



Specialist  
Conferences

6th IWA Specialist Conference  
on Wastewater Reclamation  
and Reuse for Sustainability

# Guiding the growth of water reuse

Preliminary programme

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SPECIALIST CONFERENCES



October 9-12, 2007  
Flanders Congress and Concert Centre  
Antwerp, Belgium

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## PROGRAMME OVERVIEW

**Monday** 17:00 - 20:00 Icebreaker, FCCC

### DAY 1 - OCTOBER 9TH

#### OPENING CEREMONY

|               |   |  |  |   |
|---------------|---|--|--|---|
| 09:00         | His Royal Highness Prince Laurent of Belgium, chairman of the IRGT - KINT |  |  |   |
| 09:10         | Conference Chairman Prof. B. Van De Steene (Belgium)                      |  |  |   |
| 09:20         | IWA Water Reuse Specialist Group Chairman Prof. I. S. Kim (South Korea)   |  |  |   |
| 09:30         | EUREAU-board president D. Villesot (France)                               |  |  |   |
| 09:40         | Minister President of the Flemish Region K. Peeters (Belgium)             |  |  |   |
| 09:50 - 10:30 | Keynote plenary lecture by Prof. T. Asano (USA)                           |  |  |   |
| 11:00 - 12:30 | Emerging pollutants<br><i>Chair: T. Melin (Germany)</i>                   | Policy Framework<br><i>Chair: A. Angelakis (Greece)</i>          | Urban applications<br><i>Chair: L. Sala (Spain)</i>            | Industrial applications<br><i>Chair: T. Asano (USA)</i>   |
| 14:00 - 16:00 | Health Risks<br><i>Chair: I. Hespanhol (Brazil)</i>                       | Ownership & financing<br><i>Chair: J. Van Steen (Belgium)</i>    | Agricultural applications<br><i>Chair: B. Jiménez (Mexico)</i> | Workshop 1<br>EU – MED initiative<br><i>Chairs: A. Angelakis (Greece) &amp; B. Durham (UK)</i>      |
| 16:00 - 16:30 | Poster presentation session 1: Policy                                     |  |  |   |
| 16:30 - 18:00 | Membranes<br><i>Chair: M. Messalem (Israel)</i>                           | Integrated water management<br><i>Chair: C. Thoeve (Belgium)</i> | Agronomic value<br><i>Chair: B. Ceballos (Brazil)</i>          | Workshop 2<br>Emerging pollutants<br><i>Chairs: A. Joss (Switzerland) &amp; T. Ternes (Germany)</i> |
| 19:00         | Reception, Town Hall  |  |  |   |

### DAY 2 - OCTOBER 10TH

|               |   |  |  |  |
|---------------|---|--|--|--|
| 09:00 - 11:00 | MBR<br><i>Chair: I.S. Kim (South Korea)</i>                     | Revised WHO guidelines<br><i>Chair: H. Shuval (Israel)</i>       | Managed aquifer recharge<br><i>Chair: T. Wintgens (Germany)</i>      | Industrial recycling: food industry<br><i>Chair: W. Verstraete (Belgium)</i>                                   |
| 11:00 - 11:30 | Poster presentation session 2: Science                          |  |  |  |
| 11:30 - 13:00 | Pond systems<br><i>Chair: D. Mara (UK)</i>                      | Decision support systems<br><i>Chair: L. Benedetti (Belgium)</i> | Water quality analysis<br><i>Chair: M. Jekel (Germany)</i>           | Industrial recycling: ultrapure water<br><i>Chair: P. Cornel (Germany)</i>                                     |
| 14:30 - 16:00 | Micro - & sand filtration<br><i>Chair: V. Lazarova (France)</i> | Public acceptance<br><i>Chair: P. Jeffrey (UK)</i>               | Activated Carbon<br><i>Chair: J. van der Graaf (the Netherlands)</i> | Workshop 3<br>Managed groundwater recharge<br><i>Chairs: T. Wintgens (Germany) &amp; P. Dillon (Australia)</i> |
| 16:00 - 16:30 | Poster presentation session 3: Practice and industry            |  |  |  |
| 16:30 - 18:15 | UF/NF/RO<br><i>Chair: G. Oron (Israel)</i>                      | Greywater recycling<br><i>Chair: E. Friedler (Israel)</i>        | Industrial cooling water applications<br><i>Chair: K. Wood (USA)</i> | Workshop 4<br>Revised WHO guidelines<br><i>Chair: R. Bos (Switzerland)</i>                                     |
| 20:00         | Gala Dinner, Grand Café Horta                                   |  |  |  |

### DAY 3 - OCTOBER 11TH - PAGE 9

|               |   |  |   |   |
|---------------|---|--|---|---|
| 09:00 - 10:30 | UV disinfection<br><i>Chair: A. Ried (Germany)</i>        | Regional perspectives<br><i>Chair: M. Bazza (Egypt)</i>    | Risk Management<br><i>Chair: J.M. Anderson (Australia)</i>    | Industrial Applications II<br><i>Chair: B. Meesschaert (Belgium)</i>  |
| 11:00 - 12:40 | Ozone treatment<br><i>Chair: G. Amy (the Netherlands)</i> | Constructed wetlands<br><i>Chair: F. Brissaud (France)</i> | Agricultural irrigation<br><i>Chair: R. Mujeriego (Spain)</i> | Industrial recycling: textile<br><i>Chair: C. Lubello (Italy)</i>     |
| 14:00 - 15:30 | Advanced Oxidation<br><i>Chair: M. Weemaes (Belgium)</i>  | Indirect Potable Reuse<br><i>Chair: W. Miller (USA)</i>    | Rainwater harvesting<br><i>Chair: P. Dillon (Australia)</i>   | Workshop 5<br>Industrial water recycling<br><i>Chair: H. De Wever</i> |

#### CLOSING CEREMONY

|       |  |
|-------|--|
| 16:00 | Chairman of the Flemish Integrated Water Management Commission F. Van Sevenscoten  |
| 16:15 | Distribution of awards   |
| 16:25 | Introduction to Technical visits by CEO J. Verbauwhede (IWVA)<br>Closing words by Conference Chairman Prof. B. Van De Steene (Aquafin) |

### DAY 4 – OCTOBER 12TH - PAGE 12

|               |   |
|---------------|---|
| 09:00 - 16:00 | <b>TECHNICAL VISITS</b>                         |
| 16:35         | Royal Ballet of Flanders, followed by reception |

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**TUESDAY OCTOBER 9TH 2007**

