Foaming functionality of spray-dried milk powders

"I want a direction to follow and challenges to stretch me"

Nestlé Research, Nestlé Institute of Material Sciences **Internship (6 Months)**
Lausanne, Switzerland **Start: 1 Feb. or 1 March 2019**

The main goal of the internship will be to link process parameters of milk powder production (wet processing: pasteurization, homogenization; and spray-drying) to its foaming properties. The approach requires conducting studies at the lab as well as at the pilot scale. The target is to understand what microstructures are critical for the desired foaming properties, and how their generation can be controlled. To achieve it, you will to work within a strongly interdisciplinary team, involving scientists of different backgrounds, while working closely with technologists.

Nestlé Research is based in Lausanne, Switzerland and employs approximately 800 people. It consists of three major research institutes: Health Sciences, Material Sciences and Food Safety & Analytical Sciences. Nestlé Research combines fundamental science at the highest level, high-end analytical platforms leveraged by all research teams, and strong prototyping capabilities to accelerate the translation of science into innovation. Learn more about Nestlé Research at www.nestle.com/randd

Key responsibilities

- Integrate into a highly motivated team working on a project around wet processing and spray-drying of milk next to foam science. Build strong interactions with scientists and technologists involved.
- Review literature on wet processing and spray-drying of milk, and foam science. Acquire lab techniques developed earlier (dispersion and foam characterization, microscopy, etc.).
- Develop approach to link spray-drying parameters to powdered milk microstructure, and to foaming properties. Study link between lab and pilot scale produced powder properties.
- Analysis and interpretation of results; strong physical sense required (use of base literature)
- Writing of a final report and oral presentation of results (in English)

Education and experience

- MEng or MSc student enrolled in a Food Engineering, Food Science and Technology, Process Science, Chemical Engineering or Physical-Chemistry program
- High interest and skills in interdisciplinary applied research: material and colloid science, food processing, relationship between microstructure and properties. Setting up of experiments.
- Strong capacity in developing experimental methodologies / team player
- Fluency in, or highly functional skills in English (written and spoken); French is a plus.

Show us that you have a strong mindset and motivation to work on a fast-paced project and can integrate quickly into a multidisciplinary team. We are looking for someone who is flexible in their way of thinking and can quickly contribute by making the necessary links between available or newly generated knowledge and specific applications, as well as project targets. Please send your application (CV + cover letter, in English), to M. Deniz Gunes at zeyneldeniz.gunes@rdls.nestle.com

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