

Ozone & Related Oxidants: Solutions for Emerging Pollutants of Concern to the Water and the Environment

International Conference
April 28 - 30, 2010 - Geneva, Switzerland

Organised by the European African Asian Australasian Group EA₃G
of the International Ozone Association IOA

PRELIMINARY PROGRAMME

Wednesday 28th April 2010

13h30-14h30 Introductory conferences

13h30-13h50 **Conference opening**
Z. Do Quang, IOA-EA₃G President

13h50-14h10 **Challenges in water treatment**
Key note speaker

14h10-14h30 **SIG experience and activities in the ozone field**
C. Higy, M. Chammartin, O. Delavy, J-L. Walther, T. Merle, P-A. Liechti

14h30-15h30 Session 1. Emerging pollutants

14h30-14h50 **1.1 Oxidative treatment of trace organic contaminants Diclofenac, Iopamidol, Tributyltin chloride, TCPP and TnBP in Wastewater Effluents with O₃ and O₃/H₂O₂**
M. M. Sein, A. Jarocki, T. C. Schmidt, A. Golloch and C. von Sonntag (Germany)

14h50-15h10 **1.2 Occurrence and treatment of Tetracycline and Sulfonamide antibiotics in manure**
A. Karci, H. M. Otker Uslu, I. A. Balcioglu (Turkey)

15h10-15h30 **1.3 Ozone and persulphate oxidation of Oxytetracycline antibiotic on spent bentonite**
A. Ozbarli, A. Karci, A. Erdinc, I. A. Balcioglu (Turkey)

15h30-16h00 Coffee break

16h00-16h20 **1.4 Evaluation of estrogenic activity in environmental waters from Guandu river (Brazil) and estrogenicity removal by ozonation and chlorination**
A. C. V. Dias, D. M. Bila, F. W. Gomes, C. F. Melo, M. Dezotti (Brazil)

16h20-16h40 **1.5 Degradation of an iodinated contrast agent by catalytic ozonation in aqueous solution**
G. Abdelli, Q. M. Bui, N. Karpel Vel Leitner (France)

16h40 – 17h00 **1.6 Elimination of Amoxicillin and its antibacterial activity by UV/H₂O₂ process**
J-W. Kang, Y. J. Jung, and W. G Kim (Korea)

17h00-17h20 **1.7 Oxidation Of Ibuprofen In the presence of magnetite and iron II amended magnetite at neutral pH**
N. Sabri, V. Yargeau, K. Hanna (Canada)

17h30-19h00 Session 2. Poster session

17h30-18h20 Oral introduction

17h30 **2.1 Oxidation of Dichloroacetic Acid in aqueous media: Ozonation combined with UVC radiation**
M. E. Lovato, C. A. Martín, A. E. Cassano (Argentina)

17h35 **2.2. Methanol decomposition in aqueous solution by simple ozonation and the combination of ozone/activated carbon**
I. Fuentes C., T. Poznyak, J.L. Rodríguez S. (Mexico)

17h40 **2.3. Studies on Degradation of Syntan used in leather tanning process using ozone**
T. Rema, B. Parivallal, R A Ramanujam (India)

17h45 **2.4. Abatement of surface waters pollutants by coupling gliding electric discharges and cheap dispersed catalyst**
E. Njoyim Buleng, S. Laminsi, P. Ghogomu and J.-L. Brisset (Cameroon, France)

17h50 **2.5. Decomposition of detergents in industrial wastewater by AOP in flow systems**
L. Kos, J. Perkowski, R. Żyła (Poland)

17h55 **2.6. Fenton-based processes for food-processing wastewater treatment**
N. Dulova, M. Trapido (Estonia)

18h00 **2.7. Combined Physicochemical Treatment of textile and mixed industrial wastewater**
A. Dulov, N. Dulova, M. Trapido (Estonia)

18h05 **2.8. Application of ozone for reusing MWTPs effluents study of the degradation of priority pollutants**
Judith Sarasa, Isabel García, Rosa Mosteo, Maria P. Ormad and José Luis Ovelleiro (Spain)

18h10 **2.9. Ozonation of a pretreated landfill leachate: Evaluation of recalcitrance removal**
P. Van Aken¹, N. Lambert¹, J. Luyten¹, J. Degre² and S. Liers¹ (Belgium)

18h15 **2.10. The long-term coupling between column ozone and tropopause properties**
F. Arkian (Iran)

18h20-19h00 Poster presentation

Thursday 29th April 2010

8h30-10h30 Session 3. Emerging Pollutants

8h30-8h50 **3.1 Chemical and toxicological identification of by-products during oxidative waste water treatment**
J. Tuerk, A. Boergers, J. Richard, E. Dopp, M. Wolff, N. Janzen, M. Tavian, X. Chen, K. Bester (Germany, Denmark)