|              |  |  |
|--------------|--|--|
| <b>08:00</b> | Coffee and registration  |  |
| <b>09:00</b> | <b>OPENING CEREMONY - MARMEREN ZAAL</b><br>His Royal Highness Prince Laurent of Belgium, Chairman of the IRGT - KINT   |  |
| <b>09:10</b> | Conference Chairman Prof. B. Van De Steene (Belgium) "Guiding the growth of water reuse"   |  |
| <b>09:20</b> | IWA Water Reuse Specialist Group Chairman Prof. I. S. Kim (South Korea) "Past, present and future water reusespecialty conference"                                       |  |
| <b>09:30</b> | EUREAU-board president D. Villessot (France) "Importance and implications of water reuse for the water and wastewater utilities"   |  |
| <b>09:40</b> | Minister President of the Flemish Region K. Peeters (Belgium)  |  |
| <b>09:50</b> | Keynote plenary lecture by Prof. T. Asano (USA) "Milestones in municipal wastewater reuse"   |  |
| <b>10:30</b> | Coffee break   |  |
| <b>11:00</b> | <b>DARWIN ZAAL</b><br><b>EMERGING POLLUTANTS</b><br>Chair intro: <i>T. Melin (Germany)</i>   | <b>MARMEREN ZAAL</b><br><b>URBAN APPLICATIONS</b><br>Chair intro: <i>L. Sala (Spain)</i>   |
| <b>11:05</b> | Water reuse and sustainability in semi-arid/arid regions: are they compatible?<br><i>U. Zoller (Israel)</i>  | Current trends in water reuse in Australia<br><i>M.H.Muston (Australia)</i>  |
| <b>11:25</b> | Occurrence and treatment of endocrine disruptors and pharmaceuticals<br><i>S.A. Snyder, E.C. Wert, B.J. Vanderford (USA)</i>   | Reclaimed wastewater supply business in Tokyo and introduction of new technology<br><i>K. Yamada, O. Matsushima, K. Sone (Japan)</i>   |
| <b>11:45</b> | An approach to assess the potential of organic micropollutants to pass through wastewater reuse systems<br><i>T. Reemtsma, S. Weiss, T.P.Knepper (Germany)</i>           | Economic and environmental benefits of urban water reuse in tourist areas<br><i>V. Lazarova, V. Sturny (France)</i>  |
| <b>12:05</b> | Impact of temperature on biodegradation of bulk and trace organics during soil passage in an indirect reuse system<br><i>S. Gruenheid, U.Huebner, M. Jekel (Germany)</i> | Heat island mitigation using water retentive pavement sprinkled with reclaimed wastewater<br><i>H. Yamagata, M. Nasu, M. Yoshizawa, A. Miyamoto, M. Minamiyama (Japan)</i>   |
| <b>12:25</b> | The impact of household products on biological systems for water reuse<br><i>G.J.A. Knops, M. Pidou, S. Judd, B. Jefferson (United Kingdom)</i>                          | Water reuse for irrigation of golf courses and landscapes in Algarve<br><i>A. Martins, J. Freire (Portugal)</i>  |
| <b>12:30</b> | EE2 cometabolism by E2 degrading bacteria<br><i>B. Pauwels, K. Wille, H. Noppe, H. De Brabander, T. Van de Wiele, W. Verstraete, N. Boon (Belgium)</i>                   |  |
| <b>12:35</b> | Lunch  |  |
| <b>14:00</b> | <b>HEALTH RISKS</b><br>Chair intro: <i>I. Hespanhol (Brazil)</i>   | <b>AGRICULTURAL APPLICATIONS I</b><br>Chair intro: <i>B. Jiménez (Mexico)</i>  |
| <b>14:05</b> | Water reuse for urban landscape irrigation: aspersion and health related regulations<br><i>F. Brissaud, E. Blin, S. Hemous, L. Garrelly (France)</i>                     | The reversed water chain approach: optimizing agricultural use of urban wastewater<br><i>J.B. van Lier, F.P. Huibers (the Netherlands)</i>   |
| <b>14:25</b> | Integrating disability adjusted life-years (DALYs) as a tool for human health risk assessment<br><i>I. Kopac, M.N. Ayuso-Gabella, M. Salgot (Slovenia)</i>               | Water reuse and integrated water resources management in Vitoria-Gasteiz, Spain<br><i>J. López, R. Mujeriego (Spain)</i>   |
| <b>14:45</b> | How to transpose the 2006 WHO guidelines into national standards<br><i>D.D. Mara (United Kingdom)</i>  | Sustainable reclaimed water management by subsurface drip irrigation system: a case study for forage production<br><i>M.P. Palacios, V. Mendoza-Grimón, F. Fernández, J.R. Fernandez-Vera, J.M. Hernandez-Moreno (Spain)</i> |



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| 11:00 | FOYER<br><b>INDUSTRIAL APPLICATIONS I</b><br>Chair intro: <i>T. Asano (USA)</i>   | KEURVELSZAAL<br><b>POLICY FRAMEWORK</b><br>Chair intro: <i>A. Angelakis (Greece)</i>   |
| 11:05 | Sustainable water management at an industrial complex<br><i>C.K.Groot, L.L.Paping, L.J.van Miert, C.van Houwelingen, J.Slagt, P.A.de Boks (the Netherlands)</i>   | The initiative of the EUWI-MED water directors and DG environment<br><i>Guest speaker</i>  |
| 11:25 | Wastewater reuse in textile Prato district: technology, management and users satisfaction<br><i>R. Valeri, E. Coppini, C. Bassetti, M. Allocca (Italy)</i>  | Towards a European water recycling policy<br><i>R. Hochstrat, T. Wintgens, T. Melin, P.J. Jeffrey (Germany)</i>  |
| 11:45 | The water balance as a tool for improving the industrial water management in the metallurgical industry - case study Kremikovtzi Ltd., Bulgaria<br><i>G. Dimova, K. Tarnacki, T. Melin, I. Ribarova, L. Vamvakeridou-Lyroudia, N. Savov, T. Wintgens (Bulgaria)</i> | Adapting to climate change with water savings and water reuse<br><i>J.M. Anderson (Australia)</i>  |
| 12:05 | Water reuse and sustainability in a global chemical manufacturing company<br><i>K.N Wood, K.J. Kozelski, R.A. Reich, R.W. Sylvester (USA)</i>   | Sustainable urban water systems: strategic framework for municipal planning considering regional variation in geography and climate<br><i>J.W. Norton J.R. Ford, T. Morris (USA)</i> |
| 12:25 | IPPC as a driver and as a chance for water reuse, two cases<br><i>J.J.M. Appelman, A. Visser (the Netherlands)</i>  | Water recycling and reuse in EUREAU countries: trends & challenges<br><i>B. Durham, H. Marecos Do Monte, A. Angelakis (United Kingdom)</i>   |
| 12:30 | Water reuse in industrial laundries: water saving scenarios and technological options for advanced treatment<br><i>H. De Wever, E. Brauns, I. Genné, J. Helsen (Belgium)</i>  |  |
| 12:35 |   |  |
| 14:00 | <b>OWNERSHIP, FINANCING &amp; ECONOMICS</b><br>Chair intro: <i>J. Van Steen (Belgium)</i>   | <b>WORKSHOP 1 EU - MED initiative</b><br><i>A. Angelakis (Greece) &amp; B.Durham (United Kingdom)</i>  |
| 14:05 | Perspectives and impediments of HeBei Provincial WasteWater Reuse Programmes<br><i>L. Wu, H.Z. Jin, W. Xu, K.Z. Dai, L. Zhou (China)</i>  | 14.00-14.10 Introduction and explanation of objectives of the workshop: <i>A. Angelakis (Greece)</i>   |
| 14:25 | Viability of increasing the tariff of freshwater for irrigation as a tool to stimulate wastewater reuse in the MENA region<br><i>M. Abu-Madi, R. Al-Saéd, O. Braadbaart, G. Alaerts (Palestinian Territory)</i>   | 14.10-14.30 Development of EU guidelines. EUWI-MED working group: <i>TBC</i>   |
| 14:45 | Delivery of wastewater projects through alliance contracting<br><i>J.C. Ricketts, M.J. Cave (Australia)</i>   | 14.30-14.50 The paradox of water scarcity and ill-reuse of wastewater in the Near East Region:<br><i>M. Bazza (Egypt)</i>  |

