The 16th International Conference on

Advanced Oxidation Technologies for Treatment of Water, Air and Soil (AOTs-16)

FINAL PROGRAM

Town & Country Resort, San Diego, California
November 15-18, 2010

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Muhammed A. Rauf, UAE University, United Arab Emirates
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Susan Richardson, Environmental Protection Agency - EPA, USA
Luigi Rizzo, University of Salerno, Italy
Felicity Roddick, RMIT University, Australia
Krzysztof Schmidt-Szałowski, Warsaw University of Technology, Poland
David L. Sedlak, University of California - Berkeley, USA
Adrian M. T. Silva, University of Porto, Portugal
George a Sorial, University of Cincinnati, USA
Piotr Stepnowski, University of Gdansk, Poland
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Yoshio Yoshioka, Kanazawa Institute of Technology, Japan
Quan Zhuang, CANMET Energy Natural Resources Canada

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Monday, November 15, 2010

IL: Invited Lecture (25 Min)
ST: Short Talk (15 Min)

Session I

Emerging Contaminants and the Role of Advanced Oxidation Technologies

Chairs (8:30 – 10:10): William J. Cooper and Marta Litter

Chairs (10:30 – 12:00): Gianluca Li Puma and Leonardo Palmisano

Chairs (1:30 – 2:40): Susan Richardson and Kevin O'Shea

8:30 – 8:55 (IL) **Emerging Disinfection By-Products and Other Contaminants in Drinking Water: The Ongoing Need for Removal Technologies**

Susan D. Richardson
U.S. Environmental Protection Agency, National Exposure Research Laboratory, Athens, GA, USA

8:55 – 9:20 (IL) **Advanced Oxidation of Cyanotoxins**

Kevin E. O'Shea[1,*], Dionysios D. Dionysiou[2], Weihua Song[3], William J. Cooper[3]
[1]Department of Chemistry and Biochemistry, Florida International University, Miami, FL, USA
[2]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA
[3]Civil and Environmental Engineering, Urban Water Research Center University of California, Irvine, Irvine, CA, USA

9:20 – 9:45 (IL) **Destruction of Microcystin-LR in Water Using UV/H_2O_2 Process**

Xuexiang He[1], Miguel Pelaez[1], Christopher D. Williams[2], Judy A. Westrick[3], Kevin E. O'Shea[4], Anastasia Hiskia[5], Theodoros Triantis[5], Armah A. de la Cruz[6] and Dionysios D. Dionysiou[1*]
[1]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA
[2]GreenWater Laboratories/CyanoLab, Palatka, Florida, USA
[3]Department of Chemistry and Environmental Science, Lake Superior State University, Marie, Michigan, USA
[4]Department of Chemistry and Biochemistry, Florida International University, Miami, Florida, USA
[5]Laboratory of Catalytic - Photocatalytic Processes (Solar Energy – Environment), National Center of Scientific Research "Demokritos", Athens, Greece
[6]Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH, USA

9:45 – 10:10 (IL) **Removing Steroidal Activity from Waters: Oxidizing and Reducing Radical Reactions**

Stephen P. Mezyk, Edsel M. Abud, Garrett McKay, Kimberly A. Rickman
Department of Chemistry and Biochemistry, California State University, Long Beach, CA, USA

10:10 – 10:30 **Coffee Break**

10:30 – 10:55 (IL) **Recent Advances in Oxidation Processes for Treating Pharmaceutical Compounds in Water**

William J. Cooper, Behnaz Razavi, Hanoz Santoke, Weihua Song, Yin Tung Haomin Xu
Department of Civil and Environmental Engineering, and Urban Water Research Center, University of California – Irvine, Irvine, CA, USA

10:55 – 11:20 (IL) **Rational Design of Advanced Oxidation Processes Using Computational Chemistry**

Daisuke Minakata[1], Ke Li[2], John C. Crittenden[1]
[1]School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA
[2]Faculty of Engineering, University of Georgia, Athens, GA, USA

11:20 – 11:45 (IL) **Degradation of Persistent Organic Contaminants Using Functionalized Nanoscale Materials**

Sherine O. Obare
Department of Chemistry, Western Michigan University, Kalamazoo, MI, USA

11:45–12:00 (ST) **Degradation of Cocamidopropylbetaine by Advanced Oxidation Technologies**

Alejandro M. Senn, [1,2], Luciana de la Fuente[1], Denise Kalik[1];
Marta I. Litter[1,2,3]
[1]Comisión Nacional de Energía Atómica
[2]Consejo Nacional de Investigaciones Científicas y Técnicas
[3]Universidad Nacional de Gral. San Martín, Buenos Aires, Argentina

12:00 – 1:30 **Lunch Break**

1:30 – 1:55 (IL) **Antibiotic Pollution Control by AOPs**

Isil Akmehmet Balcioglu
Bogazici University Institute of Environmental Science, Istanbul, Turkey

1:55 – 2:10 (ST) **Inhibition of the Antibacterial Activity after the Degradation of Flumequine by Photoperoxidation (H_2O_2/UV)**

Caio Rodrigues da Silva[1], Milena Guedes Maniero[1], Susanne Rath[2], José Roberto Guimarães[1]

[1]Civil Engineering, Architecture and Urban Design School, University of Campinas – UNICAMP, Campinas, SP, Brazil
[2]Chemistry Institute, University of Campinas – UNICAMP, Campinas, SP, Brazil

2:10 – 2:25 (ST) **Photocatalytic Oxidation of the Emerging Pollutant *Trans*-Resveratrol**

Cláudia G. Silva, Rita R. N. Marques, Judith Monteiro, Adrián M. T. Silva*, Joaquim L. Faria
Laboratório de Catálise e Materiais (LCM), Laboratório Associado LSRE/LCM, Departamento de Engenharia Química, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal

2:25 – 2:40 (ST) **Degradation of the Veterinary Drug Ivermectin by Fenton and Photo-Fenton and Toxicity Test Using *Escherichia Coli***

Sandra Maria Dal Bosco[1], Izabela Major Barbosa[1], Milena Guedes Maniero[1], Susanne Rath[2], José Roberto Guimarães[1]
[1] Civil Engineering, Architecture and Urban Design School, University of Campinas – UNICAMP, Campinas, SP, Brazil
[2] Institute of Chemistry, University of Campinas – UNICAMP, Campinas, SP, Brazil

2:40 – 3:05(IL) **Sonochemical Degradation of the Anti-Inflammatory Pharmaceutical Diclofenac by Divalent and Zero-Valent Iron**

Gökce Tezcanli-Güyer and Nilsun H. Ince
Bogazici University, Institute of Environmental Sciences, Istanbul Turkey

