Outline programme
Disinfection of Water, Wastewater and Biosolids Conference
25-29 November 2012

Sunday, 25th November
08:20  Transport to Workshop venue (Academia Mexicana de Ciencias) from Radisson Hotel
09:00 - 16:00  Workshop “Basics of UV Disinfection for Water, Wastewater and Reuse Applications” (organized by IUVA)
18:00 - 20:00  Welcome reception

Monday, 26th November
07:45  Transport to conference venue from Radisson Hotel and Metro Copilco
08:30 - 17:00  Registration
09:30 - 10:30  Opening Ceremony
10:30 - 11:30  Keynote speech
11:30 - 11:45  Coffee break
11:45 - 12:45  Session 1A. Basic and applied research in disinfection and inactivation technologies  Auditorium A
11:45 - 12:45  Session 1B. Basic and applied research in emerging disinfectants  Auditorium B
12:45 - 14:00  Lunch
14:00 - 14:30  Poster presentations and Exhibitions
14:30 - 15:30  Session 2A. Basic and applied research in disinfection and inactivation technologies  Auditorium A
14:30 - 15:30  Session 2B. Public health risks and issues related to disinfection and inactivation processes and Legislation  Auditorium B
15.50 - 16.10  Coffee break
16.40 - 17:40  Session 3A. Basic research in UV disinfection  Auditorium A
Session 3B. Advanced oxidation processes (AOP)  Auditorium B
18.00  Transport to Radisson Hotel and Metro Copilco

Tuesday 27th November
08:30  Transport to conference venue from Radisson Hotel and Metro Copilco
08:30 - 09:30  Keynote speech
10:30 - 10:45  Coffee break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 4A. Basic and applied research in disinfection and inactivation technologies</th>
<th>Auditorium A</th>
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<tr>
<td>10:45 - 13:00</td>
<td>Session 4B. Case studies of disinfection and inactivation processes: opportunities, problems and solutions</td>
<td>Auditorium B</td>
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<td>13:00 - 14:00</td>
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<td>Session 5A. Disinfection by-products and precursors</td>
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<td>Session 5B. Technical-commercial presentation</td>
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<td>15:50 - 16:10</td>
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<td>16:15 - 17:15</td>
<td>Keynote speech</td>
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<td>17:15 - 18:45</td>
<td>Session 6A. Sludge Treatment</td>
<td>Auditorium A</td>
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<td>19:00</td>
<td>Transport to Gala Dinner</td>
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<td>Gala Dinner</td>
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<td>23:00</td>
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**Wednesday 28th November**

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<td>08:30</td>
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<td>10:45 - 13:30</td>
<td>Session 7A. Basic and applied research in disinfection and inactivation technologies</td>
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<td>10:45 - 11:45</td>
<td>Session 7B1. Advanced oxidation processes (AOP)</td>
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**Thursday 29th November**

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Sunday, 25th November

08:20  Transport to Workshop venue (Academia Mexicana de Ciencias) from Radisson Hotel

09:00 - 16:00  Workshop. "Basics of UV Disinfection for Water, Wastewater and Reuse Applications"
Organized by IUVA (International Ultraviolet Association)
For more information see: http://iuva.org/event/basics-uv-disinfection-w
(Contact: Deborah Martinez, Executive Director, Deb.martinez@iuva.org, 202-422-2445)

18:00 - 20:00  Welcome reception

Monday, 26th November

07:45  Transport to conference venue from Radisson Hotel and Metro Copilco

08:30 - 17:00  Registration and Coffee Break

09:30 - 10:30  Opening Ceremony

10:30 - 11:30  Keynote speech
Progress and pitfalls in water disinfection
Prof. Dr. Regina Sommer, Medical University Vienna

11:30 - 11:45  Coffee break

Auditorium A  Session 1A. Basic and applied research in disinfection and inactivation technologies
Chairman: Haim Chikurel

11:45 - 12:15  Comparative study of four wastewater disinfection techniques for water reuse applications with special emphasis on microbial stability of the effluents
A. Bischoff, P. Cornel and M. Wagner
Germany

12:15 - 12:45  Municipal wastewater disinfection by coupling coagulation-flocculation and ozonation
E. Zamudio, I. Chairez and L. G. Torres.
Mexico