8h50-9h10 **3.2 Removal of Levofloxacin by ozonation and photocatalysis**
D. Nasuhoglu, A. Rodayan, V. Yargeau and D. Berk (Canada)

9h10-9h30 **3.3 Advanced disinfection with homogeneous Fenton and photo-Fenton processes for Enterococcus sp. removal**
J. Rodriguez-Chueca, M.P. Ormad, R. Mosteo, S. Louwen, J.L. Ovelleiro (Spain)

9h30-9h50 **3.4 Evaluation of ozone on removal endocrine disruption potential from urban wate water effluents using small model organisms**
L. Castillo, K. Seriki, F. Martin, S. Mateos, S. Pallud-Mothré, A. Sebillot, G.F. Lemkine, B.A. Demeneix (France)

9h50-10h10 **3.5. The effect of ozone on the biodegradability of Sulfomethoxazole (SMX)**
S. Larcher and V. Yargeau (Canada)

10h10-10h30 **3.6. Degradation of tetracycline by ozonation in combination with ultrasonic irradiation in a rectangular air-lift reactor**
Y. Wang, S. Wang, H. Zhang (China)

10h30-11h00 Coffee break

11h00-13h00 Session 4. Poster session

11h00-11h55 Oral introduction

11h00 **4.1 Unstationary film model for complex reaction mechanism. Parameter identification and sensitivity analysis in ozone reactions**
S.C. Cardona, F. López, A. Abad, J. Navarro-Laboulais (Spain)

11h05 **4.2. Optimum and control of combined ozone/UV Process using modified Rct concept**
M. G. Kang, B. S. Oh, T-M. Hwang, H. J. Oh, and J. W. Kang (Korea)

11h10 **4.3. Combined phenol and acetate degradation by O₃/UV in two different reactor configurations**
W. Van de Moortel, K. Van Eyck, S. Liers, J. Degrève and J. Luyten (Belgium)

11h15 **4.4. Reconstruction of dynamics variables for the biodegradation of pre-ozonated chlorophenols in aqueous solution**
P. Guerra, A. García, T. Poznyak, I. Chairez, A. Poznyak, E. I. García (Mexico)

11h20 **4.5. Effectiveness of conventional treatments on the hazardous pollutants degradation in the water reclamation process**
A. López, M.P. Ormad, J. Rodriguez, I. García, J.L. Ovelleiro (Spain)

11h25 **4.6. Ozonation of TiO₂, SiO₂, and Al₂O₃ in aqueous solution**
J.L., Rodríguez S., T. Poznyak, and M.A. Valenzuela Z. (Mexico)

11h30 **4.7. Catalytic ozonation of Crystal Violet in aqueous solution with a Fe/activated carbon catalyst**
H. Zhang, H. Gao, S. Yao (China)

11h35 **4.8. Influence of chemical surface characteristics of natural zeolite on catalytic ozone abatement**
H. Valdés, E. Padilla, and C. A. Zaror (Chile)

11h40 **4.9. Application of AOP for cleaning industrial water generated in wet dedusting of top gases**
M. Czaplickaab, R. Kurowskia (Poland)

11h45 **4.10. Ozone generated by electrolytic means as an alternative to chlorine-based sanitizers in food safety applications**
B. Yost (USA)

11h50 **4.11. Le LuminoTox: comment un biocapteur devient un bioessai et finalement un outil de gestion de la qualité de traitement des eaux**
F. Bellemare, L. Lorrain, N. Boucher (Canada)

11h55-13h00 Poster presentation

13h00-14h30 Lunch

14h30-16h30 Session 5. Fundamentals and Process

14h30-14h50 **5.1. Oxidation properties and environmental applications of reactive species formed in electrical discharges**
J.-L. Brisset, D. Moussa, E. Hnatiuc (France)

14h50-15h10 **5.2. Determination of absolute kinetic rate constants in ozonation reactions using an unstationary film model. Ozonation of azo-compounds**
S.C. Cardona, F. López, A. Abad, A. García-Blanquer, J. Navarro-Laboulais (Spain)

15h10-15h30 **5.3. Oil-Refinery Wastewater Treatment Aiming Reuse by Advanced Oxidation Processes (AOPs) Combined with Biological Activated Carbon (BAC)**
B. M. Souza; A. C. Cerqueira; G. L. Sant'Anna Jr.; M. Dezotti (Brazil)

15h30-15h50 **5.4. Removal of bio-recalcitrant compounds with a hybrid ozone/activated carbon process: an industrial application**
T. Merle, J.S. Pic., M.H. Manero and H. Debellefontaine (France)

15h50-16h10 **5.5. Aeration, oxidation and ion exchange for natural pollutants removal from groundwater**
J. Sutt, P. Tonisson, L. Lumiste, T. Eensalu, M. Trapido, Y. Veressinina and R. Munter (Estonia)