3:05 – 3:30 **Coffee Break**

Session II

Green Synthesis of Chemicals by AOTs and Production of Renewable Energy

Chairs: John Crittenden and Sherine O. Obare

3:30 – 3:55 (IL) **TiO_2 Heterogeneous Photocatalysis as a Selective Tool for Organic Green Syntheses**

L. Palmisano[1]*, V. Augugliaro[1], M. Bellardita[1], A. Di Paola[1], E. García-Lopez[1], V. Loddo[1], G Marcì[1], G Palmisano[1] and S. Yurdakal[2]
[1]"Schiavello-Grillone" Photocatalysis Group, Department of Chemical Engineering of Processes and Materials, University of Palermo, Palermo, Italy

3:55 – 4:20 (IL) **Hydrogen Production and Simultaneous Degradation of Inorganic or Organic Sacrificial Agents in Wastewater Mediated by Pt/CdS/TiO_2 Photocatalysts and Solar Light**

Vasileia M. Daskalaki[1], Maria Antoniadou[2], Natalia Quici[3], Gianluca Li Puma[3], Dimitris I. Kondarides[3], Panagiotis Lianos[2]

[1]Department of Chemical Engineering, University of Patras, Patras, Greece
[2]Engineering Science Department, University of Patras, Patras, Greece
[3]Photocatalysis & Photoreaction Engineering, Department of Chemical Engineering, Loughborough University, Loughborough, United Kingdom

Session III

Electro-oxidation, Electro-Fenton and Free Radicals

Chairs: Stephen P. Mezyk + Nilsun H. Ince (TBA)

4:20 – 4:45 (IL) **Electro-generation of Free Hydroxyl Radicals Using Boron Doped Diamond (BDD) Anodes**
Christos Comninellis
Swiss Federal Institute of Technology, GGEC-ISIC-FSB-EPFL-1015 Lausanne, Switzerland

4:45 – 5:10 (IL) **Electrochemically Generated H_2O_2 for Water Purification and SO_2 Conversion in Aqueous Solution**
Chuan Wang and Hong Liu*
The Key Lab of Low-carbon Chemistry & Energy Conservation of Guangdong Province, Research Center of Green Chemistry and Engineering, School of Chemistry and Chemical Engineering, Sun Yat-sen University, Guangzhou, China

5:10 – 5:25 (ST) **Degradation of Rhodamine B by a Novel Electro-Fe(II)/Oxone Process Using a Steel Sheet as Sacrificial Anode**
Y. R. Wang [1], W. Chu*
Department of Civil and Structural Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

5:25 – 5:40 (ST) **Distillery Wastewater Treated by Electro-Oxidation with Boron-Doped Diamond Electrodes**
Christian Eduardo Alvarez Pugliese, Paola Andrea Moreno Wiedman, Nilson de Jesús Marriaga Cabrales, and Fiderman Machuca-Martínez
Group of Advanced Oxidation Process - GAOX, School of Chemical Engineering, Universidad del Valle, Cali-Colombia

5:40 – 5:55 (ST) **Electrochemical Treatment of Segregated Effluents from the D-Stage in ECF Kraft Cellulose Bleaching**
Claudio A. Zaror, Esteban Araneda, Rodrigo Barra, Hector Mansilla, Carlos Peña
Chemical Engineering Department, University of Concepción, Concepcion, Chile

6:00 – 7:30 **Poster Session/ Reception**

Tuesday, November 16, 2010

Session IV

Emerging Methods for the Generation of Reactive Radical Species

Chairs: Christos Comninellis and Isil Akmehmet Balcioglu

8:30 – 8:55 (IL) **Production of Hydroxyl Radicals by Iron-Containing Fenton Catalysts at Circumneutral pH Values**

David L. Sedlak[1], Anh L. Pham[1] and Fiona M. Doyle[2]
Department of Civil and Environmental Engineering, Department of Materials Science & Engineering, University of California, Berkeley, CA, USA

8:55 – 9:20 (IL) **Free-Radical-Induced Degradation of Formic and Oxalic Acids**

Bruce J. Mincher[1], Stephen P. Mezyk[2], Gracy Elias[1] and William J. Cooper[3]
[1]Idaho National Laboratory, Idaho Falls, ID, USA
[2]California State University- Long Beach, Long Beach CA, USA
[3]Urban Water Research Center, University of California at Irvine, Irvine, CA, USA

9:20 – 9:45 (IL) **Organic Photocatalysts for the Oxidation of Pollutants and Model Compounds**

A. Arques[1], M.L. Marín[2], L. Santos-Juanes[1], A.M. Amat[1], M.A. Miranda[2]
[1]Departamento de Ingeniería Textil y Papelera, Universidad Politécnica de Valencia, Campus de Alcoy, Alcoy, Spain
[2]Instituto Universitario Mixto de Tecnología Química-Departamento de Química (UPV-CSIC), Valencia, Spain

9:45 – 10:00 (ST) **Waste Derived Bio-Organic Substances for Light Induced Generation of Reactive Oxygenated Species**

Alessandra Bianco Prevot[1], Paola Avetta[1], Debora Fabbri[1], Edmondo Pramauro[1], Claudio Baiocchi[1], Claudio Medana[1], Enzo Montoneri[2],Vittorio Boffa[2], Enzo Laurenti[3], Tatiana Marchis[3]
[1]Dip. di Chimica Analitica, Torino, Italy
[2]Dip. di Chimica Generale e Chimica Organica, Torino, Italy
[3]Dip. di Chimica Inorganica, Chimica Fisica e dei Materiali, Torino, Italy

10:00 – 10:30 **Coffee Break**

Session V

Emerging Nanomaterials and Nanocatalysts for AOTs

Chairs (10:30 – 12:15): Dion Dionysiou and Felicity Roddick

Chairs (1:30 – 3:15): David L. Sedlak and Adrián M. T. Silva

10:30 – 10:55 (IL) **Removal of Toxic Pollutants with Zerovalent Iron Nanoparticles**

Marta I. Litter[1,2,3], María E. Morgada[1,2], Ivana K. Levy[1,2], Vanesa Salomone[1], Nahuel Montesinos[1,2], Martín Meichtry[1,2], Silvia Farías[1], Gerardo López[4,5]

[1]Comisión Nacional de Energía Atómica, Prov. de Buenos Aires, Argentina

[2]CONICET, Ciudad Autónoma de Buenos Aires, Argentina

[3]Instituto de Investigación e Ingeniería Ambiental, Universidad Nacional de San Martín, Prov. de Buenos Aires, Argentina

[4]Nanotek S.A., Santa Fe, Argentina

[5]Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina

10:55 – 11:20 (IL) **Synthesis and Characterization of Nanostructured Catalytic Materials for AOTs**

