



**The Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) and
the DFG Research Training Group on Urban Water Interfaces (UWI)
invite to a guest lecture by**

**Prof. Dr. Klaus Kümmerer
Institute of Sustainable Chemistry,
Chair of Sustainable Chemistry and Material Resources,
University of Lüneburg, Germany
Thursday, 29 April 2021, 1:30 – 2:30 pm
via Zoom**

Lecture title: *Benign by Design*

Abstract

Chemicals and pharmaceuticals are an important pillar of our standard of living and health. They are also indispensable for achieving the Sustainable Development Goals. Many of these substances, such as pharmaceuticals, pesticides, fragrances, biocides, detergents, ingredients of personal care products and washing agents, and others, inevitably enter the aquatic environment as a result of their use. This also applies to their decomposition products, e.g. from paints or abrasion of surfaces. Other compounds, such as flame retardants or plasticizers and other additives of plastics, are released to the environment in the course of their use, and some of them also reach wastewater. Many of these substances are not removed in conventional wastewater treatment or are only incompletely mineralized. Even advanced wastewater treatment can only remove a more or less small part, which varies with the process. Depending on the process, there are even different substances that are removed or not removed or degraded. Thus, for complete removal, one would have to combine several of these advanced treatment processes. In some processes, the treatment even results in the formation of new substances ("transformation products") whose properties are often unknown. Some are known to be even more problematic than the parent compounds from which they emerged.

Solutions to the problem of chemical pollution of water must therefore start at the beginning of the pipe, not at its end. Targeted design of chemicals and pharmaceuticals which perform the function expected of them as good as possible, but which are also rapidly and as completely as possible degraded in the environment at the end of their life, is one such approach at the source. Examples demonstrating the feasibility will be explained in the lecture.

To participate in the online presentation, please register until 28 April 2021:

<https://survey.igb-berlin.de/index.php/695771?lang=en>



About the speaker

- since 2010: Full Professor for Sustainable Chemistry and Physical Resources at the Leuphana University Lüneburg, Germany
- since 2011: Director of the Institute for Sustainable Chemistry and Environmental Chemistry at the Leuphana University Lüneburg, Germany
- since 2017: Director International Research and Education Sustainable Collaborative Centre (ISC3), Leuphana University Lüneburg and Bonn
- current project: Prioritisation and Risk Evaluation of Medicines in the Environment (PREMIER)
- Some of his main topics: green or sustainable chemistry, fate of contaminants in the environment
- 2009: Recipharm International Environmental Award (annually awarded for the best environmental performance or environmental innovation within the pharmaceutical industry or the academic world)

Personal website:

<https://www.leuphana.de/en/institutes/isec/persons/klaus-kuemmerer-engl.html>