



Science Talk UFZ

Challenges and Perspectives of Chemical and Bio-Technologies for the Environment



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Leipziger KUBUS, Lecture Hall 1B

Permoserstr. 15, 04318 Leipzig

Metabolic interactions in methanogenic granular sludge

Wastewater from the agroindustry can be efficiently treated anaerobically, by which energy is conserved as biogas. Anaerobic conversion of organic compounds to methane and carbon dioxide is a process carried out by a complex community of anaerobic bacteria and methanogenic archaea that often appears granulated. Of particular interest is the conversion of the short-chain and long chain fatty acids, which requires the obligate syntrophic cooperation of acetogenic bacteria and hydrogenotrophic methanogens. Granulation of biomass is favorable for these syntrophic degradation processes. The ecophysiology and energetics of methanogenic degradation of propionate and butyrate will be presented and discussed. Insight of these metabolic interactions is essential to broaden the application of anaerobic wastewater treatment.

Alfons Stams started his international scientific career as PhD student at the University of Groningen, the Netherlands, where he studied the ecophysiology of sulfate-reducing bacteria. During a postdoc position at Wageningen University he started to study syntrophic conversions in methanogenic environments. Over the years Alfons Stams discovered a large number of new syntrophic interactions, even during studies where syntrophy was not expected to play a role. Since 2000 Alfons Stams is Professor for Microbiology at Wageningen University. He has almost 40 years research experience with anaerobic microbial communities, especially those that are key players in environmental biotechnological processes. Besides studying topics that are scientifically challenging, he finds it very important that his research is relevant for application. Alfons Stams has a track record of more than 370 scientific publications in international peer-reviewed journals which have been cited more than 17,000 times.

All interested colleagues are kindly invited.