Adrián M.T. Silva

Laboratório de Catálise e Materiais (LCM), Laboratório Associado LSRE/LCM, Departamento de Engenharia Química, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal

11:20 – 11:45 (IL) **Effects of Aggregation on Nanoparticle Reactivity**

Peter J. Vikesland and Robert L. Rebodos

Department of Civil and Environmental Engineering, Virginia Tech, Blacksburg, VA, USA

11:45 – 12:00 (ST) **Nano-Magnetite as a Novel Material for the Removal of Microcystin-LR from Water**

Mohammad H. Entezari[1,3], Lin Chen[1], Dionysios D. Dionysiou[2], Kevin E. O'Shea[1]

[a]Department of Chemistry and Biochemistry, Florida International University, Miami, FL, USA

[b]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA

[c]Department of Chemistry, Ferdowsi University of Mashhad, Mashhad, IRAN

12:00 – 12:15 (ST) **Hydrophobic Fe-Zeolites as Promising Adsorbents and Catalysts for Fenton-Like AOPs**

Rafael Gonzalez-Olmos, Anett Georgi and Frank-Dieter Kopinke

Helmholtz Centre for Environmental Research - UFZ, Department of Environmental Engineering, Leipzig, Germany

12:15 – 1:30 **Lunch Break**

1:30 – 1:55 (IL) **AOP for Purification of Wastewaters**

S. Rakovsky[1], M. Anachkov[1], V. Iliev[1], A. Eliyas[1], Gianluca Li Puma[2]
[1]Bulgarian Academy of Sciences, Institute of Catalysis, Sofia, Bulgaria
[2]Department of Chemical and Environmental Engineering, The University of Nottingham, Nottingham, United Kingdom

1:55 – 2:20(IL) **CNTs Synthesis in Microwave Plasma**

Zbigniew Kołacinski[1], Lukasz Szymanski[2], Grzegorz Raniszewski[1]
[1]Technical University of Lodz, Poland
[2]Academy of Humanities and Economics in Lodz, Poland

2:20 – 2:45 (IL) **Fe-NANOSIT, NanoAqua, *nanoblox* - R&D Approaches to Improve the Advanced *Uviblox*®Technology for Water and Air Treatment by Photocatalytic Oxidation in Combination with Bio- and Nanotechnologies**

Frank Seitz
Chemical engineer, Department of Process Engineering, IBL Umwelt- und Biotechnik GmbH, Heidelberg, Germany

2:45 – 3:00 (ST) **Orange II Degradation by Heterogeneous Fenton Reagent Using Norit RX 3 Extra Activated Carbon as Iron Support**

F. Duarte[1], F. Maldonado-Hódar[2], L. M. Madeira[1]*
[1]LEPAE, Department of Chemical Engineering, Faculty of Engineering, University of Porto, Portugal
[2]Departament of Inorganic Chemistry, Faculty of Sciences – University of Granada, Spain

3:00 – 3:15 (ST) **Catalytic Ozonation of Pharmaceutical Compounds by Novel Dawsonite-Based Solids**

Sandra Contreras, Mohammad S. Yalfani, Francesc Medina, Jesús E. Sueiras
Departament d'Enginyeria Química, Universitat Rovira i Virgili, Tarragona, Spain

3:15 – 3:30 **Coffee Break**

Session VI

Corona Discharge, Plasma, Non-Thermal Plasma, Ozone-Generating Systems and Plasma Integrated System

Chair: Rino Morent and TBA

3:30 – 3:55 (IL) **Non-Thermal Plasma Technologies for VOCs and Odour Control**

Quan Zhuang and Bruce Clements
Clean Electric Power Group (CEPG), CanmetENERGY, Natural Resources Canada, Ottawa, Canada

3:55 – 4:20 (IL) **A Novel Atmospheric Pressure Townsend Discharge Using Barrier Discharge Device and Some Possible Applications**

Yoshio Yoshioka, Naoki Osawa
Kanazawa Institute Of Technology, Nonoichi, Ishikawa, Japan

4:20 – 4:45 (IL) **Recent Progress of Nano-Seconds Pulsed Discharge and its Applications**

Douyan Wang[1], Takao Matsumoto[2], Sho Okada[2], Takao Namihira[3] and Hidenori Akiyama[2]
[1]Priority Organization for Innovation and Excellence, Kumamoto University, JAPAN
[2]Graduate School of Science and Technology, Kumamoto University, JAPAN
[3]Bioelectrics Research Center, Kumamoto University, JAPAN

4:45 -5:10 (IL) **Progress in Radical Injection Techniques for Environmental Control**

Shinji Kambara
Gifu University, Environmental and Renewable Energy Systems Division, Gifu, Japan

5:10 – 5:35 (IL) **Spectroscopic Diagnostics of Filamentary Microplasmas**

H.-E. Wagner [1], K.V. Kozlov [2], R. Brandenburg [3], T. Hoder [3]
[1] Institute of Physics, Ernst-Moritz-Arndt-University, Greifswald, Germany
[2] Department of Chemistry, Moscow State University, Moscow, Russia
[3] INP Greifswald (Leibniz Institute for Plasma Science and Technology), Germany

5:35 – 6:00 (IL) **Water Remediation Using Pulsed Power Discharge under Water with Advanced Oxidation Process**

Katsuyuki Takahashi[1,2], Koichi Takaki[2], and Naoya Satta[3]
[1]Shishido Electrostatic, LTD., Tsuzuki-ku, Yokohama, Kanagawa, Japan
[2]Department of Electrical and Electronics Engineering, Iwate University, Iwate, Japan
[3]Department of Environmental Sciences for Sustainability, Faculty of Agriculture, Iwate University, Iwate, Japan

Wednesday, November 17, 2010

Session VI

Corona Discharge, Plasma, Non-Thermal Plasma, Ozone-Generating Systems and Plasma Integrated System, continued .....

