



Level 2 Room 2		Level 3 Room 16	
KEYNOTE PLENARY 1 8.30 Health and the Millennium Development Goals Jamie Bartram, World Health Organisation Introduced by Japan Bank for International Cooperation (JBIC)		KEYNOTE PLENARY 2 8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland Introduced by Siemens	
Level 3 Room 3		Level 3 Room 4	
DRINKING WATER TREATMENT		WASTEWATER TREATMENT	
Disinfection and Management of Disinfection By-products I Chair Joe Jacangelo United States 9.15 Evaluating Drinking Water Quality through an Efficient Chlorine Decay Model Veeriah Jegatheesan Australia 614516 9.35 Brominated Trihalomethanes Formation In Istanbul Water Supply Vedat Uyak Turkey 614002 9.55 Electrochemical Disinfection of Micropolluted Water Yanqing Cong China 609686 10.15 Ozone and UV: A Tool for "Multi-barrier Concepts" in Water Treatment Achim Ried Germany 608624 P 10.35 Screening of Chemical Structures Related to Haloacetic Acid Formation in Drinking Water Chlorination Process Shinya Echigo Japan 606637		Industrial Wastewater Treatment I: Microbial Fundamentals of Industrial Wastewater Treatment Chair Peter Cornel Germany 9.15 Effect of Starvation on Activity and Viability of Pseudomonas aeruginosa ATCC10145 Degrading 4-chlorophenol Germán Buitrón Mexico 606019 9.35 Comparison of Two Types of Inocula during Acclimation and Stable Operation for Nitrophenol Biodegradation in an Anaerobic–Aerobic SBR Alejandro Vargas Mexico 598277 9.55 The Performance and Microbial Diversity of a Membrane Bioreactor Treating with the Real Textile Dyeing Wastewater Sheng-Jie You Chinese Taiwan 599303 10.15 Decolorisation of a Textile-reactive Dye with Phanerochaete chrysosporium Incubated in Different Ways under Non-sterile Conditions Xianghua Wen China 600737 P 10.35 Stimulation of Dye Decolorisation by Immobilised Laccase Mediator System Prapaipid Chairattananakorn Japan 600248 P 10.40 Application of Iron-coated Starfish on the Treatment of Toxic Heavy Metals Mok-Ryun Yu Korea 596864	
Morning Tea 10.45			
DRINKING WATER TREATMENT		WASTEWATER TREATMENT	
Disinfection and Management of Disinfection By-products II Chair Joe Jacangelo United States 11.30 Modelling and Optimisation of Chlorine Dioxide Generation Wolfgang Uhl Germany 608433 11.50 Key Parameters and Kinetics of Oxidation of Lead (II) Solid Phases by Chlorine in Drinking Water Haizhou Liu China 608117 12.10 Application of Computational Fluid Dynamics (CFD) to Ozonation Contactor Optimisation Ji Li China 608094 12.30 Compliance with Legal Standards of Pre-oxidation and Disinfection By-products in Four Water Treatment Plants Rui Sancho Portugal 605683 P 12.50 Inactivation of Tubifex (Monopylephorus limosus) Found in Tap Water by Six Common Disinfectants Lin Zhu China 605453		Industrial Wastewater Treatment II: Removal of Metals 11.30 Development of Chitosan-based Granular Adsorbents for Enhanced and Selective Adsorption Performance in Heavy Metal Removal Renbi Bai Singapore 602842 11.50 Removal of Metal Ions from Electroplating Effluents by Edi Process and Recycle of Purified Water Xiao Feng China 614078 12.10 Experimental Study on Removal of Alkali-metal and Incineration of High Concentration Organic Liquid Wastes Jingying Ma China 596798 12.30 Biosorption Characteristics of Reactive Dye onto Dried Activate Sludge Ju Dong Jin Korea 604638 P 12.50 Evaluation of Biological Treatment for Removal of Heavy Metals from Flue Gas Desulphurisation Wastewaters Robert Kelly United States 605515	
Lunch 1.00			
DRINKING WATER TREATMENT		WASTEWATER TREATMENT	
Disinfection and Management of Disinfection By-products III 2.30 Aquatic Natural Organic Matter (NOM): Will It Form THMs or HAAs? Emma Harriet Goslan United Kingdom 607905 2.50 A Robust Analysis of Bromate Formation Models Peter Jarvis United Kingdom 605192 3.10 The Necessary Requirements of UV Disinfection Reactor Design Brian Petri Canada 604690 3.30 Lifetime Carcinogenic Risk from Exposures to Trihalomethanes in Drinking Water Gen-Shuh Wang Chinese Taiwan 607467 P 3.50 Study of Improving Clearwell Hydraulic Efficiency and Optimising Disinfection Wenjun Liu China 604397 P 3.55 Comparison of Bacillus subtilis Spore Inactivation by Ozone and Ferrate (FeO4 ²⁻) Hyunook Kim Korea 604499		Industrial Wastewater Treatment III: Water Reuse and Full-scale Experiences Chair Andrew Engleland United States 2.30 Closing the Water Loop in a Maltery: Reuse Tests at Pilot-scale Heleen De Wever Belgium 589739 2.50 Evaluation of Aerobic and Anaerobic Treatment of Kraft Pulp Mill Marcelo Nolasco Brazil 609592 3.10 Treatment of Pulp and Paper Effluent in China with SBR Technology Zhiping Qiu Canada 606919 3.30 Water Reuse in the Food Industry: Technological and Other Challenges Ronald Hopman The Netherlands 604401 P 3.50 Disposal and Resource of Sludge from Dyeing Wastewater Treatment Danli Xi China 596725	
Afternoon Tea 4.00			
DRINKING WATER TREATMENT		WASTEWATER TREATMENT	
Disinfection and Management of Disinfection By-products IV 4.45 The Roles of Bromide and Precursor Structures on DBP Formation and Species Distribution Gen-Shuh Wang Chinese Taiwan 607455 5.05 Utilisation of Solar Energy for the Disinfection of Drinking Water in Bangladesh Md Golam Mostafa Korea 607423 5.25 Disinfection By-product Removal in GAC Filter Yuefeng Xie United States 606937 P 5.45 Electrochemical Inactivation of microorganism Using a Boron-doped Diamond Electrode Joonseon Jeong Korea 604024		Industrial Wastewater Treatment IV: Miscellaneous Industrial Wastewater Treatment Applications Chair Pedro Alvarez United States 4.45 Successful Solution for High Nitrogen Content Wastewater Treatment from Rendering Plants Libor Novák Czech Republic 595974 5.05 Anaerobic Treatment of Organic Chemical Wastewater Using Packed Bed Reactors Petia Mijaylova Nacheva Mexico 599581 5.25 Fungal Treatment of Corn Processing Wastewater in an Attached Growth System Samir Khanal United States 607258 P 5.45 Anoxic Treatment Characteristics of Ammonium-ridden High-strength Organic Effluent by Yeast Shaokui Zheng China 600264	

