



60 second interview | *Thomas Wintgens*

Dipl.-Ing. Thomas Wintgens
Institute für Verfahrenstechnik der Rhein
West Techn. Hochschule
Aachen 52056, Germany

Thomas Wintgens is based in Germany at the RWTH Aachen University where he completed his first degree in environmental engineering in 1999. He then took up a position at the University in the department of chemical engineering, where he is currently working towards his doctoral degree (on membrane bioreactors, particularly their hydraulic behaviour and the behaviour of organic trace contaminants).

His particular interest is on advanced wastewater management and organic micro-pollutants, in addition to interdisciplinary research subjects, particularly the linking of engineering and scientific expertise. Beside these subjects, he works in the areas of water recycling, where membrane bioreactors are particularly relevant. Since 2003, he has managed a substantial European funded project on integrated concepts for water re-use, called AQUAREC.

Thomas joined IWA in 2001, following the World Congress in Berlin. From the beginning he found the international element of the Association, its cross-cutting nature and interdisciplinary approach of interest. He has been particularly involved with IWA's young water professional's programme, and the young researcher's conferences.

- *What do you consider to be the most significant recent change in your field of expertise to have occurred in the last 10 years?*

I have been working in the area of water research for only about 5 years, so I'm probably not the best candidate to review major breakthroughs in the recent past. But I have some perception of major changes which I have gleaned from the areas I am working in and from other researchers and practitioners I work with.

I believe the application of membrane processes for large scale applications such as drinking water treatment, surface water treatment and municipal wastewater treatment represents a key shift. These membrane processes (typically ultra-filtration and micro-filtration) were originally thought to be for niche uses only, for specific wastewater or water conditions, or limited to desalination applications with advanced membrane processes or reverse osmosis. But their deployment on the large scale represents a significant change. Large scale applications of this kind are also indicative of the mutual interdependence between researchers and the water industry, where research has stimulated practice change, and change in practice has led to iterations in research.

- *What do you consider to be the most significant future challenge that professionals must deal with in the next 10 years?*

I think targeting water problems at different scales is the key issue. Typically, we no longer think about small, disparate parts of the world, but increasingly need to focus on the interconnections between different countries and regions.

Secondly, although the players are increasingly operating on a global basis, so are the problems (in terms of climate change, extreme events, fluxes and drops). Similarities exist between regions and approaches to mitigate these impacts, so I think the problem of scale must transform itself into technical solutions.

- *Whom do you consider to be the leading expert in your field, outside of your own organization, and why?*

In terms of the water recycling arena, my choice would be Prof. Takashi Asano from USA, who has provided the practical and theoretical foundation for water reclamation and water reclamation processes at different scales. To think of water reclamation is to immediately think of his name. In particular, I appreciate the comprehensive and interdisciplinary approach he represents; furthermore, he seeks to base decision making on solid scientific ground. This is something I admire in his publications, particularly from his books on water reclamation and reuse.

Before we move on, I would like to express something which is less obvious; something I really appreciated in my recent project work. That is the people who are probably not represented in publications, coming from the practitioner side; those who are making the breakthroughs in implementing innovative technology on a significant scale, making it accessible to others and to further research.

- *Which report, product or service from your organization deserves more attention and why?*
I have worked at the RWTH Aachen University in the Chemical Engineering department where our core field of expertise has been membrane processes - not just in water treatment but more generally in different conditions. I think this is one of our key strengths. At the same time, we have developed the skill to work in an interdisciplinary fashion and to incorporate technical solutions into a broader context that considers economics, social conditions, and perceptions. Both elements have been documented by publications; for example, a book published by Professor Thomas Melin, our director, covers these subjects and needs attention drawn to it.

Finally, I think our institution is visible in the research sector through a variety of means – through projects, publications, by being active in dissemination activities like conferences – so I think there are good opportunities to foster cooperation with RWTH Aachen University.

- *In what ways would you like to see IWA change in the next 5 years?*
I do not feel that dramatic change is needed; I have really appreciated recent developments, particularly in the last couple of years. For example, the attention paid to young water professionals and young water researchers is exemplary, and would I like to see that aspect strengthened.

One issue which I am not involved in, but which I would like to see the Association place a greater emphasis on are the profound problems we have worldwide with water supply and sanitation. I believe that an organization like IWA should be involved in providing strategy to achieve meaningful international development goals and targets.

From the research perspective, it would be advisable to use the worldwide expertise of the Association to formulate longer term research strategies, which can be orientated to those working both inside and beyond IWA.

- *What are the key fracture points – issues of conflict or debate in your specialist area?*
My feeling is that you can highlight many issues which are current debates in the water sector. But one that is significant is in the field of micro-pollutants; there is topical debate about the key current micro-pollutants, and the analytical capacity that allows researchers to detect more compounds and lower concentrations. The key question relates to the systems and approaches which are relevant to identify the potential impact of these pollutants on ecology and human health. I see at the moment a tendency to conduct research in these areas, particularly where there is significant concern such as from the customer and health regulator perspectives. One of the critical unresolved questions is what should be the final strategy? What kinds of measures are needed? How far should the precautionary principles go?
- *Forthcoming news of interest...*
Within the next 6-10 months we are going to issue a set of outputs from the AUQAREC project and this is certainly something that I would like others to be aware of. News and resources will be available through www.aquarec.org.

- *Contact points*

Dipl. Ing. Thomas Wintgens
Institut für Verfahrenstechnik
RWTH Aachen University
Turmstrasse 46
52064 Aachen
Germany

Tel: +49 241 8096233

Fax: +49 241 8092252

E-mail: Thomas.Wintgens@post.rwth-aachen.de