



World Water Congress
and Exhibition

Invitation to register & preliminary programme

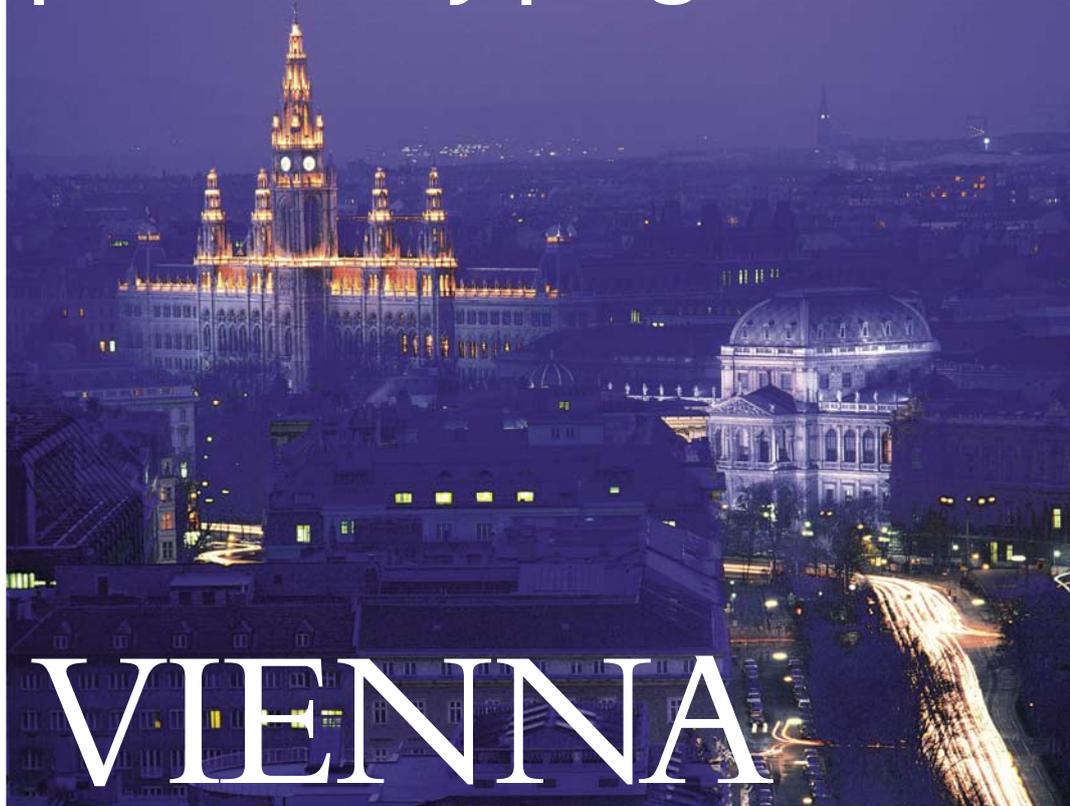
Institutional partner



Principal sponsors



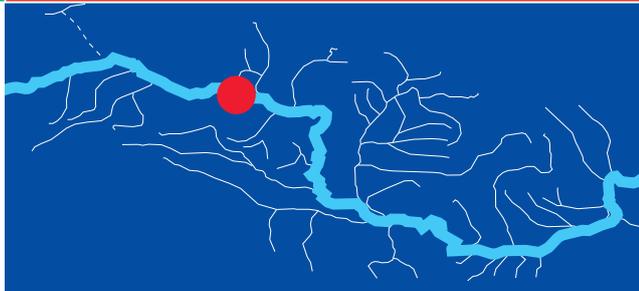
Platinum sponsor



www.iwa2008vienna.org

7-12 SEPTEMBER 2008 AUSTRIA CENTER VIENNA

Organisers



Earlybird registration discount closes 1 July 2008



Institutional partner

City of Vienna *Vienna is special.*

Vienna's tradition as an important conference venue dates back to 1815, when the city hosted the peace negotiations after the Napoleonic wars at the "Congress of Vienna." Today the city is the seat of numerous international organisations and a hub for cooperation at many levels, particularly after EU Eastern enlargement. It is also one of the leading international conference venues and one of the world's favourite congress cities. Vienna is a clean, green and safe place. The IWA World Water Congress & Exhibition participants will be made to feel very welcome and can embark on carefree explorations of the manifold facets that make up this metropolis. A visit to the City of Vienna exhibition pavilion will help delegates familiarise themselves with the "wet" facets of the Austrian capital. With its position on the river Danube, a unique water supply system fed by mountain springs and a state-of-the-art main wastewater treatment plant, the City of Vienna offers a wide and interesting range of attractions for water experts from all over the world. Danube Island, which was created for flood protection purposes, is an example of sustainable water management as practised by the City of Vienna. In addition to the main event, a variety of municipal departments of the City of Vienna invite you to learn more about Vienna and its sustainable attitude to the crucial resource that is water.

Vienna Waterworks

Walter Kling
Grabnergasse 4-6, 1060 Vienna
Tel. +431 59 9 59 31002
Fax +431 59 9 59 7311
Email walter.kling@wien.gv.at
www.wien.at/english/environment/watersupply/

Stadtspark, Johann-Strauss-Monument
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Principal sponsors

SIEMENS

Siemens Water Technologies provides answers to some of the world's most pressing water issues. We develop drinking water and wastewater technologies that help manage the world's water resources more effectively. Our membrane technology treats more than 1.3 billion gallons of water per day for water reuse and reclamation, helping reduce the demand on potable water worldwide. Siemens serves more than 90 per cent of the Fortune 500 manufacturing companies, including approximately 100,000 industrial customers. Through high-purity technology and related services, Siemens provides answers to industry and manufacturers by helping them meet specific water quality requirements to ensure consistent processes and production. We also help industry meet ever-increasing wastewater regulations, while improving efficiency and reducing waste. Siemens is a global water treatment equipment and service provider with more than 5,500 employees at 170 locations worldwide. More than 200,000 technology and service installations around the world illustrate the company's product, process and service expertise. More than 2,100 water-related patents and trademarks illustrate our innovative spirit and passion for taking care of the world's water.

Siemens Water Technologies

Tel. +1724 772 1402
Email information.water@siemens.com
www.siemens.com/water

SUEZ ENVIRONMENT

SUEZ Environment, a SUEZ business line, is proud to support the IWA World Water Congress and Exhibition held this year in the historical city of Vienna. For decades, SUEZ Environment has nurtured a culture of dialogue like we will experience in Vienna. For instance, our Foresight Advisory Council (FAC) provides advice on how to respond to emerging water industry issues. The company employs a partnership strategy in new markets, working hand-in-hand with local operators so that our technical skills can supplement their knowledge of local conditions. The themes of the IWA Congress are at the core of our approach to anticipate upcoming environmental challenges, such as water scarcity. Degrémont, SUEZ Environment's water treatment plant specialist, is building a major desalination plant in Barcelona, a city that is facing a

serious shortage of drinking water. In Central Europe, SUEZ Environment is active in most of Austria's neighbouring countries: the Czech republic, Germany, Slovakia, Hungary, Poland and Slovenia, assisting these countries to comply with new EU regulations in the environmental field. SUEZ Environment provides equipment and services that protect the environment and deliver the essentials of life. Its activities include drinking water production and distribution, wastewater collection and treatment and waste treatment and recovery. The company employs 62,000 people worldwide and generated revenues of € 12 billion in 2007.

SUEZ Environment

www.suez-environnement.com



Veolia Water is very pleased to sponsor the IWA World Congress again this year. This event provides one of the most qualitative opportunities for the water industry to meet and share best practices and ideas to better serve populations, local authorities and governments throughout the world. Veolia Water's daily vocation matches the cross-cutting themes of the 2008 congress: the impact of climate change on our operations within the framework of a sustainable management approach in different local contexts, sanitation for all, reducing environmental footprint and managing the urban water metabolism in an IWRM context. The company is also the leading water operator in many countries of the Danube water basin, serving 4 million people with drinking water and 5.5 million with sanitation. With significant contracts in the Czech Republic, Slovakia, Hungary and

Fiaker in front of the Imperial Palace
© WienTourismus / MAXUM





Romania, our extensive experience of the specific challenges faced by these countries will be shared during the congress. At the 2008 congress, Veolia Water will be pleased to invite and meet with industrial companies interested in using the latest state-of-the-art technologies and in discovering strong operational management capabilities in reducing water costs and protecting the environment. Veolia Water, the world's leading operator of water services, provides water and wastewater services for public authorities and industries. The company also designs technological solutions and builds the requisite facilities.

Veolia Water

52 Rue d'Anjou, 75008 Paris
Tel. +33 1 49 24 49 24
Fax. +33 1 49 24 69 59
www.veoliawater.com

Veolia Wasser GmbH

Niederlassung Wien
Leiterin Unternehmensentwicklung
Österreich
Email phoefinger@veoliawasser.at

Veolia Water Systems Austria GmbH

Email karl-heinz.buechl@veoliawater.com

Platinum sponsor



Water is the essential element of life on Earth. How we use this precious resource and return it for reuse will help define the future of humanity. ITT Corporation is deeply involved in the cycle of water use and reuse. We are committed to the wise and sustainable development and use of the world's water. ITT provides solutions for all the steps of the water cycle, from raw water intake, treatment, disinfection and distribution to collecting the used water, treating the wastewater and releasing it back to nature. Globally we are participating in helping municipalities, industries and individuals to protect and efficiently use this precious resource. ITT is a global sponsor of the IWA World Water Congress 2008. ITT Corporation (NYSE: ITT) is a US\$8 billion global multi-industry engineering and manufacturing company. ITT operates on every continent, providing state-of-the-art products, services and solutions in water and wastewater technology, defence electronics, electronic components and motion and flow control.

ITT Corporation

www.ittfuidbusiness.com

Gold sponsors



Buderus Cast Iron Pipe Systems, consisting of the two companies BGW and TRM, belongs to Pipe and Pile International S.A. based in Wasserbillig, Luxemburg. Buderus Cast Iron Pipe Systems has around 600 employees and is located in Wetzlar, Hall / Tyrol and Beroun / Czech Republic. Buderus is one of the leading manufacturers in Europe of ductile cast iron socket pipes for freshwater and wastewater systems. A highlight of these pipes is their tug- and nudge-proof VRS-T / BLS connection and PUR exterior coating. We also produce a range of fittings to accompany all our pipes. Another innovative product is the TRM gutter pile, which is used in the construction of multi-level foundations.

Buderus Tiroler Röhren-und Metallwerke AG

Innsbrucker Straße 51,
6060 Hall in Tirol, Austria
Tel. +43 5223 503 0
Fax +43 5223 43 619
Email office@trm.at
www.gussrohre.com



Water is our most precious resource. Yet despite this obvious fact, more than a third of the world's drinking water is lost from municipal distribution systems. This lost water is valued at the staggering sum of \$18 billion each year. Reducing the current enormous level of water loss is vital. Not only will it alleviate the environmental problems related to water scarcity, but it will save energy and greatly improve the economic situation of both municipalities and residents. Miya was established in 2007 by Arison Investments, a global business incorporating leading firms in Israel and throughout the world. Miya's mission is to help municipalities implement comprehensive water solutions to enhance both their financial and environmental circumstances.

Miya – Water Efficiency Solutions

23 Shaul HaMelech Boulevard
Tel Aviv 64367 Israel
Tel. +972 3 7180226
Fax +972 3 7180222
Email miya-info@arison.co.il
www.miya-water.com

Schönbrunn Palace, spring fountain
© WienTourismus / MAXUM



The Best Water Technology Group (BWT) and Christ Water Technology Group are sister companies since their separation in 2005. BWT and CHRIST are the leading water technology companies in Europe. A combined workforce of 3,700 employees in 100 subsidiaries and associates provide private, industrial and municipal customers with innovative technologies that deliver maximum safety, hygiene and health in their daily contact with water – the elixir of life. The product range includes turnkey water treatment products, plants and services for drinking water and process water for individual homes, hotels, trade, industries (pure and ultrapure water for pharma, power, semicon) and municipalities (desalination, drinking water, wastewater).

BWT Group

Simone Spitzbart, Ralf Burchert
Tel. +43 6232 5011 ext 1130 or 1113
Email: office@bwt.at
www.bwt-group.com

Christ Water Technology Group

Christian Stark
Tel. +41 61 7558 238
Email: christian.stark@christ.ch
www.christwater.com



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St Stephens Cathedral with Fiaker
© WienTourismus / Stefan Liewehr



**International
Water Association**

The International Water Association (IWA) is a global network of water professionals spanning the continuum between research and practice and covering all facets of the water cycle. The Association's members collaborate on effective and sustainable approaches to water management, with emphasis on the science and management of drinking water, wastewater, stormwater and the conservation of water resources throughout the world. IWA seeks to create value and drive the advancement of science and best practice water management in the fields of water resources, irrigation and drainage. The ultimate strength and potential of IWA lie in the professional and geographic diversity of its membership – a "mosaic" of member communities, including academic researchers and research centres, utilities, consultants, regulators, industrial water users and water equipment manufacturers. IWA members represent the leading edge in their fields of expertise and work together to build new frontiers in global water management through interdisciplinary exchange and collaboration.

IWA

Tel. +31 703 150 793
Fax +31 703 150 799
Email water@iwahq.org
www.iwahq.org

Joint organising committee

Walter Kling	Congress president
Paul Reiter	Executive Director IWA
Roy Agterbos	Exhibition manager
Margaret Bates	Event manager
Bernie O'Neill	IWA meetings
Keith Robertson	Scientific and technical programme
Hans Sailer	IAWD
Andrea Shufflebotham	Sponsor liaison
Andrew Walker	Media



**International Association
of Water Supply Companies
in the Danube River
Catchment Area**

The International Association of Water Supply Companies in the Danube River Catchment Area (IAWD) was founded in 1993 to improve and safeguard the water quality of the Danube and its tributaries. The association encourages all measures and attempts directed at avoiding and eliminating all contamination of, and hazards to, raw water quality in the Danube region in order to ensure reliable drinking water supply. With the IWA World Water Congress in Vienna, IAWD is celebrating its 15-year anniversary. In the past two years, IAWD has focused its efforts on the Vienna congress to provide global experts with an excellent account of water management in residential areas of the Danube basin. In the years to come, IAWD will continue to develop its water management goals. The congress is one step towards helping to raise public and political understanding of the complex issues of water management in residential areas.

IAWD

Tel. +431 59959 31002
Fax +431 59959 7311
Email office@iawd.at
www.iawd.at

Congress technical programme committee

Helmut Kroiss (chair)	Austria
Norbert Jardin (vice-chair)	Germany
Akissa Bahri	Ghana
John Batten	USA
Don Bursill	Australia
Yves Comeau	Canada
In Kim	Korea
Jacques Labre	France
Gerard Luyet	Switzerland
Yang Min	China
Takashi Mino	Japan
Bruno Nguyen	France
Dayanand Panse	India
Paul Reiter	IWA
Regina Sommer	Austria
Rhodes Trussell	USA



The International Water Association's 2008 World Water Congress and Exhibition in Vienna offers the global community of water professionals an unparalleled opportunity to experience the very best of water science, research, practice and management from around the world.

This experience starts with your participation in an extraordinary technical programme that ranges from the critical issues of our time – climate change, explosive population growth, a global sanitation crisis and urbanisation – to emerging breakthroughs in biotechnology and the leading-edge of applied research and technology. A regional focus on the Danube, a summit of Europe's local government leaders and a water utility leaders' forum add to an already rich technical programme.

The congress's keynote speakers, who are leading experts in their fields and represent the world's top institutions and political bodies, will share with you their insight and perspectives on the emerging trends and challenges the sector faces today and in the future.

The congress will also provide you with the opportunity to meet the world's top figures in all aspects of water and network with your peers from around the world. For many it is this chance for collaborative engagement which makes the IWA World Water Congress one of the world's most important water events.

That is not to forget the exhibition and industry forum, where you will meet first-hand the companies and organisations behind leading-edge products, services and processes.

And all of this in one of the world's most beautiful cities – Vienna. Taking full advantage of Vienna's architectural and cultural assets, the congress gala night will be a feast of music and dancing. For congress delegates only, the Vienna Symphony Orchestra will be performing a unique and exclusive concert.