Auditorium B  Session 1B. Basic and applied research in emerging disinfectants
Chairman: Robin Gramstad
<table>
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| 11:45 - 12:15| Full-Scale evaluation of UV and peracetic acid as alternative disinfecting agents to chlorine in WWTPs  
A. Chiavola, R. Gavasci, P. Sirini, M. Spizzirri and A. Zanobini  
Italy                                                                 |
| 12:15 - 12:45| Peracetic acid for secondary efluent disinfection: a Global Performance Assessment  
A. Turolla, M. Antonelli, V. Mezzanotte and C. Nurizzo  
Italy                                                                 |
| 12:45 - 14:00| Lunch                                                                                       |
| 14:00 - 14:30| Poster presentations and Exhibitions                                                        |
|              | **Auditorium A**                                                                            |
|              | **Session 2A. Basic and applied research in disinfection and inactivation technologies**    |
|              | *Chairman: Kara Nelson*                                                                     |
| 14:30 - 14:50| Performic Acid in wastewater disinfection treatments: Full scale comparisons and evaluations  
P. Ragazzo, N. Chiucchini, V. Piccolo, M. Ostoich  
Italy                                                                |
| 14:50 - 15:10| Disinfection of tertiary wastewater effluent prior to river discharge dosing peracetic acid. Treatment efficiency and results on by-products formed in full scale tests  
Per Overgaard Pedersen and Erling Brodersen  
Denmark                                                             |
| 15:10 - 15:30| Resistance of a wide spectrum of microorganisms to diverse disinfection systems to produce safe reuse water  
Maya C, Chávez A, Lucario E, Hernández E. and Jiménez B.  
Mexico                                                            |
| 15:30 - 15:50| Multiple-barrier household water disinfection system evaluation  
A C Espinosa-García, R Solano-Ortiz, M A Tapia-Palacios, N Vázquez-Salvador, S Espinosa-García, R E Sarmiento-Silva, Carlos Diaz-Avalos and M Mazari-Hiriart  
Mexico                                                             |
|              | **Auditorium B**                                                                            |
|              | **Session 2B. Public health risks and issues related to disinfection and inactivation processes and Legislation** |
|              | *Chairman: Inés Navarro*                                                                    |
| 14:30 - 14:50| Implementation proposal of safety plan for reuse of treated wastewater in green areas, Case Study: University City  
Orta de Velásquez M. T., Yañez-Noguez I., González Villarreal F.J. and García Santiago E.I  
Mexico                                                            |
| 14:50 - 15:10| Risk analysis and disinfection plan proposal related with microbial water contamination in the Magdalena River, Mexico City  
Pérez-Ortiz, G., A. Espinosa-García, M. J. Aguilar-Medina, Y. López Vidal and M. Mazari-Hiriart  
Mexico                                                            |
15:10 - 15:30  Regulations for Equipment and Methods of Disinfection for Effluent Water from Fish Slaughter and Processing Plants and Chemical Disinfectants for Technical Use in Aquaculture Systems
Semir Loncarevic
Norway

15:30 - 15:50  Alternative water quality indicators applied in Mexico City
Fonseca-Salazar M.A, N. Vázquez-Salvador, A.C. Espinosa-García and F. J. González-Villarreal
Mexico

15:50 - 16:10  Coffee break

Auditorium A  Session 3A. Basic research in UV disinfection

Chairman: Teresa Orta

16:10 - 16:40  Evaluation of UV reactor performance with a new “detector-model” combination method
Mengkai Li, Zhimin Qiang and James R. Bolton
China

16:40 - 17:10  Free Surface Effects and UV Disinfection in Open Channel UV Reactors
B. Peng, D. Santoro, M. Sasges, B. Petri, and D. Olson
Canada

17:10 - 17:40  Enhancing Ultraviolet Disinfection by Provision of Air Bubbles in Nano-Micron Size
Y. Chen, H. Liao, J.Y. Fang, C. Shang and Y. Xu
Hong Kong

Auditorium B  Session 3B. Advanced oxidation processes (AOP)

Chairman: Chao Chen

16:10 - 16:40  A New Production process of Fenton type nanocatalysts (FeOx/C) synthesized for the inactivation of Ascaris eggs in water
Ariadna. A. Morales, Rafael Schouwenaars, Heriberto Pfeiffer and Rosa María Ramírez Zamora
Mexico