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| 15:05 | Exposure and risk assessment of salmonella in recycled residuals<br><i>C.P. Gerba, N. Castro-del Campo, J.P. Brooks, I.L. Pepper (USA)</i>   | The first national win-win project of wastewater reclamation and reuse between urban and agricultural sectors in Japan<br><i>T. Shigematsu, W.K.C.N. Dayanthi, N. Yamashita, H. Tanaka, T. Yamashita (Japan)</i>          |
| 15:25 | Risk assessment of antibiotic resistance genes during artificial groundwater recharge using real-time quantitative PCR<br><i>U. Böckelmann, H.H. Dörries, E. Grohmann (Germany)</i>  | Modelling E. Coli transport in soil columns: simulation of wastewater reuse in agriculture<br><i>E. Smith, A. Badawy (Egypt)</i>  |
| 15:45 | Objective evaluation of required reclaimed water quality for municipal wastewater reclamation and reuse<br><i>R.J. Chiou (Taiwan)</i>  | The use of treated wastewater for irrigated agriculture in Jordan<br><i>G. Carr, S. Nortcliff, R. Potter (United Kingdom)</i>   |
| 15:50 | Microbial quality of chlorinated city water stored in household tanks in Byblos Lebanon<br><i>N.A. Chedid, F. Hashwa (Lebanon)</i>   |   |
| 15:55 | Coffee break<br><b>POSTER SESSION 1: POLICY</b>  |   |
| 16:25 | <b>MEMBRANES</b><br>Chair intro: <i>R. Messalem (Israel)</i>   | <b>INTEGRATED WATER MANAGEMENT</b><br>Chair intro: <i>C. Thoeye (Belgium)</i>   |
| 16:30 | Membrane technology for sustainable treated wastewater reuse: agricultural, environmental and hydrological considerations<br><i>G. Oron, L. Gillerman, A. Bick, Y. Manor, N. Buriakovsky, J. Hagin (Israel)</i>  | Advanced treated wastewater as an important resource for supporting and improving the water situation in the region South of Berlin<br><i>B. Heinzmann (Germany)</i>  |
| 16:50 | Quality and cost analysis of different membrane technologies (microfiltration and ultrafiltration), UV radiation and ozonization applied as tertiary treatment of urban wastewater<br><i>M. Gómez, F. Plaza, G. Garralón, J. Pérez, and M.A. Gómez (Spain)</i> | Microbiological water quality improvement from reclaimed water discharges into Ridaura River (Costa Brava, Girona, Spain)<br><i>A. Costan, M. Montemayor, F. Lucena, J. Jofre, J. Muñoz, S. Quintana, L. Sala (Spain)</i> |
| 17:10 | Problems of operation and main reasons for failure of membranes in tertiary treatment systems<br><i>P. Rougé, V. Lazarova (France)</i>   | The planning of greywater management in new housing developments through systems dynamics modelling<br><i>L.G. Mendoza-Espinosa, E.J. Lopez-Calva and L.W. Daessle-Heuser (USA)</i>                                       |
| 17:30 | The water reclamation and reuse project of El Prat de Llobregat, Barcelona, Spain<br><i>J. Compte, T. Cazorra, R. Mujeriego (Spain)</i>  | Cross sectoral and scale-up impacts of greywater recycling technologies on catchment hydrological flows<br><i>N. Bertrand, B. Jefferson, P. Jeffrey (United Kingdom)</i>  |
| 17:50 | Maximising wastewater reuse in Abu Dhabi<br><i>R.L. Duquez, R. Ratcliff, K. Smolenska (United Arab Emirates)</i>   | Water recycling and reuse – A viable method to meet increasing water demand in Kerala<br><i>K.S.Nair (India)</i>  |
| 17:55 |  | An assessment of policies and institutional frameworks impacting on wastewater management in Zimbabwe<br><i>J. Rurinda, I. Nyagumbo (Zimbabwe)</i>  |
| 18:00 | END  |   |
| 19:00 | Reception at Town Hall   |   |

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| 15:05 | The use of data envelopment analysis to simulate the effect of water reuse on efficiency measures for small-scale vegetable growers in North West Province South Africa<br><i>S. Speelman, M. D'Haese, L. D'Haese (Belgium)</i> | 14.50-15.10 | Good practice examples in Southern Europe:<br><i>L. Sala, A. Angelakis, V. Lazarova (Spain)</i>         |
| 15:25 | On the development of a meta-analytical framework for the economic valuation of constructed wetlands<br><i>A. Ghermandi, P.A.L.D. Nunes, H.L.F. de Groot, J.C.J.M. van den Bergh (Italy)</i>                                    | 15.10-15.30 | Good practice examples in Northern Europe:<br><i>B. Durham, C. Thoeve, T. Wintgens (United Kingdom)</i> |
| 15:45 | Making recycled water projects economically feasible – could non-market benefits be of value?<br><i>A.C. Hurlimann (Australia)</i>  | 15.30-15.50 | Discussion and debate   |
| 15:50 | Ulu Pandan NEWater Factory - Singapore's experience in closing the water loop<br><i>C. Dotremont, E. Mun (Belgium)</i>  | 15.50-16.00 | Conclusions: <i>A. Angelakis (Greece), B. Durham (United Kingdom)</i>                                   |

15:55

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| 16:25 | <b>AGRONOMIC VALUE</b><br>Chair intro: <i>B.S.O. Ceballos (Brazil)</i>  | <b>WORKSHOP 2 EMERGING POLLUTANTS</b><br>A.Joss (Switzerland) & T.Ternes (Germany) |  |
| 16:30 | Treated sewage effluent as a crop macro nutrient source in irrigated agriculture, the Jordan case<br><i>S. Boom, J.B. van Lier, F.P. Huibers (the Netherlands)</i>  |  |  |
| 16:50 | The effect of reclaimed wastewater on the quality and growth of grapevines<br><i>L.G. Mendoza-Espinosa, A. Cabello-Pasini, V. Macias-Carranza, A. de la Cerda-Ramírez, V. Orozco-Borbón (USA)</i>                                 |  |  |
| 17:10 | Wastewater reuse for sustainable nursery plant production<br><i>F. Ferrini, F.P. Nicese, R. Gori, C. Lubello (Italy)</i>  |  |  |
| 17:30 | Growth of cotton of brown fiber irrigated with urban treated wastewater<br><i>W.A.A. Alves, Carlos A.V. Azevedo, J. Tavares de Sousa, J. Dantas Neto, N.E.M. Beltrão, B.S. Ovruski de Ceballos (Brazil)</i>                       |  |  |
| 17:50 | Swedish experiences from wastewater irrigation on large-scale Short-Rotation Willow Coppice plantations<br><i>P. Aronsson, I. Dimitriou (Sweden)</i>  |  |  |
| 17:55 | Alleviation of salinity stress imposed on broad beans irrigated with reclaimed wastewater mixed with brackish water through exogenous application of jasmonic acid<br><i>N. Mansour, Z. Mimi, J. Harb (Palestinian Territory)</i> |  |  |

18:00

19:00

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**WEDNESDAY OCTOBER 10TH 2007**

