

The 23rd International Conference on

**Advanced Oxidation Technologies for Treatment of
Water, Air and Soil**

(AOTs-23)

This conference is dedicated to the memory of Professor Ezio Pelizzetti and the memory of Professor Mario Ollino for their significant contributions for Semiconductor Photocatalysis/Advanced Oxidation Technologies fields.

FINAL PROGRAM

**Holiday Inn Hotel & Suite – Clearwater Beach, Florida
November 13-16, 2017**

International Scientific Committee:

Hussain Al-Ekabi, Redox Technologies, Inc., Canada
Catherine Almquist, Miami University, USA
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Kevin O’Shea (Co-Chair), Florida International University, Florida, USA
Hyunwoong Park, Kyunpook National University, Korea
Joanna Pawlat, Lublin University of Technology, Poland
Xie Quan, Dalian University of Technology, China
Yutaka Sakakibara, Waseda University, Japan
Christian Schoeneich, University of Kansas, USA
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George Sorial, University of Cincinnati, Ohio, USA
Henryka Danuta Stryczewska, Lublin University of Technology, Poland
Frederic Thevenet, Ecole Nationale Supérieure des Mines de Douai, France
David Waite, UNSW Australia, Kensington, Australia
Yuxian Wang, China University of Petroleum, China
Yongbing Xie, Institute of Process Engineering, China
Shujuan Zhang, Nanjing University, China

IL Stands for Invited Lecture (25 minutes)

ST Stands for Short Talk (15 minutes)

Monday, November 13, 2017

Session 1: Advanced Oxidation Processes: Fundamentals and Applications

- 8:30 – 8:55am**
IL
Degradation of Cyanotoxins Using Advanced Oxidative Processes
Kevin E. O’Shea^{1*}, Dionysios D. Dionysiou², and Virender K. Sharma³
¹Florida International University, Miami, Florida, USA
²University of Cincinnati, Cincinnati, OH USA
³Texas A&M University, College Station, Texas, USA
- 8:55 – 9:20am**
IL
Treatment of Urban Sludge by Advanced Oxidation Processes
Işıl Akmeahmet Balcıoğlu
Boğaziçi University, Istanbul, Turkey
- 9:20 – 9:45am**
IL
A Review on UV-Light Emitting Diodes for Application to Advanced Oxidation Systems
Catherine B. Almquist
Miami University, Oxford, Ohio, USA
- 9:45 -10:10am**
IL
Design of Photocatalysts for Oxidation Processes – A Thermodynamic Approach
Wojciech Macyk, Marcin Kobielski, Joanna Kuncewicz
Jagiellonian University, Kraków, Poland
- 10:10 – 10:30am**
Coffee Break
- 10:30 – 10:55am**
IL
Keys to Optimizing Chemical Injection & Soil Blending Applications
Ken Summerour
Eden Remediation Services, Inc., Monroe, GA, USA
- 10:55 – 11:20am**
IL
Adding Accurate Control to Horizontal Well Systems under Tanks, Roads, Utilities, and Adjacent Owner Properties
Lance I. Robinson
EN Rx, Inc., Tampa, Florida, USA

Session 2: Photo-Fenton, Fenton-Like and Bio-Fenton Reactions

11:20 – 11:45am
IL **Photo-Fenton Treatment of Emerging Contaminants at Circumneutral pH**
Jose Miguel Albahaca, Nuria López, Violette Romero, Antonella De Luca, Pilar Marco, Jaime Giménez and Santi Esplugas
University of Barcelona, Barcelona, Spain

11:45 – 12:10pm
IL **Treatment of Tetracycline by Bio-Fenton Process in Diatoms in SBR**
V. P. Ranjusha and Y. Sakakibara
Waseda University, Japan

12:10 – 1:30pm **Lunch**

Session 3: Electrochemical Oxidation

1:30– 1:55pm
IL **Development of ROS-Generating Oxide Electrocatalysts for High Efficiency Remediation of Aquatic Pollutants**
So Young Yang^{1,2}, Dong Suk Han³ and Hyunwoong Park^{1,2,*}
¹School of Energy Engineering and ²School of Architectural, Kyungpook National University, Daegu, Korea
³Texas A&M University at Qatar, Doha, Qatar