16:40 - 17:10  Evaluation tests of a heterogeneous Fenton process applying iron swarf as catalyst for disinfection purposes under continuous flow operation
Deisy Hernández Hernández, Abelardo González Aragón, Alethia Vázquez Morillas, Margarita Beltrán Villavicencio and Raúl Hachec Luna
Mexico

17:10 - 17:40  Inactivation of bacteria and helminth in wastewater treatment plant effluent using oxidative processes
Regiane Aparecida Guadagnini, Luciana Urbano dos Santos, Regina Maura Bueno Franco and José Roberto Guimarães
Brazil

18:00  Transport to Radisson Hotel and Metro Copilco
Tuesday 27th November

08:30  Transport to conference venue from Radisson Hotel and Metro Copilco

09:30 - 10:30  Keynote speech
The influence of particle removal on chlorine, UV and Ozone disinfection of secondary treated effluents
Dr. Haim Cikurel
Chemical and Environmental Engineering Services

10:30 - 10:45  Coffee break

Auditorium A  Session 4A. Basic and applied research in disinfection and inactivation technologies

Chairman: Kara Nelson

10:45 - 11:15  Development, challenges and validation of a high-efficiency UV system for water reuse and low effluent quality wastewater
Keith Bircher, Bill Sotirakos and Andrew Salveson
Canada

11:15 - 12:00  UV disinfection of drinking water: Quality management once and now
Regina Sommer, Alexander Cabaj, Georg Hirschmann and Thomas Haider
Austria

12:00 - 12:30  Design considerations to minimize the electrical energy of a UV Disinfection System
Adam Festger, Scott Bindner and Ji An
Canada

12.30 - 13.00  Advances in UV dose monitoring for drinking water and wastewater applications
Harold Wright, Mark Heath, Jeff Bandy and Keith Bircher
USA

Auditorium B  Session 4B. Case studies of disinfection and inactivation processes: opportunities, problems and solutions

Chairman: Astrid Bishoff

10:45 - 11:20  Safeguarding public health in Mexico using UV disinfection for Lake Chapala
Wayne Lem and Jennifer Muller
Canada

11:20 - 11:50  Case study of implementation of sequential disinfection in the inactivation of microorganisms in a real scale WWTP
R.C. Medeiros, L. Sartori and L.A. Daniel
Brazil

11:50 - 12:25  Evaluation of the field efficacy of a household UV water disinfection system: The Mesita Azul randomized control stepped wedge trial in Baja California Sur, Mexico
Fermin Reygadas, Joshua S Gruber, Isha Ray, John M Colford Jr. and Kara Nelson
USA
Disinfection in car wash wastewater reclamation units in South Brazil
Rafael Newton Zaneti, Ramiro Etchepare, André Azevedo, Marcelo Bauer and Jorge Rubio
Brazil

Lunch

Poster presentations and Exhibitions

Session 5A. Disinfection by-products and precursors
Chairman: Regina Sommer

Formation and removal of disinfection by-products in swimming pool water treatment: first experience using a pilot scale swimming pool model
S. Uhlig, B. Skibinski and W. Uhl
Germany

Variable reactivity modeling for chlorine decay and THM formation in drinking water distribution system
Pei Hua, Klaus Ripl, Ekaterina Vasyukova and Wolfgang Uhl
Germany

Degradation of Nitrogenous Disinfection By-products by Vacuum-Ultraviolet Photolysis
Jing-Yun Fang, Tat-Ming Sze and Chii Shang
China - Hong Kong

Efficiency of O3-BAC Process for N-nitrosamines Precursor removal in pilot-scale water treatment Plant
Xiaobin Liao, Jun Wang, Chengkun Wang, Xiaoqian Zhang and Chao Chen
China

Session 5B. Technical-commercial presentation
Chairman: Jorge Rubio

DesinFix® - Chlorine-free disinfection for water reuse applications
Sweden

UV – Properties of disinfection and dechlorination
Alberto Helguera and Wesley Morin
Mexico

Membrane Bioreactors (MBR) – a key technology to meet the future demand for wastewater reuse
S. Meuler, T. Hackner, M. von Igel and A. Leitner
Germany

The UV disinfection for wastewater and drinking water. Implementation experience in Mexico
Ing. Lucina Equihua
Mexico