16h10-16h30 **5.6. Influence of EfOM on the oxidation of atrazine by ozone and UV/H₂O₂ in secondary effluents**
S. Pereira, R. F. Dantas, S. Esplugas, C. Sans, M. Dezotti (Spain)

Thursday 29th April 2010 (cont'd)

16h30-17h00 **Coffee break**

17h00-18h30 **Session 6. Poster session**

Oral introduction

17h30	6.1. Analysis on the Natural Organic Matter(NOM) and Disinfection By-Products in full-scale advanced water treatment plant and conventional water treatment plant <i>J-C. Jeon, C-H. Jo, I. Choi, T-M. Hwang, Y. Choung (Korea)</i>
17h35	6.2. A case study on automatic ozone dose control system based on ozone consumption rate in a full scale advanced water treatment plant <i>J-C. Jeon, C-H. Jo, K-H. Lee, T-M. Hwang, Y. Choung (Korea)</i>
17h40	6.3. Enhanced inactivation and DBPs Control by sequential disinfection using ozone/chlorine or chlorine dioxide/chlorine <i>T-M. Hwang, S. H. Nam, W. B. Go, S. Lee, M. Cho, J-H. Kim (Korea)</i>
17h45	6.4. Control strategy for an ozonation plant with UV-spectrometry <i>H. Schaar, R. Hofstädter, E. Saracevic, S. Winkler and N. Kreuzinger (Austria)</i>
17h50	6.5. Advanced Oxidation Processes (AOP) - Comparison of different treatment scenarios based on processes combining Ozone, UV and Hydrogen Peroxide <i>A. Ried, A. Wieland, J. Mielcke, D. Rohring (Germany)</i>
17h55	6.6. Case-study of ozonation step at the Dongguan drinking water plant by means of inhomogeneous feed gas plasma processing ozone synthesis <i>F. Krogh, H-P. Schiller, B. Paolini, A. Freilich and J. Lopes (Switzerland, USA)</i>
18h00	6.7. In-Situ Chemical Oxidation with Ozone in gas phase: lesson learnt from the first Italian full-scale application <i>L. Amighetti, E. Crescini, A. Guerini, G. Riva, F. Dallera (Italy)</i>
18h05-18h30	Poster presentation
20h00	Conference dinner

Friday 30th April 2010

8h30-10h30 **Session 7. Case studies in full scale plants:**

8h30-8h50	7.1. Ozonation of tertiary effluent at the Clark County water reclamation district advanced water treatment facility <i>M. A. Oneby, M. G. Priest, and J. H. Borchardt (USA)</i>
8h50-9h10	7.2. Ozone for tertiary treatment of municipal wastewater – Experiences from the first full scale plant in Germany <i>P. Jagemann, S. Lyko, A. Ried, A. Wieland (Germany)</i>
9h10-9h30	7.3. Ozone disinfection of urban wastewater at full scale – Impact on persistent pollutants <i>S. Baig, J.M. Choubert, S. Martin Ruel, M. Esperanza, H. Budzinski, C. Miège, M. Coquery (France)</i>
9h30-9h50	7.4. Anaerobic effluent disinfection using ozone/chlorine <i>G.H.R. Silva and L.A. Daniel (Brazil)</i>
9h50-10h10	7.5. Ozone: a wastewater disinfectant of the future <i>G. Gesuale, P-A. Liechti, M. Fournier, P. Payment, C. Gagnon, R. Hausler (Canada)</i>
10h10-10h30	7.6. Modelling on-site ozonation units. A case study on Annet-sur-Marne water works <i>P. Mandel, M. Maurel, C. Lemoine, P. Roche, D. Wolbert (France)</i>

10h30-11h00 **Coffee break**

11h00-13h00 **Session 7. Case studies in full scale plants (cont'd)**

11h00-11h20	7.7. Assessment and modeling of a full-scale ozonation step of municipal secondary wastewater effluent <i>S.G. Zimmermann, M. Wittenwiler, J. Hollender, S. Koepke, E. Salhi, J. Traber1, F. Hammes, E. Gansner, M. Koch, C. Ort, H.R. Siegrist, U. von Gunten (Switzerland)</i>
11h20-11h40	7.8. The effect of an ozonation step for tertiary treated wastewater on the mutagenic potential <i>M. Mišik, F. Ferk, S. Knasmüller, H. Schaar and N. Kreuzinger (Austria)</i>
11h40-12h00	7.9. Potential of ozone for the removal of hazardous micropollutants and related changes in dissolved organic matter composition in a municipal biotreated effluent <i>B. Domenjoud, N. Cortés, J. Caixach, S. Esplugas, S. Baig (Spain, France)</i>

12h00-12h40 **Open discussion with introduction by M. Rapin, CIPEL, Switzerland**

12h40-13h00 **CONFERENCE CONCLUSIONS**

13h00-14h30 **Lunch**