1:55 – 2:20pm
IL **Boron-doped Diamond Powder-based Polymer Composites for Flexible Electrolysis Unit**
Tsuyoshi Ochiai^{1,2,3}, Shoko Tago², Mio Hayashi², Takeshi Kondo³, and Akira Fujishima^{2,3}
¹Kanagawa Institute of industrial Science and TEChnology (KISTEC), Japan
²Photocatalyst Group, KISTEC, Japan
³Tokyo University of Science, Japan

2:20 – 2:45pm
IL **The Role of Carbonate in Heterogeneous Electro-Catalytic Water Oxidation by Ni(II) Complexes**
Ariela Burg^{1*}, Yaniv Wolfer², Dror Shamir³, Haya Kornweitz⁴, Yael Albo⁵, Eric Maimon³ and Dan Meyerstein^{4,2*}
¹Shamoon College of Engineering, Beer-Sheva, Israel
²Ben-Gurion University of the Negev, Beer-Sheva, Israel
³Nuclear Research Centre Negev, Beer-Sheva, Israel
⁴Chemical Sciences Department, Ariel University, Ariel, Israel
⁵Chemical Engineering Department, Ariel University, Ariel, Israel

2:45 – 3:00pm
ST **Dehalogenation of Antibiotic Compounds Using a Bifunctional Cobalt-Phosphorous/Oxide Electrocatalyst**
Tian Liu¹, Jinming Luo², Xiaoyang Meng², John Crittenden², Liming Yang¹, Bin Liang³, Meijun Liu,¹ Chengbin Liu¹, Aijie

Wang³, Xia Liu⁴, Yong Pei⁴, Jili Yuan,¹ Huiling Liu¹ and Ya Ma¹

¹ Hunan University, Changsha, P. R. China

² Georgia Institute of Technology, Atlanta, Georgia, USA

³ Chinese Academy of Sciences, Beijing, P. R. China

⁴ Xiangtan University, Xiangtan, China

3:00 – 3:30pm Coffee Break

Session 4: Ultrasound/Cavitation

**3:30 – 3:55pm Ultrasound-Assisted Advanced Oxidation Processes for
IL the Destruction of Emerging Pollutants**

N. H. Ince

Bogazici University, Istanbul, Turkey

**3:55 – 4:10pm Kinetic, Product, and Computational Studies of the Ultrasonic
ST Induced Degradation of 4-Methylcyclohexanemethanol
 (MCHM)**

Danni Cui¹, Alexander M. Mebel¹, Luis E. Arroyo-Mora²,

Howard Holness¹, Kenneth G. Furton¹ and Kevin O'Shea¹

¹ Florida International University, Miami, Florida, USA

¹ West Virginia University, Morgantown, West Virginia, USA

**4:10 – 4:25pm Oxidation of Chloramphenicol in Water using
ST Hydrodynamic Cavitation**

Greg Loraine and Georges Chahine

Dynaflow Inc, Jessup, MD, USA

**4:25 – 4:40pm Fundamental Study of Ultrasound Induced Degradation
ST of a Popular Antihistamine, Diphenhydramine (DPH)**