|              |   |  |
|--------------|---|--|
| <b>08:00</b> | Coffee  |  |
| <b>09:00</b> | <b>DARWIN ZAAL</b><br><b>MANAGED AQUIFER RECHARGE</b><br>Chair intro: <i>T. Wintgens (Germany)</i>  | <b>MARMEREN ZAAL</b><br><b>REVISED WHO GUIDELINES</b><br>Chair intro: <i>H. Shuval (Israel)</i>  |
| <b>09:05</b> | Framework for assessment of performance of soil aquifer treatment systems<br><i>S.K. Sharma, C.M. Harun, G. Amy (the Netherlands)</i>   | Evaluating the quantitative microbial risk analysis (QMRA) methodology of the WHO 2006 health guidelines for wastewater reuse in agriculture<br><i>H. Shuval (Israel)</i>          |
| <b>09:25</b> | Spatial and temporal changes in sulphate-reducing groundwater bacterial community structure in response to managed aquifer recharge<br><i>D.A. Reed, S. Toze, B. J. Mee (Australia)</i>   | Wastewater treatment requirements for wastewater use in agriculture: implications of the 2006 WHO guidelines<br><i>D.D. Mara (United Kingdom)</i>                                  |
| <b>09:45</b> | Preliminary results of managed aquifer recharge with reclaimed wastewater and stormwater in six operational case studies from around the world<br><i>K. Le Corre, B De heyder, C. Masciopinto, V. Tandoi, A. Aharoni, H. Cikurel, X. Zhao, S. Rinck-Pfeiffer, R. Regel, M. Salgot, M.N. Ayuso Gabella, N. Saperas, E. Cartmell, B. Jefferson, P. Jeffrey (United Kingdom)</i> | Application and adaptation of the WHO guidelines to low-income communities in West Africa and in the Middle East<br><i>R. Bos, A. Thomas (Switzerland)</i>                         |
| <b>10:05</b> | Fate and transport of faecal contamination microbial indicators and pathogens in the artificially recharged fractured aquifer of the Salento, Italy<br><i>R. La Mantia, C. Masciopinto, C. Levantesi, V. Tandoi (Italy)</i>   | Reducing health risks from wastewater use in urban and peri-urban Saharan Africa - the role of 2006 WHO Guidelines<br><i>P. Drechsel, L.R. Sally, R. Abaidoo, A. Bahri (Ghana)</i> |
| <b>10:25</b> | Alternative SAT treatment of secondary effluents using a combination of UF and short term SAT for increasing infiltration rates at the Shafdan site (Israel)<br><i>I. Gaus, H. Cikurel, G. Picot, A. Aharoni, Y. Guttman, W. Kloppmann, M. Azaroual (France)</i>  | Wastewater irrigation of salad crops: further evidence for the evaluation of the WHO guidelines<br><i>R.K.X. Bastos, P.D. Bevilacqua, C.A.B. Silva, C.V. Silva (Brazil)</i>        |
| <b>10:45</b> | Summary of the reclaimed water quality produced at the Blanes Reclamation Plant (Costa Brava, Girona, Spain)<br><i>G. Borrás, M. Soler, L. Sala (Spain)</i>   | Quantitative microbial risk assessment (QMRA) for greywater reuse in rural tribal schools in India<br><i>S. Godfrey, A. Swami, P.K. Labahsetwar, S. Wate (India)</i>               |
| <b>10:50</b> |   |  |
| <b>10:55</b> | Coffee break  |  |
|              | <b>POSTER SESSION 2: SCIENCE</b>  |  |
| <b>11:25</b> | <b>POND SYSTEMS</b><br>Chair intro: <i>D. Mara (United Kingdom)</i>   | <b>DECISION SUPPORT SYSTEMS</b><br>Chair intro: <i>L. Benedetti (Belgium)</i>  |
| <b>11:30</b> | Using on-farm sedimentation ponds to reduce health risks in wastewater irrigated urban vegetable farming in Ghana<br><i>B. Keraïta, P. Drechsel, F. Konradsen (Ghana)</i>   | Integrating sustainable water reuse into our cities: developing frameworks and tools for the optimal scales<br><i>P. Holt, A. Vieritz, G. Mitchel (Australia)</i>                  |
| <b>11:50</b> | Enhanced pathogen removal in on-site biofiltration systems over organic filtration materials<br><i>M.A. Garzon-Zuñiga, A.C. Tomasini-Ortiz, G. Moeller-Chavez, Y. Hornelas, G. Buelna, P.M. Nacheva (Mexico)</i>  | MCDM approach for the evaluation of different wastewater treatment and reuse systems<br><i>G.L. Cirelli, N. Pappalardo (Italy)</i>   |
| <b>12:10</b> | Upgrading of pond effluents for reuse<br><i>D. Kaya, F.B. Dilek, C.F. Gökçay (Turkey)</i>   | Decision support tool for integrating health risks in wastewater management<br><i>J.R. Ottoson (Sweden)</i>  |



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08:00

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| 09:00 | FOYER<br><b>INDUSTRIAL RECYCLING: FOOD INDUSTRY</b><br>Chair intro: <i>W. Verstraete (Belgium)</i>   | KEURVELSZAAL<br><b>MBR</b><br>Chair intro: <i>I. S. Kim (South-Korea)</i>   |
| 09:05 | Reuse of water in food industry: AquaCCP<br><i>R.T.G. Hoeijmakers, F. Laurysen, E. Driessen (Belgium)</i>  | Immersed membrane bioreactor treatment for domestic wastewater reclamation: optimal draft tube selection<br><i>A. Bick, F. Yang, S. Shandalov, G. Oron (Israel)</i>                                   |
| 09:25 | Ozone clean in place in food industries - ozone as an alternative sanitising agent for cleaning operations in food industry<br><i>M.A. Prieto Arranz, G. Schories (Germany)</i>                                | Membrane bioreactor for water reuse in Singapore<br><i>G.H. Tao, K. Kekre, B. Visvanath and H. Seah (Singapore)</i>   |
| 09:45 | Thermophilic digestion of potato residues followed by membrane separation technology and optimised combined heat and power generation<br><i>F. Moyaers, P. Lavers, F. De Boever, D. Dresselaerts (Belgium)</i> | Potential of innovative DUAL CAS-MBR configurations in two very diverse market situations: Bulgaria and Cyprus<br><i>D. Bixio, W. De Wilde, V. Nenov, P. Eliades, B. Lesjean, C. Thoeys (Belgium)</i> |
| 10:05 | Water reuse in the potato processing industry – a case study<br><i>L. Verdickt, K. Lambert, F. De Boever (Belgium)</i>   | Membrane bioreactors for decentralized wastewater treatment and reuse<br><i>M. Roediger, T. Hackner, S. Meuler (Germany)</i>  |
| 10:25 | Membrane bioreactors as core technology for water loop closure in a maltery<br><i>H. De Wever, W. Boënné, M. Danau, N. Vanderspigel, K. Lambert, J. Limbos, K. Hardy (Belgium)</i>                             | Community scale non-potable reuse in London using an MBR<br><i>R. Birks, S. Hills, E. Grant, B. Verrecht (United Kingdom)</i>   |
| 10:45 | Ureolytic phosphate precipitation from wastewater<br><i>B. Meesschaert, E. Desmidt, J. Dick, W. Verstraete (Belgium)</i>   | European and worldwide water reuse applications with Kubota submerged membrane bioreactor<br><i>M. Kanai, V. Ferre, S. Lluch, K. Izumi (United Kingdom)</i>   |
| 10:50 | BOOMERANG WATER®: Biological effluent reuse in the food & beverage industry - 2 Waterleau case studies<br><i>J. De Lathouwer, W. Gils, L. Vriens (Belgium)</i>   | Wastewater treatment for water reuse – Membrane bioreactors (MBR)<br><i>K. Vossenkaul, D. Lawrence, C. Kullmann (Germany)</i>   |

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| 11:25 | <b>INDUSTRIAL RECYCLING: ULTRAPURE WATER</b><br>Chair intro: <i>P. Cornel (Germany)</i>  | <b>WATER QUALITY ANALYSIS</b><br>Chair intro: <i>M. Jekel (Germany)</i>  |
| 11:30 | Use of submerged UF membranes for wastewater re-use in industry<br><i>T. Buer, E. Vonghia, G. Hagemeyer (Germany)</i>  | Wastewater effluent organic matter (EfOM) versus natural organic matter (NOM): understanding similarities and differences that affect potable reuse<br><i>S.N. Nam, G. Amy (the Netherlands)</i> |
| 11:50 | Reuse of low concentrated electronic wastewater using selected microbe immobilized cell system<br><i>S.J. Lee, Y.W. Lee, J. Chung, J.K. Lee, J.Y. Lee, D. Jahng, Y. Cha, Y. Yu (South Korea)</i> | Bioassays and biomarkers for ecotoxicological assessment of reclaimed municipal wastewater<br><i>C.A. Papadimitriou, A. Kontana, P. Samaras, M. Yiangou (Greece)</i>                             |
| 12:10 | Treatment of petroleum production wastewater for reuse in the secondary oil recovery<br><i>P. M. Nacheva, E. Ramirez, L. Sandoval (Mexico)</i>   | Application of heat shock protein assay and proteome assay to water from wastewater treatment plant<br><i>N. Funamizu, M. Takenaka, J. Han, T.P.N. Talorete, H. Isoda (Japan)</i>                |