Vienna's weather in September is ideal and there are unlimited local and regional excursions that can be made. Partners, family and friends alike can join you in experiencing the full range of activities of an IWA congress in Vienna.

For all these reasons, we warmly invite you to join us from 7–12 September 2008 in Vienna for the IWA World Water Congress and Exhibition.

See you there.



Dr David Garman
IWA President



Walter Kling
Congress President

The Danube River
© Vienna Waterworks/Georg Riha



Special events

Opening ceremony

Sunday 7 September
5.00 – 6.30 pm
Austria Center Vienna

Delegates, partners and exhibitors are all invited to attend.

Welcome reception

Sunday 7 September
6.30 – 8.00 pm
Austria Center Vienna

The welcome reception is the kick-off social event for the whole week of activities. Drinks and snacks will be served.

Austria Center Vienna



Danube Island Festival/Main stage
©WienTourismus/Ulli Koscher

Danube Island Festival

From Friday 5 to Sunday 7 September the Danube Island Festival will take place in Vienna. With more than 1 million visitors per day, this is the biggest open-air festival in Europe. Entrance is free and will feature more than 300 bands and events on 20 stages, from Viennese traditional music to jazz, hard rock, techno, hip hop, DJ's and cabaret groups.

Musikverein © Wien Tourismus / Lois Lammerhuber

Concert at Musikverein with Vienna Symphony Orchestra

Tuesday 9 September
7.00 – 9.00 pm
Musikverein, 1010 Vienna,
Börsendorferstrasse 12
Dress: Suit and tie, eveningwear

There are many music societies but only one Musikverein. Music lovers throughout the world know it as the centre of Viennese musical culture, as the focus of the international concert circuit and as the Eldorado of classical music.

IWA has organised a Vienna Symphony Orchestra concert exclusively for Congress participants at the famous Golden Hall of the Musikverein, well-known for its architectural splendour and as the venue of the Vienna New Years Concert. Hearing Mozart and Strauss in this wonderful building will be an unforgettable experience.

Tickets are € 105,00 excluding VAT of 20% per person. Booking is via the congress registration form or online. There is limited space so tickets are available on a first-come, first-served basis.



Palais Ferstel

Vienna City Hall © Stadt wien marketing

IWA PIA dinner

Wednesday 10 September
7.00 – 10.30 pm

Palais Ferstel, 1010 Vienna, Strauchgasse 4
Dress: Business attire

The global winners of the prestigious IWA Project Innovation Awards (PIA) will be announced at this exclusive dinner to be held in the Palais Ferstel, one of Vienna's grandest and architecturally interesting buildings located in the historic first district.

In keeping with IWA's mission of connecting water professionals worldwide to lead the development of effective and sustainable approaches to water management, the IWA Project Innovation Awards recognise excellence and innovation in water engineering projects throughout the world.

The Chair of the Global Judging Panel, William Dee, will present highlights of the nominees' world-class innovative projects before announcing the global and overall winners.

The Project Innovation Awards are sponsored by Black & Veatch, GHD, Kiwa Water Research, Malcolm Pirnie Inc, MWH and SKM.

Another special kind of innovation is in the area of utilities communications. IWA

will also present the IWA Marketing and Communications Award 2008 at the dinner. The purposes of this award are to enhance an integrated and sustainable view on water and heighten awareness among water utilities worldwide of the increasing importance of establishing professional and effective communications with users of water and wastewater services.

Tickets are limited and available via the IWA Executive Secretary, email bernie.oneill@iwahq.org.

Closing ceremony

Thursday 11 September
3.30 – 4.15 pm
Austria Center Vienna

Delegates, partners and exhibitors are all invited to attend.

Gala night

Thursday 11 September
7.00 pm to early hours of the morning
Vienna City Hall, 1010 Vienna, Rathausplatz
Dress: Business attire or national costume

The congress will conclude with a gala night unlike any other. To be held in Vienna City Hall, one of the Austrian capital's best-known architectural landmarks and the seat of power in the city, the gala night will be a feast of buffet-style food, drink, music and dancing spread across all the function rooms and the arcade courtyard.

You will be able to sample a variety of tastes representing various cuisines from the Danube region. The entertainment will range from classic-style waltz to midnight clubbing.

Attendance at the gala night is included in most registration types (see the first page of the registration form for details). Extra tickets are available for € 100,00 excluding VAT of 20%. Booking is via the registration form or online.

Programme planner



Sunday	Monday 8 September					Tuesday 9 September					
Opening ceremony 5.00 – 6.30 Welcome reception 6.30 – 8.00 Exhibition open 8.30 – 6.00	8.30	9.00 – 10.30	11.15 – 12.45	2.15 – 3.45	4.30 – 6.00	Exhibition open 8.30 – 6.00 Poster session 5.00 – 7.00 Exhibition open 8.30 – 6.00	8.30	9.00 – 10.30	11.15 – 12.45	2.15 – 3.45	4.30 – 6.00
	Keynote plenary session: Water, climate and energy						Keynote plenary session: Cities of the future				
		Adsorption and ion exchange	Adsorption and ion exchange	Adsorption and ion exchange	Biological treatment of drinking water		Development theme: policy and the institutional environment	Development theme: new sanitation approaches for developing countries	Development theme: new sanitation approaches for developing countries	Development theme: mitigating water supply challenges in developing countries	
		Nitrogen removal and recovery	Nitrogen removal and recovery	Phosphorus removal and recovery	Phosphorus removal and recovery		Membranes in water treatment	Membranes in water treatment	Membranes in water treatment	Conventional and full-scale treatment	
		Industrial wastewater treatment	Industrial wastewater treatment	Industrial wastewater treatment	Wetland systems		Upgrading wastewater treatment systems	Upgrading wastewater treatment systems	Sludge and biosolids management	Sludge and biosolids management	
		Occurrence and removal of hazardous substances in wastewater	Occurrence and removal of hazardous substances in wastewater	Occurrence and removal of hazardous substances in wastewater	Managing urban water metabolism in cities in an IWRM context		Advanced oxidation processes in wastewater treatment	Advanced oxidation processes in wastewater treatment	Advances in physico-chemical processes and technology	Activated sludge population dynamics	
		Managing and maintaining water supply networks	Managing water quality in distribution systems	Operation and optimisation of DWTs	Water resource conservation and utilisation		Wastewater reclamation and reuse	Wastewater reclamation and reuse	Wastewater reclamation and reuse	Decentralised wastewater collection and treatment systems	
		Biodegradation of hazardous substances	Health-related water microbiology	Health-related water microbiology	Microbial ecology		Assessment of anthropogenic impacts on water quality	Monitoring system development and data management	Model development and application	Model development and application	
		Governance and regulation	Economics, pricing and financing of water services	Measuring and improving performance and sustainability indicators and benchmarking	Serving citizens, consulting stakeholders and managing the customer base		Strategic management of water resources in urban water systems	Strategic management of water resources in urban water systems	Demand management, water conservation and metering	Disaster preparedness: response and recovery	
		Protection of natural drinking water sources	Point and diffuse pollution control	Institutional development and trans-boundary cooperation	Regulatory practice, water quality objectives and standard setting		Hazard analysis and detection methods	Hazard analysis and detection methods	Water safety plans	Risk assessment, disease burden and health surveillance	
		Providing livelihoods and water for a rapidly growing population	Global warming and climate change	Global warming and climate change	Global warming and climate change		Strategic asset management and long-term planning	Rehabilitation and maintenance of assets	Strategic asset management: phase two	Strategic asset management: phase two	
		Frontiers in science, research and technology: can we imagine the future as we invent it?	Frontiers in science, research and technology: can we imagine the future as we invent it?	Frontiers in science, research and technology: can we imagine the future as we invent it?	Frontiers in science, research and technology: can we imagine the future as we invent it?		Water and energy: reducing our carbon footprint in the context of global warming	Water and energy: reducing our carbon footprint in the context of global warming	Water and energy: reducing our carbon footprint in the context of global warming	Water and energy: reducing our carbon footprint in the context of global warming	
		Future of sanitation: expanding sanitation options to meet diverse needs around the world	Future of sanitation: expanding sanitation options to meet diverse needs around the world	Future of sanitation: expanding sanitation options to meet diverse needs around the world	Future of sanitation: expanding sanitation options to meet diverse needs around the world		Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	
		Barriers to innovation: exploration of pathways for translating wishes into realities	Barriers to innovation: exploration of pathways for translating wishes into realities	Women, water and leadership	Women, water and leadership		Water, nutrition and nutrients: platforms for water protection in agriculture	Water, nutrition and nutrients: platforms for water protection in agriculture	Water, nutrition and nutrients: platforms for water protection in agriculture	Water, nutrition and nutrients: platforms for water protection in agriculture	
		Biofouling and membranes for water and wastewater	Biofouling and membranes for water and wastewater	Non-revenue water	Non-revenue water		100 years of disinfection	100 years of disinfection	Urban water decision-making: emerging challenges for planning water supply	Urban water decision-making: public participation, levels of service and risk assessment	
		Specialist group meetings	Specialist group meetings	Specialist group meetings	Specialist group meetings		Good modelling practice: guidelines for use of activated sludge models	Good modelling practice: guidelines for use of activated sludge models	Trends and opportunities for international cooperative research	Trends and opportunities for international cooperative research	
		Industry forum	Industry forum	Industry forum	Industry forum		Industry forum	Industry forum	Industry forum	Industry forum	
		Industry forum	Industry forum	Industry forum	Industry forum		Industry forum	Industry forum	Industry forum	Industry forum	



Wednesday 10 September						Thursday 11 September						Friday			
Exhibition open 8.30 – 6.00	8.30	Keynote plenary session: The Danube	9.00 – 10.30	11.15 – 12.45	2.15 – 3.45	4.30 – 6.00	8.30	Keynote plenary session: Zero emissions in industry - why not in utilities?	9.00 – 10.30	11.15	12.45 Lunch break — Best poster award ceremony 1.00 – 1.30	Closing plenary 2.15 and Harremoës lecture	Closing ceremony 3.30 – 4.15	Gala night 7.00	Technical tours
			Disinfection and disinfection by-products	Disinfection and disinfection by-products	Disinfection and disinfection by-products	Drinking water quality			Advances in biological processes and technology	Advances in biological processes and technology					
			Membrane systems for wastewater treatment	Membrane systems for wastewater treatment	Membrane systems for wastewater treatment	Odours and volatile emissions			Emerging issues for health and the environment	Safety of recreational waters					
			Anaerobic processes	Anaerobic processes	Modelling wastewater treatment processes	Modelling wastewater treatment processes			Biofilm processes	Biofilm processes					
			Waste stabilisation ponds	Social dimensions, access to water and sanitation and capacity building	Water safety plans	Water safety plans			Strategies for water resource management (including reuse)	Water resource management and regulation					
			Design costs and planning of waste water treatment plants	Design, costs and planning of drinking water treatment plants	Managing and maintaining water supply networks	Non-conventional treatment			Managing and maintaining sewer systems	Instrumentation, control and automation					
			Drinking water quality management from source to consumer	Drinking water quality management from source to consumer	Toxicity and environmental impact assessment	Toxicity and environmental impact assessment			Climate change cross-cutting theme	Climate change cross-cutting theme					
			Innovative water treatment	Innovative water treatment	Oxidation in water treatment	Oxidation in water treatment			Regulatory and institutional change: global trends and case studies	Regulatory and institutional change: global trends and case studies					
	Desalination and reuse: rethinking future resources	Desalination and reuse: rethinking future resources	Desalination and reuse: rethinking future resources	Desalination and reuse: rethinking future resources	Desalination and reuse: rethinking future resources	Desalination and reuse: rethinking future resources									
	Keynote plenary session: Upscaling water and sanitation services	Succession strategies: developing the next generation of leaders in key areas of the water sector	Succession strategies: developing the next generation of leaders in key areas of the water sector	Water and sanitation: challenges and solutions for the world's poor urban populations	Water and sanitation: challenges and solutions for the world's poor urban populations	Keynote plenary session: IWRM and catchment management in large basins	Water, engineering and education: are our educational institutions meeting today's imperatives?	Water, engineering and education: are our educational institutions meeting today's imperatives?							
		Water operators partnerships: a building block in achieving the MDGs	Water operators partnerships: a building block in achieving the MDGs	Water operators partnerships: a building block in achieving the MDGs	Water operators partnerships: a building block in achieving the MDGs		Rainwater harvesting	Rainwater harvesting							
		Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes	Cities of the future: pioneering and reengineering urban design for sustainable water outcomes		Proactive crisis management of urban infrastructure	Proactive crisis management of urban infrastructure							
		Managing the Danube and other basins	Managing the Danube and other basins	Managing the Danube and other basins	Managing the Danube and other basins		Groundwater as a threatened resource: mitigation strategies around the world	Groundwater as a threatened resource: mitigation strategies around the world							
		Applied benchmarking for utilities: how, what and when	Applied benchmarking for utilities: how, what and when	Plant-wide simulation protocol and platforms for benchmarking of control strategies for wastewater treatment plants	Plant-wide simulation protocol and platforms for benchmarking of control strategies for wastewater treatment plants		Large WTPs: emergent pathogenic and chemical risks and response	Large WTPs: emergent pathogenic and chemical risks and response							
		The sustainability agora	The sustainability agora	Triple bottom line reporting	Specialist group on sustainability prize presentations		Specialist group meetings	Specialist group meetings							
		Industry forum	Industry forum	Industry forum	Industry forum		Industry forum	Industry forum							
		Industry forum	Industry forum	Industry forum	Industry forum		Industry forum	Industry forum							

