

Judith Krautwald



What do you find fascinating/challenging about the energy research/transition?

What fascinates me about energy research is the vision to enable an energy supply for humanity in harmony with nature. As part of the SCCER BIOSWEET, I am working on environmental technologies to provide bioenergy. This energy source has a complex value chain. Compared to, for example, wind and solar energy, there is not one optimal technology, but rather a whole pool of technologies that are more or less suitable depending on the location, the type of biomass and the needs of consumers. So the optimal mix must be found for each location. This is a challenge and a fascination for me at the same time.

What are your research topics and what is your role within the SCCER BIOSWEET?

My research focus is biological methanation. Within the SCCER BIOSWEET, I am responsible for projects in this field as part of WP 2. I am also involved in projects in my group that focus on the improvement of substrate pretreatment for anaerobic digestion which is one of the main topics of WP 1 of SCCER BIOSWEET. I also act as a contact between WP 1 and WP 2 since there are many synergistic effects between the activities of these two work packages.

What made you become a scientist?

In fact, I didn't plan this. Nevertheless, I always chose my professional perspectives in such a way that I was never far away from research. After finishing my PhD, I worked in plant engineering in the field of Bio-SNG production. In addition to some established technologies, the development of new and innovative systems was part of my tasks. Consequently, I became networked with energy researchers in this field. The creation of the SCCERs resulted in an attractive job offer for me in the field of applied sciences and education. I took this opportunity and never regretted the decision.

Describe your biography, carrier path.

I studied process and plant engineering at the BTU Cottbus in Germany. After finishing my studies, I started my doctoral thesis in 2003 in the field of heterogeneous catalysis and numerical fluid dynamics. In 2009, after completing my PhD, I started working in Switzerland as an R&D process engineer in the field of plant engineering. In late 2014, I joined the Zurich

University of Applied Sciences (ZHAW) in Wädenswil as the Chair of Environmental Biotechnology where I work as a scientific associate in research and education.

Where do you see renewable energy in the next 10 years and what role will bioenergy (or your technology in particular) play?

That's a difficult question. Technologically, I am not so worried about renewable energy sources. 10 years from now many technologies will have been developed to such an extent that they could be implemented without major technical problems. However, there will always be political and social aspects to consider. Besides technological development, this will be the most challenging task. Compared to photovoltaic or wind energy, bioenergy is less appealing to the public. This might be due to a lack of knowledge and understanding about the current state of biomass sourced energy production. We need to do much more educational work in this area in order to develop a good understanding of the technologies amongst the population. In my opinion, this is something we should not forget in addition to research. Time will show how well we succeed.

What is your "work-balance" recipe?

Music and never lose the fun of learning. I play French horn in an orchestra, which gives me a wonderful balance, both musically and humanly.

Can you provide recommendations for young scientists wishing to pursue a career in the field of (energy) research?

I would like to recommend to young energy researchers to not only develop their careers in research, but also to go into industry in order to broaden their horizons. It helped me a lot. In addition to all the questions in our day-to-day research, there are many other questions that often determine the realization of projects in practice. For example, the time to market and the benefits to the company and to the customers are very important questions in industry. Once you have learned both perspectives, it is much easier to develop an understanding of this and to advance research in the right direction. This is especially true for researchers in the applied sciences.

What are the important issues related to biomass energy that public policy makers should consider when developing the Energy Strategy 2050?

In the case of renewable energies, there can be large differences between regions, cities or villages in terms of the available resources and in the requirements of the local consumers. The national policies should promote the consideration of the local particularities in the development of renewable energy planning.

Any other question you would like to answer!

I would like to end the interview with a quote that inspires me from time to time in my research and way of working: "There will always be good reasons not to take risks. But if you always do what worked in the past, you'll wake up one day and find that you've been overtaken." (Clayton Christensen)

Interview: Mark McCormick, April 2018