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| 12:30 | Wastewater modification processes assessment in a stabilization reservoir<br><i>G. Mancini, G. Mannina, M. Torregrossa, G. Viviani (Italy)</i>   | Sustainable wastewater reuse: development and application of a holistic approach<br><i>P. Roccaro, F.G.A. Vagliasindi (Italy)</i>                                |
| 12:50 | A case study in the search for sustainable water reuse<br><i>T. Chan, F. Rogalla (United Kingdom)</i>  | Understanding water reuse in India through both quantitative and qualitative methods<br><i>G. Zornes, L. Macpherson, P. Fos, A. Englande (USA)</i>               |
| 12:55 | Lunch  |  |
| 14:30 | <b>MICRO - &amp; SAND FILTRATION</b><br>Chair intro: <i>V. Lazarova (France)</i>   | <b>PUBLIC ACCEPTANCE</b><br>Chair intro: <i>P. Jeffrey (United Kingdom)</i>  |
| 14:35 | Filtration of secondary clarifier effluent<br><i>N.C. Wortel, C.A. Uijterlinde, P. Roeleveld, A.J. van Nieuwenhuijze, A. Visser, P.P. van der Pijl, P.M.J. Janssen (the Netherlands)</i>   | Public acceptance: The greatest barrier to widespread water reuse<br><i>W. Miller (USA)</i>  |
| 14:55 | Helminth eggs removal by microscreening for water reclamation and reuse<br><i>S. Quinzanos, C.P. Dahl, R. Mujeriego, R. Strube (Denmark)</i>   | What drives communities' decisions and behaviours in the reuse of wastewater?<br><i>B.E. Nancarrow, Z. Leviston, M. Po, N.B. Porter, D.I. Tucker (Australia)</i> |
| 15:15 | Disinfection of secondary effluent using slow sand filtration<br><i>K. Langenbach, P. Kuschik, M. Kästner (Germany)</i>  | Urban versus rural – how public attitudes to recycled water differ in these contexts<br><i>A.C. Hurlimann (Australia)</i>  |
| 15:35 | The ACTIDisk process for water reclamation: an experimental performance assessment<br><i>J. Sanz, C. Ferrer, and R. Mujeriego (Spain)</i>  | Stigma, emotion and fear changing mental models about reuse<br><i>L. Macpherson, P. Slovic (USA)</i>   |
| 15:55 | The use of chemicals in the conventional tertiary treatment. Full scale experiences and a pilot scale study<br><i>J.A. Mendoza-Roca, A. Bes-Piá, A. Iborra-Clar, F.J. Martínez-Francisco, I. Bernácer-Bonora, J. Illueca-Muñoz (Spain)</i> |  |
| 16:00 | Coffee break<br><b>POSTER SESSION 3: PRACTICE AND INDUSTRY</b>   |  |
| 16:30 | <b>UF/NF/RO</b><br>Chair intro: <i>G. Oron (Israel)</i>  | <b>GREYWATER RECYCLING</b><br>Chair intro: <i>E. Friedler (Israel)</i>   |
| 16:35 | Influence of biofouling on boron removal by nanofiltration and reverse osmosis membranes<br><i>E. Huertas, M. Herzberg, G. Oron, M. Elimelech (Spain)</i>  | Technologies for urban water recycling<br><i>M. Pidou, F.A. Memon, R. Frazer-Williams, P. Jeffrey, T. Stephenson, B. Jefferson (United Kingdom)</i>              |
| 16:55 | An integrated wastewater reuse concept combining natural reclamation techniques, membrane filtration and metal oxide adsorption<br><i>A. Sperlich, X. Zheng, M. Ernst, M. Jekel (Germany)</i>  | Variation in grey wastewater quality reused for toilet flushing<br><i>E. Eriksson, X. Yan, M. Lundsbye, T.S. Madsen, H.R. Andersen, A. Ledin (Denmark)</i>       |
| 17:15 | The study on the ceramic membrane wastewater reuse system with pre-ozonation and coagulation<br><i>M. Noguchi, S. Suzuki, T. Kato, Y. Kanto (Japan)</i>  | Onsite wastewater reclamation and reuse in individual buildings in Japan<br><i>K. Kimura, D. Mikami, N. Funamizu</i>   |

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| 12:30 | Wastewater reclamation experience for cathode-ray tube manufacturing in Korea<br><i>G.T. Seo, B.H. Moon, S.H. Kim, C.H. Yoon, J.H. Ryu (South Korea)</i>  | Environmental isotope monitoring of artificial recharge (ASTR) with treated municipal wastewater<br><i>W. Kloppmann, E. Van Houtte, I. Gaus, B. De heyder, A. Vandenbohede, L. Lebbe, C. Guerrot, R. Millot (France)</i> |
| 12:50 | Reclamation of the wastewater from the industrial park using hollow-fiber and spiral-wound membranes: 50-CMD pilot testing and cost evaluation<br><i>C.P. Chu, Y.S. Wu, C.C. Lin, Y.J. Chung (Taiwan)</i>                             | Cytotoxic and genomic effect of radiocontrast media (diatrizoate and iopromide) in reclaimed wastewater to human kidney HEK293 cells<br><i>X. Ren, J.S. Chang, H.H. Lim, C.S. Park, J. Cho, I.S. Kim (South Korea)</i>   |
| 12:55 |   |  |
| 14:30 | <b>ACTIVATED CARBON</b><br>Chair intro: <i>J. van der Graaf (the Netherlands)</i>   | <b>WORKSHOP 3 MANAGED GROUNDWATER RECHARGE</b><br><i>T. Wintgens (Germany) &amp; P. Dillon (Australia)</i>   |
| 14:35 | Comparing the EfOM removal of direct NF and powdered activated carbon/NF as high quality pretreatment options for artificial groundwater recharge<br><i>C. Kazner, S. Baghoth, S. Sharma, G. Amy, T. Wintgens, T. Melin (Germany)</i> | 14:30 Introduction in the workshop, short overview on objectives and background<br><i>T. Wintgens (Germany)</i>  |
| 14:55 | Opportunities for effluent reuse at the municipal wastewater treatment plant Maasbommel<br><i>F.D.G. Kiestra, W. van Betuw, J. Kruit (the Netherlands)</i>  | 14:35 Research on water stress mitigation funded by the European Communities in the 6th and 7th Framework Programme<br><i>A. Gonzalez-Gonzalez (Equador)</i>   |
| 15:15 | Advanced treatment of WWTP effluent, no use or reuse?<br><i>S.M. Scherrenberg, H.W.H. Menkveld, J.H.J.M. van der Graaf (the Netherlands)</i>  | 14:45 Global experiences with managed aquifer recharge<br><i>P. Dillon (Australia)</i>   |
| 15:35 | The use of powdered activated carbon to reduce sludge production from the tertiary treatment of a small WWTP<br><i>G. Mancini, C. Mazzola, P. Roccaro, F.G.A. Vagliasindi (Italy)</i>   | 15:05 Flash presentations on some of the aspects described above to state open questions and stimulate discussions<br><i>G. Amy (the Netherlands), W. Kloppman (France), T. Ternes (Germany)</i>                         |
| 15:55 | Removal of copper by adsorption using granular activated carbon<br><i>S.L. Mudaliar, G.S. Natarajan (India)</i>   | 15:30 Regulative framework conditions for managed aquifer recharge   |
|       |   | 15:50 Conclusions<br><i>T. Wintgens (Germany)</i>  |
| 16:00 |   |  |
| 16:30 | <b>INDUSTRIAL COOLING WATER APPLICATIONS</b><br>Chair intro: <i>K. Wood (United States of America)</i>  | <b>WORKSHOP 4 REVISED WHO GUIDELINES</b><br><i>R. Bos (Switzerland)</i>  |
| 16:35 | Integrating advanced oxidation for water reuse<br><i>J. Neemann, G. Hunter, C. Wallis-Lage, J. Clement (United Kingdom)</i>   | TBC  |
| 16:55 | Reclamation of wastewater for industrial purposes - advanced treatment of secondary effluents for the reuse as boiler and cooling make-up water<br><i>J. Lahnsteiner, F. Klegraf, R. Mittal, P. Andrade (Austria)</i>                 |  |
| 17:15 | Eco-efficiency strategy to reduce the water consumption in a Mexican petrochemical industry<br><i>M.A. Morales M., S.A. Martínez D., M.G. Rodríguez R. and C. Nolasco H. (Mexico)</i>   |  |