Preliminary technical programme



Monday	Monday	Monday
Wastewater treatment	Wastewater treatment	Wastewater treatment
<p>9.00 Adsorption and ion exchange 1 Manganese(II) adsorption characteristics of selected filter media for groundwater treatment Richard Buamah Netherlands 666584 Elimination of persistent odorous compounds from drinking water George Sorial United States 663155 Aqueous NOM removal by quaternary ammonium-compound-modified iron-oxide-coated sand Chii Shang Chinese Hong Kong 663233 Effects of ion exchange resin pre-treatment on GAC adsorption Beatrice Sani Italy 666187 Influence of micrometer activated carbon powder on the adsorption of micropollutants in water Pierre Le Cloirec France 663759 Ion exchange: quality improvement of drinking water Doeke Schippers Netherlands 662873</p>	<p>9.00 Nitrogen removal and recovery 1 Improvement of BNR process performance by equalization of step inflow distribution Takao Murakami Japan 666203 Influence of influent COD and COD/TN on denitrification Hongjuan Hou China 662867 Characterizing denitrification kinetics using various carbon sources in lab-scale SBRs Yalda Mokhayeri United States 666469 The role of nitrite/free nitrous acid on N₂O production during denitrification Jurg Keller Australia 665604 Application of spent sulfidic caustics for autotrophic denitrification in an MLE process Jeungjin Park Korea 665695 VFA-driven DEAMOX process for treatment of BOD-deficient strong nitrogenous wastewater Sergey Kalyuzhnyi Russian Federation 662725</p>	<p>9.00 Industrial wastewater treatment 1 Mineralization of TFP in photo-assisted persulfate oxidation Yao-Hui Huang Chinese Taiwan 665929 ZLD approach in plating industry: treatment by electrocoagulation and anodic oxidation Sylvain Hermon France 665274 Application of an anaerobic hybrid reactor for petrochemical effluent treatment Mohammad Taghi Jafarzadeh Iran 664026 Reduction of EDTA from PCB wastewater using low pH process Shiao-Shing Chen Chinese Taiwan 667227 Diethylamine removal from synthetic wastewater by <i>Acinetobacter baumannii</i> TRP5 in batch reactor Chun-Chin Wang Chinese Taiwan 665952 3-chlorophenol biodegradation in a sequencing batch reactor: filling time study Agostina Chiavola Italy 664471</p>
Morning tea 10.30		
<p>11.15 Adsorption and ion exchange 2 Adsorption kinetics of <i>E. coli</i> and <i>Staphylococcus aureus</i> on single-walled carbon nanotube aggregates Shuguang Deng USA 662877 Removal of arsenic(V) onto chitosan: sorption mechanism Claire Gerente France 664878 Preparation of aminated polyacrylonitrile fibres and their sorption for arsenate Shubo Deng China 663395 The influence of dissolved organic carbon on metal sorption to pine bark in a batch experiment Emma Nehrenheim Sweden 663600 Effects of NOM pre-loading on physical characteristics and remaining MTBE adsorption capacity Silvana Velten Switzerland 665175 Ion exchange processes for arsenic removal from solutions with high sulfate concentrations Renato Bacocchi Italy 666251</p>	<p>11.15 Nitrogen removal and recovery 2 Performance of a bench-scale hybrid membrane biofilm process for nitrogen removal Leon Downing United States 665377 Industrial wastewater as an external carbon source to optimise nitrogen removal Jacek Makinia Poland 666930 Granular biomass capable of partial nitrification and anammox Siegfried Vlaeminck Belgium 664990 Anammox process for synthetic and practical wastewater treatment using novel biomass carriers Sen Qiao Japan 664325 Nutrient recovery from source-separated urine-steam stripping in demo scale Felix Tettenborn Germany 666018 Activated sludge treatment of high salinated wastewater Stefan Grube Germany 664970</p>	<p>11.15 Industrial wastewater treatment 2 Experimental design to optimize degradation of organic compounds in semiconductor wastewater Nidia Caetano Portugal 666640 Treatment of succinonitrile wastewater by immobilized high efficiency microorganism strains Yalei Zhang China 666415 Treatment of perchlorate-contaminated wastewater using zero-valent iron Se Chang Ahn United States 666485 Innovative submerged membrane fungi reactor for textile wastewater treatment Faisal Ibney Hai Japan 664472 Performance of a compost biofilter with earthworms to treat cheese whey Gerard Merlin France 663468 Effect of sludge retention time on treating high load wastewater Mohammad Reza Alavi Moghaddam Iran 665918</p>
Lunch 12.45		
<p>2.15 Adsorption and ion exchange 3 Novel composite adsorbents preparation for removing As(III) and As(V) from drinking water Ruiping Liu China 666349 Phosphate removal from membrane concentrates Alexander Sperlich Germany 666249 Removal of natural organic material by a magnetic ion exchange resin Treavor Boyer United States 665611 Impact of phosphate and silica and adsorption technologies for arsenic removal Kashi Banerjee United States 665243 Removal of arsenic from groundwater by a hybrid anion exchange membrane process Svetlozar Velizarov Portugal 665356 Uranium removal from groundwater by adsorption onto granular ferric hydroxide (GFH) Carsten Bahr Germany 665088</p>	<p>2.15 Phosphorus removal and recovery 1 Is it pao-gao competition or metabolic shift in EBPR system? Ufuk Erdal United States 666891 Phosphorus removal performance of the Traverse City MBR George V Crawford Canada 666418 Inhibition of free nitrous acid on P-uptake by poly-phosphate-accumulating organisms Maite Pijuan Australia 663556 Phosphate removal and sulfate reduction in iron and wood denitrification reactor Takahiro Yamashita Japan 666233 Application of the biochemical acidogenic potential test to samples of municipal wastewater Jean-Marc Choubert France 665240 Reaching ultra low phosphorus concentrations in WWTP effluent: technology limits S M Scherrenberg Netherlands 663977</p>	<p>2.15 Industrial wastewater treatment 3 Chromium (VI) reduction in activated sludge bacteria exposed to high chromium loading Evans M N Chirwa South Africa 666428 Use of chitosan for chromium removal from exhausted tanning baths Raffaele Cesaro Italy 666235 Marine macroalga <i>Sargassum horneri</i> as biosorbent for heavy metal removal Bounheng Southichak Japan 667415 Removal of azo-dyes from water with zerovalent iron nanoparticles Yang-hsin Shih Chinese Taiwan 666435 Biodegradation of azo dye in sequencing batch reactor Ozer Cinar Turkey 664784 Sequenced anaerobic-aerobic suspended growth reactors treating azo dyes Gabriela Moeller-Chávez Mexico 667252</p>
Afternoon tea 3.45		
<p>4.30 Biological treatment of drinking water Evidence of specialized bromate-reducing bacteria in a hollow fibre membrane bioreactor Kelly Martin United States 666690 Manganese removal and occurrence of manganese oxidizing bacteria during biofiltration Mark Samuel Burger Canada 664288 High-rate hydrogenotrophic denitrification in a fluidized-bed biofilm reactor using SPEME Masahito Komori Japan 667210 Modelling of NOM removal in drinking water biofilters Qiongqiong Xia China 662896 Development of ecosystem within the BAC filter Jekatyerina Dorkó Hungary 664044 A long-term hydrogenotrophic denitrification by in situ permeable walls Hiroaki Fukuoka Japan 666239</p>	<p>4.30 Phosphorus removal and recovery 2 Phosphorus recovery from wastewater: needs, technologies and costs Peter Cornel Germany 669500 Recovering phosphorus from anaerobic digester supernatant: model-based evaluation Md Saifur Rahman Canada 666613 Continuous struvite precipitation in source-separated urine: laboratory results Mariska Ronteltap Netherlands 666692 Reducing operating costs for struvite formation with carbon dioxide stripper Kazi Fattah Canada 666736 Challenges for phosphate removal and recovery as struvite crystals from swine wastewater Kazuoyoshi Suzuki Japan 663437 Characterization of phosphate ion removal by calcined Mg-Al-Cl form hydroxalcalcite(HT) Tomoyuki Kuwabara Japan 663241</p>	<p>4.30 Wetland systems Treatment of cooling water effluent from a coal-fired power plant Dong-Keun Lee Korea 666909 Ecological stabilization of thickened wastewater sludge from CAST process Zhi-Sheng Liu China 662573 Constructed wetland treatment system in textile industry Luisa Caetano Davies Portugal 665529 Influence of plant tillering and root volume on flow pattern and water purification Sheng Wang China 665555 Optimizing phosphorus removal in vertical subsurface flow constructed wetland systems Yaqian Zhao Ireland 666841 Hold the salt: innovative treatment of RO concentrate Lee A Foster Australia 665792</p>



Monday	Monday	Monday
Wastewater treatment	Design and operation of water systems	Health and the environment
<p>9.00 Occurrence and removal of hazardous substances in wastewater 1 Semi-quantitative analysis of a specific database on priority and emerging substances Samuel Martin Ruel France 665499 Removal of micropollutants by nanofiltration: influence of membrane and substance properties Farhad Salehi Germany 664889 Relevant approach to assess performance of wastewater biosolids composting to remove micropollutants Patureau Dominique France 667016 Study of antibiotic-resistant bacteria in water environments and wastewater Mamoru Suwa Japan 667339 Discharge study for three carwashes in the separated sewer system of Toulouse, France Claire Vialle France 665014 Fate and behaviour of selected trace organic pollutants in artificial ground recharge Arne Hein Germany 666113</p>	<p>9.00 Managing and maintaining water supply networks 1 Construction of the Wide Area Waterworks System in the Tama area Yuichi Honjyo Japan 663533 Leakage reduction contracted out: an update from Ho Chi Minh City Bill Kingdom Canada 663135 Potential impact of natural hazards on water supply systems Michael Moderl Austria 664195 Water losses assessment in an urban water network D'ida Covas Portugal 664212 Sustainable energy generation in water supply networks Fábio Verissimo Gonçalves Portugal 665177 Experiences in reduction of apparent losses in Belgrade water supply system Stevo Savic Serbia 668240</p>	<p>9.00 Biodegradation of hazardous substances Immobilized cell bioaugmentation for nitrate removal from agricultural infiltrate: sand column study Eakalak Khan Thailand 666366 Natural attenuation of chloroethenes: identification of sequential reductive/oxidative biodegradation by microcosm studies Andreas Tiehm Germany 664974 Development of a groundwater biobarrier for removing PAH, BTEX and heterocyclic hydrocarbons Andreas Tiehm Germany 664983 Mutagenic fate of fenitrothion insecticide Taku Matsushita Japan 664705 Degradation capability of bacteria strains for effective degradation of selected alkanes Xuefei Zhou China 663224 Biodegradation of bisphenol A, bisphenol F and bisphenol S in seawater Erica Danzl Japan 665958</p>
Morning tea 10.30		
<p>11.15 Occurrence and removal of hazardous substances in wastewater 2 Reductive dehalogenation of iopromide by zero-valent iron Michael Stieber Germany 663009 Pharmaceutical cycling in wastewater treatment plant systems Ester Heath Slovenia 668423 Use of microcalorimetry to compare the biological activity of CAS and MBR sludge Hélène Bouju Italy 667149 Treatment of a landfill leachate containing pharmaceutical compounds Marin Matosic Croatia 667385 Pharmaceutical residues in source-separated urine and their fate during nutrient recovery Felix Tettenborn Germany 666683 Ultrasound-induced destruction of pharmaceutically active compounds in aqueous solutions Gangadhar Andaluri United States 667492</p>	<p>11.15 Managing water quality in distribution systems US water providers' experiences with coloured water control management Sunil Kommineni United States 666711 Application of uni-directional flushing in water distribution pipes in Seoul City JC Ahn Korea 666952 Cleaning of networks: water flushing revisited Jan Vreeburg Netherlands 663980 National portal: methodologies, indicators and tools to measure customer satisfaction Mihaela Muresan Romania 668432 Pulsed field gel electrophoresis for microbial source tracking in drinking water Sarah Jane Payne Canada 665454 Assessment of iron species in tap water in Melbourne Jianping Lin Australia 664966</p>	<p>11.15 Health related water microbiology 1 Enteric viral presence in New Zealand drinking water sources Marion Savill New Zealand 667680 Assessment of Lisbon drinking water distribution network biofilm colonization and associated hazards José Menaia Portugal 666797 Control of amoebae and intra-amoebal bacteria in drinking water production and distribution Jean-Francois Loret France 665122 The hospital tap water system as a source of nosocomial infections Ziad Mimi Palestinian Territory 662724 Sustainability of a water quality intervention in rural communities Natasha Potgieter South Africa 667716 Waterborne outbreaks: lessons to be learned Ana Maria de Roda Husman Netherlands 667625</p>
Lunch 12.45		
<p>2.15 Occurrence and removal of hazardous substances in wastewater 3 Removal of endocrine disrupting chemicals with brominated by-products control during ozonation Heqing Zhang China 665821 Removal of endocrine disruptor compounds by an innovative biological technology Lydia Balest Italy 665262 Generation of endocrine disruptor compounds during ozone treatment of tannery wastewater Horst Friedrich Schröder Germany 663522 Evaluating the impact of single-walled carbon nanotubes in a wastewater reactor Xiaoqi Zhang United States 666798 Adsorption of <i>Levodopa</i> from aqueous solution on different granular activated carbons Isaribel Quesada France 666586 Removal of pharmaceuticals, personal care products and illicit drugs from wastewater Barbara Kasprzyk-Hordern United Kingdom 666630</p>	<p>2.15 Operation and optimisation of drinking water treatment plants Hiding places of protozoa and worms in water treatment technologies Jekatyerina Dorkó Hungary 664050 Sand filtration of <i>Cryptosporidium parvum</i>: effects of media depth and coagulation Vitaly Gitis Israel 663691 World's first full-scale large-diameter SWRO plant: techno-economics of first year Felix Wang Singapore 667056 Improving performance of horizontal sedimentation tanks Ali Ghawi Slovakia 662229 Characterization and quantification of anionic acrylamide-based polymers at low PPB level Emilie Manessier France 667527 Optimization operation strategy for drinking water treatment systems Yongpeng Xu China 665791</p>	<p>2.15 Health related water microbiology 2 One year of monitoring sapoviruses and other viruses at a wastewater treatment plant Eiji Haramoto Japan 663181 Responses of microbial communities to penicillin G in wastewater treatment Dong Li China 664539 Incidence of pathogens in surface water by real time PCR Apostolos Vantarakis Greece 665271 The impact of different land use types for diffuse microbial surface water pollution Christiane Franke Germany 665027 Comparison of innovative brominated and chlorinated polystyrene hydantoin polymers for water treatment Joan Rose United States 666271 Invertebrate animals in Danish drinking water distribution networks Sarah C B Christensen Denmark 664643</p>
Afternoon tea 3.45		
<p>4.30 IWRM in an urban context Urban metabolism for sustainable water solutions: lessons from four Australian cities Steven Kenway Australia 667245 Ecological comparison of conventional and source-separating sanitation systems Christian Remy Germany 663299 The status of watershed management in Jordan Ahmad Saleh Edien Abu Hijleh Jordan 665983 Human society and urban water from ancient Roman to modern times Maria Carmela Monteleone United Kingdom 666907 Strategies for urban water supply in the Algarve region Cristina Silva Portugal 666657 The Water Quality Identification Index for Chinese city rivers Hailong Yin China 666440</p>	<p>4.30 Water resource conservation and utilisation Identification of groundwater recharge areas for improving regional water conservation Nelson W Dias Brazil 665665 Can water conservation save water? Frank Ward United States 666566 Linking indices of biotic integrity to environmental and land use variables Vladimir Novotny United States 665201 A simulation framework for optimal environmental water allocation in urban rivers Wei Yang China 663258 Global-scale modelling of groundwater resources comprising sectoral groundwater withdrawals Karin Berkhoff Germany 663898 Hydrological model development and application for managing the Volga River Basin Nadezhda Sentsova Russian Federation 666232</p>	<p>4.30 Microbial ecology Polyvalent fingerprint based molecular surveillance methods for drinking water supply systems Ingrid Brettar Germany 666739 Ecological significance of microbial endokarst communities in alpine karstic groundwater resources Inés C Wilhartitz Austria 663597 F-specific RNA phage genotyping in river water by real-time RT-PCR Christophe Gantzer France 668087 Ecology and potential pathogenicity of <i>Vibrio cholerae</i> in a large central European saline lake Alexander K T Kirschner Austria 665085 The mechanism of <i>Microcystis aeruginosa</i> death upon exposure to bacillus mycoides Eugene Cloete South Africa 667060 Development of micro-devices for measuring microbial activity Tomoaki Itayama Japan 666649</p>