Coffee break
16:15 - 17:15  Keynote speech  
Strategies and Challenges of Water Disinfection Supply System  
in the Mexico Valley, Estrategias y Desafíos de la Desinfección del  
Agua en el Sistema de Abastecimiento del Valle de México  
Dr. Felipe I. Arreguin Cortés, CONAGUA

Auditorium A  Session 6A.  Sludge Treatment

Chairman: Haim Chikurel

17:15 - 17:45  Sewage treatment plant effluent for agricultural use  
K. Roest, H. Huiting and J.A.M.H. Hofman  
Netherlands

17:45 - 18:15  Fecal coliforms and Salmonella spp reactivation/re-growth in samples  
of sludge pre-treated by different heating and cooling conditions  
Daniel de los Cobos Vasconcelos, Sergio Mauricio Magos Navarro,  
Margarita Elizabeth Cisneros Ortiz and Adalberto Noyola  
Mexico

18:15 - 18:45  Disinfection of latrine waste with ammonia  
T. Ogunyoku and K.L. Nelson  
USA

19:00  Transport to Gala Dinner

20:00 - 23:00  Gala Dinner

23:00 - 23:30  Transport to Radisson Hotel and Metro Copilco

Wednesday 28th November

08:30  Transport to conference venue from Radisson Hotel and Metro Copilco

09:30 - 10:30  Keynote speeches  
Innovative technologies enable wastewater treatment plants  
Mr. David Tomowich  
Trojan Technologies

10:30 - 10:45  Coffee break

Auditorium A  Session 7A.  Basic and applied research in disinfection  
and inactivation technologies

Chairman: Marisa Mazari

10:45 - 11:15  Effects of different weather conditions & parameters on the efficiency of solar  
based disinfection of Pseudomonas aeruginosa in rooftop harvested rainwater  
M. Nawaz, M. T. Amin, M. Y. Han, A. A. Alazba and U. Manzoor  
Saudi Arabia

11:15 - 11:45  Progress on modeling sunlight disinfection of viruses  
M. Nguyen, A. Silverman, K.L. Nelson  
USA
11:45 - 12:10  Quantification of Helicobacter pylori by quantitative PCR (qPCR) in water disinfected with ozone
Casasola-Rodríguez B., Orta de Velásquez M.T., Luqueño Martínez V.G. and Monje-Ramírez I.
Mexico

12:10 - 12:40  Retention capacity of ceramic membranes on water containing various pathogen bacteria and different levels of turbidity
K. Matthies, K. Brändle and U. Obst
Germany

12:40 - 13:10  Optimization of the Ozone dosage at the drinking water treatment plant of Kluizen
Jan Cromphout, Walter Neirynck, Stefanie Goethals and Liesbeth Verdiickt
Belgium

13:10 - 13:30  Case study: Methodology to design the ozone disinfection process for water supply system of University City - UNAM
Monje-Ramírez I., Orta de Velásquez M.T., Olivares-Watson G., Nava-Shimada R, Yañez-Noguez I. and González Villarreal F.J
Mexico

Auditorium B  Session 7B1. Advanced oxidation processes (AOP)
Chairman: Rosa María Ramírez

10:45 - 11:15  Modeling the enhanced solar photocatalytic disinfection of Escherichia coli using Nitrogen-doped TiO2
Mexico

11:15 - 11:45  Comparing electrochemical disinfection with chlorination for inactivation of bacterial spores in drinking water
L. Mezule, M. Reimanis, V. Krumplevska, J. Ozolins and T. Juhna
Latvia

Auditorium B  Session 7B2. Applied research in disinfection and inactivation technologies
Chairman: Regina Sommer

11:45 - 12:15  Last updates regarding our novel approaches to the treatment and disinfection of wastewaters from cholera treatment centres
Emanuele Sozzi, Jean-Francois Fesselet and Huw Taylor
UK

12:15 - 12:45  Fresh water preservation by safe and sustainable use of seawater or brackish water as secondary quality water in coastal urban areas
K. Roest, Tessa P.H. van den Brand, Damir Brdjanovic, Guang H. Chen and Mark C.M. van Loosdrecht
Netherlands

12:45 - 13:15  Collection system and molecular detection of Rotavirus in water samples
José Alfredo Soto-Alonso, Francisco Javier Zavala-Diaz de la Serna, Gilberto Erosa-de la Vega, Guadalupe Virginia Nevarez-Moorillon and Rocío Infante-Ramírez.
Mexico
Auditorium A