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| 17:35 | The applicability of drinking water ultrafiltration membrane modules for the treatment of secondary effluent in the context of water reuse<br><i>F. Kent, J. Citulski, K. Farahbakhsh (Canada)</i> | Grey water reuse in hotel and catering industry<br><i>K. Gethke, H. Herbst, C. Keysers, J. Pinnekamp (Germany)</i>  |
| 17:55 | Ultrafiltration membrane plant performance in direct water reclamation at the NGWRP<br><i>T. Theron-Beukes, E. Konig (Namibia)</i>   | Submerged membranes for reclamation technology of greywater in hotels of the Canary Islands<br><i>L. Vera Peña, E. Rodriguez-Jiménez, G. Melian, V. Millan, D. Blanco (Spain)</i> |
| 18:00 | Nanofiltration and ultrafiltration membrane – photocatalysis hybrid system for herbicide removal from wastewater<br><i>S.H. Kim, H.K. Shon, H.H. Ngo, C.-Y Chang, S. Vigneswaran (Taiwan)</i>      | Greywater reuse in edifications using combined anaerobic/aerobic compact treatment system<br><i>R.F. Gonçalves, B. Bazzarella, S.T. Cassini (Brazil)</i>                          |
| 18:05 | End  |   |
| 20:00 | Gala dinner  |   |

## THURSDAY OCTOBER 11TH, 2007

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| 08:00 | Coffee  |   |
| 09:00 | <b>DARWIN ZAAL<br/>UV DISINFECTION</b>  | <b>MARMEREN ZAAL<br/>RISK MANAGEMENT</b><br>Chair intro: J. Anderson (Australia)  |
| 09:05 | Decentralized raw sewage utilisation for irrigation of green areas in arid cities<br><i>K.-U. Rudolph, T. Fuhrmann, R. Soud (Germany)</i>   | Process reliability and significance of reclaimed water quality parameters<br><i>R. Mujeriego (Spain)</i>   |
| 09:25 | Combined performance of UV light and chlorine during reclaimed water disinfection<br><i>M. Montemayor, A. Costan, F. Lucena, J. Jofre, J. Munoz, E. Dalmau, R. Mujeriego, L. Sala (Spain)</i> | Definition of CCP in two artificial recharge sites with reclaimed wastewater in the RECLAIM WATER project<br><i>M. N. Ayuso-Gabella, D. Bixio, E. van Houtte, M. Salgot, N. Saperas, I. Kopac (Spain)</i> |
| 09:45 | Wastewater ponds and subsequent UV disinfection - a lean cost option for agricultural wastewater reuse<br><i>T. Fuhrmann, K.-U. Rudolph (Germany)</i>   | Reliability of operation and failure management of membrane wastewater treatment<br><i>V. Lazarova, V. Sturny, J.L. Richard (France)</i>  |
| 10:05 | Prevention of microbial survival during UV treatment of re-used wastewater<br><i>B.F. Kalisvaart (the Netherlands)</i>  | Water recycling in action in South Australia: a review of agricultural and municipal reuse (dual-reticulation) schemes and innovation<br><i>S. Rinck-Pfeiffer, R. Regel (Australia)</i>                   |
| 10:25 |   | Assessment of the reliability of an on-site MBR system for greywater treatment and the associated aesthetic and health risks<br><i>E. Friedler, Z. Schwartzman, A. Ostfeld (Israel)</i>                   |
| 10:30 | Coffee break  |   |
| 11:00 | <b>AGRICULTURAL APPLICATIONS II</b><br>Chair intro: <i>R. Mujeriego (Spain)</i>   | <b>CONSTRUCTED WETLANDS</b><br>Chair intro: <i>F. Brissaud (France)</i>   |
| 11:05 | Effects of TWW irrigation on the dissolved and soil organic carbon in Israeli soils<br><i>E. Jueschke, B. Marschner, J. Tarchitzky, Y. Chen (Germany)</i>                                     | Use of reclaimed water in the recreation and restoration of aquatic ecosystems: practical experience in the Costa Brava region (Girona, Spain)<br><i>L. Sala, S. Romero de Tejada (Spain)</i>             |
| 11:25 | Water renew systems: wastewater polishing using renewable energy crops<br><i>A Sugiura, S Tyrrel, I Seymour, P Burgess (United Kingdom)</i>   | Modelling pathogen removal for the design of surface-flow constructed wetlands<br><i>A. Ghermandi, D. Bixio (Italy)</i>   |

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| 17:35 | Wastewater reuse at Sasol: replacing process effluent with secondary effluent for cooling purposes<br><i>C.A. Moller, C.F.Schutte (South Africa)</i> |  |
| 17:55 | Status and needs of municipal water reuse for industrial cooling water make-up<br><i>D. Bixio, A. Bertini, C. Lubello, C. Thoeve (Belgium)</i>       |  |
| 18:00 | Re-use of municipal wastewater effluent for cooling water and boiler feed make-up<br><i>F. Vagi, C. Ward, J. Penny, R. Jacklin (Canada)</i>          |  |

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| 09:00 | FOYER<br><b>INDUSTRIAL APPLICATIONS II</b>  | KEURVELSZAAL<br><b>MEDITERRANEAN PERSPECTIVES</b><br>Chair intro: M. Bazza (Egypt)   |
| 09:05 | Evaluation of feed water sources and retrofitting of an Integrated Membrane System<br><i>J. van Agtmaal, P. de Boks, R. Cornips, L. Paping (the Netherlands)</i>  | Spanish national water reuse programs<br><i>J.R. Barro, L. Ortega (Spain)</i>  |
| 09:25 | Technical and economical evaluation of water recycling in the carwash industry with membrane processes<br><i>K. Boussu, G. Van Baelen, W. Colen, D. Eelen, S. Vanassche, C. Vandecasteele, B. Van der Bruggen (Belgium)</i> | Municipal wastewater effluent reuse in agriculture in Apulia - South Italy<br><i>G. D'Arcangelo, E. Ranieri (Italy)</i>    |
| 09:45 | A pilot study of industrial wastewater recovery using an electro dialysis reversal system<br><i>T.M. Liang, Y.M. Chao (Taiwan)</i>  | Use of alternative water sources to mitigate water stress in Cyprus<br><i>T. Wintgens, D. Glekas, A. Pollice (Germany)</i> |
| 10:05 | Wastewater reuse in the chemical industry by a Thermophilic MBR<br><i>H. Futselaar, H. Leemreize, P. van Oort (the Netherlands)</i>   | Jordan strategy for the collection, treatment and reuse of wastewater<br><i>A.A. Arar (Jordan)</i>                         |
| 10:25 | Evaluation of bioassays for the optimization of waste water treatment in the tank cleaning industry<br><i>J. Dries, W. De Schepper, J. Robbens, L. Geuens, R. Blust (Belgium)</i>   | Wastewater potential and reuse standards in Turkey<br><i>C.F. Gokcay (Turkey)</i>  |

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| 11:00 | <b>INDUSTRIAL RECYCLING: TEXTILE</b><br>Chair intro: <i>C. Lubello (Italy)</i>   | <b>OZONE TREATMENT</b><br>Chair intro: <i>G. Amy (the Netherlands)</i>  |
| 11:05 | Implementation of best available techniques as a prerequisite for sustainable water reuse in textile industry<br><i>I. De Vreese, T. Cattoor (Belgium)</i> | The use of ozonation for municipal wastewater treatment – Studies to follow the transformation of Sulfamethoxazole via LC-MS<br><i>A. Hein, F. Muñoz Bisesti, M. Ernst, T. Reemtsma, M. Jekel (Germany)</i> |
| 11:25 | Water recycling in textile industries: effects on biological treatment plants<br><i>L. Cammilli, R. Gori, G. Munz, A. Girodano (Italy)</i>                 | Cost-effective water-reuse with ozone as an oxidant<br><i>S. Schaefer, M. Sievers, A. Ried, A. Wieland (Germany)</i>  |