Preliminary technical programme



Monday	Monday	Monday
<p>Managing and planning water services</p> <p>9.00 Governance and regulation The yardstick competition regulatory model: the Portuguese experience Rui Cunha Marques Portugal 666390 Introducing the private sector into the Chinese municipal water industry Richard Austin United Kingdom 663938 Strengths and weaknesses of long-enduring French irrigation user associations Sébastien Loubier France 665202 Designing tradeable rights to manage aquifer recharge using robust separation principles Agnes Grandgirard Australia 664381 Indian urban water supply sector: key issues and lessons for developing countries Mukul Kulshrestha India 665182 Governance for technological innovation and diffusion Lena Partzsch Germany 663255</p>	<p>Water resources and river basin management</p> <p>9.00 Protection of natural drinking water sources Development of a design guideline for air diffusers Sung Hoon Kim Korea 665805 Drinking water protection in forested headwaters using a GIS-based hydrotope model Roland Koeck Austria 664131 Transport of dissolved chemicals and colloids affected differently in biofilm formation Selim L Sanin Turkey 666673 Transport of nutrients and eutrophication control by an urban runoff diversion system Shannon Pankratz United States 664247 Restoration of aquatic macrophytes to improve lakeside ecotone health in eutrophic Taihu Lake Weidong Wang China 665975 Community attitudes to a natural resources management levy and water consumption behaviour Zhifang Wu Australia 664618</p>	<p>Workshop</p> <p>9.00 6.6 billion + 215,000 people a day: providing livelihoods and water for a rapidly growing population Population growth, income growth and urbanization are placing profound demands on the earth's resources. It is essential for us to understand the rate of change of these key determinants of water needs and water pollution if we are to meet the challenge of providing livelihoods and water for the earth's rapidly growing population. This workshop frames the challenges we face today and sets the scene for a suite of solution-focused workshops on global warming and climate change adaptation, water and energy, cities of the future and water, nutrition and nutrients.</p>
<p>Morning tea 10.30</p>		
<p>11.15 Economics, pricing and financing of water services Ongoing pressure for efficiency in utilities and implications for firms and industries Hagen Worch Switzerland 667422 Indirect economic impacts in water supplies augmented with desalinated water Martin Rygaard Denmark 664823 Climate change impacts on hydrology and regional development Monika Schoenerlee Austria 663286 Potential for economic regulation in a water-scarce developing country Anna Matros-Goreses United Kingdom 665329 Economic analysis of Austrian water services in the communal water sector Christoph Prandtstetten Austria 668129 Appropriateness of tariff structure: lessons from experience Alain Mathys France 664638</p>	<p>11.15 Point and diffuse pollution control Ecological consequences of dissolved silica retention in mountain reservoirs Janusz A Tomaszek Poland 663466 Foam abatement on a transboundary river Matthias Zessner Austria 664578 Investigation of river eutrophication in low dissolved oxygen TMDL implementation William Stringfellow United States 666832 Upgrading Vienna's wastewater treatment plant: linking point source emissions to environmental standards Oliver Gabriel Austria 668394 Assessment of the pollutant removal performance of an infiltration trench BMP Lee-Hyung Kim Korea 666075 Speciation, leaching potential and effect of re-suspension on heavy metals in river sediments Kyung-Yup Hwang Korea 665670</p>	<p>11.15 Global warming and climate change: pioneering adaptation in the water sector The impacts of climate change on water scarcity, water quality, coastal hydraulics, flooding and urban drainage are already being seen in circumstances ranging from Peru to Perth. This workshop brings together the world's leading figures on climate change adaptation related to the daily provision of urban water services. An understanding of the impacts will allow participants to begin to strategize about potential adaptation strategies that will necessarily be highly specific to local circumstances.</p>
<p>Lunch 12.45</p>		
<p>2.15 Measuring and improving performance and sustainability indicators and benchmarking Using performance indicators to assess drinking water treatment plants Paula Vieira Portugal 663154 Using a novel integrated water cycle concept to assess urban water reuse Huu Hao Ngo Australia 665720 Estimation of greenhouse gas emissions from wastewater treatment plants Andrew Shaw Australia 663148 Life cycle assessment of water system importation, reclamation and desalination Ke Li United States 666855 Key success factors for water supply services Heimo Theuretzbacher-Fritz Austria 664593 Water supply services in Jakarta: how do people understand performance? Michiko Iwanami United Kingdom 663719</p>	<p>2.15 Institutional development and transboundary cooperation Adaptation to climate change in transboundary watersheds: role of UN Watercourses Convention Flavia Loures United States 666151 Implementation of a new legal framework for IWRM: the Paraguay example Elena Isabel Benitez Alonso Paraguay 665439 Is the law of transboundary watercourses up to the task of wide cooperation? Christina Leb Switzerland 663725 Sharing water from international watercourses Stephen Draper United States 663806 Implementing the Water Framework Directive: responses by UK water service providers Marc Spiller United Kingdom 665435 Austrian-German cooperation in modelling a transboundary deep thermal groundwater body Otto Vollhofer Austria 664125</p>	<p>2.15 Global warming and climate change: pioneering adaptation in the water sector (cont.)</p>
<p>Afternoon tea 3.45</p>		
<p>4.30 Serving citizens, consulting stakeholders and managing the customer base The socio-technology of indirect potable water reuse Sarah Bell United Kingdom 666192 A social participation: consumers and the water supply company Guillermo Cao Moisés Spain 666204 Influencing attitudes and changing consumers' household water consumption behaviour John Cary Australia 664394 Small and community managed rural water systems: pricing and financing H Fonseka Sri Lanka 667593 Agbar customer service expertise implemented on information systems Victor Martinez Spain 667778 Best practice customer oriented organizational modernization Luis Branco Portugal 665154</p>	<p>Water treatment</p> <p>Regulatory practice, water quality objectives and setting standards Linking trading ratio with TMDL allocation matrix and uncertainty analysis Harry X Zhang United States 663194 Evaluation of source water quality for selection of drinking water purification system Masahiro Fujiwara Japan 663838 Determination and evaluation of the phosphorus load of an artificial shallow lake Yvonne Schneider Germany 663895 Elements for setting up discharge standards in developing countries based on plant performance Marcos von Sperling Brazil 666791 Considerations in regulating industrial wastewater in Korea Ijung Kim Korea 666527 Relevance of organic trace substances for drinking water production - the Berlin case Gesche Grützmaier Germany 666927</p>	<p>4.30 Global warming and climate change: pioneering adaptation in the water sector (cont.)</p>



Monday	Monday	Monday	Monday
Workshop	Workshop	Workshop	Workshop
<p>9.00 Frontiers in science, research and technology: can we imagine the future as we invent it?</p> <p>This workshop builds on a popular Beijing congress workshop and along with the associated keynote, it will focus on biotechnologies and nanotechnologies and their likely interfaces with conventional and membrane technologies. Breakthroughs in microbial ecology and bioengineering, material sciences and nanotechnologies will be explored and debated in the context of the significant challenges that we face in achieving the quality and sustainability imperatives ahead. The workshop is expected to result in new specialist and task groups being formed.</p>	<p>9.00 Future of sanitation: expanding sanitation options to meet diverse needs around the world</p> <p>Providing sanitation to almost half of the world's population is one of the biggest challenges facing us in the next decade. Clearly, business-as-usual approaches are not adequate to the task. Many of the world's leading sanitation experts will be in Vienna participating in sessions that are seeking innovative approaches to traditional problems. This workshop provides a rare opportunity for us to think together about both the problems and challenges we face building on the work already undertaken through IWA's Sanitation 21 programme.</p>	<p>9.00 Barriers to innovation: exploration of pathways for translating wishes into realities</p> <p>Large-scale innovation is critical to meeting the sustainability challenges that lie ahead. However, this innovation will only come through strategic experimentation. How do we create space for innovation and controlled experimentation in a highly regulated industry? This workshop will bring together regulators, consultants, technology providers and utilities to explore the barriers to innovation and approaches that could be used to incentivize experimentation without compromising public health and safety.</p>	<p>9.00 Biofouling and membranes for water and wastewater</p> <p>Biofouling is a persistent problem in the water sector. This workshop aims to bring together the communities of research and practice working on membranes for water and wastewater treatment. It is organised by three IWA specialist groups: on water reuse, biofilms and membrane technology.</p>
Morning tea 10.30			
<p>11.15 Frontiers in science, research and technology: can we imagine the future as we invent it? (cont.)</p>	<p>11.15 Future of sanitation: expanding sanitation options to meet diverse needs around the world (cont.)</p>	<p>11.15 Barriers to innovation: exploration of pathways for translating wishes into realities (cont.)</p>	<p>11.15 Biofouling and membranes for water and wastewater (cont.)</p>
Lunch 12.45			
<p>2.15 Frontiers in science, research and technology: can we imagine the future as we invent it? (cont.)</p>	<p>2.15 Future of sanitation: expanding sanitation options to meet diverse needs around the world (cont.)</p>	<p>Workshop</p> <p>2.15 Women, water and leadership</p> <p>Although women make up a minority of water professionals, their contributions to the field of water have been abundant. This workshop highlights the accomplishments of leading women in the field of water with a special emphasis on the leadership dimension of their success. The presentations and discussion at the workshop will cover both the opportunities and challenges for women in the field today. In addition, the workshop will examine means for attracting young professionals, particularly women, into the field of water which will be critical for the world's future.</p>	<p>Workshop</p> <p>2.15 Non-revenue water</p> <p>This workshop will provide an opportunity for participants to learn from world experts in water loss management about the latest techniques, methodologies, practices and equipment which constitute best practice in the field of water loss control.</p>
Afternoon tea 3.45			
<p>4.30 Frontiers in science, research and technology: can we imagine the future as we invent it? (cont.)</p>	<p>4.30 Future of sanitation: expanding sanitation options to meet diverse needs around the world (cont.)</p>	<p>4.30 Women, water and leadership (cont.)</p> <p>Featured at the workshop will be the winner of the biennial IWA Women in Water Award, given in honour Hei-jin Woo (a leading Korean female engineer and scientist). This award recognises outstanding women professionals in the world of water science, engineering and management.</p>	<p>4.30 Non-revenue water (cont.)</p>

Preliminary technical programme



Tuesday	Tuesday	Tuesday
Science and practice of water and sanitation	Water treatment	Wastewater treatment
<p>9.00 Policy and institutional environment A framework for planning of sustainable water and sanitation systems in peri-urban areas Anna Norström Sweden 665746 Microfinance for water and sanitation infrastructure development Jenna Davis United States 666768 Meeting the water challenge in developing countries: analysis of sustainable development indicators Doerte Ziegler Germany 665462 A systems approach to household water treatment systems Tommy Ka Kit Ngai United Kingdom 663846 Analyzing the water programmes of donors and regional institutions for MDGs Rosa Castizo Spain 667229 Institutional challenges and opportunities: decentralized and integrated water resource infrastructure Valerie I Nelson United States 666639</p>	<p>9.00 Membranes in water treatment 1 Phenols and dicarboxylic acids removal from aqueous solutions by NF/RO membranes Maria José López-Muñoz Spain 665395 Influence of organic and colloidal fouling on removal of sulfamethoxazole by nanofiltration Long Nghiem Australia 664321 Electrostatic repulsion as a mechanism in fouling of ultrafiltration membranes Vitaly Gitis Israel 667006 Enhanced As(III) removal with permanganate oxidation, ferric chloride precipitation and sand filtration Lihua Sun China 663878 Release of earthy-musty odour compounds from cyanobacteria during ceramic microfiltration Taku Matsushita Japan 664699 Cleaning solutions assessment for nanofiltration membrane in drinking water treatment plant Kecili Karima France 664079</p>	<p>9.00 Upgrading wastewater treatment systems 1 Use of recommendations for the design of activated sludge treatment facilities in different climates Stefan Grube Germany 665075 Climate change factors influencing wastewater treatment in Oslo, Norway during winter Benedek Plosz Norway 666695 Biologically and chemically enhanced clarification: cost-effective treatment of wet weather flows Julian Sandino United States 662568 Utilization of activated sludge plants for enhanced treatment of combined sewage Brigitte Nikolavcic Austria 668387 Bench-scale demonstration of ATPP-anaerobic digestion for upgrading wastewater sludge treatment Masanobu Takashima Japan 665780 Implementation strategy to meet the Chesapeake Bay Program restoration goals Scott Phipps United States 664982</p>
Morning tea 10.30		
<p>11.15 Sanitation: new approaches for developing countries ROSA Project: a new approach to sustainable sanitation in Eastern African cities Guenter Langergraber Austria 664279 Ecosan: sustainable sanitation solution for India Sreevidya Satish India 663421 People-centered approaches in sustaining water, food and environmental sanitation Carlos Miniano Pascual Philippines 667303 Perception of household onsite greywater treatment and reuse in Palestinian rural areas Nidal Mahmoud Palestinian Territory 664018 Hikkaduwa coastal zone waste management project: environmental and sanitation effects P Y D De Silva Sri Lanka 662036 Study on EcoSan project experiences using GTZ EcoSan project data sheets Christine Werner Germany 666117</p>	<p>11.15 Membranes in water treatment 2 Rejection of PPCPs and EDCs by low pressure reverse osmosis membranes Hiroaki Ozaki Japan 663615 Influence of calcium on membrane fouling caused by NOM hydrophilic fraction Hiroshi Yamamura Japan 664198 Enhancing boron rejection in seawater reverse osmosis facilities Robert Huehmer United States 667039 Protein fouling and chemical cleaning of RO membrane Huajuan Mo Singapore 664480 Ultrasound-enhanced backwashing in ultrafiltration modules with ceramic membranes Angela Boley Germany 666763 Pre-treatment technology for a SWRO plant: granular media or low-pressure membrane filtration? Pierre-Jean Remize France 664154</p>	<p>11.15 Upgrading wastewater treatment systems 2 Cost-effective upgrading of a biological wastewater treatment plant by using lamella separators with bypass operation Norbert Jardin Germany 666996 Upgrading and retrofitting of wastewater treatment plants in Shanghai Xuejun Tan China 666124 The effect of flow equalization and pre-fermentation on sludge in a BNR plant Anna Mia Kaarina Mikola Finland 665441 Cost and performance aspects of two-stage activated sludge plants Stefan Winkler Austria 668421 Optimization of secondary clarifier using 3D modelling of sludge Jaroslav Pollert Czech Republic 663614 WWTP upgrading towards positive energy balance: Dijon case study Carlos Alberto Peregrina Cambero France 665069</p>
Lunch 12.45		
<p>2.15 Sanitation: new approaches for developing countries A measure for provisional-and-urgent sanitary improvement in developing countries: septic-tank performance improvement Hidenori Harada Japan 666136 Anaerobic co-digestion of kitchen garbage and excess sludge under various temperatures Myungyeol Lee Japan 664490 Experiences with sanitation concepts for discharge and treatment of grey-, brown- and yellow-water Anton Peter-Fröhlich Germany 663396 Sanitation and related sustainability criteria Christine Werner Germany 666275 Advancing sanitation outcomes through health communication approach Rose Mary Namboozie Uganda 664895 Environmental and resource performance of a dry UD toilet system Håkan Jönsson Sweden 666728</p>	<p>2.15 Membranes in water treatment 3 Investigating membrane biofouling using flow field-flow fraction Eunkyung Lee Korea 665894 Risk management approach for monitoring UF membrane integrity Anne Brehant France 665304 Modelling of polarization effect on flux behaviour of forward osmosis Chien Hsiang Tan Singapore 665802 Fouling control: ensuring stable operation of membrane filtration plants Graeme Pearce United Kingdom 666760 Multifunctional TiO₂/Al₂O₃ UF membrane for drinking water treatment Xiwang Zhang Singapore 664397 Seawater desalination by reverse osmosis: advances in technology and energy efficiency Wolfgang Neubrand Switzerland 667867</p>	<p>2.15 Sludge and biosolids management 1 Prediction of thermal hydrolysis impact at different sludge characteristics Phimphaka Phothislangka Austria 668245 Lysis of bacterial cells by the combined action of thermophilic bacteria Yudong Song China 664169 Rheology as a tool for measurement of sludge shear Banu Ormeçi Canada 666842 Application of excess activated sludge ozonation in an SBR plant Massimiliano Naso Italy 666201 Biosolids and energy reduction developments: Canniba Solids Reduction System Betty-Ann Curtis United States 667367 Solubilization of excess sludge by the solar photo-fenton reaction Masahiro Tokumura Japan 663412</p>
Afternoon tea 3.45		
<p>4.30 Mitigating water supply challenges in developing countries Solar disinfection for household treatment of roof-harvested rainwater M Mansoor Ahammed India 667091 System for treating collected rainwater for human use Garrido Sofia Mexico 666764 Arsenic removal from groundwater using indigenous iron and manganese oxidizing bacteria T Hamasaki Japan 665834 Potential use of monsoon rainwater for drinking purposes in Bangladesh Md Golam Mostafa Bangladesh 665985 Uplifting the operation of small local managed water service systems Kevin Wall South Africa 666072 Significance of faecal contamination of drinking water in rural Cambodia Toru Watanabe Japan 666486 Household water treatment, storage and handling: Mekong Delta case study Susanne Herbst Germany 665013</p>	<p>2.15 Conventional and full-scale treatment Objectives for optimization of drinking water treatment plants Alex van der Helm Netherlands 665448 Customer-demand-based drinking water softening policy towards realisation of softening plants Luc Jozef Palmen Netherlands 665097 Experimental study of sand filters conversion into granular activated carbon filters J Michael Klee Spain 663121 Effects of several water quality parameters on arsenic removal by coagulation Dora Laky Hungary 666083 Approach to water treatment process selection and design to maximize sustainability Jesus Garcia-Aleman Canada 666812 Comparison of iron and aluminum salts for coagulation of low turbidity and high pH water Hsuan-Hsien Yeh Chinese Taiwan 666191</p>	<p>4.30 Sludge and biosolids management 2 Metaproteomic analysis for studying extracellular polymeric substances (EPS) in activated sludge Chul Park United States 665450 Effect of a bio-stimulant on sludge biomass treating municipal wastewater Ki-Young Park Korea 663627 Adsorption of Cd(II), Zn(II) by extracellular polymeric substances extracted from waste activated sludge Lei Zheng China 664319 Enhanced heavy metals removal without phosphorus loss from anaerobically digested sewage sludge Ayumi Ito Japan 664095 Nutrients release of sludge reduction induced by oligochaetes Yuansong Wei China 666304 Sustainable practices: advanced digestion technologies and enhanced biogas generation Zeynep K Erdal United States 666895</p>