Danni Cui¹, Alexander M. Mebel¹, Luis E. Arroyo-Mora²,

Cen Zhao¹, Anthony De Caprio¹ and Kevin O'Shea¹

¹ Florida International University, Miami, Florida, USA

² West Virginia University, Morgantown, West Virginia, USA

5:30 – 7:00pm Poster Session / Reception

Tuesday, November 14, 2017

Session 5: Photocatalytic/Catalytic Oxidation- 1

**8:30 – 8:55am Strategies to Activate Oxyanions for Oxidative Treatment
IL of Organic Pollutants**

Jaesang Lee , Korea University, Korea

- 8:55 – 9:20am**
IL **Dramatically Coupling O₃ into C₃N₄ Photocatalysis under Visible Light towards Superior Mineralization of Water Pollutants**
Jiandong Xiao, Yongbing Xie,* and Hongbin Cao
Chinese Academy of Sciences, Beijing, China
- 9:20 – 9:45am**
IL **Functionalized Graphene for Synergistic Catalytic Oxidation and Adsorption of Recalcitrant Pollutants in Water Decontamination**
Teik-Thye Lim, Xiao Chen, Wen-Da Oh and Zhong-ting Hu
Nanyang Technological University, Singapore
- 9:45 – 10:10am**
IL **Probing the Active Sites for Reduced Graphene Oxide for Efficient Catalytic Ozonation: A Combined Experimental and Theoretical Study**
Yuxian Wang^{1,2}, Hongbin Cao¹, Yongbing Xie^{1*} and Shaobin Wang³
¹China University of Petroleum, Beijing, China
²Institute of Process Engineering, Chinese Academy, Beijing, China
³Curtin University, Perth, Western Australia, Australia
- 10:10 – 10:40am** **Coffee Break**
- 10:40 – 11:05am**
IL **Advances on Carbon-based Materials for Water Treatment**
Adrián M.T. Silva
Universidade do Porto, Porto, Portugal
- 11:05 – 11:30am**
IL **Tailored Semiconductor Catalysts of Spinel Ferrite for Photocatalysis**
Shiyong Fan¹ and Xinyong Li^{*1,2}
¹Dalian University of Technology, Dalian, China
²Curtin University, Perth, Australia

Session 6: Plasma/Ozone

- 11:30 – 11:55am**
IL **Reactions in Non-Thermal Plasma, Transient Luminous Events, Destruction of CFCs and Atmospheric Chemistry**
Lev N. Krasnoperov
New Jersey Institute of Technology, Newark, NJ, U.S.A.
- 11:55am – 12:20pm**
IL **Measurement of Pressure Waves in Dielectric Barrier Discharge by Fibered Optical Wave Microphone**
Toshiyuki Nakamiya¹, Fumiaki Mitsugi², Yoichiro Iwasaki³, and Yoshito Sonoda¹

¹Cooperate Research Laboratory, Kumamoto University, Kumamoto, Japan

²Graduate School of Science and Technology, Kumamoto University,
Kumamoto, Japan

³Graduate School of Industrial Engineering, Tokai University, Kumamoto,
Japan

12:20 – 1:30pm

Lunch

1:30 – 1:55pm
IL

**Nanoparticles Preparation by Atmospheric Pressure
Gliding Arc Discharge and its Application**

**Shin-ichi Aougi¹, Tamiko Ohshima², Hiroharu Kawasaki² and
Fumiaki Mitsugi³**

¹Sojo University, Kumamoto, Japan

²Sasebo National College of Tech., Sasebo, Japan

³Kumamoto University, Kumamoto, Japan

1:55 – 2:20pm
IL

**Mobile Installations of Air, Water and Soil Treatment
with Ozone**

**Henryka Danuta Stryczewska¹, Kenji Ebihara² and Robert
Muszański³**

¹Lublin University of Technology, Poland

²Environment & Energy Laboratory, Fukuoka, Japan

³WOFIL Ozone Technology, Krynica Zdrój, Poland

2:20 – 2:45pm
IL

**Oxidation of Persistent Groundwater Contaminants with
Non-Thermal Plasma as Pretreatment for Effective
Bioremediation**

Robert J. Wandell, Yi Xiong, Youneng Tang and Bruce R. Locke
FAMU-FSU College of Engineering, Florida State University,
Tallahassee, Florida, USA

