



IP Sustainable Biotechnology and Bioeconomy

Lecture



Prof. Dr. Rainer Meckenstock

University of Duisburg-Essen, Biofilm Centre

Friday, 24 May 2019, 09:00

Leipziger KUBUS, Lecture Hall 2

Permoserstr. 15, 04318 Leipzig

Ecological concepts for anaerobic degradation of aromatic hydrocarbons in groundwater and oil reservoirs

Hydrocarbons are both an essential resource for humanity and major pollutants of the environment. Although microorganisms are perfectly adapted to degrade hydrocarbons with or without molecular oxygen, the degradation is obviously limited as documented by long lasting contaminations of groundwater or the presence of oil reservoirs. In the present talk, I will challenge the current perspectives of hydrocarbon degradation in the environment and introduce new concepts of how such processes proceed. This will include the anaerobic degradation of hydrocarbons in groundwater and novel processes of a subsurface microbial loop. Furthermore, I will transfer these concepts to oil reservoirs and present recent findings of how microbial life occurs in oil and how microbial communities work in the subsurface.

Rainer Meckenstock did his PhD in Biochemistry at the ETH Zürich, Switzerland (1993).

He then did a Postdoc at EAWAG, Dübendorf, Switzerland, where he developed molecular tools to detect microbial biodegradation processes in the environment.

In 1996, he became senior researcher at University of Konstanz where he worked on microbial ecology of groundwater and anaerobic degradation of polycyclic aromatic hydrocarbons.

He then joined the University of Tübingen as a group leader in the Center for Applied Geosciences where he continued to work on microbiology of groundwater, anaerobic degradation of polycyclic aromatic hydrocarbons (PAH) and stable isotope fractionation to assess biodegradation.

From 2003 – 2014, he was director of the Institute for Groundwater Ecology at the Helmholtz Zentrum München and full professor at the Technical University Munich.

Since 2014, he is full professor at the University of Duisburg-Essen where he studies how environmental contaminants are degraded in the environment and how technical solutions can overcome limitations. In parallel, he is scientific director at the IWW in Mülheim a research and consulting institute for water producers and all aspects of water quality in industry and private use.

All interested colleagues are kindly invited.