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| 11:45 | Fertility and salinity of soil irrigated with treated wastewater in the tropical semi-arid region of Northeast Brazil<br><i>W.A.A. Alves, C.A.V. Azevedo, J.T. de Sousa, J. Dantas Neto, N.E.M. Beltrão and B.S.O. Ceballos (Brazil)</i>       | Wastewater treatment solution in rural areas<br><i>S. Cabras, D. Tiddia, S. Zaccolo (Italy)</i>   |
| 12:05 | Reuse of Industrial Wastewater for the Irrigation of Ornamental Plants<br><i>R. Gori, C. Lubello, F. Ferrini, F.P. Nicese and E. Coppini (Italy)</i>   | Constructed wetland treatment of strong sewage in arid climates<br><i>N. Spanakis, K. Stephanopoulos, E.A. Korkosuz, E. Diamadopoulos (Greece)</i>  |
| 12:25 | Comparison of nitrogen dynamics in soil due to continuous and intermittent irrigation of reclaimed water: an application to Okinawa Island, Japan<br><i>W.K.C.N. Dayanthi, T. Shigematsu, H. Tanaka, N. Yamashita, J.E. Odencrantz (Japan)</i> | A pilot experiment on greywater recycling for toilet flushing in Morocco<br><i>B. El Hamouri, M. Regelsberger (Morocco)</i>   |
| 12:30 |  |   |
| 12:35 | Lunch  |   |
| 14:00 | <b>RAINWATER HARVESTING</b><br>Chair intro: <i>P. Dillon (Australia)</i>   | <b>INDIRECT POTABLE REUSE</b><br>Chair intro: <i>W. Miller (USA)</i>  |
| 14:05 | Microbial challenge-testing of treatment processes for quantifying stormwater recycling risks and management<br><i>C.M. Davies, V.G. Mitchell, S. Petterson, G. Taylor, J. Lewis, C. Kaucner, N. Ashbolt (Australia)</i>                       | Torreele's water re-use facility enabled sustainable groundwater management in the Flemish dunes (Belgium)<br><i>E. Van Houtte, J. Verbauwhede (Belgium)</i>                                      |
| 14:25 | A critical evaluation of combined engineered and aquifer treatment systems in water recycling<br><i>P. Dillon, D. Page, J. Vanderzalm, P. Pavelic, S. Toze, E. Bekele, S. Higgison (Australia)</i>   | Selection of a nanofiltration membrane to make potable the water of an aquifer recharged with wastewater in the Tula Valley<br><i>A. Aguilar, B. Jiménez, J.E. Becerril, L.P. Castro (Mexico)</i> |
| 14:45 | Treatment of stormwater runoff by on-site infiltration trench in streets<br><i>L-H. Kim, E.-J. Lee, Y.-J. Jung, S.-Y. Lee, M. Maniquiz (South Korea)</i>   | Feasibility studies of planned indirect potable reuse for augmenting future water supplies in London<br><i>S. Hills, R. Birks, E. Grant, V. Aitken (United Kingdom)</i>                           |
| 15:05 | Reuse of rainwater by cistern systems in Ancient Greece<br><i>G. Antoniou, R. Xarchakou and A.N. Angelakis (Greece)</i>  | Water quality control in a third world country: challenges to ensure good quality reclaimed water in Windhoek, Namibia<br><i>J.G. Menge, P. du Pisani, B. van der Merwe (Namibia)</i>             |
| 15:25 | Aquifer storage transfer and recovery (ASTR), a novel application to storage and reuse of stormwater<br><i>R. Regel, S. Rinck-Pfeiffer, D. Page, M. Purdie, P. Pavelic, C. Pitman, P. Dillon (Australia)</i>                                   | Organic matter evolution in the treatment process<br><i>V. Jacquemet, E-C. Gherman, E. Konig, T. Theron-Beukes (France)</i>   |
| 15:30 | Coffee break   |   |
| 16:00 | Chairman of the Flemish Integrated Water Management Commission F. Van Sevenscoten (Belgium)  |   |
| 16:15 | Distribution of awards by IWA president D. Garner (Australia)  |   |
| 16:25 | Introduction to Technical Tours by IWVA CEO J. Verbauwhede (Belgium) , Closing words by Conference chairman Prof. Dr. B. Van De Steene, Aquafin (Belgium)  |   |
| 16:35 | Royal Ballet of Flanders   |   |
| 17:15 | Reception  |   |
| 19:00 | End  |   |

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|-------|--|---|
| 11:45 | From process to product: water recycling in wet textile manufacturing<br><i>G. Rovero, C. Beltramo (Italy)</i>   | The use of ozone during APT of wastewater for its reuse in agriculture: an approach to enhance coagulation, disinfection and crop productivities<br><i>A.E. Campos-Reales-Pineda, M.T. Orta de Velásquez (Mexico)</i> |
| 12:05 | Integrated wastewater management in a denim manufacturing textile mill-implementation of EU's IPPC directive<br><i>N. Uzal, H. Yükseler, M. Unlu, C. Varol, E. Sahinkaya, N.O. Yigit, L. Yilmaz, M. Kitis, G.N. Demirer, F.B. Dilek, U. Yetis (Turkey)</i> | Ozonation of brine resulting from RO membrane treatment of a municipal wastewater treatment plant effluent<br><i>J. Benner, M. Weemaes, G. Fink, U. Von Gunten, T.A. Ternes (Germany)</i>                             |
| 12:25 | Recycling of textile dyeing effluent: examples and recommendations<br><i>I. De Vreese, B. Van der Bruggen, G. Cornelis (Belgium)</i>   | Wastewater disinfection using ozone: byproducts formation<br><i>G.H.R. Silva, L.A. Daniel, H. Bruning, W.H. Rulkens (Brazil)</i>  |
| 12:30 | Water recycling by ozonisation of effluent in the textile industry<br><i>J. Schwerdt, E. Thomas, J. Parmentier (Belgium)</i>   |   |
| 12:35 |  |   |
| 14:00 | <b>COMBINATION OF STRONG OXIDANTS</b><br>Chair intro: <i>M. Weemaes (Belgium)</i>  | <b>WORKSHOP 5 INDUSTRIAL WATER RECYCLING</b><br><i>H. De Wever (BE)</i>   |
| 14:05 | The use of UV and hydrogen peroxide in wastewater reuse to accomplish multiple treatment objectives<br><i>M.-O. Buffle, C. Williamson, A. Festger (Switzerland)</i>  |   |
| 14:25 | Sequential application of ozone and UV radiation to eliminate resistant microbiological indicators<br><i>P. Bilotta, L.A. Daniel (Brazil)</i>  |   |
| 14:45 | The use of AOPs for the abatement of ibuprofen from wastewater<br><i>R. Dewil, T. Scheers, L. Gielen, B. Dirckx (Belgium)</i>  |   |
| 15:05 | Effect of peracetic acid, ultraviolet radiation, nanofiltration-chlorine in the disinfection of a not conventional source of water (Tula Valley)<br><i>J.A. Barrios, B. Jiménez (Mexico)</i>   |   |
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## FRIDAY OCTOBER 12TH, 2007

### TECHNICAL VISITS

|              |  |
|--------------|--|
| <b>09:00</b> | OPTION 1: Aquafin WWTP, IWVA Torreele water reuse plant and groundwater recharge project (Wulpen)  |
|              | OPTION 2: BioEnergy food processing plant for converting by-products of food processing into reclaimed water for boiler feed water and steam, green electricity and a biological fertilizer (Lommel) |
|              | OPTION 3: Evides industry Water Deco plant for production of demineralised water from 6 different water resources and production of cooling water for the Dow Benelux chemical plant (Terneuzen)     |
| <b>16:00</b> | END  |