Tuesday	Tuesday	Tuesday
<p>Wastewater treatment</p> <p>9.00 Advanced oxidation processes in wastewater treatment 1 Comparison of the electrocatalytic characteristics of SnO₂ anodes for phenol removal Junfeng Liu China 664685 Heterogeneous photocatalytic ozonation of 2,4-D in dilute aqueous solution with TiO₂ fibre Rabindra Raj Giri Japan 662269 Effect of temperature on imidacloprid oxidation by homogeneous photo-fenton processes Claudio Zoror Chile 666886 Electrochemical degradation of pentachlorophenol on a palladium modified gas-diffusion electrode Hui Wang China 663190 Prediction of an azo dye degradation by heterogeneous photo-fenton process Masoud Bagherzadeh Kasiri France 665939 Decolourisation and degradation of indigo dye acid blue 74 by KMnO₄UVH₂O₂ process Mohammad Ebrahim Olya France 665510</p>	<p>Wastewater treatment</p> <p>9.00 Wastewater reclamation and reuse 1 Use of polishing pond effluents to cultivate lettuce in a hydroponic system Regina Keller Brazil 665650 Removal of effluent organic matter, toxic anions and micropollutants using membranes Sarper Sarp Korea 662774 Tertiary polishing of BNR process effluent using autotrophic and heterotrophic hybridization of two-stage filter Kyung Sok Min Korea 666761 Dissolved organic matter in the sewage effluent of an SBR Jin Guo China 666354 Membrane bioreactor: technology for wastewater reclamation Sachin Malekar India 663124 Comparison of organic micropollutant removal by PAC/NF and NF/GAC treatment Christian Kazner Germany 665973</p>	<p>Water resources and river basin management</p> <p>9.00 Assessment of anthropogenic impacts on water quality Field observations and management policy for hot spring used water in WuLai Area Chi-Feng Chen Chinese Taiwan 665995 A decision model for good chemical and ecological status implementation in river basins Cunha Maria Portugal 664237 DNA-based quantitative microbial source tracking (QMST) on the Danube River catchment Georg Reischer Austria 667712 EDCs and pharmaceuticals in Paris rivers Caroline Lecarpentier France 665024 A simplified conflict resolution model for reservoir operation S Ehsan Shirangi Iran 665833 Algal fate and behaviour in the San Joaquin River Gary Litton United States 665922</p>
Morning tea 10.30		
<p>11.15 Advanced oxidation processes in wastewater treatment 2 Treatment of yellow water by membrane separation and advanced oxidation methods Lazarova Zdravka Austria 668826 Biofilter and advanced oxidation in leachate treatment processes Jaya Kandasamy Australia 664719 Latent remediation: an innovative approach in advanced oxidation technologies Rashmi Chand United Kingdom 663632 Adsorption and photocatalysis kinetics of titanium dioxide in wastewater treatment Saravanamuthu Vigneswaran Australia 663872 Beneficial effect of integrated heterogeneous sonophotofenton processes in the degradation of phenolic aqueous solutions Yolanda Segura Spain 665386 Treatment of edible olive processing wastewater by wet air oxidation Evan Diamadopoulos Greece 663655</p>	<p>11.15 Wastewater reclamation and reuse 2 Fate of NDMA and its precursors during wastewater polishing for artificial groundwater recharge Martin Krauss Switzerland 664102 Secondary effluent reclamation: combination of pre-treatment and disinfection technologies Laura Alcalde Spain 666008 Slow sand filtration of treated domestic wastewater as a pre-treatment to UF Xing Zheng Germany 666635 Tertiary treatment of municipal and industrial wastewaters for agricultural reuse Riccardo Gori Italy 665325 Process technical oriented aspects of biological removal of 17α- ethinylestradiol Ilse Forrez Belgium 666012 Strategies for controlling photoreactivation after UV disinfection with chlorine Meiting Guo China 663467</p>	<p>11.15 Monitoring system development and data management Assessing crucial stress on life cycle of fish in suburban streams Yutaka Sakakibara Japan 663994 Assessment of groundwater monitoring networks using the entropy theory Reza Kerachian Iran 666463 Intelligent monitoring networks for water management Stefan Winkler Austria 668736 Trophic structure of stream macroinvertebrate communities revealed by stable isotope analysis Kozo Watanabe Japan 664425 Monitoring methods and decision support for landuse activities Stefan Kollarits Austria 666558 Decision support system for real-time analysis of reservoir turbidity flows Se Woong Chung Korea 665586</p>
Lunch 12.45		
<p>2.15 Advances in physico-chemical processes and technology 1 Advances in aerobic granular sludge research Merle de Kreuk Netherlands 665229 PERBIOF: an innovative technology for treating municipal wastewater Claudio Di Iaconi Italy 664129 Optimisation of aeration for activated sludge treatment with simultaneous nitrification denitrification David Thauere France 664877 Anaerobic codigestion of sludge with organic waste and nutrient removal from supernatant Simone Caffaz Italy 665226 Optimization of operating conditions in aerobic granulation by fuzzy pattern recognition Guowei Chen Korea 663873 Simultaneous nitrification, denitrification and phosphorus removal from industrial wastewater using granular sludge Zhiguo Yuan Australia 664755</p>	<p>2.15 Wastewater reclamation and reuse 3 Indirect potable reuse: balancing costs and benefits Larry Schimmoller United States 665152 NEWater: multi safety barrier approach for indirect potable use Mien Ling Chong Singapore 663362 The BedZED wastewater reclamation plant: decentralised urban reuse in London Bart Verrecht United Kingdom 664741 Reclamation and agricultural reuse of wastewater at Cagliari sewage treatment plant, Sardinia Andrea Viridis Italy 667129 Estimating farmers' valuation of treated wastewater in Cyprus Ekin Birol United States 665196 Fate of micropollutants in two artificial recharge sites with reclaimed wastewater Christa McArdell Switzerland 665492</p>	<p>2.15 Model development and application 1 Uncertainty effects in a simulation-optimization model and application of a distributed TMDL Chi-Feng Chen Chinese Taiwan 665954 A hydroinformatic tool for estuarine water quality management António A L Sampaio Duarte Portugal 666062 Prediction of Huangpu River, Shanghai water quality based on tidal river network model Hailong Yin China 666426 Hydro-economic analysis of water supply for a bi-national trans-boundary region Josue Medellin-Azuara United States 665936 Error analysis of a steady state water quality model, QUAL2E Dongil Seo Korea 663406 Dynamic 3D groundwater model for a gravel bar at the Danube riverbank Julia Drex Austria 665023</p>
Afternoon tea 3.45		
<p>4.30 Activated sludge population dynamics Ecological engineering of bio-augmentation from side-stream nitrification Robert Smith United States 666854 Assessment of a biological process for treating vegetable oil effluent Adrian Phillip Degenaar South Africa 666429 Effect of salinity on the activity, settling and microbial community of activated sludge Xinmin Zhan Ireland 666176 PHA-accumulating microorganisms in full-scale wastewater treatment plants Mamoru Oshiki Japan 665363 Treatment of high ammonium concentrated effluent in a side part SBR Adriana Gonzalez Ospina France 667668 Simplification of ASM 2 and control on wastewater treatment removing phosphate Kim Shin-Geol Korea 666559</p>	<p>4.30 Decentralised wastewater collection and treatment systems Resources and nutrients oriented greywater treatment for reuse Fangyue Li Germany 662928 Comparing small-scale chemical and biological greywater treatment systems Melissa Toifl Australia 668071 Ecosan demonstration project at the headquarters of the GTZ Christine Werner Germany 666111 Hydroponics reducing effluents heavy metals discharge Abdellah Rababah Jordan 662780 Infiltration percolation to treat a small community's wastewater François Brissaud France 666358 Using LCA to compare environmental impacts of an urban EcoSan system Amparo Flores United Kingdom 666258</p>	<p>4.30 Model development and application 2 Developing a conflict resolution model for use of surface and groundwater resources Mohammad Reza Bazargan-Lari Iran 666905 Characterization and modelling of turbidity density plume induced into stratified reservoir by flood runoffs Se Woong Chung Korea 663841 An objective test of stochastic behaviour in riverine water quality models Geoffrey Thomas Parker Canada 664406 Modelling raw water quality: development of a drinking water management tool Christine Kübeck Germany 664885 Distributed modelling of river water in a hilly forested watershed using remote sensing and GIS Binaya Raj Shivakoti Japan 666268 Reduction of Sakarya River water quality data by principal component analysis Rabia Koklu Turkey 664739</p>

Preliminary technical programme



Tuesday	Tuesday	Tuesday
Managing and planning water services	Health and the environment	Managing and planning water services
<p>9.00 Strategic management of water resources in urban water systems 1</p> <p>Assessing desalination using a multiple-criteria decision support model Maria do Céu Almeida Portugal 668886</p> <p>Exchange of water between the agricultural sector and urban replenishment: approach for efficient planning Francisco Cubillo Spain 667683</p> <p>Modelling the impacts of climate change on a water treatment plant Olivia Thorne United Kingdom 664879</p> <p>Measuring the metabolism of decentralised urban developments Ted Gardner Australia 667580</p> <p>Managing and planning water services Islam Ul-haque Pakistan 667109</p> <p>Service procurement selection methodology Davin Shellshear Australia 663060</p>	<p>9.00 Hazard analysis and detection methods 1</p> <p>Picogram determination of N-Nitrosodimethylamine in water Lifeng Zhang Singapore 664238</p> <p>Using comprehensive two-dimensional GC for screening hazardous contaminants Auguste Bruchet France 665209</p> <p>Quantitative microbial source tracking of genetic markers from human and ruminant origin Georg Reischer Austria 662903</p> <p>Multi-detection of waterborne pathogens in raw and treated water samples Sophie Courtois France 665391</p> <p>Radium in produced water Avinash Egambaram Pillay United Arab Emirates 667257</p> <p>Assessing the fate of priority substances and emerging pollutants in wastewater treatment Mar Esperanza France 664816</p>	<p>9.00 Strategic asset management and long-term planning</p> <p>Asset management: the required utility organization paradigm shift Scott Haskins United States 669171</p> <p>Alternative approaches for setting targets for non-revenue water Stuart Trow United Kingdom 667032</p> <p>Integrated approach for water network rehabilitation Dewi Rogers Italy 666552</p> <p>Developing asset management competencies in water utilities: fitting training approaches to need Jo Parker United Kingdom 666732</p> <p>Austrian-German cooperation in managing a trans-boundary deep thermal groundwater body Otto Vollhofer Austria 664118</p> <p>Water services asset management in South Africa: national strategy and implementation Kevin Wall South Africa 666281</p>
Morning tea 10.30		
<p>11.15 Strategic management of water resources in urban water systems 2</p> <p>Multi-objective optimization of energy management in water supply systems Helena M Ramos Portugal 665138</p> <p>An integrated design-build-operate alliance for Gold Coast desalination project Greg Cashin Australia 663110</p> <p>Living with climate change: adapting to global warming impacts on water supplies Will Strachan Australia 664423</p> <p>Optimum use of gravity springs in water supply systems Katarina Tothova Slovak Republic 668356</p> <p>The availability of groundwater in crystalline rocks Upali de Silva Jayawardena Sri Lanka 666931</p> <p>Institutional challenges and opportunities: decentralized and integrated water resource infrastructure Valerie I Nelson United States 666639</p>	<p>11.15 Hazard analysis and detection methods 2</p> <p>Application of direct LC-MS detection for monitoring Danube water quality Wolfram Seitz Germany 668549</p> <p>Drinking water protection in the Ohio River Alan Vicory United States 665178</p> <p>Use of quantum dot for immunofluorescent and immunoelectrochemical detection In S Kim Korea 667048</p> <p>Emissions and source identification of PFAS Manfred Clara Austria 664062</p> <p>Decentralized collection of iodinated X-ray contrast media in hospitals Bernd Heinzmann Germany 663607</p> <p>Evaluating the monitoring priority of pesticide on water quality management Motoyuki Kamata Japan 666153</p>	Design and operation of water systems
		<p>11.15 Rehabilitation and maintenance of assets</p> <p>Strategic asset management planning of stormwater drainage Jeku Jeyakumaran Australia 664728</p> <p>Rehabilitation and maintenance of water distribution network assets Symeon Christodoulou Cyprus 666211</p> <p>Holistic planning methodology for long-term design and capacity expansion Tiku T Tanyimboh United Kingdom 664052</p> <p>Coast trunk sewer rehabilitation project for Orange County sanitation district Robert J Warren United States 669322</p> <p>Forecasting risk levels of water distribution networks from an asset management perspective Junlae Roh Korea 665622</p> <p>Roof renewal of ageing pre-stressed concrete distribution tank Hajime Taniguchi Japan 663264</p> <p>Objectives for optimization of drinking water treatment plants Alex van der Helm Netherlands 665448</p>
Lunch 12.45		
<p>2.15 Demand management, water conservation and metering</p> <p>Characterization of end uses and explanatory factors on consumption of water for domestic use Francisco Cubillo Spain 667535</p> <p>Solutions for metering apartment blocks in former Soviet Union countries Andreas Rohde Germany 663153</p> <p>Non-intrusive leak detection in large diameter, low-pressure non-metallic pipes Malcolm Farley United Kingdom 668740</p> <p>Automatic meter reading system that finds leaks Tim Waldron Australia 667057</p> <p>Comprehensive water-saving plan for Vitoria-Gasteiz César Samperio Spain 667047</p> <p>Partnerships for enhancing a water-saving culture in Spain Sam Kayaga United Kingdom 663381</p>	<p>2.15 Water safety plans</p> <p>Implementation of a technical risk management concept based on water safety plans Nadine Staben Germany 663947</p> <p>Quantitative risk assessment: case studies from drinking water practice Gertjan Medema Netherlands 667613</p> <p>Drinking water safety plans: from guidance to reality Tim Darlow United Kingdom 664012</p> <p>Water safety plan for an artificial groundwater recharge site with reclaimed water Davide Bixio Belgium 669483</p> <p>Regulator verification of drinking water analysis through an audit trail process David Drury United Kingdom 662768</p> <p>Microbiological water quality of a massive riverbank filtration system on the Danube Jean-Jacques Grandguillaume France 665166</p>	Workshop
		<p>2.15 Strategic asset management: phase two</p> <p>Water and wastewater companies around the world have faced rising asset management and replacement costs, often to levels that are financially unsustainable. This workshop focuses on techniques, technologies and management approaches that are aimed at optimising the investment in infrastructure while achieving the customer service standards that are demanded.</p>
Afternoon tea 3.45		
<p>4.30 Disaster preparedness response and recovery</p> <p>Response to Hurricane Wilma: lessons learned by Cancun water and sanitation services Gerardo Aguilera Soriano France 663707</p> <p>Online satellite data transmission for flood forecasting in medium sized catchments Christophe Ruch Austria 665381</p> <p>The first tier of rapid toxic material assay in response to heightened water security Qiantao Cai Singapore 666376</p> <p>Containerised mobile water treatment unit Ramchandran Natarajan India 662922</p> <p>The influence of tsunamis on water treatment at Yodo River purification plants Kazuya Yamano Japan 665071</p> <p>Some water operations experience of facing an extreme hydro-climatic event Hao-Nhien Pham France 663779</p>	<p>4.30 Risk assessment, disease burden and health surveillance</p> <p>Methods and techniques for risk assessment of water supply systems Ladislav Tuhovcák Czech Republic 664464</p> <p>Experiences of policymakers, regulators, utilities and scientists in QMRA for drinking water Ana Maria de Roda Husman Netherlands 667626</p> <p>Selection and adaptation of a risk assessment method for drinking water supply Claudia Niewersch Germany 665925</p> <p>Calculating the risk of contamination of vegetables from irrigation Katrina Charles United Kingdom 666319</p> <p>Enteropathogenic viruses and bacterial faecal indicators in raw waters for drinking water treatment Beate Hamsch Germany 665160</p> <p>Waterborne health hazards attributable to drinking water in Japan Toshiro Yamada Japan 664860</p>	<p>4.30 Strategic asset management: Phase two</p>