Technical Programme Monday

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KEYNOTE PLENARY 1 8.30 Health and the Millennium Development Goals Jamie Bartram, World Health Organisation Introduced by Japan Bank for International Cooperation (JBIC)	KEYNOTE PLENARY 2 8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland Introduced by Siemens
Level 3 Room 11	Level 3 Room 13
APPROPRIATE AND NON-CONVENTIONAL WASTEWATER SYSTEMS Alternative Sanitation Chair Guenter Langergraber Austria 9.15 Incineration of Faecal Matter for Treatment and Sanitation Charles Niwagaba Uganda 605427 9.35 The Potential of Ecosan to Provide Sustainable Sanitation in Emergency Situations and to Achieve 'Quick Wins' in MDGs Elisabeth von Muench The Netherlands 595852 9.55 Sanitation and Excreta Management in Rural Uzbekistan Susanne Herbst Germany 605238 10.15 Financial and Institutional Challenges to Make Faecal Sludge Management an Integrated Part of Ecosan Approach: Case Study of Kumasi, Ghana Elisabeth von Muench The Netherlands 609040 P 10.35 Urine Separation: An Efficient Method for Nutrient Recovery Franz Bischof Germany 592171 P 10.40 Exemplary Treatment Processes for Yellow Water: Nutrients and Pharmaceutical Residues Felix Tettenborn Germany 608400	
Morning Tea 10.45	
WASTEWATER TREATMENT Biosolids and Sludge Management I: Sludge Dewatering and Extraction Procedures Chair Daniel Villessot France 11.30 Bench- and Pilot-scale Sludge Electrodewatering in a Diaphragm Filter Press Hans Saveyn Belgium 597931 11.50 Extracellular Polymers in Partly Ozonated Return Activated Sludge: Impact on Flocculation and Dewaterability Magdalena Dytczak Canada 605588 12.10 Use of Citric Acid for Heavy Metals Extraction from Contaminated Sewage Sludge for Land Application Dominica Dacera Thailand 603496 12.30 Development of a Microwave-assisted Digestion Technique for the Extraction of Heavy Metals from Sewage Sludge F Dilek Sanin Turkey 604727 P 12.50 Effect of Microwave Pre-treatment on Sewage Sludge Dewatering and Settling Yu Tian China 602578 P 12.55 The Effect of Humus Soil on Settling and Dewatering of Activated Sludge Ke Zhao China 603327	STRATEGIC MANAGEMENT OF WATER IN URBAN AREAS Demand Management Chair Roland Liemberger Austria 11.30 Closing the Water Loop: Singapore's Integrated Water Resource Management Ryan Yuen Singapore 607180 11.50 Application of Modern Financial Portfolio Theory to Water Resource Portfolios Mark Beuhler United States 607852 12.10 Water Demand Management Jose Manuel de la Puente Mendez Spain 608633 12.30 Study on Household Water Use in North China: Analysis of Nationwide Statistical Data and Case Study of Taiyuan City Ji Han China 602680
Lunch 1.00	
WASTEWATER TREATMENT Biosolids and Sludge Management II: Sludge Reduction Chair Franco Cecchi Italy 2.30 Experimental Study on Sludge Reduction by Ultrasound Xiuqin Cao China 599934 2.50 Combined Anaerobic/Aerobic Digestion of Sewage Sludge for Enhanced Volatile Solids Reduction and Nitrogen Removal John Novak United States 593566 3.10 Ultrasound Pre-treatment of Waste Activated Sludge: Evaluation of Sludge Disintegration and Aerobic Digestibility Samir Khanal United States 598397 3.30 Isolation and Characterisation of Thermophilic Bacteria Capable of Lysing Microbial