Chair (8:30 – 10:10): Chobei Yamabe and Shin-ichi Aoqui

Chairs (10:30 – 11:35): Quan Zhuang and Douyan Wang

8:30 – 8:55 (IL) **Hybrid Plasma-Catalytic Systems for Conversion of Greenhouse Gases and VOC**

Krzysztof Schmidt-Szalowski, Krzysztof Krawczyk, Jan Setek, Bogdan Ulejczyk, Agnieszka Górska, Michal Mlotek
Warsaw University of Technology, Faculty of Chemistry, Warszawa Poland

8:55 – 9:20 (IL) **Plasma Surface Modification Using Atmospheric Pressure Microwave Plasma**

Shigeru Ono
Department of Electrical Engineering, Tokyo City University, Tokyo, Japan
[2]Kimya Bölümü, Anadolu Üniversitesi, Eskişehir, Turkey

9:20 – 9:45 (IL) **Investigation of Electric Discharge Sound in Atmospheric Pressure Plasma Using Optical Wave Microphone**

Toshiyuki Nakamiya[1], Fumiaki Mitsugi[2], Ryosuke Kozai, Shota Suyama[2], Tomoaki Ikegami[2], Yoshito Sonoda[2], Yoichiro Iwasaki[2] and Ryoichi Tsuda[2]
[1]Graduate School of Industrial Engineering, Tokai University, Kumamoto, Japan
[2]Graduate School of Science and Technology, Kumamoto University, Japan

9:45 – 10:10 (IL) **Plasma-assisted Catalytic Reactors for Abatement of Volatile Organic Compounds**

R. Morent[1], A. Vandenbroucke[1], N. De Geyter[1] and C. Leys[1]
[1] Research Unit Plasma Technology, Department of Applied Physics, Ghent University, Ghent, Belgium

10:10 – 10:30 **Coffee Break**

10:30 – 10:55 (IL) **A Study of Explication of Electric Discharge Mechanism and Control on Gliding Arc Discharge**

S. Aoqui[1*], J. *Pawłat*[2], H. D. Stryczewska[2], I. Muramoto[3], M. Shinohara[4], F. Mitsugi[5], H. Kawasaki[6], T. Ohshima[6], Y. Sonoda[7], T. Nakamiya[7]
[1]Dep. of Computer & Information Sciences, Sojo Univ., Kumamoto, Japan
[2] Institute of Electrical Eng. & Electrotechnologies, Lublin Univ. of Tech., Poland
[3] Graduate School of Electrical & Electronics Eng., Sojo Univ., Kumamoto, Japan
[4] Dep. of Electrical & Electronics Eng., Nagasaki Univ., Nagasaki, Japan
[5] Faculty of Eng. Kumamoto Univ., Kumamoto, Japan

[6] Dep. of Electrical & Electronics Eng., Sasebo National College of Tech., Japan
[7] School of Industrial Eng., Tokai Univ., Kumamoto, Japan

10:55 – 11:20 (IL) **Ozone-Zero Phenomena and a Nitrogen Addition Effect on an Ozone Generation**

Chobei Yamabe, Sebastian Gnapowski, Kouji Kayashima and Satoshi Ihara
Department of Electrical and Electronic Engineering, Graduate School of Science and Engineering, Saga University, Japan

11:20 – 11:35 (ST) **Regeneration of Isopropanol Saturated TiO_2 Coatings Using Surface Dielectric Barrier Discharges**

P. Gravejat[1,2,3], F. Thevenet[1,2], O. Guaitella[3], A. Rousseau[3]
[1]Université Lille Nord-de-France, Lille, France
[2]D[pt] Chimie-Environnement, Ecole des Mines de Douai, Douai, France
[3]Laboratoire de Physique des Plasmas, Ecole Polytechnique, UMR CNRS 7648, Palaiseau, France

Session VII

AOTs and Disinfection: Ecotoxicity of Nanomaterials

Chair: Peter J. Vikesland (TBA) and Wilson F. Jardim

11:35 – 12:00 (IL) **Photocatalysis and Disinfection**

C. Guillard, S. Pigeot-Remy
Institut de recherches sur la catalyse et l'environnement de Lyon (IRCELYON), Université Lyon 1 - UMR 5256 CNRS, Villeurbanne cedex, France

12:00 – 1:30 **Lunch Break**

1:30 – 1:55 (IL) **Production of Reactive Oxygen Species by Silver Nanoparticles - Implications for Bactericidal Activity**

T. David Waite, Adele M. Jones, He Di, Shikha Garg and A. Ninh Pham
School of Civil and Environmental Engineering, The University of New South Wales, Sydney, Australia

1:55 – 2:20 (IL) **Ecotoxicity of Nanomaterials: The Case of TiO_2**

Wilson F. Jardim and Glauciene P.S. Marcone
Environmental Chemistry Laboratory, University of Campinas – UNICAMP, Institute of Chemistry, Campinas, SP, Brazil

2:20 – 2:45 (IL) **Evaluation of AOPs application to Water and Wastewater Treatment by Ecotoxicity Tests**

Luigi Rizzo
Department of Civil Engineering, University of Salerno, Fisciano (SA), Italy

Session VIII

Wastewater Treatment and Industrial/Pilot-Scale Applications of AOTs

Chairs: Chantal Guillard and José Roberto Guimarães (TBA)

2:45 – 3:10 (IL) **UV Light Based-AOPs for Water Remediation - Fundamentals and Practical Applications**
Mihaela Stefan
Trojan Technologies, London, ON, Canada

3:10 – 3:30 **Coffee Break**

3:30 – 3:55 (IL) **Significance of Parameters for the Implementation of Oxidative Degradation of Natural Organic Matter**
Ceyda S. Uyguner Demirel, Ayse Tomruk and Miray Bekbolet
Bogazici University, Institute of Environmental Sciences, Istanbul, Turkey

3:55 – 4:20 (IL) **Wastewater, Advanced Oxidation Processes and Organic Matter**
Felicity Roddick
School of Civil, Environmental and Chemical Engineering, RMIT University, Melbourne, Victoria, Australia

4:20 – 4:35 (ST) **Decontamination of Cooling Water from Space Propulsion Testing by Solar Light Enhanced Fenton Treatment**
Christian Jung[1], Ralf Olwig[1], Christian Sattler[1], Richard Huth[1], Hans-Jürgen Bigus[2], Timo Olbrich[2], Andreas Sieck[3], Volker Dietrich[3]
[1]German Aerospace Center (DLR)
[2]Hirschmann Laborgeräte GmbH
[3]KACO new energy GmbH

4:35 – 5:00 (IL) **Hydrogen Peroxide Dosage as Influent Factor in the Photo-Fenton Process**
M. Pérez-Moya*, M. Graells
Departament d'Enginyeria Química, EUETI de Barcelona, UPC, Barcelona, Spain

5:00 – 5:25 (IL) **Effect of Photochemical Advanced Oxidation Processes on the Biodegradability and Toxicity of Industrial Pollutants**
Idil Arslan-Alaton, Tugba Olmez-Hanci, Ozlem Karahan
Istanbul Technical University, Faculty of Civil Engineering, Department of Environmental Engineering, Istanbul, Turkey

5:25 – 5:50 (IL) **Application of Submerged Hydrodynamic Cavitating Jets (DYNAJETS®) for Oxidation of Trace Organic Micropollutants**
Gregory Loraine, Georges Chahine, Jin-Keun Choi, and Chao-Tsung Hsiao
DYNAFLOW INC, Jessup, MD, USA

