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# Programme

6<sup>th</sup> IWA Specialist Conference

## Oxidation Technologies for Water and Wastewater Treatment

# Goslar

May 7 – May 9 2012





6<sup>th</sup> IWA Specialist Conference

## Oxidation Technologies for Water and Wastewater Treatment

### ➤ Sunday, May 6 2012

- 16:00 – 17:00 Meeting of IWA-Specialist group AOP
- 16:00 – 19:00 Registration at the hotel “Der Achtermann”
- from 19:00 Get-together

### ➤ Monday, May 7 2012

- 09:00 – 09:15 Welcome, introduction and opening  
*M. Sievers, CUTEC-Institut GmbH, Germany*

### FUNDAMENTALS

- 09:15 – 10:00 Mechanisms of ozone reactions: consequences for ozone applications in water treatment  
*C. von Sonntag, Max-Planck Institut, Germany*
- 10:00 – 11:00 Poster introduction I
- 11:00 – 11:30 Coffee break, poster presentation & exhibition
- 11:30 – 11:50 Pulsed corona discharge: The role of ozone and hydroxyl radical in aqueous pollutants oxidation  
*S. Preis, Lappeenranta University of Technology, Finland*

### PROCESSES

- 11:50 – 12:10 Fe-Zeolite in heterogeneous Photo-Fenton processes to degrade organic compounds in water at neutral pH using solar light  
*R. Gonzalez-Olmos, University of Girona, Spain*
- 12:10 – 13:00 Poster introduction II
- 13:00 – 14:30 Lunch, poster presentation & exhibition



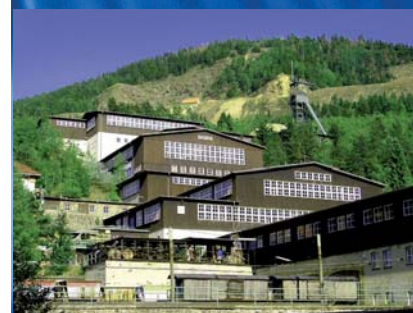




- 14:30 – 14:50      Oxidation of nonylphenol ethoxylates in aqueous solution by UV-C photolysis,  $\text{H}_2\text{O}_2$ /UV-C, Fenton and Photo-Fenton processes: Are these processes toxicologically safe?  
**A. Karci**, *Bogazici University, Turkey*
- 14:50 – 15:10      Reduction of critical trace compounds and fresh water consumption by recovery of AOP treated industrial effluents  
**S. Bierbaum**, *Papiertechnische Stiftung, Germany*
- 15:10 – 15:30      AOX removal from industrial wastewaters using AOPs: Assessment of a combined chemical-biological oxidation  
**L. Braeken**, *KU Leuven, Belgium*
- 15:30 – 16:00      Poster introduction III
- 16:00 – 16:30      Coffee break, poster presentation & exhibition

### INDUSTRIAL SESSION

- 16:30 – 16:45      Development of a high efficient ozone AOP reactor with a limited bromate formation potential  
**J. Schneideler**, *Xylem Water Solutions Herford GmbH, Germany*
- 16:45 – 17:00      Large scale application of the Fenton-Reaction: Presentation of the FENTOX-process and the different practical realisations  
**J. Schumacher**, *Eisenmann Anlagenbau GmbH & Co. KG, Germany*
- 17:00 – 17:15      Bottling water, bromate-free  
**K. Nonnenmacher**, *Anseros GmbH, Tübingen, Germany*
- 17:15 – 17:30      Commercial scale advanced oxidation process for TOC removal  
**O. Legrini**, *ESCO International, United Kingdom*
- 17:30 – 17:45      Ozone bleaching of kaolonite using a new gas/fluid mixing system  
**C. Oliveri**, *Ultrasonic Systems GmbH, Germany*
- 17:45 – 18:00      Development of ozone generator for improved oxygen-specific ozone yield and increased mass transfer rates  
**H. Pastagiya**, *CUTEC-Institut GmbH, Germany*
- from 18:00      Poster presentation & exhibition with draft beer and pretzels