13:30 - 14:30  Closing Ceremony
14:30 - 15:30  Lunch
16:00  Transport to Radisson Hotel and Metro Copilco

Thursday 29th November

Visits pick-up and drop-off from Radisson Hotel

06:30 - 17:00  Technical tour - Tula Valley (or Mezquital Valley)  
Including the nearly completed Atotonilco wastewater treatment plant the Endho dam and the Tula river  
Bus 1

06:30 - 17:00  Technical tour - Cutzamala System  
Including Los Berros wastewater treatment plant and the Bravo Valley dam  
Bus 2
Poster presentations

Disinfection of primary municipal wastewater effluents using continuous UV and ozone treatment
Yaneth Bustos, Mabel Vaca, Raymundo López, Erick Bandala, Luis Torres and Neftalí Rojas-Valencia (Mexico)
Bustos P1. Mexico

DesinFix® – Efficient disinfection for water reuse
R. Gramstad, H. Heinonen-Tanski and C. Hohenthal (Sweden)
Gramstad P2. Sweden

Compare the efficacy of five methods to disinfect different types of organisms in two different qualities of treated wastewater
A. Chávez, R. Gramstad, C. Maya, S. Lucario and B. Jiménez (Mexico).
Chávez P3. Mexico

Experiences in the use of bacteria, protozoa, and viruses as indicators of microbiological water quality
Espinosa P4. Mexico

Safe and sustainable water extraction from sewage
Roest P5. Netherlands

Verification of synergism in Chlorine-Ultraviolet radiation wastewater sequential disinfection using Escherichia coli and coliphages as indicator microorganisms.
N. Fischer, L. A. Daniel (Brazil)
Fischer P6. Brazil

Disinfection of an advanced primary effluent using peracetic acid and ultraviolet radiation for its reuse in public services
Flores Rodríguez; Julio; Martínez Gutiérrez Ma.Dolores; Vaca Mier Mabel; Rojas-Valencia Ma. Neftalí and López Callejas Raymundo (Mexico)
Flores P7. Mexico

Removal of pathogenic microorganisms in a low-cost system (biofilter-floating wetland) used for treatment of domestic wastewater
Oskar A. Palacios L., Guadalupe V. Nevarez-Moorillón, Marco A. Garzón Z., Paul Kay, Arodí Bernal-Martínez, Sergio A. Silva M. and Germán Cuevas-Rodríguez (Mexico)
Palacios P8. Mexico

Dry weather Flow Interception systems and centralised Sewage treatment in fourteen municipalities in Manila
Juan Zorrilla and Kar Weng Ng. (Australia)
Zorrilla P9. Australia
Pharmaceutical wastewater treatment with fungi technology
M. Bernats and S. Larsson (Latvia)
Bernats P10. Latvia

Wastewater desinfection by electrolyses with conductive-diamond electrochemical – oxidation.
Cano P11. Mexico

Microbiological indicators of contamination in sediments in the laguna de bustillos, cuauhtemoc, Chihuahua, Mexico.
Enriquez P12. Mexico

Water quality in the intermittent, piped water supply of Hubli-Dharwad, India
E. Kumpel, K.L. Nelson (USA)
Kumpel P13. USA

Microbiological Evaluation of Recycled Wastewater Used for Irrigation of Green Areas in Chihuahua, Mexico
O. A. Palacios-López, M. L. Ballinas-Casarrubias, M. S. Espino-Valdés and G. V. Nevarez-Moorillón (Mexico)
Palacios P14. Mexico

Critical success factors for the industrial reuse of effluent from process water treatment plants and municipal sewage treatment plants
Roest P15. Netherlands

Implementing UV for reuse on East Coast. Lessons Learned: Wastewater UV Operations
Jorge San Miguel and Wes Morin (Mexico)
San Miguel P16. Mexico

Disinfection of municipal wastewaters by coagulation-flocculation using natural gum and lime
E. Zamudio, N. Rojas and L.G. Torres (Mexico)
Zamudio P17. Mexico

Behavior of disinfected secondary effluent on green area irrigation
M. S. Espino-Valdés, A. Briones-Saucedo, M. Royo-Ochoa and A. Pinales-Munguía. (Mexico)
Espino P18. Mexico

Energy production from wastewater – Dynamic filtration of activated sludge
Roest P19. Netherlands