6:00 – 7:30 **Poster session/Reception**

7:30 – 9:30 **Banquet Dinner**

Thursday, November 18, 2010

Session VIII

Wastewater Treatment and Industrial/Pilot-Scale Applications of AOTs, Continued……

Chairs: Mihaela Stefan and Luigi Rizzo

8:30 – 8:55 (IL) **Using Ultrasound as an AOT for Treating Dyes and Phthalates in Water**
Gareth J. Price and Daniel VandenBerg
Department of Chemistry, University of Bath, Bath, United Kingdom

8:55 – 9:20 (IL) **Ultrasonic Destruction of Emerging Contaminants: Experimental and Theoretical (ANN) Approach**
Gangadhar Andaluri, Ekatrina Rokhina and Rominder Suri*
NSF Water and Environmental Technology (WET) Center, Department of Civil and Environmental Engineering, Temple University, Philadelphia, PA, USA

9:20 – 9:45(IL) **Degratation of Ionic Liquids with AOTs**
Piotr Stepnowski
Department of Environmental Analysis, Faculty of Chemistry, University of Gdańsk, ul., Gdańsk, Poland

9:45 – 10:00 (ST) **TiO_2 Photocatalysis *vs.* Sonocatalysis for the Treatment of Model Dye Wastewater**
Dinko Vujević, Ivana Grčić, Natalija Koprivanac
University of Zagreb, Faculty of Chemical Engineering and Technology, Croatia

10:00 – 10:30 **Coffee Break**

Session IX

In-situ Chemical Oxidation, Persulfate and Ozonation

Chair (10:30 – 12:10): T. David Waite and Mohammad Entezari

Chair (1:30 – 3:10) Santiago Esplugas and Henrik R. Andersen (TBA)

10:30 – 10:55 (IL) **The Importance of Bench-Scale Treatability Studies as a Decision Making Tool for ISCO**

Daniel Cassidy
Western Michigan University, Department of Geosciences, Kalamazoo, MI, USA

10:55 – 11:20 (IL) **Comparing UV/$S_2O_8^{2-}$ to UV/H_2O_2 for Micropollutant Removal in Ground Water**

Maria G. Antoniou, and Henrik R. Andersen,*
Technical University of Denmark, Department of Environmental Engineering, Kgs. Lyngby, Denmark

11:20 – 11:45 (IL) **Application of Ozone to Municipal Sewage Treatment for Water Reuse**

Bruno Domenjoud[1], Santiago Esplugas[1], Sylvie Baig[2]
[1]Chemical Engineering Dpt, University of Barcelona, Barcelona, Spain
[2]Degrémont S.A., Rueil-Malmaison Cedex France

11:45 – 12:00 (ST) **In Situ Generation of H_2O_2: An Application in Fenton Reaction**

M. S. Yalfani[1], S. Contreras[1], F. Medina[1], A. Georgi[2], J. E. Sueiras[1]
[1]Universitat Rovira i Virgili, Departament d'Enginyeria Quimica, Tarragona, Spain
[2]UFZ - Helmholtz-Centre for Environmental Research, Department of Environmental Technology, Leipzig, Germany

12:00 – 1:30 **Lunch Break**

1:30 – 1:55 (IL) **On-site Ozone Treatment for Agricultural Soil and Related Matter**

Kenji Ebihara[1], Fumiaki Mitsugi[2], Tomoaki Ikegami [2], Takamasa Sakai [2], Takashi Ikegami[3],and D.H.Stryczewska [4]
[1]Environment and Energy Laboratory, Fukuoka City, Fukuoka, Japan
[2]Graduate School of Science and Technology, Department of Electrical and Computer Engineering, Kumamoto University, , Kumamoto, Japan
[3]Dojindo Laboratories, Kumamoto Techno Research Park, Mashiki-Machi, Kamimashiki-gun, Kumamoto, Japan
[4]Faculty of Electrical Engineering and Computer Science, Lublin University of Technology, Lublin, Poland

1:55 – 2:10 (ST) **Iron Activated Persulfate Oxidation of an Azo Dye in Model Wastewater: The Influence of Iron Activator Type and Processes Optimization**

Igor Peternel, Natalija Koprivanac, A. Loncaric Bozic, Hrvoje Kusic
Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb, Croatia

2:10 – 2:25 (ST) **Application of Ozonation for Oxidation of Micropollutants from Aqueous Solutions**

Temesgen Garoma, Rory Klinger, and Melissa Allen
Department of Civil, Construction, and Environmental Engineering, San Diego State University, San Diego, California, USA

2:25 – 2:40 (ST) **Utilization of Ozone Based Techniques for Industrial Effluents Depuration and Reuse**

Nuno Amaral-Silva[1], Rui C. Martins[1], Sérgio Castro-Silva[2] and Rosa M. Quinta-Ferreira[1]
[1]GERSE – Group on Environmental, Reaction and Separation Engineering, Department of Chemical Engineering, Faculty of Sciences and Technology, University of Coimbra Pólo II, Coimbra, Portugal
[2]Adventech – Advanced Environmental Technologies, Centro Empresarial e Tecnológico, São João da Madeira, Portugal

2:40 – 2:55 (ST) **Degradation of Thymol by Ozone, Hydrogen Peroxide and Ultraviolet Radiation**

Tatiana Mitsusaki Ricci Xavier*, Felipe Rufine Nolasco, Juliana G. Giovaninni de Oliveira, Glauco Arnold Tavares, José Albertino Bendassolli
Centro de Energia Nuclear na Agricultura – Universidade de São Paulo, Brasil

2:55 – 3:10 (ST) **Integrated Biological and Chemical Treatment of Anaerobically Digested Distillery Wastewater**

Namasivayam Vasudevan and Ramalingam Kanimozhi
Centre for Environmental Studies, Anna University Chennai, Chennai, India

3:10 – 3:30 **Coffee Break**

Session X

Kinetics and Modeling of AOTs

Chairs: Daniel Cassidy and Hrvoje Kušić

3:30 – 3:45 (ST) **Formal Bimolecular Kinetic Model for the Ozonation of Ciprofloxacin in the Liquid Phase**

Philippe M. Heynderickx, Kristof Demeestere, Jo Dewulf, Bavo De Witte, Herman Van Langenhove
Research Group ENVOC, Ghent University, Ghent, Belgium

3:45 – 4:00 (ST) **Treatment of Simulated Wastewater from Petrochemical Industry: Influence of Operating Parameters and Development of Mechanistic Model**

Hrvoje Kušić[1], Natalija Koprivanac[1], Ana Lončarić Božić[1], Jarolim Meixner[2]
[1]Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia
[2]DINA Petrokemija Inc., Omisalj, Croatia