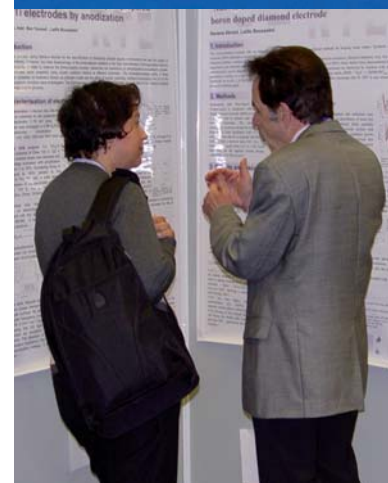
## 🕒 Tuesday, May 8 2012

### PHOTOCATALYSIS

- 09:00 – 09:20 A short overview of the state-of-the-art and perspectives on the main basic factors hindering the development of photocatalytic treatments of water  
**P. Pichat**, CNRS, Ecole Centrale de Lyon, France
- 09:20 – 09:40 Degradation of phenylarsine oxide by heterogeneous photocatalysis  
**C. Miranda**, Universidad de Concepción, Chile
- 09:40 – 10:00 Influence of the titania nanotubes properties on photocatalytic degradation  
**L. Bousselmi**, Centre de Recherche et des Technologies des Eaux, Tunisia
- 10:00 – 10:20 Photoelectrocatalytic study and scaling up of titanium dioxide electrodes for wastewater treatment  
**C. Pablos Carro**, Universidad Rey Juan Carlos, Spain
- 10:20 – 11:00 Coffee break, poster presentation & exhibition
- 11:00 – 11:20 Plasmonic photocatalysts for degradation of organic compounds under overall solar spectrum  
**E. Kowalska**, University of Erlangen-Nuremberg, Germany
- 11:20 – 11:40 Mechanism of visible light activity with non-metal doped titania  
**J. A. Byrne**, University of Ulster, United Kingdom
- 11:40 – 12:00 Industrial water treatment with the solar enhanced Fenton reaction – from laboratory to demonstration scale  
**C. Jung**, German Aerospace Center (DLR), Germany

### PROCESS COMBINATION

- 12:00 – 12:20 Used industrial oils recovery wastewater treatment by coupled chemical and biological processes  
**V. M. Monsalvo García**, Universidad Autónoma de Madrid, Spain
- 12:20 – 14:00 Lunch, poster presentation & exhibition
- 14:00 – 14:20 Serial ozone-AOP and UV-AOP for synergistic and effective organic micropollutant treatment and bromate formation control  
**K. Lekkerkerker-Teunissen**, Dunea, The Netherlands







- 14:20 – 14:40 Combining adsorption with anodic oxidation as an innovative technique for removal and destruction of organics  
**N. Brown**, *Institute Arvia Technology Ltd, United Kingdom*
- 14:40 – 15:00 Impact of hydroxyl surface groups of acid-treated natural zeolite on the heterogeneous catalytic ozonation of methylene blue contaminated waters  
**H. Valdés**, *Universidad Católica de la Santísima Concepción, Chile*
- 15:00 – 15:30 Coffee break, poster presentation & exhibition
- 15:30 – 15:50 Potential of UV-based AOP in treating high-salinity municipal wastewater reverse osmosis concentrate  
**L. Fan**, *RMIT University, Australia*
- 15:50 – 16:10 Effects of ozonation of secondary effluent on the filtration performance of a ceramic microfiltration module  
**U. Mieke**, *Kompetenzzentrum Wasser Berlin gGmbH, Germany*
- 16:10 – 16:30 Application of ozone and Fenton treatment to membrane concentrates originating from the paper industry  
**S. Tews**, *GKU Gesellschaft für Kommunale Umwelttechnik, Germany*
- 18:00 Shuttle transfer to Rammelsberg, dinner