■ SCIENCE ■ POLICY ■ PRACTICE AND INDUSTRY

| POSTER TITLE  | AUTHOR   |
|---|--|
| Photo degradation of pharmaceutically activated compounds in water by direct photolysis and UV advanced oxidation   | L. Yu, T. Wintgens, T. Melin   |
| Integrating methanogenesis and denitrification in EGSB reactors for adjusting effluent nitrogens levels to agricultural demand                                | G. Kassab, E. Koetse, J. van Lier  |
| Total N mineralization in vertical flow constructed wetlands systems soil for domestic wastewater treatment   | S. Silva, R. Bernardes, L. Ramos   |
| Trophic webs from discharges: nature enhancement through the waterharmonica concept   | L. Sala, T. Claassen, R. Kampf, J. Sala, D. Boix, H. van der Geest                             |
| Biological filtration of treated waste water by Daphni: an alternative for technical filtration, or an addition?  | R. Kampf, H. van der Geest, L. Sala, A. Romani, Q. Thomas, T. Claassen, S. Gerbens, R. Neef    |
| Reusing residential wastewater: physicochemical and biological characterization for water conservation techniques   | R. Gonçalves, T. Rebouças, G. Bianchi, S. Cassini  |
| Regulation of wastewater from a series of electrochemical continuous reactors   | S. Martinez, H. Puebla, M. Rodriguez, M. Morales, R. Aguilar-Lopez                             |
| Follow-up of the physico-chemical and bacteriological quality of the domestic wastewater treated by High Rate Algal Ponds (HRAP) under semi-arid climate      | S. Nacir, L. Mandi, F. Zouhir, S. Dekayir, B. Emzilh, N. Ouazzani                              |
| Identification and antibiotic susceptibility of enterococcus strains isolated from medicago sativa plants irrigated with reclaimed and conventional water     | M. Tejedor-Junco, M. González-Martín, P. Lupiola-Gómez, V. Mendoza-Grimón and M. Palacios-Díaz |
| Modified rapid biofiltration for advanced treatment of STP effluents  | U. Miehe, U. Dünbnier, M. Jekel  |
| Decentralized wastewater treatment plant, at the University of the Balearic Islands (UIB). Reclaimed water for infiltration and natural ecosystem restoration | C. Amengual Morro, G. Moyà Niell, A. Martínez-Taberner   |
| Application of electrolysis disinfection to on-site type wastewater reclamation system  | J. Nakajima, M. Sato, A. Horio, I. Mishima, M. Kaneko  |
| Effect of oxygen injection during reclaimed wastewater transportation on the microbiological quality of water   | N. Abreu, L. Rodríguez-Gómez, M. Álvarez, B. Valladares  |
| Phosphate removal and recovery by zirconium mesostructures entrapped in calcium alginate  | K. Yeon, K. Lee, Y. Park, S. Lee   |
| Basic study on phosphorus removal mechanism in MBR process with coagulant addition  | J. Nakajima, M. Hama, I. Mishima   |
| Cytotoxicity and dephosphorylation of N, N-diethyl m-toluamide (DEET) in human brain neuroblast BE(2)-M17 cells   | X. Ren, J.-S. Chang, H.-H. Lim, C.-S. Park, J. Cho, I. Kim                                     |
| Factors that resulted in membrane fouling in the initial period of a membrane bioreactor (MBR) pilot plant  | L. Sun, L. Wang, X.Y. Yuan, S.F. Li  |
| Risk in the RECLAIM WATER Project   | I. Kopac, M. Ayuso-Gabella, M. Salgot  |
| Wastewater irrigation of animal feed crops: an evaluation of existing guidelines  | P. Bevilacqua, R. Bastos, G. Costa, R. Oliveira, R. Capanema                                   |
| Reuse of wastewaters or reduce the water uses: the main issue in the developing countries   | M. Ghaferi   |
| The environmental and socio-economic benefits of wastewater use in irrigation under arid climate  | M. Ellatifi  |
| Proper management, measures as well as laws and by-laws needed towards sustainable wastewater treatment and reuse in Palestine                                | M. Sbeih   |
| The optimisation of water networks through Genetic algorithm  | J. Park, W. So, M. Park, J. Jung, C. Yoo   |
| Concept and model of centralized wastewater reuse systems in modern cities  | T. Chugg, Y. Feng, K. Wichmann, R. Otterpohl   |
| An intelligent visualization of a decision support system for decentralized wastewater treatment plants   | J. Wölle, J. Hansen, H. Steinmetz, K. Einsfeld, A. Ebert                                       |

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| POSTER TITLE  | AUTHOR  |
|---|---|
| Water Reuse in the sustainable management of water resources in the Macaronesia   | S. Delgado, L. Rodríguez-Gómez, L. Vera, F. Díaz, J. Rodríguez-Sevilla, M. Álvarez, G. Martel         |
| Environmental criteria for alternative nutrient removal in treated wastewater   | J. Muñoz, L. Sala   |
| Decision support system for planning of integrated water reuse systems  | D. Joksimovic, D. Bixio, D. Savic, G. Walters   |
| Cost-effectiveness analysis for greywater reuse systems in rural schools, Madhya Pradesh, India   | S. Godfrey, P.K. Labhasetwar, J. Govind, S. Saxena  |
| Domestic wastewater treatment in submerged packed bed bioreactors with different support materials  | P. Mijajlova Nacheva, G. Moeller-Chávez, M. Garzón Zuñiga   |
| Physiological indexes of brown fiber cotton irrigated with wastewater   | C. Azevedo, W. Alves, J. de Sousa, J. Neto, N. Beltrão, B. Ceballos                                   |
| Production of brown fiber cotton irrigated with treated wastewater  | W. Alves, C. Azevedo, J. de Sousa, J. Neto, N. Beltrão, B. Ceballos                                   |
| Use potential of stabilization pond effluent in Brazilian tropical agrosystems  | C. Montes, A. Fonseca, T. Gloaguen, U. Herpin, C. Surita, R. Pivelli, A. Melfi, F. Mendonça, T. Gomes |
| Fertility of soil irrigated with treated wastewater in the tropical semi-arid region of Northeastern Brazil   | W.A.A. Alves, C.A.V. Azevedo, J. de Sousa, J. Neto, N. Beltrão, B. Ceballos                           |
| Start-up of the "Y" form UASB reactor for tanning wastewater  | O. Peron Filho, T. Matsumoto  |
| Case study of the use of wastewater from the Gacko TPP  | I. Milojkovic, B. Obuskovic, B. Cakic, N. Milenkovic  |
| Optimization for the reuse of sewage sludge as an alternative source for agricultural soil nutrients  | G. Torres, A. Hernandez   |
| Greywater reuse efficiency for water and energy conservation at residential buildings   | R. Gonçalves, M. Pertel, P. Silva, L. Grecco, S. Cassini  |
| Towards a solution: mine wastes in domestic water on the Zambian copperbelt   | M. Kalebe, E. Van Ranst and H. Verplancke   |
| Adsorption of E. Coli on Egyptian agricultural soils: impact of soil organic content  | E. Smith, A. Badawy   |
| Textile wastewater treatment and reuse in technological processes   | L. Kos, J. Perkowski  |
| Biomass production in slow rate systems used for treatment of domestic wastewater   | V. Tzanakakis, N. Paranychianakis, A. Angelakis   |
| Experiences of wastewater reuse for industrial and agricultural purposes in Italy   | C. Collivignarelli, M. Vaccari  |
| Evaluation of two concepts to treat wwtp effluent for reuse water at a UF-RO plant  | A. Janssen, J. van Agtmaal, W. van den Broek, J. Trampe, J. van der Graaf                             |
| Eco-toxicological evaluation of advanced oxidation treatment of membrane generated industrial concentrates: preliminary study on the toxicity of a tank cleaning effluent | W. De Schepper, J. Dries, J. Robbens, H. De Bondt, L. Geuens, R. Blust                                |
| Removal of nitrogen and organic matter in swine wastewater by using advanced oxidation process  | J. Kim, I. Song, H. Oh, J. Park, Y. Choung  |
| Black water of different origin - characterisation and biological treatment   | H. Knerr, J. Hansen, H. Steinmetz, M. Engelhart, G. Sagawe  |
| The agricultural use of wastewater in different environments: A comparison between Bolivia, Ghana and Tunisia   | F. Huibers, S. Agodzo, F. Chenini, A. Durán, J. van Lier  |
| Community-based initiatives to exploit untapped run-off water for enhanced nutrition  | R. Nambooze   |