4:00 – 4:15 (ST) **Kinetics of the Heterogeneous Catalytic Wet Peroxide Oxidation of Acid Orange 7 using a Saponite-based Catalyst**

J. H. Ramirez [1,2], A. M. T. Silva [3], M. A. Vicente [4], C. A. Costa [1] and L. M. Madeira [1,*]
[1]LEPAE, Department of Chemical Engineering, Faculty of Engineering – University of Porto (FEUP), Portugal
[2]National University of Colombia, Colombia
[3]LSRE/LCM at FEUP, Portugal
[4]University of Salamanca, Spain

4:15 – 4:30 (ST) **Modeling of the Sonochemical Processes**

Ivana Grčić, Dinko Vujević, Natalija Koprivanac
Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia

4:30 – 4:45 (ST) **UV-A and UV-C Photolytic and Photocatalytic Degradation of Ciprofloxacin and Moxifloxacin: Reaction Kinetics and Adsorption**

X. Van Doorslaer, J. Dewulf, P.M. Heynderickx, K. Demeestere, H. Van Langenhove
Research Group EnVOC, Department of Organic Chemistry, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

4:45 – 5:00 (ST) **Paraquat Degradation by Fenton's Reagent: Parametric and Kinetic Analysis**

Mónica S. F. Santos, Arminda Alves and Luis M. Madeira*
LEPAE, Department of Chemical Engineering, Faculty of Engineering – University of Porto, Porto, Portugal

5:00 – 5:15(ST) **Decolourisation of Textile Dyeing Industrial Wastewaters by Photocatalytic-Ozonation: A Pilot Study in Tamilnadu, India**
S. Rajendiran and S. Kanmani*
Centre for Environmental Studies, Anna University Chennai, Chennai, India

5:00 **Adjourn**

POSTERS

(We will continue until September 15, 2010 accepting abstracts for poster presentations)

Emerging Contaminants and the Role of Advanced Oxidation Technologies

[AOTs-P1] Photochemical Destruction of β-lactam Antibiotics
Xuexiang He[1], Kimberly A. Rickman[2], Stephen P. Mezyk[2], and Dionysios D. Dionysiou[1*]
[1]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA
[2]Chemistry and Biochemistry Department, California State University, Long Beach, California, USA

[AOTs-P2] Degradation of Domoic Acid by UV and Visible Light TiO_2 Photocatalysis
Urooj Khan[1], Miguel Pelaez[2], Dionysios D. Dionysiou[2], Kevin E. O'Shea[1,*]
[1]Department of Chemistry and Biochemistry, Florida International University, Miami, FL, USA
[2]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA

[AOTs-P3] Degradation of Ibuprofen Sodium Salt in a Hybrid Photolysis – Membrane Distillation System Utilizing Germicidal UVC Lamp
Sylwia Mozia[1*], Tomoki Tsumura[2], Masahiro Toyoda[2], Antoni W. Morawski[1]
[1]West Pomeranian University of Technology, Institute of Chemical and Environment Engineering, Szczecin, Poland
[2]Oita University, Oita, Japan

Emerging Nanomaterials and Nanocatalysts for AOTs

[AOTs-P4] Sono-Synthesized Core-Shell Nanoparticles (CdS/TiO_2) Can Degrade and Mineralize a Reactive Textile Azo Dye, RB5
***Mohammad H. Entezari and Narjes Ghows**
Department of Chemistry, Ferdowsi University of Mashhad, Mashhad, Iran

[AOTs-P5] Tailoring the Phase Composition and Morphology of Goethite-Hematite Nanostructures and Their Catalytic Activity in the Photo-Fenton Like Process
Andreja Gajović[1], Adrián M. T. Silva[2*], Ricardo A. Segundo[2], Saso Šturm[2], Boštjan. Jančar[3], Miran Čeh[3]
[1]Ruđer Bošković Institute, Zagreb, Croatia

[2]Laboratório de Catálise e Materiais (LCM), Laboratório Associado LSRE/LCM, Departamento de Engenharia Química, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal
[3]Jožef Stefan Institute, Ljubljana, Slovenia

[AOTs-P6] Materials for Sensitized Photo-Oxygenation under Visible Light: Synthesis, Properties and Applications

S. Lacombe, T. Pigot, P. Saint-Cricq, R. Rahal, A. K. Bennabou
[a]Institut Pluridisciplinaire de Recherche sur l'Environnement et les Matériaux, (UMR CNRS 5254), Equipe chimie-physique, Université de Pau et Pays de l'Adour, Pau cedex, France

[AOTs-P7] Synthesis, Morphological Control and Properties of a New Strontium Tantalate Photocatalyst

Shijing Liang, Lijuan Shen, Xun Chen, Ling Wu*, Xianzhi Fu
State Key Laboratory Breeding Base of Photocatalysis, Fuzhou University, Fuzhou, China

[AOTs-P8] Effective Oxidation of Alcohols with Manganese Dioxide Supported on Kieselguhr under Heterogeneous Conditions

Ji-Dong Lou,[1,*] Yongjun Zhang,[1] Yi-Chun Ma,[1] Changhe Zhang,[2]
Qiang Wang,[3] and Negin Vatanian[3]
[1] College of Life Sciences, China Jiliang University, Hangzhou, Zhejiang, China
[2] Department of Environmental and Biological Engineering, Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal
[3] Sirnaomics, Inc., Gaithersburg, MD, USA

[AOTs-P9] Iron-Containing SBA15 Mesoporous Silica as a Catalyst for Heterogeneous Fenton Reaction: Selective Oxidation of Organic Contaminants by Size Exclusion

Anh L. Pham[1], David L. Sedlak[1] and Fiona M. Doyle[2]
Department of Civil and Environmental Engineering, Department of Materials Science & Engineering, University of California, Berkeley, CA, USA

[AOTs-P10] Comparison of Structural, Optical and Photocatalytic Activity of ZnO Nanostructures Prepared Using Solvothermal Method in Different Solvents

M. Rezapour*, N. Talebian
Chemistry Society, Department of Chemistry, Islamic Azad University, Shahreza branch, shahreza, Isfahan, Iran

[AOTs-P11] Photocatalytic Activity of Nanocrystalline SnO_2/ZnO Multilayered Thin Films Catalysts towards 4-Nitrophenol and *p*-Aminophenol Degradation

Nasrin Talebian, Mohammad Reza Nilforoushan, Parisa Memarnejad
Department of Chemistry, Faculty of Science, Islamic Azad University, Shahreza branch, I.R. Iran

[AOTs-P12] Sol–Gel Preparation of Nano-Structured Zinc Oxide Thin Films for Photocatalytic Applications: Solvent Effect

Nasrin Talebian, Najimeh Maleki
Department of Chemistry, Faculty of Science, Islamic Azad University, Shahreza branch, I.R. Iran