2:45 – 3:10pm
IL

**Atmospheric Pressure Plasma Applications for Selected
Heat-Sensitive Materials**

**Joanna Pawlat, Michał Kwiatkowski, Piotr Terebun and
Jarosław Diatczyk**

Lublin University of Technology, Lublin, Poland

3:10 – 3:40pm

Coffee Break

Session 7: Homogeneous AOPs

3:40 – 4:05pm
IL

**Mechanisms of Tungstate-Induced Oxidation and
Cleavage Pathways of Proteins**

Christian Schöneich

University of Kansas, Lawrence, KS, USA

- 4:05 – 4:30pm**
IL
- Removing Contaminants of Emerging Concern by UV/H₂O₂ in Water Reuse and Detoxification Applications**
Ying Huang¹, Yiqing Liu¹, Scott Coffin², Elvis Genbo Xu², Daniel Schlenk², Kristin H. Cochran³, Cassiana C. Montagner³, Susan D. Richardson³, and Dionysios D. Dionysiou^{1*}
¹University of Cincinnati, Cincinnati, Ohio, USA
²University of California, Riverside, California, USA
³University of South Carolina, Columbia, South Carolina, USA
- 4:30 – 4:55pm**
IL
- Concerted Redox Conversion of Chromate and Arsenite in the UV/Acetylacetone Process**
Shujuan Zhang, Tianyu Xie, Bingdang Wu and Zhihao Chen
Nanjing University, China
- 4:55 – 5:20pm**
IL
- Kinetic Isotope Fractionation Studies on Selectivity of Hydroxyl Radicals in Aqueous Solution – Indications for a Cage Effect**
Anett Georgi and Frank-Dieter Kopinke
Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany
- 5:20 – 5:45pm**
IL
- High Catalytic Efficiency of Some Selected MOFs with Specific Metallic Elements and Structure for Fenton-Like Reaction**
Xie Quan and Cong Gao
Dalian University of Technology, Dalian, China
- 5:45 – 6:00pm**
ST
- Ozone and H₂O₂ in Wastewater Treatment of a Bio-Refinery**
Cristian Carboni and Alex Bettinardi
De Nora S.p.a, Milan, Italy
- 6:00 – 6:15pm**
ST
- Correlation between Oxidative Degradation and Chemical Structure of Selected Compounds in Aqueous Systems**
Maik Weisse¹, Michael Stelter^{1,2} and Patrick Braeutigam¹
¹Friedrich Schiller University Jena, Jena, Germany
² Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Hermsdorf, Germany

Wednesday, November 15, 2017

Session 8: Gas Phase Treatment

- 8:30 – 8:55am**
IL
- Photocatalytic Treatment of Indoor Air Contaminated by Wood-Based Material Emissions**
Frédéric Thevenet, Pamela Harb and Nadine Locoge
IMT Lille Douai, Université de Lille, Douai, France

8:55 – 9:20am
IL

Characteristics of NO Oxidation by 172 nm VUV irradiation

Shinji Kambara* and Tomohito Wakazono

Gifu University, Gifu, Japan

9:20 – 9:45am
IL

Innovative Design Approach for Mitigating Landfill Gas: A Landfill Post-Closure Mixed-Use Development Case Study

Omer Uppal¹, Jeffrey Ludlow², Matt Ambrusch¹, Chris Glenn³, Nadira Najib¹, Stewart Abrams⁴, Greg Corcoran⁵ and Annie Lee⁶

¹Langan, Parsippany, New Jersey, USA

²Langan, San Francisco, California, USA

³Langan, Oakland, California, USA

⁴Langan, Lawrenceville, New Jersey, USA

⁵Geosyntec, San Diego, California, USA

⁶Geosyntec, Waterloo, Ontario, Canada

9:45 – 10:00am
ST

Distinct Characteristics of Room-temperature Catalysis: Active-site Exposure and Oxygen Radicals Activation

Hai Wei Li¹, Shun Cheng Lee^{1,*}, Yu Huang², Jun Ji Cao² and Wing Kei Ho³

¹The Hong Kong Polytechnic University, Hong Kong, China

²Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China

³The Hong Kong University of Education, Hong Kong, China

10:00 – 10:30am

Coffee Break

10:30 – 10:45am
ST

Ozonation of Aldehydes in Gas Phase

L. Vitola Pasetto^{1,2,*}, V. Simon², J. S. Pic³, R. Richard¹, F. Violleau⁴ and M. H. Manero¹

¹Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France

²Laboratoire de Chimie Agro-industrielle, Université de Toulouse, INRA, INPT, ENSIACET, Toulouse, France

³Laboratoire d'Ingénierie des Systèmes Biologiques et de Procédés, Université de Toulouse, CNRS, INRA, INSA, Toulouse, France

⁴Laboratoire de Chimie Agro-industrielle, Université de Toulouse, INRA, INPT, EI PURPAN, Toulouse, France

Session 9: Photocatalytic/Catalytic Oxidation - 2

10:45 – 11:10am
IL

Pilot-Scale Treatment of Printing and Dyeing Wastewater by Photocatalytic Ozonation Process