Cells in Activated Sludge Yudong Song China 597309 P 3.50 The Pattern of Some Important Parameters in Excess Activated Sludge Reduction by Ozonation Zheng Wang China 594212 P 3.55 Ways of Innovation Routes for the Reduction of Excess Sludge Patricia Camacho France 597120	STRATEGIC MANAGEMENT OF WATER IN URBAN AREAS Water Loss Management Chair Francisco Cubillo Spain 2.30 Some International Experiences in Promoting the Recent Advances in Practical Leakage Management Marco Fantozzi Italy 602477 2.50 Effective Water Loss Management Using International Water Association Guidelines Tim Waldron Australia 602109 3.10 Redesigning Water Loss Standards in California: Using the New IWA Methodology Mary Ann Dickinson United States 607024 3.30 New Tools for Precision Pressure Management: A Case Study in SABESP, Sao Paulo, Brazil Julian Thornton Brazil 604678 P 3.50 Benefits of Applying the IWA Approach in a Water-scarce Environment: The Cyprus Experience Bambos Charalambous Cyprus 600901 P 3.55 A Study on the Relationship between Water Loss and System Operation of US Water Utilities Hyun Jung Park United States 607216
Afternoon Tea 4.00	
WASTEWATER TREATMENT Biosolids and Sludge Management III: Sludge Disposal and Full-scale Experiences Chair Antero Luonsi Italy 4.45 A Unique, Environmentally Sustainable and Cost-effective Program to Revegetate Military Training Lands Utilising Composted Wastewater Biosolids at a Large Canadian Military Training Centre Peter J Loughton Canada 598394 5.05 Utilisation of Dried Sludge for Making Ceramsite Guoren Xu China 599015 5.25 Agricultural and Energy Valorisation of Biosolids: The Case of the Paris 'Seine Amont' Wastewater Treatment Plant Pascal Vizier France 599140 P 5.45 Two Critical Considerations in the Design of a Sludge Fluid Bed Incinerator Ky Dangtran United States 599175 P 5.50 Innovative Sludge Treatment by Thermal Hydrolysis and Wet Air Oxidation Combination on N-Brussels Merzak Belkhdja France 642973	STRATEGIC MANAGEMENT OF WATER IN URBAN AREAS Reuse and Non-conventional Resources Chair Mathias Ernst Germany 4.45 An Integrated Approach to Least-cost Planning of Water Reuse Schemes Dragan Savic United Kingdom 605617 5.05 Evaluation of Economic Viability and Benefits of Urban Water Reuse and Its Contribution to Sustainable Development Lazarova Valentina France 595820 5.25 Opportunities and Impediments for Water Reuse and Recycling in European Countries Thomas Wintgens Germany 608091 5.45 The Membrane Technologies Applied To Wastewater Reuse: The Experience of Veolia Water JC Schrotter France 642912 P 6.05 Multi-purpose Rainwater Management in Korea Mooyoung Han Korea 607290



Level 3 Room 16

KEYNOTE PLENARY 2

8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water **Paul Greenfield, The University of Queensland**
Introduced by **Siemens**

Level 3 Room 30

DRINKING WATER TREATMENT

Management of the Aesthetic Quality of Drinking Water
Chair Djanette Khiri United States

9.15 State of the Art Analytical Methods for Solving Taste and Odour Episodes
Auguste Bruchet France 597096

9.35 Identification of a Sweet–Buttery Compound Causing Taste and Odour Episodes in Raw and Treated Water and Strategies Adopted in the Water Treatment Plant
Ventura Francesc Spain 605240