Tuesday	Tuesday	Tuesday	Tuesday	Tuesday
Workshop	Workshop	Workshop	Workshop	Workshop
<p>9.00 Water and energy: reducing our carbon footprint in the context of global warming</p> <p>This workshop examines key relationships related to climate change mitigation including the energy needed to produce water and the water needed to produce energy. It provides a starting point to begin mapping out a strategy for carbon reduction, as well as an introduction to potential energy-producing mechanisms tied to wastewater management.</p>	<p>9.00 Cities of the future: pioneering and reengineering urban design for sustainable water outcomes</p> <p>Rapid growth in megacities and secondary cities will frame the crucial decisions that must be made by urban water professionals, policy makers and political leaders to make cities productive and environmentally sustainable. Added complexity is introduced when the spectrum of high, medium and low income circumstances is considered.</p>	<p>9.00 Water, nutrition and nutrients: platforms for water protection in agriculture</p> <p>Irrigated agriculture and chemical fertilizers are expanding the world's agricultural and nutritional capacities. This workshop examines the linkages between food production, water use and water quality in the context of competing users in cities, industry and energy both in developed and developing countries.</p>	<p>9.00 100 years of disinfection</p> <p>It is 100 years since the publication of Dr Harriet Chick's pivotal work on the death rates of bacteria. The disinfection of water and wastewater has been the cornerstone of public health safety for drinking water, recreational waters and wastewater. The knowledge and scientific gaps in disinfection research and kinetics, novel resistant pathogens and public health goals for efficacy will be presented.</p>	<p>9.00 Good modelling practice: guidelines for use of activated sludge models</p> <p>This workshop presents an introduction to activated sludge modelling and shows the current practice of using activated sludge models. The need for a common framework is shown and the goals of the IWA Good Modelling Practice Task Group are presented.</p>
Morning tea 10.30				
<p>11.15 Water and energy: reducing our carbon footprint in the context of global warming (cont.)</p>	<p>11.15 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p> <p>The focus of this workshop is on why and how the design of cities and the water (drinking water, wastewater and drainage) systems that serve them must be harmonised to minimise the use of scarce natural resources.</p>	<p>11.15 Water, nutrition and nutrients: platforms for water protection in agriculture (cont.)</p>	<p>11.15 100 years of disinfection (cont.)</p>	<p>11.15 Good modelling practice: guidelines for use of activated sludge models (cont.)</p>
Lunch 12.45				
<p>2.15 Water and energy: reducing our carbon footprint in the context of global warming (cont.)</p>	<p>2.15 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>	<p>2.15 Water, nutrition and nutrients: platforms for water protection in agriculture (cont.)</p>	<p>Workshop</p> <p>2.15 Urban water decision-making 1: emerging challenges for water supply planning</p> <p>With increasing levels of urbanisation come new challenges for delivering water services. This workshop explores the planning options for water supply in the context of emerging challenges.</p>	<p>Workshop</p> <p>2.15 Trends and opportunities for international cooperative research</p> <p>This workshop highlights international water research strategies and trends. It has a particular focus on the EU, North America, East Asia and Australasia.</p>
Afternoon tea 3.45				
<p>4.30 Water and energy: reducing our carbon footprint in the context of global warming (cont.)</p>	<p>4.30 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>	<p>4.30 Water, nutrition and nutrients: platforms for water protection in agriculture (cont.)</p>	<p>4.30 Urban water decision-making 2: emerging challenges for water supply planning</p> <p>Beyond formal submission, invitation or stakeholder consultation, there are limited real opportunities for citizens to engage in water supply planning and assessment of service levels. This workshop will give water managers a chance to share experiences, develop a common vision and discuss the challenges, threats and good practice related to public participation in urban water decision-making.</p>	<p>4.30 Trends and opportunities for international cooperative research (cont.)</p>

Preliminary technical programme



Wednesday	Wednesday	Wednesday
Water treatment	Wastewater treatment	Wastewater treatment
<p>9.00 Disinfection and disinfection by-products 1 Chlorine dioxide by-products predictive models for drinking water oxidation treatment Rita Binetti Italy 664623 Probing NOM reactivity using differential absorbance as an alternative surrogate parameter Paolo Roccaro United States 666483 Feasibility of disinfection kinetics and minimum inhibitory concentration determination on bacterial cultures Lian-Shin Lin Macau 665444 Formation of HAAs and THMs in Macau treatment and distribution system Wong Hou Italy 664365 Pre-oxidation with chlorine dioxide: EAF experience of raw water dosing Andrea Virdis Japan 667197 Change in disinfection by-products due to coexistent bromide and iodide ions Koichi Ohno Korea 666593</p>	<p>9.00 Membrane systems for wastewater treatment 1 MARAPUR: a new process combination for MBR optimization Josef Lahnsteiner Austria 667235 New process configurations for lessening membrane fouling in domestic wastewater treatment Shuo Liu China 666364 Membrane technique in a freight container for advanced nutrients removal Regina Gnirss Germany 665446 Feasibility of submerged anaerobic membrane bioreactor (SAMBR) for treating low-strength wastewater Zhi Huang Singapore 664481 Operation of membrane bioreactors in parallel: experiences and difficulties Jana Schaller Germany 665768 Market and design considerations of Europe's 32 larger MBR plants Boris Lesjean Germany 666619</p>	<p>9.00 Anaerobic processes 1 Denitrification inhibiting sulfate reducing bacteria activity in an anaerobic baffled reactor Zhang Zhaohan China 665621 Effect of hydraulic retention time and temperature on production of acetic and butyric acids Woong Kim Korea 666032 Sulfate and organic matter removal in a horizontal-flow anaerobic immobilized biomass reactor Marcia Damianovic Brazil 663339 Enhanced granulation using natural polymers in UASB reactors treating domestic wastewater Saumyen Guha India 666034 Low-temperature anaerobic biotreatment of pentachlorophenol-contaminated waste streams Rory Moses McKeown Ireland 664951 Biological conversion and mass balance in a coupled UASB-activated sludge process Yeshi Cao Singapore 663628</p>
Morning tea 10.30		
<p>11.15 Disinfection and disinfection by-products 2 DBP formation from chloramination of clarified water Dong-Hoon Kim Chinese Hong Kong 663236 Chemical effects on UV irradiation absorption of fouled quartz sleeves Beibei Sun United States 665515 Characterization of NOM and THM formation potential Zhi-Sheng Liu China 665863 Modelling disinfection by-products: coupling hydraulic and chemical models Kebreab Ghebremichael Netherlands 665190 Deactivation of biochemically active compounds using the UV/H2O2 advanced oxidation process Marc-Olivier Buffle Switzerland 668936 Chlorine dioxide pre-oxidation by-products: monitoring and reduction plan Rui Sancho Portugal 666333</p>	<p>11.15 Membrane systems for wastewater treatment 2 Monitoring of transparent exopolymer particles (TEP) in an MBR Teresa de la Torre Germany 665119 Development of photometric online measurement of fouling components in MBRs Renata Mehrez Germany 665909 Characterisation of biofilm constituents and their effect on membrane filterability in MBRs Tze Chiang Albert Ng Singapore 664484 Granulate-driven fouling control in a submerged membrane module for MBR application Stefan Krause Germany 665771 Correlation of TMP rise-up and structure of bio-cake in a membrane bioreactor Byung-Kook Hwang Korea 665749 Quorum quenching techniques in an MBR: new molecular-level biofouling control strategy Kyung-Min Yeon Korea 665759</p>	<p>11.15 Anaerobic processes 2 Effect of pH on hydrogen fermentation of food waste using intrinsic inoculum Dong-Hoon Kim Korea 665698 Application of methanogenic activity to improve sludge disintegration Cimochowicz-Rybicka Malgorzata Poland 666675 RNA-based quantification of major phylogenetic groups in anaerobic digestion Patricia Camacho France 664899 Microwave athermal effect in thermophilic digestion of sludge Miguel Coelho Canada 665728 Modelling sulfate reduction and dissolved sulfide production in an anaerobic biofilm reactor Servio Tulio Cassini Brazil 666856 Study of thermophilic and mesophilic CSTR acid phase anaerobic digestion of synthetic complex organic wastewater Lily Ho Australia 665685</p>
Lunch 12.45		
<p>2.15 Disinfection and disinfection by-products 3 Dissolved organic carbon in urban and coastal watersheds C B Chidambara Raj Singapore 662908 DBP formation in drinking water: kinetics and linear modelling Massimiliano Fabbicino Italy 664122 Assessment and management of risk from bromate in drinking water Zdravka Doquang France 665228 Formation of trihalomethanes and haloacetic acids from isolated NOM fractions Jinfeng Lu China 665962 Innovative ways of utilizing GAC to reduce DBP formation Kirk Nowack United States 665569 Investigation of storing drinking water in copper in rural and remote areas Mukul Kulshrestha India 665225</p>	<p>2.15 Membrane systems for wastewater treatment 3 In the search of alternative cleaning solutions for MBR plants Aurelie Grelot France 667616 Pilot plant experiences using mesh filter modules for direct activated sludge separation Christian Loderer Austria 664790 Baseline study on osmotic membrane bioreactor: optimization of operating conditions in forward osmosis Jianjun Qin Singapore 664006 Evaluation of main factors for failure of MBR systems Lazarova Valentina France 665538 Low-MLSS operation of MBR for optimization of energy consumption Hiromasa Inoki Japan 664861 Rejection capabilities of RO membranes to DHS notification-level chemicals Ufuk Erdal United States 666894</p>	<p>2.15 Modelling wastewater treatment processes 1 Distribution of heterotrophic and autotrophic organisms in a biological aerated filter Oscar Gonzalez-Barcelo Mexico 663847 Structural identifiability and experimental assessment combining OUR and DO data Javier Navarro-Laboulais Spain 666382 Inhibition and toxicity modelling in the long-term control benchmark model (BSM1_LT) framework Christian Rosen Sweden 666579 Experimental parameter estimation in extended biokinetic degradation models for micropollutants Monika Schoenrkle Austria 663494 Activated sludge model adaptation to MBR treatment of tannery wastewater at high SRT Riccardo Gori Italy 665317 Investigation of oxygen profile in a nitrifying moving bed biofilm process: a mathematical model Anders Heyden Sweden 665895</p>
Afternoon tea 3.45		
<p>4.30 Drinking water quality Where do the odorous halogenated phenols in water resources come from? Auguste Bruchet France 665189 Novel method for in-situ capture of taste and odour in drinking water Dalel Benali France 667524 Novel on-tap passive sampling for odorous compounds in drinking water Christophe Tondelier United States 667520 Controlling taste and odour events in Philadelphia, USA Mel Suffet United States 663885 Preparation and application of poly-silicic-ferric: a new kind of inorganic polymer coagulant Xu Xia China 664344 Barcelona will drink desalinated seawater: how will consumers react? Ricard Devesa Spain 662927</p>	<p>4.30 Odours and volatile emissions Monitoring of sulphide behaviour in lab batch reactor by formation of nitric oxide Maria Fuerhacker Austria 664886 E-PRTR reporting of air emissions at urban wastewater treatment plants Tommi Fred Finland 665084 Odour removal from wastewater treatment plant using a combined bioreactor Jianwei Liu China 665737 Development of a photocatalytic scrubber using aqueous TiO2 hydrosol Xiangzhong Li Chinese Hong Kong 665667 Assessing and managing odour emissions in wastewater treatment plants Virginie Decottignies France 665103 Pickling waste dosing to control excessive hydrogen sulfide in an anaerobic digester Wipa Charles Australia 663835</p>	<p>4.30 Modelling wastewater treatment processes 2 Modelling anaerobic digestion of dairy manure using the IWA ADM1 David Page United States 664475 The use of ASM-based models for the simulation of biological sludge reduction processes Bruce R Johnson United States 666468 Effects of different hydraulic models on predicting longitudinal profiles of reactive pollutants Jacek Makinia Poland 665937 Modelling of enhanced CSO treatment in secondary clarifiers with modified activated sludge model no. 3 Markus Ahnert Germany 666503 Process modelling as a tool for maximizing wet weather capacity Edward Becker United States 665541 JS protocol: practical guidance for the use of activated sludge modelling Hiroki Itokawa Japan 664474</p>



Wednesday	Wednesday	Wednesday
Wastewater treatment	Design and operation of water systems	Workshop
<p>9.00 Waste stabilisation ponds The energy and carbon management opportunities of waste stabilization ponds Andy Shilton New Zealand 668370 Fate of EfOM and NOM through riverbank filtration Sung Kyu Maeng Netherlands 664905 Performance evaluation of a simple wastewater treatment system Marcos von Sperling Brazil 666608 Nutrients removal in high-rate algal, maturation and water hyacinth ponds for piggy waste treatment Ligia Barthel Brazil 665479 Nictemeral analysis of aerated facultative pond and maturation pond for piggy waste treatment Rejane Costa Brazil 664116 Survey of pathogens in an urban river in monsoon Asia Masaaki Ozaki Japan 667482</p>	<p>9.00 Design, costs and planning of wastewater treatment plants Estimation of rainwater treatment costs for a BNR plant Jerzy Mikosz Poland 666570 Real-time efficiency monitoring for wastewater aeration systems Shao-Yuan Leu United States 664616 Use of in-situ UV/Vis spectrometry in water monitoring in Vienna Joep van den Broeke Austria 665269 Affordability of wastewater treatment in Danube countries Christoph Lampert Austria 668302 Redesign of Hilversum wastewater treatment plant Kees de Korte Netherlands 666016 Corrosion and corrosion protection in wastewater systems: new recommendation Daniel Bindschedler Switzerland 664564</p>	<p>9.00 Succession strategies: developing the next generation of leaders in key areas of the water sector Since the 1990s the global water industry has undergone continual changes. It now faces unprecedented workforce challenges as its leaders retire and the sector appears to be both financially unattractive and lacking career development opportunities for newcomers. This workshop looks at succession planning, strategies to recruit and retain staff and the continuing professional development of employees.</p>
Morning tea 10.30		
<p>Managing and planning water services</p> <p>11.15 Social dimensions, access to water and sanitation and capacity building Improving water access indicators in developing countries: water point mapping methodology Alejandro Jiménez Spain 664855 Challenges with up-scaling dry sanitation technologies J N Bhagwan South Africa 663471 10 years of experience in south-eastern Europe: a best practice report Christoph Prandtstetten Austria 668131 Developing irrigator types from clustered values Geoff Kuehne Australia 663811 Perceptions of low cost on-site disposal sanitation and social-health impacts Evans M N Chirwa South Africa 666806 Community-managed small-scale water systems: case study of Indian Barrage Rajendra Poddar India 663458</p>	<p>11.15 Design costs and planning of drinking water treatment plants Application of analytical hierarchical process method for water treatment plant upgrading Stanislaw M Rybicki Poland 666344 The estimation of deadzone and hydraulic efficiency in pilot-scale clearwell using CFD Park Heekyung Korea 665443 High pressure schedule for low pressure membrane plant design Laurie Sullivan United States 664281 Extended pilot testing in source waters: techno-economics of SWRO and pre-treatment Felix Wang Singapore 666913 Drinking-water-based power plants: economic and ecological aspects Friedrich Rödler Austria 664707 Reducing investment and operating costs of a UF plant Peter Berg Germany 667673</p>	<p>11.15 Succession strategies: developing the next generation of leaders in key areas of the water sector (cont.)</p>
Lunch 12.45		
<p>Workshop</p> <p>2.15 Water safety plans The World Health Organization's Guidelines for Drinking Water Quality feature the Water Safety Plan (WSP) methodology. This risk-based approach takes a more holistic view and identifies the points of the system which present the most severe threats to water quality so that actions may be targeted where they will have maximum positive impact. This workshop describes the WSP concept and provides case studies demonstrating the effectiveness of implementing water safety plans.</p>	<p>2.15 Managing and maintaining water supply networks Pressure management in the Athens water supply network Sophie Kanellopoulou Greece 668427 Replacement project of early ductile pipe in Tokyo Shigeru Imai Japan 665584 Optimal pump operation of water distribution system using hybrid genetic algorithm Shi-hu Shu China 664060 Expansion of existing monitoring system using acoustic fibre optic technology Mike Wrigglesworth Canada 666391 Calibration of the model of an operational water distribution system Anatoli Vassiljev Estonia 665808 Operational and safety analysis in water supply systems Helena M Ramos Portugal 666247</p>	<p>Workshop</p> <p>2.15 Water and sanitation: challenges and solutions for the world's poor urban populations Many experts foresee that the Millennium Development Goals for Water and Sanitation will not be met in several developing regions. This workshop will present large-scale water and sanitation projects that have been successfully delivered to under-served peri-urban areas and informal settlements. It will also discuss the conditions and criteria for developing water and sanitation services for the urban poor and the roles and responsibilities that utilities have to play in this development.</p>
Afternoon tea 3.45		
<p>4.30 Water safety plans (cont.)</p>	<p>4.30 Non-conventional treatment A contribution to solve the arsenic problem in Ganges groundwater Holger Kauffmann Germany 664518 Understanding the role of the sand filter in arsenic removal Loren Ramsay Denmark 665406 A novel iron oxide coated sponge adsorption system for arsenic removal Saravanamuthu Vigneswaran Australia 663951 Integrating fibre filters, ultrasound and UV-C into a chemical-free water treatment system Guenther Langergraber Austria 663201 Rehabilitation of waterworks for improved treatment or recycling Andre Lerch Germany 663062 Removal of <i>Cryptosporidium</i> and <i>Giardia</i> by upflow and downflow direct filtration Regina Keller Brazil 666863</p>	<p>4.30 Water and sanitation: challenges and solutions for the world's poor urban populations</p>

