

Conference report Kilian Daffner

The following report will be a very short sum up of my experience at the *8th International Symposium on Food Rheology and Structure* which took place at in Switzerland at ETH Zurich from the 17th – 20th of June 2019. This conference was the first one I officially attended with my own presentation.

The kick-off event was a get-together on the Sunday before the official conference started and gave us the opportunity to mingle and to chat to researchers from industry and academia at all career stages while enjoying a delicious barbecue. I met a few German colleagues from KIT and TU Dresden, but also talked to industrial people (Nestlé, Unilever) and we discussed different work-related topics.

The conference was officially opened by its organisers Prof Erich Windhab and Prof Peter Fischer, welcoming everyone and mentioning a few interesting facts (more than 30% of industrial participants this year, more than 200 guests, several big technical companies presenting their equipment, e.g. Anton Paar, TA,..). The first session was started with keynote speaker Prof Alan Foegeding who discussed *“How material properties translate into texture perception”*, providing a very interesting overview about how food texture developed in the last several decades. The first day included a few presentations which I really enjoyed (e.g. Norbert Raak giving a sum up of his whole PhD about rheology and gel microstructure of acid induced dairy gels which enzymatically cross-linked) and which showed me e.g. the potential use of NMR (T2 value) to characterize some of my printed materials.

Within the session *“Influence of Processing on Structure and Rheology”*, several useful talks were given, especially due to the fact that my PhD topic includes gelation processes under dynamic conditions during a printing process (shear flow, extensional flow, etc.). Moreover, a few researchers presented amazing microscopy images (Sally Gras, Christelle Tisserand) which confirmed me in my decision to work for Prof Sally Gras from the end of July until Christmas this year. Conducting microscopy like TEM or super resolution confocal microscopy under the supervision of highly experienced researchers within the Dairy Research Hub at the University of Melbourne can help me to better characterize my own formulations regarding their printability.

The second day was opened by Randy Ewoldt (Associate Professor at the University of Illinois) who gave a very interesting presentation about the *“Design of yield-stress fluids”*

from his expertise area, Mechanical Science and Engineering. This talk helped me to finalize one of my graphs for my presentation. Personally, the most interesting day regarding all the presentations was the last day, which included the 3D-Printing session and my own presentation. First, I got a few good questions afterwards and really useful feedback as well as invitations from industry to further discuss my current/ongoing work (e.g. Fonterra). Second, I had the chance to listen to older and more experienced researchers working on different techniques and raw materials for extrusion based 3D-Printing (e.g. Prof Atze Jan van der Goot) and see how they characterize and print their formulations. These talks showed me the future potential of 3D-Printing for certain areas in the food “industry” (elderly with dysphagia or human with certain, special needs) and encouraged me to continue my own work on dairy proteins and their printability.

The most inspiring talk was given by Peter Lillford (former Unilever and still part of our group at the University of Birmingham, Chemical Engineering). He inspired us/all the young researchers to contribute to change the world. He mentioned that food engineering/ - science is currently not considered to be one of the key elements to make the world a better place, although scientists working in all these areas contribute a lot to improve technologies, feed human around the globe and help to maintain a cleaner environment.

All in all, the whole conference was well organized and many interesting talks were given. I could learn a lot for my future career, independent if for academia or industry, and met many researchers from all over the world.

I would like to sincerely thank “*IChemE Food & Drink Special Interest Group*” for the financial support.

Many thanks,
Kilian