9.55 Development of a Closed Loop Stripping Analysis Using SPME to Analyse Geosmin and MIB in Drinking Water **Auguste Bruchet France 597128**

10.15 Sensory and Chemical Analysis Methods for Earthy and Musty Odours in Drinking Water Caused by Geosmin and 2-Methylisoborneol **Zhengping Wang United States 601276**

HEALTH AND THE ENVIRONMENT

DRINKING WATER TREATMENT

- 2.30** Variabilities in the Cost Equivalency of Decentralised Treatment Units Designed to Address Network-derived Water Quality Degradation **Walter J Weber Jr** United States [599629](#)
- 2.50** Variation of Dissolved Organic Matter and Microbial Regrowth Potential through Drinking Water Treatment Processes **Myung-goo Kang** Korea [607571](#)
- 3.10** Analysis of Particle Numbers, Size and Composition in Drinking Water Transportation Pipelines: Results of On-line Measurements **Jasper Verberk** The Netherlands [603755](#)
- 3.30** Water Quality Indicator Indices and Management Issues of Small Water Treatment Plants in Limpopo and Mpumalanga Provinces of South Africa Chikwelu **Larry Obi** South Africa [600995](#)
- 3.50** Managing the Microbiological Water Quality in a Large Distribution System with Low Chlorine Levels **John Geldenhuys** South Africa [606200](#)
- 3.55** Characteristics of Suspended Particles in Distribution Pipes **Yoshihiko Matsui** Japan [601434](#)

OPERATING AND MANAGING WATER AND WASTEWATER SYSTEMS

4.45	Evaluation of Treatment Methods to Reduce the Corrosivity of Soft Waters	Yves Jaeger	France	597744
5.05	Uncertainty Associated with Calibration of a Chlorine Decay Model and Temporal Demand Variations Using a Bayesian Algorithm	Cathelijne Flamink	United Kingdom	607949
5.25	The Incidence, Significance and Control of Microbial Pathogens and Indicators in Potable and Recycled Water Distribution Systems	Michael V Storey	Australia	602837
5.45	New Method of Removing Impurities in Pipes	Nobuo Matsuda	Japan	606632
5.50	Heterotrophic Plate Count Changes in Water Distribution System and Its Influencing Factors	Li Shuang	China	646084