Preliminary technical programme



Wednesday	Wednesday	Wednesday
<p>Water treatment</p> <p>9.00 Innovative water treatment 1 Kasza: design of a closed water system for greenhouse horticulture Raphaël van der Velde Netherlands 666055 Influence of groundwater NOM on the performance of Fe⁰ reactive barriers for groundwater decontamination Aki Sebastian Ruhl Germany 666114 Treatment of spent filter backwash water using DAF in Isfahan WTP Mohammah Hassan Mahmoodian Iran 666395 Ion exchange to control NOM fouling in nanofiltration Emile Cornelissen Netherlands 665171 The BiEau process: an innovative solution for in-situ treatment Jean-Jacques Grandguillaume France 665141 Framework for assessing performance of managed aquifer recharge systems Saroj Kumar Sharma Netherlands 664979</p>	<p>Health and the environment</p> <p>9.00 Drinking water quality management from source to consumer 1 Bacteria growth in aged copper or plastic pipes and new pipelines Markku Lehtola Finland 662898 How Singapore manages drinking water quality from source to consumers Cheng Hua Sim Singapore 668068 Operational management of <i>Naegleria</i> spp. in drinking water supplies Rino Trolie Australia 664752 Post-<i>Giardia</i> water supply priority efforts in Bergen Bjornar Eikebrokk Norway 664647 Drinking water quality management: balance between regulation and self-assessment Hans-Peter Rohms Germany 667058 Resource and water quality management as a basis for sustainable supply Wolfgang Zerobin Austria 664674</p>	<p>Workshop</p> <p>9.00 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>
<p>Morning tea 10.30</p>		
<p>11.15 Innovative water treatment 2 Treatment of trace organics in membrane concentrates: pesticide elimination Bengu Bozkaya France 667663 Removal of pharmaceuticals and endocrine disrupting chemicals Jaehyuk Kim Korea 665751 Small-scale drinking water treatment Doeke Schippers Netherlands 663754 Urea treatment in ultrapure water plants Grigorios Kolios Switzerland 668111 Demonstration testing of innovative 16-inch and conventional 8-inch SWRO in the Arabian Gulf Felix Wang Singapore 667067 Nitrate removal from drinking water in Iran: three different treatment processes Oliver Dördelmann Germany 664971</p>	<p>11.15 Drinking water quality management from source to consumer 2 Alpine karstic water resource management: opening the pollution microbiology black box Andreas Farnleitner Austria 662804 Investigating public health impacts of deer in a protected drinking water supply watershed Kathy Cinque Australia 661882 Europe: towards the catchment-to-consumer approach Andrea Keessen Finland 666752 Evaluation of concentration methods for quantification of HAdV, JCPyV and noroviruses Nestor Albinana-Gimenez Spain 665230 Evaluation of chronic toxicity and carcinogenic potential of reclaimed water in mice Leslie Retnam Singapore 664814 On-site reuse of municipal sewage effluents for ricefield irrigation Aristotelis Papadopoulos Greece 661720</p>	<p>11.15 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>
<p>Lunch 12.45</p>		
<p>2.15 Oxidation in water treatment 1 Catalytic ozonation of herbicide 2,4-dichlorophenoxyacetic acid in aqueous solution by MnOx Chun Hu China 664646 Photodegradation of sulfadimethoxine in water by medium pressure UV lamp Hadas Mamane Israel 664835 Photocatalytic inactivation of flavobacterium and <i>E. coli</i> in water Robert Armon Israel 667713 Advanced oxidation processes Achim Ried Germany 664104 Synergetic degradation of organic contaminants by electro-oxidation and photocatalysis Xu Zhao China 666867 Developing a reaction column to treat chlorinated phenols in liquid Shyi-Tien Chen Chinese Taiwan 666776</p>	<p>2.15 Toxicity and environmental impact assessment 1 Biological effects of PPCPs on aquatic lives and evaluation of river waters Arata Harada Japan 664864 Seasonal and spatial variations in Lake Biwa dissolved organic matter Taketoshi Kusakabe Japan 665682 Application of biological safety index in two watersheds in Japan Dongbin Wei China 665869 Indirect and direct greenhouse gas emissions of a wastewater treatment plant Hugues Vanden Bossche France 667153 Heavy metal contamination near the Okdong mine, Korea Young-Hun Kim Korea 665877 Cytotoxic and cell cyclic effect of organophosphate retardants on human cells In S Kim Korea 667094</p>	<p>2.15 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>
<p>Afternoon tea 3.45</p>		
<p>4.30 Oxidation in water treatment 2 Degradation of macromolecular tannic acid by O3/H2O2 Jimin Shen China 664511 Inactivation of chironomid larvae with ozone Xing-bin Sun China 665778 Inhomogeneous feed gas processing in industrial ozone generation Fabio Krogh Switzerland 667667 Degradation of 17α-Estradiol and 17α-Ethinylestradiol by ozonation and O3/H2O2 Marcia Dezotti Brazil 663476 Impact of pre-treatment by coagulation or ion exchange on UV transmission Karin Teunissen Netherlands 662861 MTBE removal using UV/peroxide advanced oxidation: pilot study Sunil Kommineni United States 666772</p>	<p>4.30 Toxicity and environmental impact assessment 2 Demonstration of hydrophobic vs hydrophilic NOM on biotoxicity from nanoparticles Sungyun Lee Korea 666381 Effects of pH, hardness and DOC on mixture toxicity of copper and chromium Jinho Jung Korea 663945 Development of a water state index to assess impact Angela Karen Joanna Surridge South Africa 664067 Evaluation of carcinogenic and estrogenic potential of reclaimed water in fish Zhiyuan Gong Singapore 668537 GPS tracking of cattle movement in drinking water catchments Christine Kaucner Australia 601889</p>	<p>4.30 Cities of the future: pioneering and re-engineering urban design for sustainable water outcomes (cont.)</p>



Wednesday	Wednesday	Wednesday	Wednesday	Wednesday
Workshop	Workshop	Workshop	Workshop	Workshop
<p>9.00 Desalination and reuse: rethinking future resources</p> <p>Membrane technologies for desalination and reuse offer water professionals some truly bright spots in responding to the global challenges ahead. We are only at the beginning of the large-scale application of these technologies. This workshop examines the potential of desalination and reuse including some key technological breakthroughs that are on the horizon. It also addresses some of the obstacles including the energy impacts associated with desalination and reuse.</p>	<p>9.00 Utility water operator partnerships: a building block in achieving the MDGs</p> <p>This workshop serves as the global inauguration of the Water Operator Partnerships (WOPs) programme, a United Nations self-help programme for utilities aimed at achieving global and regional Millennium Development Goals (MDGs). The workshop explores both the promise and historical experience of WOPs including successful designs for WOPs funding, requirements, further cascading of WOPs related gains and longer term linkages with professional associations.</p>	<p>9.00 Managing the Danube and other basins</p> <p>This workshop traces the histories and futures of key basins in Europe. It has a special focus on the Danube and takes in what is happening in the rest of the world using a case study approach. Technical and policy challenges are covered in the context of the cases presented. The workshop also attempts to identify overarching principles of basin management.</p>	<p>9.00 Applied benchmarking for utilities: how, what and when</p> <p>This workshop disseminates the foundations of Benchmarking (Metric and Process) as defined by IWA, clears some misconceptions and presents actual experiences on the real benefits and costs of benchmarking. Following brief presentations by representatives of participant utilities in the IWA-WSAA benchmarking project, utility managers are encouraged to discuss with their colleagues and those responsible for the IWA-WSAA project particular aspects of a benchmarking project.</p>	<p>9.00 The sustainability agora</p> <p>The sustainability agora is an orchestrated disputation commencing with an introduction from a moderator followed by three or four tightly argued perspectives on <i>the</i> solution to achieving greater sustainability in the water sector, with general questions and debate from the floor. Perspectives will be organized in response to a set of previously specified challenges.</p>
Morning tea 10.30				
<p>11.15 Desalination and reuse: rethinking future resources (cont.)</p>	<p>11.15 Utility water operator partnerships: a building block in achieving the Millennium Development Goals (cont.)</p>	<p>11.15 Managing the Danube and other basins (cont.)</p>	<p>11.15 Applied benchmarking for utilities: how, what and when (cont.)</p>	<p>11.15 The sustainability agora (cont.)</p>
Lunch 12.45				
<p>2.15 Desalination and reuse: rethinking future resources (cont.)</p>	<p>2.15 Utility water operator partnerships: a building block in achieving the Millennium Development Goals (cont.)</p>	<p>2.15 Managing the Danube and other basins (cont.)</p>	<p>Workshop</p> <p>2.15 Plant-wide simulation protocol and platforms for benchmarking of control strategies for wastewater treatment plants</p> <p>Computer simulation of the control of wastewater treatment plants provides an ideal methodology for analysis. Ten years of experience have provided insight into the problems associated with testing, validating and evaluating full-scale control options using computer simulations prior to implementation. This workshop highlights the benefits and emphasises the main scientific achievements related to the simulation and analysis of control impacts.</p>	<p>Workshop</p> <p>2.15 Triple bottom line reporting</p> <p>This workshop provides useful information to water managers, consultants, technicians and scientists from all countries by showing how the triple bottom line analytical framework can be used to evaluate competing considerations in planning and operations. It covers both advanced applications and tools and the challenges of implementation. The intention is to reach an audience that is wider than current practitioners of triple bottom line analysis.</p>
Afternoon tea 3.45				
<p>4.30 Desalination and reuse: rethinking future resources (cont.)</p>	<p>4.30 Utility water operator partnerships: a building block in achieving the Millennium Development Goals (cont.)</p>	<p>4.30 Managing the Danube and other basins (cont.)</p>	<p>4.30 Plant-wide simulation protocol and platforms for benchmarking of control strategies for wastewater treatment plants (cont.)</p>	<p>4.30 IWA specialist group on sustainability prize presentations</p>

Preliminary technical programme



Thursday	Thursday	Thursday
Wastewater treatment	Health and the environment	Wastewater treatment
<p>9.00 Advances in biological processes and technology 1 Advances in aerobic granular sludge research Merle de Kreuk Netherlands 665229 PERBIOF: an innovative technology for treating municipal wastewater Claudio Di Iaconi Italy 664129 Optimisation of aeration for activated sludge treatment with nitrification-denitrification David Thauere France 664877 Anaerobic codigestion of sludge with organic waste and nutrient removal from supernatant Simone Caffaz Italy 665226 Optimization of operating conditions in aerobic granulation by fuzzy pattern recognition Guowei Chen Korea 663873 Simultaneous nitrification, denitrification and phosphorus removal from industrial wastewater Zhiguo Yuan Australia 664755</p>	<p>9.00 Emerging issues for health and the environment Developing a common priority list of pharmaceuticals Pim de Voogt Netherlands 664293 International surveys of PFOS and PFOA in surface and tap water Nguyen Pham Hong Lien Japan 666505 Emerging methods to detect emerging contaminants Annemarie van Wezel Netherlands 667107 Pathogen risk assessment in artificial groundwater recharge by quantitative real-time PCR Elisabeth Grohmann Germany 665307 MistraPharma: environmental risks caused by pharmaceuticals Christina Rudén Sweden 666990 Preliminary assessment of methane emission from sewers Albert Guisasola Canudas Spain 664027</p>	<p>9.00 Biofilm processes 1 Characterizing temporal development of biofilm porosity using artificial neural networks Haluk Beyenal United States 663775 Analysis of nitrifying bacterial communities in aerobic biofilm reactors using molecular techniques Jeungjin Park Korea 665504 Heterogeneity, distribution and control of biofouling on RO membranes Mohiuddin Md Taimur Khan United States 665716 Effect of inorganic precipitation on H2-driven membrane biofilm reactor Jong-Hyuk Hwang Canada 664251 Effect of media characteristics on hydrodynamics and oxygen mass transfer in biofilters Sylvie Baig France 667664 Assessment of vertical distribution of nitrifying bacteria and ions profiles Soo Youn Kwon Korea 666274</p>
Morning tea 10.30		
<p>11.15 Advances in biological processes and technology 2 Microbial fuel cell technology reaches pilot-scale demonstration Korneel Rabaey Australia 664809 High yield biohydrogen production in microbial electrolysis cells Bruce Logan United States 665372 An insight into cathode options for microbial fuel cells Olivier Lefebvre Singapore 664695 Influences of attached microorganisms growth in microbial fuel cells Joo Youn Nam Korea 664579 Power production enhancement with novel mediators in a microbial fuel cell Sharon Belinda Velasquez Orta United Kingdom 666621 Treatment of exploded-corn-stover washing wastewater in a microbial fuel cell YaoLan Liu China 666419</p>	<p>11.15 Safety of recreational waters Coastal water management to protect the quality of bathing waters David Suñer Spain 664619 Health risk exposure to <i>Cryptosporidium</i> and <i>Giardia</i> in Amsterdam canals Ana Maria de Roda Husman Netherlands 667629 Occurrence of microcystins in Bavarian recreational water Petra Resch Germany 661650 New decision-support tool for active management of bathing water quality Sophie Courtois France 665036 Relationship between land uses and indicator bacteria Louwanda W Jolley United States 666883</p>	<p>11.15 Biofilm processes 2 Aerobic methane oxidation and denitrification (AME-D) Oskar Modin Japan 664459 Comparison of three novel bioreactors for removal of perchlorate Eberhard Morgenroth United States 666785 Efficient nutrient removal from swine manure using algae-bacteria Raul Muñoz Torre Spain 666130 Enhanced pre-treatment for increased sustainability of biofilm reactors Frank Rogalla United Kingdom 667040 Ammonium removal performance and spatial distribution of nitrifying bacterial populations Rongchang Wang China 666821 Impact of shear force on biofilm structure and performance in a membrane biofilm reactor Dominika Celmer Canada 665566</p>
Lunch 12.45		
Closing plenary and Harremoës lecture 2.15 – 3.30		
Closing ceremony 3.30 – 4.15		
Gala night 7.00		





