092 Zürich

Dr. Simon Kuster

LFV E22
Schmelzbergstrasse 7
Tel. +41 44 632 08 09
Fax +41 44 632 11 55
simon.kuster@hest.ethz.ch
www.fpe.ethz.ch



Zürich, 10. May 2016

Vacant PhD student position in Food Process Engineering / bakery industry

Who we are

Research in the Food Process Engineering Laboratory at ETH Zurich focuses both on process engineering and food/biomaterials science. Our research incorporates both aspects of these two disciplines, and typically addresses the basic question: How does mechanical treatment influence food structure and vice versa, how the tuning of specific food properties due to well-characterized processes can be achieved? The process engineering research incorporates traditional engineering methodology as it relates to complex food systems. The overall goal is to understand and develop new processes that directly improve the state-of-the-art in food structuring with a strong focus on chocolate and bakery products.

In support of this engineering approach, we have established a materials science sub-group to characterize material and flow properties of food components. We employ both traditional measurements and several innovative techniques to investigate the structuring on multiple length and time scales. The main focus of this research involves the investigation of idealized systems with interesting rheological or microstructural behaviour, which serve as models for complex food systems. Projects include studies of model surfactant systems with unstable flow properties, biopolymer stability and gelation, protein-starch systems, model protein-polysaccharide dispersions, and interfacial modification. In this interdisciplinary, social and friendly environment we are offering together with our industrial partner Jowa AG a PhD student position in Food Process Engineering / Bakery Industry.

The Position

Our group is interested in bakery products and the investigation on the retardation of the retrogradation. The goal of this three to four year PhD thesis is the characterisation of the bread crust and crumb properties and relates them to the structure and the process parameters in order to elongate shelf-life. Next to the food analytics, a novel unit operation shall be engineered to modify the bread parameter towards a long lasting moist crumb and a crispy crust. Furthermore, the novel process shall be implemented in the process line of the industrial partner.

Who you are

The applicants should have successfully completed their Master in Food Sciences, Material Sciences or related fields. Knowledge in food engineering, analytics and rheology is mandatory as well as working in a chemical laboratory. Further knowledge in food process engineering, microbiology, and Matlab programming is beneficial. Candidates should be fluent in English and German language. The ideal candidate has a very social character, an analytical and organized way of thinking as well as a matured creativity, experiences in baking, and a flair for good cooking.

Contact

For further information you are welcome to contact Dr. Simon Kuster (simon.kuster@hest.ethz.ch), or Prof. Dr. Peter Fischer (peter.fischer@hest.ethz.ch). Please send your complete application documents to simon.kuster@hest.ethz.ch. Applications (English or German) should include a detailed CV, a summary of the Diploma or Master thesis, a motivation letter and a minimum of two references. All documents should be submitted as one single pdf.