Yidong Hou

Fuzhou University, People's Republic of China

- 11:10 – 11:25am**
ST **Treatment of Household Grey Water with Photocatalytic Activated Ceramic Foams**
Erik Schulze¹, Burkhardt Faßauer¹, Marcus Weyd² and Jeffrey McCutcheon³
¹Fraunhofer IKTS, Dresden, Germany
²Fraunhofer IKTS, Hermsdorf, Germany
³Fraunhofer Center for Energy Innovation, University of Connecticut, Storrs CT, USA
- 11:25 – 11:40am**
ST **Evaluation of Catalysts Based on Titanium and Tin Supported on Graphene Oxide in Heterogeneous Photocatalytic Treatment of Wastewater**
Natali Lorena Mena¹ and Julián Urresta A²
Universidad del Valle, Cali-Colombia
- 11:40 – 11:55am**
ST **Semiconductor Bi₂S₃ and ZnS Nanocatalysts Supported on Cotton Fibers for Dyes Removal**
Inês V. Ferreira, O. C. Monteiro and Virgínia C. Ferreira
Universidade de Lisboa, Lisboa, Portugal
- 12:00 – 1:30pm** **Lunch**

Session 10: Remediation

- 1:30 – 1:55pm**
IL **Comparative Studies on the Removal of Trihalomethanes under Different Environmental Conditions in Biotrickling Filters**
Bineyam Mezgebe¹, George Sorial¹, David Wendell¹, Endalkachew Sahle-Demessie²
¹University of Cincinnati, Cincinnati, OH, USA
²U.S. Environmental Protection Agency, Cincinnati, OH, USA
- 1:55 – 2:10pm**
ST **Dechlorination of Lindane with Tea Extract in Aqueous Phase**
Chi-Wei Wang and Chenju Liang
National Chung Hsing University, Taichung City, Taiwan
- 2:10 – 2:25pm**
ST **An Integrated Multiphase Extraction, Soil Vapor Extraction, and Air Sparging Approach for Treatment of LNAPL Impacts: A New York State Brownfield Cleanup Program Site Case Study**
Omer J. Uppal¹, Christopher McMahon², Matthew Ambrusch³, Nadira Najib⁴, Steve Ciambuschini⁵, Imtiyaz Khan⁶, and Stewart H. Abrams⁷
¹Langan, ouppal@langan.com; ²Langan, cmcmahon@langan.com;

³Langan, mambrusch@langan.com; ⁴Langan, nnajib@langan.com;
⁵Langan, sciambroschini@langan.com; ⁶Langan, ikhan@langan.com
⁷Langan, sabrams@langan.com

2:25 – 2:40pm
ST

From Vapor Intrusion to Mitigation – A Status Review of the Current Practice

Omer Uppal¹, Matt Ambrusch¹ Nadira Najib¹, Angelo Falabella¹, Stewart Abrams² Steve Ciambroschini¹ and Brian Blum¹

¹Langan, 300 Kimball Drive, 4th Floor, Parsippany, NJ, USA

²Langan, 989 Lenox Drive, Suite 124, Lawrenceville, NJ, USA

Session 11: Photocatalytic / Catalytic Oxidation -3

2:40 – 2:55pm
ST

High Efficiency Photoreduction of Cr⁶⁺ Traces in Wastewater and Its Innovative Detection by Thermal Lens Microscopy (TLM)

E. Cedeño¹, L. A. Hernández-Carabal¹, A. Mantilla^{1,*}, S. Alvarado¹, H. Cabrera^{2,3}, A. M. Mansanares⁴, A. Calderón¹ and E. Marín¹

¹Instituto Politécnico Nacional, Ciudad de México, México

²International Centre for Theoretical Physics, Italy

³Instituto Venezolano de Investigaciones Científicas, Mérida, Venezuela

⁴University of Campinas-UNICAMP, Campinas, SP, Brazil

2:55– 3:15pm

Coffee Break

3:15 – 3:30pm
ST

Photocatalytic Degradation of Acetaminophen in Water Using TiO₂ Nanoparticles Supported on Glass Beads