[AOTs-P13] ZnO-In_2O_3 Nanocomposite Photocatalysts: Preparation, Characterizations and Activity for Phenol and its Derivatives Degradation in Water

Nasrin Talebian, Razieh Ramazan Ghasem
Department of Chemistry, Faculty of Science, Islamic Azad University, Shahreza branch, I.R. Iran

[AOTs-P14] The Preparation of Bi_2O_3 and Au/Bi_2O_3 Nanorods for the Purification of Contaminants in Water Using Catalytic Oxidation Technologies

J. J. Wu[1], S. Anandan[2], G. L. Lee[1], S. H. Hsieh[1]
[1]De[i]partment of Environmental Engineering and Science, Feng Chia University, Taichung, Taiwan
[2]Nanomaterials & Solar Energy Conversion Lab, Department of Chemistry, National Institute of Technology, Trichy, India

[AOTs-P15] In-Situ Hydrothermal Oxidation Route to Nanocrystalline $BiSbO_4$ for Photocatalytic Degradation of Benzene and 4-Chlorophenol

Qingqing You, Zhaohui Li, Xianzhi Fu
Research Institute of Photocatalysis, Fuzhou University, State Key Laboratory Breeding Base of Photocatalysis, Fuzhou, P. R. China

In-situ Chemical Oxidation, Fenton, Fenton-like, Photo-Fenton, Persulfate, and Electrochemical Oxidation

[AOTs-P16] Comparative Studies between Homogeneous and Heterogeneous Fenton's Reaction

André F. Rossi, Rui C. Martins, Nuno Amaral-Silva and Rosa Quinta-Ferreira*
Group on Environment, Reaction and Separation Engineering (GERSE), Department of Chemical Engineering, Faculty of Sciences and Technology, University of Coimbra, Pólo II – Pinhal de Marrocos, Coimbra, Portugal

[AOTs-P17] Treatment of Batik Dyes Wastewater by Fenton Reagent

Tuty Emilia Agustina
Department of Chemical Engineering, Sriwijaya University, Palembang, Indonesia

[AOTs-P18] Improvement of Methane Production Using Photo-Fenton as Pretreatment of Vinasses

D. M. Acevedo, J. J. Gil-Molano, M. D. Morales, and J. Sanabria
Advanced Process for chemical and biological treatments research Group, Natural Resources School, Universidad del Valle, Cali-Colombia

[AOTs-P19] Mild Fenton and Photo-Fenton Reactions for Degradation and Disinfection

A. Bernabeu, A. Arques, Juan M. Soler, R. Vicente, R. F. Vercher, A. M. Amat,
Departamento de Ingeniería Textil y Papelera, Universidad Politécnica de Valencia, Campus de Alcoy, Alcoy, Spain

[AOTs-P20] Treatment of Petrochemical Wastewater by Fenton process Assisted with Ultrasound

Dinko Vujević[1], Ivana Grčić[1], Natalija Koprivanac[1], Jarolim Meixner[2]
[1]University of Zagreb, Faculty of Chemical Engineering and Technology, Zagreb, Croatia
[2]DINA Petrokemija d.d., Omišalj, Croatia

[AOTs-P21] The Effect of the LAS Surfactant on Reactive Dye Degradation by Sono-Fenton Process

Ivana Grčić, Sanja Papić, Natalija Koprivanac
Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb, Croatia

[AOTs-P22] Development of Fast Screening Evaluation Methodology of Fenton-like Reagents for the *In-situ* Treatment of BTEX

P. H. Lim[1], W. Y. Tsai[1], C. Huang[2], S. M. Lin[3], Y. J. Chung[4]
[1]Researcher, Environmental Engineering Research Center, Sinotech Engineering Consultants, Inc.
[2]Senior Researcher, Environmental Engineering Research Center, Sinotech Engineering Consultants, Inc.
[3]Specialist, Environmental Engineering Research Center, Sinotech Engineering Consultants, Inc.
[4]Manager, Environmental Engineering Research Center, Sinotech Engineering Consultants, Inc.

[AOTs-P23] Degradation of Tyrosol Present in Olive Mill Wastewater by UV Radiation in the Presence of Hydrogen Peroxide, Persulfate or Peroxymonosulfate: Implications of Hydroxyl and Sulfate Radicals

Melike Yalılı Kılıç[1,2], Xuexiang He[2], Kadir Kestioğlu[1] and Dionysios D. Dionysiou[2*]
[1]Environmental Engineering Department, Faculty of Engineering and Architecture, Uludag University, Gorukle, Bursa, Turkey
[2]Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, USA

[AOTs-P24] Influence of the Process Parameters for the Application of Persulfate Salts in Photochemical Wastewater Treatment

Igor Peternel[1], Natalija Koprivanac[1] and Josip Sepcic[2]
[1]Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb, Croatia
[2]DINA Petrokemija Inc., Bjanizov 1, Omisalj, Croatia

[AOTs-P25] Ferrous Catalyzed Sodium Persulfate Oxidation for the Destruction of Endocrine Disrupting Chemicals in Wastewater Effluent

Jeonghyun Kim, Yeobog Yun and Seokoh Ko
Department of Civil Engineering, Kyunghee University, Yongin, South Korea

[AOTs-P26] Degradation of Aldrin in Aqueous Samples Using Fe (II) Activated Persulfate Oxidation

Rama Mohan Kurakalva, Sriharsha Pilimetla
Environmental Geochemistry Division, National Geophysical Research Institute (CSIR)
Hyderabad, AP, India

[AOTs-P27] Electrochemical Preparation of Ferrate (VI) and its Reactivity with Methyl Mercaptan in Aqueous Solution for Odour Control

L. Ding, X. Z. Li, H. C. Liang
Department of Civil and Structural Engineering, The Hong Kong Polytechnic University, Hong Kong, China

[AOTs-P28] Increasing Oxygen Level of Lake Sediments with Granulated Calcium Peroxide

Anne Nykänen[1], Heidi Kontio[1], Silja kostia[2] and Martin Romantschuk[1]
[1]University of Helsinki, Department of Environmental Sciences, Lahti, Finland
[2] Lahti University of Applied Sciences, Lahti, Finland

[AOTs-P29] Photocatalytic Degradation of Organic Pollutants by Using O_2 as Main Oxidant in Fenton-like Reaction

Wanhong Ma, Xi Chen , Chuncheng Chen, Hongwei Ji, Jincai Zhao
Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences Beijing, China

[AOTs-P30] Thermally Activated Persulfate Oxidation Regeneration of NOM- and MTBE- Spent Granular Activated Carbon

Saebom Ko[1], Andy Hutson[2], and Scott G. Huling[3]
[1]National Research Council, Robert S. Kerr Environmental Research Center, Ada, OK, U.S.A.
[2]Department of Environmental Health Science, East Central University, Ada, OK, U.S.A.
[3]U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Robert S. Kerr Environmental Research Center, Ada, OK, U.S.A.