Technical Programme Monday

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KEYNOTE PLENARY 1 8.30 Health and the Millennium Development Goals Jamie Bartram, World Health Organisation Introduced by Japan Bank for International Cooperation (JBIC)		KEYNOTE PLENARY 2 8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland Introduced by Siemens	
Level 3 Room 16		Level 3 Room 12	
WASTEWATER TREATMENT		INTEGRATED WATER RESOURCES AND RIVER BASIN MANAGEMENT	
Nitrogen Removal I: Anammox Process Chair Harro Bode Germany 9.15 A Study on Performance of Granular ANAMMOX Process and Characterization of the Microbial Community in Sludge Jiane Zuo China 603732 9.35 Ammonia Removal in the Catalytic Wet Air Oxygen Process of Landfill Leachates with Co/Bi Catalyst Yu Li China 599917 9.55 New Anaerobic Process of Nitrogen Removal Sergey Kalyuzhnyi Russian Federation 599078 10.15 Nitrogen Removal from the Saline Sludge Liquor by Electrochemical Denitrification Xiao-yan Li Chinese Hong Kong 595553		Integrated Water Resources Management I Chair Paul Jeffrey United Kingdom 9.15 Water Crisis in the Yellow River: Facts, Reasons, Impacts and Counter Measures Shulin Chen United States 598538 9.35 Sustainable and Integrated Water Resources Management for the Coastal Areas of Shandong Province, China WF Geiger Germany 603809 9.55 Economic Valuation of the Agricultural Impact on Nitrogen in the Water Environment by a Newly Proposed Replacement Cost Method Ikuo Yoshinaga Japan 606893 10.15 Wetland-Reservoir System Improves Water Quality and Crop Production Chin Tan Canada 588965 P 10.35 Identification of Cost-effective Technical Measures for River Basin Management Planning Sten Meusel Germany 598223	
Morning Tea 10.45			
WASTEWATER TREATMENT		INTEGRATED WATER RESOURCES AND RIVER BASIN MANAGEMENT	
Nitrogen Removal II: Microbial Fundamentals of Nitrogen Removal Chair Mark van Loosdrecht The Netherlands, Zhou Qi China 11.30 Evaluation of Nitrate Removal by Continuous Culturing of an Aerobic Denitrifying Bacterium, Paracoccus pantotrophus Kiyo Hasegawa-Kurisu Japan 596551 11.50 Characterisation of a Newly Isolated Heterotrophic Nitrifying Bacterium Yan Lin Japan 597265 12.10 Classification of Denitrifying Bacteria Isolated from Activated Sludge Nishani Ramdhani South Africa 602695 12.30 Resource Recovery and Nitrogen Removal from Piggery Waste Using Combined Anaerobic Processes In Su Hwang Hwang Korea 601899 P 12.50 Nitrification at Low pH in Fluidised Bed Reactors Michal Green Israel 600684 P 12.55 Effects of Fermentation of Food Waste as an External Carbon Source on Denitrification in a Sequencing Batch Reactor Tai Hak Chung United States 608853		Integrated Water Resources Management II Chair Wolfgang Geiger Germany, Zheng Xingcan China 11.30 Seattle Public Utilities Take a Comprehensive Approach to Security Planning and Emergency Preparedness in the Post-9/11 Era Terrence Bruek United States 606652 11.50 Water Quality and Safety Procedures and Exercises for Planning Correct Responses in Emergencies: Mekorot's Experience Sion Cohen Israel 600979 12.10 Integrated Water Resources Management on the Tonle Sap Lake, Cambodia Olli Varis Finland 603883 12.30 Determination of Design Capacity for Water Transmission Systems Based on the Characteristics of Regional Peak Factors In-Hwan Hyun Korea 607360 P 12.50 A Water Supply and Demand Forecasting Decision Support System for the Tourism Industry in Arid Coastal Regions: Case Study of Sharm El Sheikh, Egypt Aya Lamei Netherlands 608602 P 12.55 An Experience in the Benefit of the Enhancement of Reserve Margin Capacity in Taipei Water Supply System to the Crisis Management of Water Resource and Utility Chin-Tse Cheng Chinese Taiwan 600560	
Lunch 1.00			
WASTEWATER TREATMENT		INTEGRATED WATER RESOURCES AND RIVER BASIN MANAGEMENT	
Nitrogen Removal III: ICA and Process Conditions for Nitrogen Removal Chair Robert Nerenberg United States 2.30 Aeration Control for Simultaneous Nitrification-Denitrification in a BAF Using Internal Model Approach Cyrille Lemoine France 597925 2.50 Observation and Mathematical Description of the Acceleration Phenomenon in Batch Respirograms Associated with Ammonium Oxidation Albert Guisasaola Canudas Spain 608045 3.10 Removal of Nitrogen, Phosphorus and Other Priority (Hazardous) Substances from WWTP Effluent Viviane Miska The Netherlands 608408 3.30 Examining the Influence of Substrates and Temperature on Maximum Specific Growth Rate of Denitrifiers Sudhir Murthy United States 598663 P 3.50 Concurrent Nitrification, Denitrification and BOD Removal in a Hybrid Membrane Biofilm Reactor Leon Downing United States 599554 P 3.55 Alkalinity and ORP Change at Nitrification and Denitrification in a Sequencing Batch Reactor (SBR) Baikun Li United States 598291		Strategies to Manage Groundwater Chair Matthias Zessner Austria 2.30 A Pulse-injection Well-to-well Circulation Process for Bioremediation of a Nitrate-contaminated Aquifer Young Kim Korea 604054 2.50 Laboratory Simulation to Assess the Role of Fermentation in in situ Anaerobic Bioremediation Youxian Wu United Kingdom 613947 3.10 Water Supply, Wastewater Disposal, Biotope and Resource Protection In Disagreement? The Need for a Holistic Consideration Bern Bucher Germany 593677	
Afternoon Tea 4.00			
WASTEWATER TREATMENT		INTEGRATED WATER RESOURCES AND RIVER BASIN MANAGEMENT	
Nitrogen Removal IV: New and Non-biological Measures for Nitrogen Removal Chair George Ekama South Africa, Peng Yongzhen China 4.45 Ammonium Removal by De-ammonification in the SBAF Xiaoming Li China 599650 5.05 Nitrogen Removal Rates at a Technical-scale Pilot Plant with the One-stage Partial Nitrification/Anammox Process Grzegorz Cema Poland 606409 5.25 SOUR Based Evaluation of Biofilm Nitrification System Treating Side-stream Recycle Water Zuwhan Yun Korea 60059		Climate Change Impacts on Water Resources Management Chair Can Wang China 4.45 Needs for Adaptations in Catchment Area Management and Drinking Water Treatment as a Consequence of Climate Change Cornelia Wolf Germany 608429 5.05 Climate Change Induced Water Stress: Adaptive Strategies for Drinking Water Production Arthur Meuleman The Netherlands 600233 5.25 The 2003 Australian Alpine Bushfires and their Impact on Catchment Water Values John Riddiford Australia 607469 P 5.45 Water Scarcity: A Sustainable Approach for Cyprus Bambos Charalambous Cyprus 600937	