## ➡ Wednesday, May 9 2012

### TRACE POLLUTANTS

- 09:00 – 09:40 The role of advanced oxidative processes in water sustainability: Reuse and contaminant issues in the USA  
**S. Snyder**, *University of Arizona, USA*
- 09:40 – 10:00 Reduction of trace pollutants in the water cycle by AOPs - state of the art  
**A. Ried**, *Xylem Water Solutions Herford GmbH, Germany*  
**S. Geißen**, *Technical University of Berlin, Germany*
- 10:00 – 10:20 Removal of odor compounds from river water by ozone based advanced oxidation process  
**J. Ma**, *Harbin Institute of Technology, China*
- 10:20 – 10:40 Chemical and toxicological evaluation of transformation products during advanced oxidation processes  
**C. vom Eyser**, *Institut für Energie- und Umwelttechnik e.V., Germany*

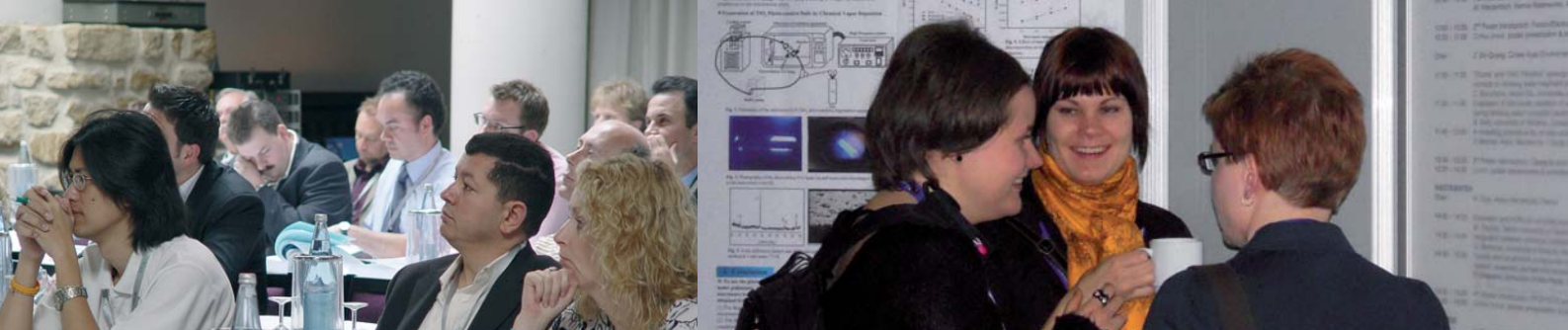




- 10:40 – 11:20 Coffee break, poster presentation & exhibition
- 11:20 – 11:40 Effect-based test systems for assessment of metabolite formation during use of ozone in municipal wastewater treatment processes  
**S. Kowal**, *IWW Rheinisch-Westfälisches Institut für Wasser, Germany*
- 11:40 – 12:00 Photocatalytic removal of 17 $\alpha$ -ethinylestradiol (EE2) and levonorgestrel (LNG) from pharmaceutical wastewater  
**V. Yargeau**, *McGill University, Canada*
- 12:00 – 12:20 Oxidation of emerging contaminants during pilot-scale ozonation of municipal effluent  
**R. Seth**, *University Windsor, Canada*
- 12:20 – 12:40 Application of CFD simulation for process optimization at a full-scale ozonation plant for the removal of micropollutants from secondary effluent  
**M. Launer**, *Technical University Dortmund, Germany*
- 12:40 – 13:00 Tertiary ozonation of industrial wastewater for the removal of estrogenic compounds (NP and BPA): A full scale case study  
**G. Bertanza**, *University of Brescia, Italy*
- 13:00 – 13:20 Life cycle assessment of advanced oxidation processes a suitable method  
**E. Rother**, *Evonik Industries AG, Germany*
- 13:20 – 13:30 Conclusion and farewell  
**M. Sievers**, *CUTEC-Institut GmbH, Germany*
- $\approx$  13:30 Lunch