Corona Discharge, Plasma, Non-Thermal Plasma, Ozone-Generating Systems and Plasma Integrated System

[AOTs-P31] Low-Temperature Plasma for Exhaust Gas Purification

Joanna Pawłat, Jarosław Diatczyk, Henryka Danuta Stryczewska
Faculty of Electrical Engineering and Computer Science, Lublin University of Technology, Lublin, Poland

[AOTs-P32] Temperature Distribution in the Gliding Arc Discharge Chamber

Henryka Danuta Stryczewska, Jarosław. Diatczyk, Joanna Pawłat
Faculty of Electrical Engineering and Computer Science, Lublin University of Technology, Lublin, Poland

UV/H_2O_2, Ozone and Integrated Technologies for Wastewater/Drinking Water Treatment/Disinfection

[AOTs-P33] Photoperoxidation (H_2O_2/UV) on *Cryptosporidium* spp. Oocysts and *Giardia duodenalis* Cysts

Luciana Urbano dos Santos[1], Regiane Aparecida Guadagnini[1], Regina Maura Bueno Franco[2], José Roberto Guimarães[1]

[1]Civil Engineering, Architecture and Urban Design School, *Department of Sanitary and Environmental*, University of Campinas – UNICAMP, Campinas, SP, Brazil
[2]Laboratory of Protozoology, Department of Animal Biology, Biology Institute, University of Campinas – UNICAMP, Campinas, SP, Brazil

[AOTs-P34] Photochemical Processes for the Treatment of Colored Wastewater: Influence of Operating Parameters, Modeling of Degradation Kinetic and Comparison of Eco- and Cost-Efficiency

Hrvoje Kušić, Natalija Koprivanac, Ana Lončarić Božić
Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb, Croatia

[AOTs-P35] Treatment of Refractory Industrial Pollutants by Cobalt and Copper-assisted Photochemical Treatment Systems: A Case Study with K-acid (2-Naphthylamine 3,6,8-Tri Sulfonic Acid)

Idil Arslan-Alaton, Tugba Olmez-Hanci, Gulcan Basar
Istanbul Technical University, Faculty of Civil Engineering, Department of Environmental Engineering, Istanbul, Turkey

[AOTs-P36] Zeolite-Based Adsorption-Oxidation Processes for the Removal of Organic Contaminants from Water

Anett Georgi, Rafael Gonzalez-Olmos and Frank-Dieter Kopinke
Helmholtz Centre for Environmental Research - UFZ, Department of Environmental Engineering, Leipzig, Germany

[AOTs-P37] Natural Zeolite Reactivity toward Ozone: The Role of Surface Acid Sites

Serguei Alejandro[1], Héctor Valdés[2], Claudio A. Zaror[1]
[1] Departamento de Ingeniería Química, Universidad de Concepción, Chile
[2] Facultad de Ingeniería, Universidad Católica de la Santísima Concepción, Chile

[AOTs-P38] Treatment of Crude Vinasse from Cane Industry by Ozone

Natalia Caicedo[1], Yulia Muñoz Garzón[1], Fiderman Machuca-Martínez[1], Diego Echeverry[2]
[1]Grupo de Investigación GAOX, Escuela de Ingeniería Química, Universidad del Valle, Cali, Colombia
[2]Grupo de Investigación en Alta Tensión GRALTA, Escuela de Ingeniería Eléctrica y Electrónica, Universidad del Valle, Cali, Colombia

[AOTs-P39] Removal of Dissolved Organic Matter by Ozonation in a Domestic Tertiary Treatment Plant

Bruno Domenjoud[1], Santiago Esplugas[1], Sylvie Baig[2]
[1]Chemical Engineering Dpt, University of Barcelona, Barcelona, Spain
[2]Degrémont S.A., Rueil-Malmaison Cedex France

[AOPs-P40] Photocatalytic Oxidation of Model Pollutants in Aqueous Solution in the Presence of Ozone

V. Iliev[1], S. Rakovsky[1], D. Tomova[1], M. Anachkov[1], A. Eliyas[a], G. Li Puma[2]
[1]Institute of Catalysis, Bulgarian Academy of Sciences, Sofia, Bulgaria

[2]Photocatalysis & Photoreaction Engineering, Department of Chemical and Environmental Engineering, The University of Nottingham, University Park, Nottingham , United Kingdom

[AOTs-P41] Ozonation and Advanced Oxidation of Swine Manure Wastewater in a Pilot-Scale Bubble Column Reactor

Natalia Quici[1], Diego Garcia Miguelez[2], Alba Serna Maza[2], Judith Chioma[3], Gianluca Li Puma[a]
[1]Department of Chemical Engineering, Loughborough University, Loughborough, United Kingdom
[2]Current address: Departamento de Ingeniería Química y Tecnología del Medioambiente, Universidad de Valladolid, Valladolid, Spain
[3]Current address: Department of Chemical and Environmental Engineering, The University of Nottingham, United Kingdom.

[AOTs-P42] Deciphering Simultaneous Bioelectricity Generation and Reductive Decolorization Using Indigenous Decolorizers

Yu-Min Wang, Bor-Yann Chen*[,a]
Department of Chemical and Materials Engineering, National I-Lan University, Taiwan
[a]Center of Green Technology (G-TEC), National I-Lan University, Taiwan

[AOTs-P43] Optimum Dosage of TiO_2 According to power Intensities of UVA in the Photocatalytic Degradation of Bisphenol A

Anna Hwang, Beomguk Park, Seungmin Na, Eunju Cho, Jeehyeong Khim
School of Civil, Environmental, and Architectural Engineering, Korea University, Seoul, South Korea

[AOTs-P44] Photocatalytic Removal of Hexavalent Chromium from Leached Soil Pore Water Using ZnO as Catalyst

Delgado-Balderas Jesús Rolando, Hinojosa-Reyes Laura*, Guzmán-Mar Jorge Luis, Peralta-Hernández Juan Manuel, Hernández-Ramírez Aracely
Facultad de Ciencias Químicas, Universidad Autónoma de Nuevo León, San Nicolás de los Garza, NL., México

[AOTs-P45] Treatment of Plasmid DNA with Ozone, Chlorine and TiO_2 Mediated Photocatalytic Oxidation: Effect of Oxidants on Plasmid DNA Structure and on its Efficiency to Transform Competent Cells

Nalan Bilgin Oncu and Isil Akmehmet Balcioglu
Bogazici University Institute of Environmental Sciences Bebek, Istanbul, Turkey