Level 2 Room 2

KEYNOTE PLENARY 1

8.30 Health and the Millennium Development Goals

Jamie Bartram, World Health Organisation

Introduced by Japan Bank for International Cooperation (JBIC)

Level 3 Room 51

APPROPRIATE AND NON-CONVENTIONAL WASTEWATER SYSTEMS

Wastewater Reuse I

Chair Zheng Xingcan China

9.15 Upper Limit of Residual Chlorine in Reclaimed Wastewater Nan Zhang China 597343

9.35 MBR-RO for High-grade Water (NEWater) Production from Domestic Used Water Guihe Tao Singapore 605424

9.55 Efficiencies of Residual Organic Pollutants Removal from Secondary Effluent by Switching of Coagulation-Air-Flotation-Filtration Processes Rongxin Huang China 606258

10.15 Ozonation of a Secondary Effluent Both for Fresh Water Protection and Reuse Valeria Mezzanotte Italy 599013

P 10.35 Green Roof Water Recycling System: GROW Shuming Liu United Kingdom 614481

Morning Tea 10.45

APPROPRIATE AND NON-CONVENTIONAL WASTEWATER SYSTEMS

Wastewater Reuse II

Chair Blanca Jiménez Mexico

11.30 Viability Reduction of Parasites (*Ascaris* spp.) in Water with Photo-Fenton Reaction via Response Surface Methodology Rosa-Maria Ramirez-Zamora Mexico 606594

11.50 Suspended Particle Effects on Ultraviolet Light Disinfection of Effluent and Improvement Wang Jianling China 595189

12.10 Effectiveness of Dual Disinfection by UV Radiation and Free Chlorine to Reduce Enteric Microbe Risks in Reclaimed Water Mark Sobsey United States 603747

12.30 Removal of Effluent Organic Matter (EOM) at Downstream Drinking Water Plant (DWTP) Baiyang Chen United States 599501

Lunch 1.00

APPROPRIATE AND NON-CONVENTIONAL WASTEWATER SYSTEMS

Wastewater in Agriculture

2.30 Agricultural Use of Reclaimed Water: Experiences in Jordan Artur Vallentin Jordan 604465

2.50 Evaluation of Phytotoxic Elements, Trace Elements and Nutrients in a Standardised Crop Plant Irrigated with Raw Wastewater Treated with Ozone and APT Orta de Velásquez Maria Teresa Mexico 606499

3.10 *E. coli* Transport in Soil Columns: Implications for Reuse of Treated Wastewater in Irrigation Edward Smith Egypt 608082

3.30 Wastewater Treatment and Land Application: A Case Study in a Town of the Chicago Metropolitan Area Fenghua Yang United States 598338

P 3.50 What Can Be Done With Saline Wastewater from Electrical Powers? Esmaiel Malek United States 595081

P 3.55 Using Recycled Water to Irrigate Vegetable Crops: The Werribee Irrigation District, Victoria, Australia Case Study Robert Faggian Australia 609253

Afternoon Tea 4.00

OPERATING AND MANAGING WATER AND WASTEWATER SYSTEMS

Operating and Managing Sewerage Collection Systems

Chair JM de Sladonha Matos Portugal

4.45 A Performance Indicator for Wastewater Collection Systems Massoud Tabesh Iran 600018

5.05 Breakdown of Air Pockets in Downwardly Inclined Sewerage Pressure Mains Christof Lubbers The Netherlands 606350

5.25 Remote Controlled Inspection Device for Large Sewers Bernd Teichgraber Germany 596313

P 5.45 Analysis of Inferior Items of Sewer Pipes Impacting Infiltration/Inflow Seungcheol Choi Korea 601364

Level 3 Room 16

KEYNOTE PLENARY 2

8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland
Introduced by Siemens

Level 2 Room 7

WORKSHOP

Frontiers in Technology: Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water

Chair David Garman Australia

9.15 – 6.00

This workshop explores the frontiers of emerging technologies with particular emphasis on bio- and nano-technologies and their convergence and application in the water industry. The rapidly evolving developments in material, biological and process biotechnologies into water applications will be examined in the workshop, considering applications in environmental, medical and industrial fields. A picture of the future of water treatment will be drawn through the workshop, linking micro- and macro-scale technology developments, considering both the opportunities and risks. By attending this workshop participants will be exposed to and learn about the technological advances that will be driving innovation over the next 20 years.