## ➤ Scientific Committee

- Prof. Dr. O. Alfano, INTEC, Argentina
- Prof. Dr. D. Bahnemann, University of Hanover, Germany
- Prof. Dr. M. Bekbölet, Bogazici University, Turkey
- Prof. Dr. G. Bertanza, University of Brescia, Italy
- Dr. L. Bousselmi, CERTE, Tunisia
- Prof. Dr. D. D. Dionysiou, University of Cincinnati, U.S.A.
- Prof. Dr. S. Esplugas, Universidad de Barcelona, Spain
- Dr. M. Fabiyi, Praxair Inc., U.S.A.
- Prof. Dr. S.-U. Geißen, Technische Universität Berlin, Germany
- Prof. Dr. N. Graham, Imperial College London, UK
- Prof. Dr. M. Jekel, Technische Universität Berlin, Germany
- P.-A. Liechti, Degremont Technologies Ozonia Ltd., Switzerland
- Prof. Dr. M.-C. Lu, Chia Nan University of Pharmacy and Science, Taiwan, R.O.C.
- Dr. H. Mansilla, Universidad de Concepción, Chile
- Prof. Dr. K. Nonnenmacher, Anseros GmbH, Germany
- Prof. Dr. P. Pichat, CNRS/Ecole Centrale de Lyon, France
- Prof. Dr. S. Preis, Lappeenranta University of Technology, Finland
- Dr. A. Ried, Xylem Water Solutions Herford GmbH, Germany
- Dr. J. Rodríguez, Universidad de Concepción, Chile
- Prof. Dr. J. J. Rodríguez, Universidad Autónoma de Madrid, Spain
- Prof. Dr. M. Sievers, CUTEC-Institut GmbH, Clausthal, Germany
- Prof. Dr. V. Yargeau, McGill University, Canada
- Prof. Dr. J. Yoon, Seoul National University, South Korea
- Prof. Dr. P. L. Yue, The Hong Kong University of Science & Technology, China

## ➤ Conference Organising Team

- Prof. Dr. M. Sievers, CUTEC-Institut GmbH, Germany
- Prof. Dr. S.-U. Geißen, Technische Universität Berlin, Germany
- Dr. B. Kragert, CUTEC-Institut GmbH, Germany
- Dr. T. I. Onyeche, CUTEC-Institut GmbH, Germany
- M. Niedermeiser, CUTEC-Institut GmbH, Germany





## Information

### SCOPE OF THE CONFERENCE

This conference is one of the very successful international conference Series and serves to discuss and promote Advanced Oxidation Processes (AOPs) in the field of water, wastewater, groundwater and potable water treatment.

The more than 130 posters and about 30 oral presentations selected as well as the technical exhibition will be an excellent platform for interesting discussions and contacts.

### PUBLICATION

Conference proceedings and book of abstracts are available. Contributions selected in a review process by the Scientific Committee will be published in selected journals.

### CO-SPONSORSHIP

International Water Association (IWA), London, UK.

This conference will be promoted by the IWA Specialist Group "Advanced Oxidation Processes" (AOP).

### SPONSORING

The following companies are sponsors:

- Xylem Water Solutions Herford GmbH, Germany
- Anseros GmbH, Tübingen, Germany
- Solvay Cemicals GmbH, Germany

### ACCOMMODATION

Comfortable, reasonably priced rooms have been reserved at the conference hotel "Der Achtermann". Other hotels in Goslar are also available. Our conference web-site includes a link to hotel reservations:

„<http://www.aop-conferences.de/accommodation.html>“.

### VENUE

The conference will be held in Goslar at the conference hotel "Der Achtermann". Goslar is an old imperial town and recognized as an UNESCO world cultural monument due to its medieval character. The Harz Mountains are a touristic attraction with its numerous lakes and lush forests, particularly at the time of the conference.

### REGISTRATION FEE

Non-members	620.- EURO
IWA members	500.- EURO
Day ticket	300.- EURO

The registration fee includes conference attendance, conference proceedings, lunches, refreshments and snacks.

### TECHNICAL EXHIBITION

The event will include a technical exhibition.

[www.aop-conferences.de](http://www.aop-conferences.de)

### CONFERENCE OFFICE

All correspondence related to registration and organisation should be directed to:

**CUTEC-Institut GmbH**

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