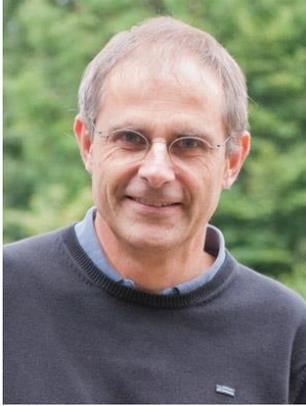


Civil and Environmental Engineering Seminar

The Department of Civil and Environmental Engineering presents



Dr. Urs von Gunten^{a,b}

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Time: 3:30 pm-4:30 pm

Place: VKC 156

Enhanced Municipal Wastewater Treatment for Micropollutant Abatement by Ozone

Abstract

The presence of micropollutants in water resources and the urban water cycle from many sources such as agriculture, municipal wastewater and industry has raised concerns about the eco- and human toxicity of these compounds. The options for the reduction of the micropollutant load are manifold and range from source control (e.g., stricter regulations) to end of pipe solutions (wastewater and drinking water treatment). In Switzerland it has been decided to upgrade municipal wastewater treatment plants with an additional polishing step, either by ozonation or by activated carbon (powdered activated carbon, granular activated carbon) to reduce the discharge of micropollutants to the aquatic environment. This talk will focus on ozonation.

There are 4 factors which need to be consider to assess ozonation processes for micropollutant abatement in wastewaters: (i) reaction kinetics, which control the efficiency of the process, (ii) elucidation of the formation of transformation products by experimental and theoretical approaches, (iii) formation of oxidation by-products (e.g., bromate) from the matrix, (iv) biological effects after ozonation, resulting from transformation products and/or oxidation by-products. To cope with all these issues, recently, a practical test system has been developed to assess the feasibility of an ozonation for a particular wastewater.

About the Speaker

Dr. Urs von Gunten is a Group Leader at The Swiss Federal Institute of Aquatic Science and Technology (Eawag) in Zürich, Switzerland, and a Professor at the Swiss Federal Institute of Technology in Lausanne (EPFL), currently on sabbatical at UC Berkeley. He earned his Diploma and PhD in Chemistry from ETH Zürich, and was a postdoctoral researcher at Eawag before taking a permanent position there. Dr. von Gunten's primary research interests are in water quality and treatment, with an emphasis on the oxidative transformation of trace organic pollutants. He is the co-author of a textbook on ozone chemistry, and has served as an associate editor for *Environmental Science and Technology*.