Technical Programme Monday

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KEYNOTE PLENARY 1 8.30 Health and the Millennium Development Goals Jamie Bartram, World Health Organisation Introduced by Japan Bank for International Cooperation (JBIC)	KEYNOTE PLENARY 2 8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland Introduced by Siemens
Level 2 Room 6	Level 3 Room 14
WORKSHOP	WORKSHOP
Rainwater Harvesting and Management Chairs Michael Rouse United Kingdom, Paul Reiter United Kingdom 9.15 – 1.00 <p>This workshop focuses on the water problems worldwide and provides insight into the emerging practices and products for achieving the objectives of multipurpose and proactive rainwater harvesting and management. The overall objective of the workshop is to offer a common-sense, effective and affordable approach to integrated rainwater management. The workshop will present about 40 oral and poster presentations showcasing the variety of technologies to harvest rainwater, applications for these technologies and the other benefits of rainwater management to deal with environmental problems. It is intended that this workshop will make a contribution to the debate on the impact of rainwater management to meet the Millennium Development Goals and for achieving sustainable water management.</p> <p>Session A: Problems and Solutions</p> <p>Integrated Rural Development with the Rainwater Harvesting Approach Zhu Qiang China</p> <p>Decentralized Rainwater Management: Solution for Sustainable Re-development and Interdependency Thorsten Schuetze Germany</p> <p>Arsenic Contaminated Ground Water and Rainwater Harvesting as an Alternative Water Resources to Take a Safe Drinking Water in Nepal Makhan Maharjan Nepal</p> <p>Rainwater Collection and Storage in Thailand: Design, Practices and Operation Vigid Vigneswaran Australia</p> <p>Session B: Promotion and Vision</p> <p>Community Initiatives in Capturing Rain through Terrain-specific Technologies: Examples from India Indira Khurana, Ranjan Panda India</p> <p>Sky Water and Sanitation as a Key Water Strategy for MDG Makoto Murase Japan</p> <p>Barriers to Innovation: Rainwater Harvesting Steve Moddemeyer United States</p> <p>Multipurpose and Proactive Rainwater Management Mooyoung Han Korea</p> <p>Closing Address and Conclusions</p>	Water Pricing and Tariff Structures: Trends and Case Studies Towards More Efficient Water Use Chair Renato Parena Italy, Alain Mathys France 9.15 – 1.00 <p>This session is based on the leaflet, <i>International Statistics for Water Services</i>, that the SG on Statistics and Economics has produced and presents at every biennial World Water Congress. The workshop will provide an international overview of water tariffs and key figures and then examine the role of water pricing and tariff structures in both cost recovery and the promotion of more efficient water use in advanced economies.</p> <p>Case studies will be used to examine the behavioural impacts of different pricing and regulatory regimes towards more efficient water use and management.</p> <p>The context and background to charging regimes and their appropriateness to different circumstances for water resources management will further provide interesting insights, allowing participants to investigate the rationales of water pricing and stimulating a wide and comprehensive discussion.</p> <p>Tariffs Structures as a Key Element to Reduce Water Consumption Carles Sanclemente Spain</p> <p>Cost Drivers and Operating Conditions Towards Different Tariffs Levels for Efficient Water Use Heimo Theuretzbacher-Fritz Austria</p> <p>Pricing Policies for Full Cost Recovery of Water Re-use Francesc Hernandez Spain</p> <p>Affordable Water Pricing and Tariff Structures to Optimise the Revenue Stream Nicolas Renard France</p> <p>Water Regulation and International Charging Policies at a Glance Renato Parena Italy</p> <p>Questions and Discussion with Panellists</p> <p>Closing Address and Conclusions</p>
Lunch 1.00	
WORKSHOP	WORKSHOP
WHO: Household Water Treatment and Safe Storage Chair Bruce Gordon Switzerland 2.30 – 6.00 <p>This is a focused forum for sharing experiences and developing strategies for scaling up household water treatment on a sustainable basis. It will consist of two panel presentations dealing with research and practice. During the first panel, presentations will highlight research findings and reflections on practical experiences. The second panel will feature speakers from organisations that have funded or implemented HWTS programs around the world who will discuss their experiences.</p> <p>The International Network to Promote Household Water Treatment and Safe Storage Bruce Gordon Switzerland</p> <p>The Philippines Household Water Management Project: The Role of Government in Facilitating Partnerships and Scale-up Bonifacio Magtibay The Philippines</p> <p>Initiating Large-scale Household Water Treatment and Safe Storage Activities in Indonesia Robert Ainslie</p> <p>Commercial Efforts to Scale Up Household Water Treatment in India: Marketing, Price Structures and Target Markets Susan Murcott and Nimish Shah United States</p> <p>Large Scale Ceramic Filter Initiatives in Cambodia: Sustainability, Health, and Water Quality Impacts Mark Sobsey and Joe Brown United States</p> <p>The Role of Partnerships to Support Country-level Implementation Greg Allgood United States</p> <p>Scaling up HWTS in Nepal: Opportunities, Barriers and the Roles of Stakeholders Han Heijnen</p> <p>Scaling up HWTS in Pakistan Population Services International TBC ??????????????????</p> <p>Panel Discussion Thomas Clasen LSHTM and Stephen Gundry United Kingdom</p> <p>Closing Address and Conclusions</p>	Water Pricing and Tariff Structure in Developing Economies: Trends and Case Studies Towards Sustainable Cost Recovery Chair Alain Mathys France 2.30 – 6.00 <p>Water utilities increasingly face the need for adequate financing to ensure the development of infrastructure and the maintenance of water production and distribution systems. In many developing countries cost recovery from tariff and public subsidies is far from sufficient to cover the full costs of accomplishing these tasks. This workshop will analyse current practices of cost recovery and tariff structure and their impacts, both positive and negative, on utility revenues, service delivery, affordability and the efficiency of water use. The workshop will also explore best practices in subsidising the very poor and mechanisms for strengthening user participation in the setting of rate levels and tariff structures.</p> <p>Achieving Sustainable Cost Recovery in Developing Countries: A Necessary Condition to Reach the Millennium Development Goals Alain Mathys France</p> <p>Water and the Poor: Who Benefits From Utility Subsidies Anne Olivier France</p> <p>Challenging Water Prices in India Urmila Brighu India</p> <p>Concepts of a New Tariff Structure Improving Revenues Predictability and Social Affordability in Manaus, Brazil Thierry Schock Brazil</p> <p>Guidelines for User Fees and Cost Recovery Cyrus Njiru Tunisia</p> <p>Regulating New Connection Charges: Evidence from Four Countries Richard Franceys United Kingdom</p> <p>Pricing for the Poor in Brasil Marcio Augusto Vasconcelos Nunes Brasil</p> <p>Questions and Interactive Discussions between Audience and Panellists</p> <p>Global Conclusions of the Morning and Afternoon Workshops</p>