Carmen Santos¹, Juan Rodríguez² and Silvia Ponce¹

¹Facultad de Ingeniería Industrial, Universidad de Lima, Lima, Peru

²Facultad de Ciencias, Universidad Nacional de Ingeniería, Lima, Peru

3:30 – 3:45pm
ST

Sonophotocatalytic Generation of Hydroxyl Radicals (*OH) and Degradation of Bisphenol a by High-Power-UV-Leds and TiO₂-Nanotubes

Dirk Paustian¹, Erik Schulze², Michael Stelter^{1,2} and Patrick Braeutigam¹

¹FSU Jena, Jena, Germany

²Fraunhofer Institute for Ceramic Technologies and Systems, Hermsdorf, Germany

3:45 – 4:00pm
ST

Photocatalytic Degradation of Organic Dyes by Selective Irradiation in Heterogeneous Aqueous Suspension Using Semiconductor on Rushing Rings: Kinetics Parameters and Intermediate Products Detected by Chromatographic

Techniques

E. Pino¹ and P Barriás

¹Universidad de Santiago de Chile, Santiago, Chile

**4:00 – 4:15pm
ST**

**Emergent Pollutants Photocatalytic Degradation Using
Novel Ruthenium Doped Titanate Elongated
Nanostructures**

B. Barrocas and O.C. Monteiro

Universidade de Lisboa, Campo Grande, Lisboa, Portugal

**4:15 – 4:30pm
ST**

**Generation of Reactive Oxygen Species by the Engineered
Nanoparticles of Humic Acid Grafted Iron Oxide for the
Potential Remediation of Toxic Arsenic from Water**

Mamun Rashid and Kevin E. O'Shea

Florida International University, Miami, Florida, USA

4:30pm

Adjourn

Posters

**Facile Synthesis of Nitrogen- and Boron- Codoped TiO₂ with Enhanced
Photocatalytic Properties for Wastewater Treatment/Reuse applications**

**Wael H. M. Abdelraheem^{1,2}, Meghshyam K. Patil^{1,3}, Ying Huang¹, Mallikarjuna N.
Nadagouda⁴ and Dionysios D. Dionysiou^{1*}**

¹University of Cincinnati, Cincinnati, Ohio, USA

²Sohag University, Sohag, Egypt

³Dr. Babasaheb Ambedkar Marathwada University, Sub-Campus Osmanabad, India

⁴Wright State University, Dayton, OH, United States

Mechanistic Insight into Solar Photocatalytic Destruction of E.Coli

N. Cemre Birben, Ceyda S. Uyguner-Demirel, Ayse Tomruk, and Miray Bekbolet
Bogazici University, Istanbul, Turkey

**The Formation of Ti–H Species at Interface Is Lethal to the Efficiency of
TiO₂ Based Dye-Sensitized Devices**

Wanhong Ma,* Yan Yan, Chuncheng Chen and Jincai Zhao

Institute of Chemistry, Chinese Academy of Sciences, Beijing, P. R. China

**A Model of Clearness Index Using Atmospheric Parameter for Solar Energy
Applications in Offa Environment, Nigeria**

Oyeleke Olaosebikan and David Henry Olatunji

Federal Polytechnic, Offa. Kwara State, Nigeria

Comparative Study of the Output of Amorphous Silicon Photovoltaic Solar Cells when Receiving Direct and Diffused Radiations

Oyeleke Olaosebikan and David Henry Olatunji

Federal Polytechnic, Offa, Kwara State, Nigeria

UV and Visible Light Photocatalytic Production of Hydroxyl Radical by Reduced Forms of Titanium Dioxide

A. M. Abdullah¹, Dr. Miguel Ángel Gracia-Pinilla² and Kevin O'Shea¹

¹Florida International University, Miami, Florida, USA

²Autonomous University of Nuevo Leon, San Nicolas de los Garza, N.L. Mexico

Synthesis and Characterization of Ferrite Cobalt Nanoparticles for the Photocatalytic Arsenic Decontamination and E-Coli Disinfection of Water

Elmer Gastelo, Juan Espinoza, Edward Carpio and Juan Rodríguez

Universidad Nacional de Ingeniería, Lima, Perú

Synthesis and Characterization of ZnO Nanorod Films for the Photocatalytic E-coli Disinfection and Methylene Blue Water Decontamination

