

Taking up the challenge

A thesis at Food Process Engineering

Isn't enjoying food together with your friends or family, one of the greatest pleasures in life? Enjoying eating is not only pleasurable, it is important as well. As our life spans increase, we should be able to enjoy our longer life, but we need to keep health care costs within limits. And if you eat well, you'll stay healthy for a longer time. But how will we prepare foods that are better balanced, for example containing less salt or unsaturated instead of saturated fats, but which so nice that you would prefer them over the 'unhealthy' products?

Perhaps the largest challenge for the 21st century is to make tasty, healthier products, while making better use of our resources. How to reduce the prodigious amounts of water and energy that are currently used in the supply of foods? And how to do that, while not reducing but actually improving the taste and quality? This is the goal that we have set ourselves in our group, and we warmly invite you to help achieve our dream.

We work, for example, on finding new ways to prepare tasty vegetable protein products. Replacement of only a part of the global meat consumption would mean an enormous step in the sustainability of food production. That includes the clean isolation of proteins from, for example, peas or lupine, which we now can do with no water at all. We develop better tasting vegetable protein products with new processes (in fact one of them was discovered by an MSc student during her thesis, who is now co-author of an important worldwide patent, which generated a lot of publicity lately). This work is coordinated by prof. Atze Jan van der Goot.

We study how solid food products are digested in the stomach: that gives us much information on how to design healthier products. Dr. Anja Janssen coordinates all research in this area.

Then, we do a lot of work on micro-engineered systems, which can be used to separate, but can also be used to make emulsions and encapsulate, producing emulsion products with unprecedented quality. Prof. Karin Schroën coordinates this work.

Dr Claire Berton studies the preparation of food products that have much better bioavailability of for example antioxidants, by nano-structuring emulsion based products.

On somewhat larger scale, 3D printing of food is now a hot topic. Related is our research in how food ingredients react to drying, and how we can develop drying processes that are milder, yet are energy efficient. This research is coordinated by Dr. Maarten Schutyser. In the field of biopolymer processing, we have designed new instruments to precisely measure the changes taking place during processing.

Most of our work is in good collaboration with major food industries that are present in The Netherlands and abroad, and many more: Unilever, Heineken, Cargill, FrieslandCampina, Avebe, DSM, Cosun, Nestlé, Firmenich, and so on – so you may well be in contact with potential future employers. But we also collaborate with a range of national and international academic groups of the best universities in the world. So, you'll have the chance of working closely together with industry and with international partners, which may help you towards your future career. And in fact, you'll find out that it is a lot of fun to collaborate with others.

In June 2015, our research was evaluated by a team of globally leading experts, and they found it excellent on all aspects, acclaiming the innovativeness of our work, our combination of fundamental and applied research, and our state-of-the-art experimental infrastructure. So you can be assured of the quality of your thesis project.

All in all, the menu is diverse, and I hope you'll find something to your taste. But don't forget that science is not something that comes in ready-made chunks. If you miss something, or would like to combine some subjects, or are interested in another subject, just talk to anyone of the staff. We're open to new ideas and will be happy to discuss with you how we can accommodate your ideas.

Hope to see you soon!

Remko Boom