Level 2 Room 2

KEYNOTE PLENARY 1

8.30 Health and the Millennium Development Goals

Jamie Bartram, World Health Organisation

Introduced by Japan Bank for International Cooperation (JBIC)

Level 2 Room 8

WORKSHOP

The Rational System: Strategic Asset Management, Benchmarking and Performance Indicators

Chair Enrique Cabrera Spain

9.15 – 6.00

There is a growing recognition worldwide of the importance of strategically managing the largely hidden physical assets of utilities. This workshop is aimed at the three legs of this process in developing “the rationale system” for asset management – the development of strategic asset management systems themselves, the importance of benchmarking supporting systems and how to deal with the underlying performance indicators. Leading international authorities and utilities will join forces in the workshop to describe the “rationale system” and to highlight utility best practices in this field through the use of international case studies.

By attending this workshop, you will become acquainted with best practice from around the world in this field and have an opportunity to interact with leading international figures and utilities.

Part I – Strategic Asset Management

State-of-the-art in Asset Management H Alegre Portugal

Overview of the Different Approaches to Asset Management Worldwide

Case Study: South Africa Roy Thomson South Africa

Case Study: Australia Don Vincent Australia

Case Study: United States Scott Haskins United States

Questions and Discussion

Part II – Performance Indicators

Presentation of the 2nd edition of IWA MBP on Performance Indicators. Highlights – Understanding the IWA Performance Indicators System. Structure and Implementation. E Cabrera Spain

Performance indicators and metric benchmarking. Findings of the EU funded COST C18 Action. Interpretation methods and decision support tools. State of the art report. Froydis Sjøvold Norway

Learning from previous experiences. Case studies in the use of performance indicators worldwide. Findings and shortcomings. Karl Rohrhofer Austria

Questions and Discussion

Part III – Benchmarking

Case Study: World Bank / IBNet Meike van Ginneken

Case Study: Mexico Victor Bourguett Mexico

Case Study: Brasil Jose Lucio Lima Machado Brasil

Case Study: Denmark Jens Bastrup Denmark

Case Study: Holland Theo Schmitz The Netherlands

Case Study: Australia WSAA Paul Harris Australia

Discussion with Panel

Closing Address and Conclusions

Level 3 Room 16

KEYNOTE PLENARY 2

8.30 Exploring the Frontiers of Emerging Bio- and Nano-technologies and their Application in Water Paul Greenfield, The University of Queensland Introduced by Siemens

Level 3 Room 4

ADDITIONAL SESSIONS

Water Management in China

Chair Zhang Yue China

9.15 – 6.00

A day of sessions focusing on the effective management of water in China. These sessions will be of particular interest to local researchers, practitioners and decision makers and also to an international audience who wish to gain a perspective on the current status of water management in China and the future challenges. The increased urbanisation of the population and industrialisation of business in China pose increasing demands on the management of wastewater and drinking water, necessitating the need for improved regulation and novel means of ensuring regulatory standards are met.

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