Luis Sanchez¹, Violeta García², Clemente Luyo¹, Pilar García¹ and Juan Rodríguez¹

¹Universidad Nacional de Ingeniería, Lima, Perú

²Universidad Nacional de San Agustín de Arequipa, Arequipa, Perú

Application of TiO₂ Photocatalysis vs AOTs in Natural Waters: Bacterial Inactivation

Ayse Tomruk, N. Cemre Birben, Ceyda S. Uyguner-Demirel and Miray Bekbolet

Bogazici University, Istanbul, Turkey

Effect of Ozone, Chlorine and Nano-TiO₂ Fiber Mediated Photocatalytic Oxidation on Antibiotic Resistant Plasmid DNA

Nalan Bilgin Öncü and Işıl Akmeahmet Balcıoğlu

Boğaziçi University, Istanbul, Turkey

Application of AOTs and Photocatalysis in Natural Waters: Natural Organic Matter Degradation

Ceyda S. Uyguner-Demirel, N. Cemre Birben, and Miray Bekbolet

Bogazici University, Istanbul, Turkey

Reaction Mechanism of NO Removal by 172nm Irradiation

Satsuki Ebata and Shinji Kambara*

Gifu University, Gifu, Japan

Hybrid Process Combining Electrocoagulation and Electro-Oxidation Processes for the Treatment of Textile Wastewater

Edison GilPavas^{*1,2}, Paula Arbeláez¹, José Medina¹, Carlos M. Gómez¹, Izabela Dobrosz-Gómez^{1,2} and Miguel-Ángel Gómez-García^{1,2}

¹GIPAB: Universidad EAFIT, Medellín-Colombia

²PRISMA: Universidad Nacional de Colombia, Manizales, Caldas, Colombia

Kinetic and Product Studies on the Ultrasonically Mediated Degradation of the Second Generation Antihistamine, Cetirizine

Danni Cui, Anamary Tarifa, Anthony De Caprio and Kevin O'Shea

Florida International University, Miami, Florida, USA

Fundamental Study of Ultrasound Induced Degradation of a Popular Antihistamine, Diphenhydramine (DPH)

Danni Cui¹, Alexander M. Mebel¹, Luis E. Arroyo-Mora², Cen Zhao¹, Anthony De Caprio¹, and Kevin O'Shea¹

¹Florida International University, Miami, Florida, USA

²West Virginia University, Morgantown, West Virginia, USA

Singlet Oxygenation of Domoic Acid as a Potential Remediation Strategy

Marcela Jaramillo and Kevin O'Shea

Florida International University, Miami, Florida USA

Two- or Four-Electron Oxygen Reduction Using Semiconductor Oxide Cathode

Tomoyuki Tanaka¹, Sunao Kamimura^{1,2} and Teruhisa Ohno^{1,3}

¹ Kyushu Institute of Technology, Tobata, Kitakyushu, Japan

² PRESTO, Japan Science and Technology Agency, Saitama, Japan

³ ACT-C, Japan Science and Technology Agency, Saitama, Japan

Fabrication of Cu₂MSnS₄ (M = Zn, Fe) Electrode by a Spray Pyrolysis Deposition Method and Evaluation of Photoelectrochemical Property

Asahi Baba¹, Sunao Kamimura^{1,2} and Teruhisa Ohno^{1,3}

¹Kyushu Institute of Technology, Tobata, Kitakyushu, Japan

²PRESTO, Japan Science and Technology Agency, Kawaguti-shi, Saitama, Japan

³ACT-C, Japan Science and Technology Agency, Kawaguti-shi, Saitama, Japan

Photoelectrochemical Reduction of Nitrobenzene to Aniline by Using Cu₂ZnSnS₄ Photocathode and a Significant Effect of Surface Modification by N-Type Buffer Layer Deposition

Yuki Kubo¹, Sunao Kamimura^{1,2*}, and Teruhisa Ohno^{1,3}

¹ Kyushu Institute of Technology, Tobata, Kitakyushu, Japan

² PRESTO, Japan Science and Technology Agency, Saitama, Japan

³ ACT-C, Japan Science and Technology Agency, Saitama, Japan