Thursday	Thursday	Thursday
Water resources and river basin management 9.00 Strategy for water resources management, including reuse Towards indirect potable reuse in south-east Queensland Warren Traves Australia 663132 Closing the water loop: integrated water resources management Melanie Tan Singapore 665709 Importance of Vienna's wastewater management for Danube water quality Gerald Wandl Austria 668531 Can groundwater banks lead from scarcity and overuse to sustainability? Juilen Harou United Kingdom 667137 Guiding the growth of water reuse Davide Bixio Belgium 669484 Recycling highly treated effluent for environmental flow substitution Dennis Cho Australia 669316	Design and operation of water systems 9.00 Managing and maintaining sewer systems Understanding blockage formation in sewer systems Scott Arthur United Kingdom 664199 Theoretical and practical aspects of hydrogen-sulphide control in pressure sewers Ernis Saracevic Austria 668389 Corrosion and odour management in sewers Zhiguo Yuan Australia 664764 Pollution load modelling in sewer systems Valentin Gamerith Austria 665978 Sewer rehabilitation using trenchless technologies Lin Kah Ooi Singapore 664570 Prediction models for hydraulic deterioration of stormwater drainage pipes Dung Huu Tran Australia 664515	Adapting to the impacts of climate change 9.00 Climate change Integrated systems evaluation of climate change and future adaptation strategies Jeffery Connor Australia 663641 Influence of climate change on water resources in an alpine region Sara De Toffol Austria 665143 Getting ready for climate change: implications for the US west coast Perri Standish-Lee United States 662968 Impacts of meteorological extreme events on drinking water supply safety Mario Unterwainig Austria 663665 Stochastic soil moisture model derivation with cumulant expansion theory in steady-state condition Sangdan Kim Korea 665845 Challenges of managing coastal areas through climate change Amit Chanan Australia 665940
Morning tea 10.30		
11.15 Water resource management and regulation Institutional and legal arrangements in the Nile River Basin Khalid Mohamed El-Hassan Abdalla Sudan 663014 Investigating artificial groundwater recharge to ensure Graz water supply Wilhelm Tischendorf Austria 664609 Assessment of optional water pricing for irrigation in Charente River Basin Sébastien Loubier France 664171 Using a choice experiment to estimate the value of improved wastewater treatment Ekin Birol United States 665380 Characterization of municipal wastewater treatment facilities effluent for sustainable water management Hung Suck Park Korea 666983 An extended trading ratio system for trading water pollution discharge permits Seyyed Morteza Mesbah Iran 666941	11.15 Instrumentation, control and automation Simultaneous nitrification-denitrification control for activated sludge wastewater treatment Cyrille Lemoine France 664584 Benchmark simulation model no. 2: plant layout and default control strategy Ingmar Nopens Belgium 663681 Dynamic control of in-line coagulation in an ultrafiltration process Harry Futselaar Netherlands 668823 Integrity sensor for membrane processes by relative trans-membrane pressure monitoring Fook-Sin Wong Singapore 666936 Water loss management Joerg Baader Germany 665056 Fully automated prototype for enumeration of <i>E. coli</i> in wastewater effluents Sergio Bodini Italy 664080	11.15 Climate change Impact of climate change on drinking water supply by riverbank filtration Paul Eckert Germany 666988 Analyzing water quality changes due to reservoir management and climate change Irene Slavik Germany 664906 Water supply planning to face up to climatic change Raquel Chamochin Spain 667119 Management of water systems to respond to climate changes Adri Verwey Netherlands 667025 Effects of global warming on waterworks: a proposal from Japan Yoshihiko Misono Japan 664382 Tokyo Waterworks action for climate change Norikazu Yamamuro Japan 664466

Lunch 12.45

Closing plenary and Harremoës lecture 2.15 – 3.30

Closing ceremony 3.30 – 4.15

Gala night 7.00



Preliminary technical programme



Thursday	Thursday	Thursday	Thursday
Workshop	Workshop	Workshop	Workshop
9.00 Desalination and reuse: rethinking future resources (cont.)	9.00 Regulatory and institutional change: global trends and case studies This workshop aims to give the “big picture” on the drivers for effective regulation. It shows trends in the introduction of regulation and provides examples of how regulation is being taken forward in practice.	9.00 Water, engineering and education: are our educational institutions meeting today's imperatives? The increasingly complex nature of water in technical, social, economic and political terms demands that an engineering education be much broader than that found in traditional engineering curricula. This workshop will address what tomorrow's engineering curricula needs are and some of the pathways that higher education could use to equip tomorrow's engineers for success in an increasingly diverse and complex world.	9.00 Rainwater harvesting Rainwater harvesting is an essential tool to meet the Millennium Development Goals and for achieving sustainable water management in developing countries. This workshop presents several case studies showcasing the variety of technologies that are available to harvest rainwater, the applications rainwater harvesting can be put to and its benefits.
Morning tea 10.30			
11.15 Desalination and reuse: rethinking future resources (cont.)	11.15 Regulatory and institutional change: global trends and case studies (cont.)	11.15 Water, engineering and education: are our educational institutions meeting today's imperatives? (cont.)	11.15 Rainwater harvesting (cont.)
Lunch 12.45			
Closing plenary and Harremoës lecture 2.15 – 3.30			
Closing ceremony 3.30 – 4.15			
Gala night 7.00			





Thursday	Thursday	Thursday
Workshop	Workshop	Workshop
<p>9.00 Proactive crisis management of urban infrastructure Across Europe there is a comprehensive research effort to find ways to mitigate the financial, social and ecological consequences of water crises. The EU is currently addressing security in water supply systems, as well as traditional risk assessment. Common European guidelines are being developed. This workshop gives an overview of the problem as it relates to drinking water systems and provides examples of current developments.</p>	<p>9.00 Groundwater as a threatened resource: mitigation strategies around the world This workshop explores a number of the complex technical, economic and political aspects of the issue of the threatened groundwater resource. It gives an overview of the current state of the science of contaminant fate and transport in the subsurface and provides case studies to illustrate the complexities of the problems and the range of solutions being considered by agencies or other entities actively involved in resolution of the problems in large groundwater basins.</p>	<p>9.00 Large WTPs: emergent pathogenic and chemical risks and response The approach for risk assessment and risk management recommended by the World Health Organization covers both the microbiological risk and the chemical risk related to the emerging parameters, such as PPCPs, some emerging pesticides and disinfection by-products. This workshop addresses all the different stages of the full methodology to conduct a quantitative risk assessment and the use of the appropriate tools as well as the practical recommendations for the operators concerning the implementation of risk management plans.</p>
Morning tea 10.30		
<p>11.15 Proactive crisis management of urban infrastructure (cont.)</p>	<p>11.15 Groundwater as a threatened resource: mitigation strategies around the world (cont.)</p>	<p>11.15 Large WTPs: emergent pathogenic and chemical risks and response (cont.)</p>
Lunch 12.45		
Closing plenary and Harremoës lecture 2.15 – 3.30		
Closing ceremony 3.30 – 4.15		
Gala night 7.00		

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Paul Brown
President Public Services
Group
CDM
USA

Cities of the future

Paul Brown is responsible for engineering firm CDM's delivery of consulting, engineering, construction, and operations services to municipal, regional and state government clients throughout North America. He is co-editor with Dr Vladimir Novotny of the book *Cities of the future: towards integrated sustainable water and landscape management* published by IWA.



Abel Mejia
Water Manager, Energy,
Transport and Water
Department
World Bank
USA

Upscaling water and sanitation services

As leader of the World Bank's Water Anchor Unit, Abel Mejia is responsible for policy, expert and strategic advice to the regional operational units, knowledge management and professional development across the water group and coordination of the water agenda with international and technical organizations. His prior experience is on water projects in Venezuela.



Philip Weller
Executive Secretary
**International Commission for the
Protection of the Danube River
(ICPDR)**
Austria

Water resources and catchment management in large basins

Philip Weller has considerable experience in the restoration of natural ecosystems. He is executive secretary of the ICPDR, the forum for the 13 major Danube countries and the European Commission to improve water quality and water management. The ICPDR recently won the Thies River Prize for facilitating effective cooperation in the Danube river basin.



Pavel Kabat
Professor of Earth System
Sciences and Climate Studies
Wageningen University
The Netherlands

Water, climate and energy

Pavel Kabat is a world-renowned expert on the impact of climate change on water resources. He has published widely including in high-impact journals such as *Nature* and *Science*. He chairs the Earth System Sciences and Climate Change Group at Wageningen University and is Science Director and Council Chair of the Dutch National Climate Research Programme.



Hans Sailer
President
**International Association of
Waterworks in the Danube River
Catchment Area (IAWD)**
Austria

The Danube: a case study for integrated water management

Hans Sailer is Managing Director of the Vienna Waterworks and President of IAWD, an association whose main focus is developing cooperation between water utilities in the Danube catchment area. Under his leadership links have been created between the regional water business and institutions such as IWA, ICPDR and EUREAU.

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- Snow-making in the secondary treatment of ski resort wastewaters [Jarmo Sallanko Finland 662179](#)
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- Occurrence of dissolved and colloidal organic nitrogen in wastewater treatment plant influents and effluents in northern Poland [Jacek Makinia Poland 666691](#)
- Fractionation of biofilter effluent and their impact in the membrane fouling process [Andreas Farnleitner Austria 666710](#)
- Optimal location of river water quality monitoring stations using the discrete entropy theory: a case study [Najmeh Mahjouri Iran 666762](#)
- Partial nitrification in biofilms: inhibition versus competition [Eberhard Morgenroth United States 666780](#)
- Exploitation of polymer residual in waterworks sludge treatment [Yaqian Zhao Ireland 666782](#)
- Perchlorate removal with shock loading in a gas-lift biofilm reactor [Eberhard Morgenroth United States 666788](#)
- Long-term DO control for N-removal in step-feed anoxic/oxic process [Wei Wang China 666799](#)
- Recovering phosphorus from wastewater through struvite crystallization: hydrodynamics of a two-dimensional fluidized-bed UBC MAP crystallizer [Xiaocao Qu Canada 666803](#)
- Approach to water treatment process selection and design to maximize sustainability and mitigate environmental impact [Jesus Garcia-Aleman Canada 666812](#)
- Degradation of commercial azo dyes in water using Fenton's oxidation technique [Petia Mijaylova Nacheva Mexico 666824](#)



- Elimination of algae chlorophyll indicators 2-MIB and geosmin using ozonation in a drinking water treatment plant [Orta de Velasquez Maria Teresa Mexico 666844](#)
- Heavy metal removal with ion exchanger produced from sawdust by a novel green procedure in solvent-free conditions [Tetsuji Okuda Japan 666857](#)
- Surface complexation mechanism and engineering implications in chemical phosphorus removal [Imre Takacs Canada 666865](#)
- Inactivation of algal bloom and destruction of toxins and odorous compounds in eutrophic water of drinking water supplies with TiO₂ thin film hollow glass beads [Dong-Keun Lee Korea 666893](#)
- Achieving many benefits of phased digestion and avoiding the pitfalls [Zeynep K Erdal United States 666899](#)
- Monsoon water management: strategies for increasing safe drinking water in Bangladesh [Md Golam Mostafa Bangladesh 666900](#)
- Removal characters of disinfection by-products and formation potential by BAAC process [Guangzhi Wang China 666916](#)
- Feasibility study of a membrane bio-reactor in treating pharmaceutical and Acrylonitrile, Butadiene and Styrene (ABS) wastewater treatment [Chia-Yuan Chang Chinese Taiwan 666920](#)
- Fuzzy control of EBPR SBR for phosphorus removal [Ph Youwei Cui China 666944](#)
- Turbid water management for Imha and Andong Reservoirs [Jeongkon Kim Korea 666951](#)
- Flow regime control in an airlift membrane bioreactor under various hydrodynamic conditions for fouling minimization [Fei Yang Israel 666962](#)
- Effect of the catalysis of activated carbon on the decomposition of dye in water by ozone [Yoshihiko Ninomiya Japan 666966](#)
- Adsorption of ionic dyes on silica coated superparamagnetic nanoparticles compared with modified mesoporous silicates [Patiparn Punyapalaku Thailand 666976](#)
- Atmospheric deposition of nutrients measured at Kutsuki experimental mountain forest in Japan in the Asian monsoon area [Takao Kunimatsu Japan 666982](#)
- Removal and recovery of phosphorus from water with synthetic granular hydrotalcite particles [Yoshihiko Ninomiya Japan 666992](#)
- Natural and technogenic groundwater anomalies near industrial centres and health risk assessment [Boris Synzynys Russia 666999](#)
- Removal of phosphorus from secondary effluents by coagulation-ultrafiltration versus chemical precipitation [Vitaly Gitis Israel 667002](#)
- Interactions between polyethylene water pipes and disinfectants used in water treatment by means of a field study and a bench-scale testing programme [Magali Rozental France 667009](#)
- Carbon, nitrogen and surfactant removal in trickling filters used as post-treatment units of effluents from UASB reactors: a comparison of different media types [Paulo Gustavo Sertório de Almeida Brazil 667019](#)
- Reverse osmosis pre-treatment with ceramic membranes [Frank Rogalla United Kingdom 667038](#)
- Development of a novel fungal consortium for the treatment of molasses distillery wastewater [Deepak Pant India 667050](#)
- The effect of ultrasound at 256 KHz on *Microcystis aeruginosa* with and without gas vacuoles [Eugene Cloete South Africa 667070](#)
- Nitrate reduction by hydrogen in water using catalytic polymeric membranes [Libe De las Fuentes Spain 667073](#)
- Methodological guidelines to prepare feasibility studies for water reuse systems [Libe De las Fuentes Spain 667077](#)
- Optimal sampling design for model calibration using genetic algorithm: a case study [Kourosh Behzadian Iraq 667108](#)
- WFDs implementation progress in the EU focusing on Greece [Stavroula Tsitsifli Greece 667116](#)
- Water demand reduction for outdoor uses: efficient gardening [Raquel Chamochin Spain 667125](#)
- Thermoplastic-lined tunnels for transport and storage of waste and potable water [Thomas Narbeshuber Austria 667140](#)
- How to understand and use common data on drinking water quality and health [Frantisek Kozisek Czech Republic 667142](#)
- Cost of WFD implementation in the Spanish Muga Basin: an innovative approach [Tomás Lejarra Spain 667160](#)
- Toxicity evaluation of solid and liquid fraction of domestic wastewater treated by ozonation [Karina Boltes Spain 667182](#)
- Carboxylic acid formation during ozonation [Zehra Semra Can Turkey 667206](#)
- Photochemical treatment of estrogenic chemicals [Henrik Rasmus Andersen Denmark 667209](#)
- Heating and cooling from sewers [Josef Gottschall Austria 667237](#)
- Two parameters neuro-fuzzy model for short-term water demand forecasting in Tehran: a comparison between randomized and non-randomized data approaches [Massoud Tabesh Iran 667239](#)
- Effect of an aquifer with a clay layer on denitrification in groundwater [Taku Fujiwara Japan 667247](#)
- Volume reduction and concentration of nutrients in raw and digested blackwater by evaporation [Öznur Alp Germany 667256](#)
- Marine environmental impact assessment of the Al-Sukhna power plant, Egypt [Donia Noha Egypt 667292](#)
- Ceramic sampler studies and water quality measurements of Pirajuçara stream, São Paulo, Brazil [Nilce Ortiz Brazil 667294](#)
- Retrospective research from 2000–2006 of the chronic water factor on the health of the population of a megacity [Vladimir Malyshev Russia 667352](#)
- An integrated water quality management in Himalayan river basins [Chet Bahadur Pariyar Nepal 667355](#)
- Biosolids drying: lessons learned around the globe [Joseph Herndon United States 667361](#)
- A low-cost solution to reduce total nitrogen discharged from WWTPs [Rohan Wikramanayake United States 667364](#)
- Optimizing membrane performance and permeate water quality through the use of Trident HSC pre-treatment process [Paul Gallagher United States 667373](#)
- Photochemical treatment of pharmaceuticals [Henrik Rasmus Andersen Denmark 667377](#)
- Amount of metabolite produced from activated sludge processes used in treating municipal sewage [Yuu Ubukata Japan 667384](#)
- Rainwater harvesting: a potential source of safe drinking water in Bangladesh [Md. Golam Mostafa Bangladesh 667478](#)
- Detection of HEV in environmental water [Shigemitsu Morita Japan 667485](#)
- Mercury bioremediation using mixed cultures: characterising process performance and the microbial community [Adrian Oehmen Portugal 667486](#)
- The influence of irrigation in wheat yield on a global scale [Junguo Liu Switzerland 667489](#)
- Determination of the Henry's constant and the volumetric mass transfer coefficient of VOCs in solvents [Abdeltif Amrane France 667496](#)
- An evaluation of biogas utilisation at Bekkelaget sewage treatment plant in five alternatives: environmental consequences, economy and technical evaluations [Ole Jakob Johansen Norway 667497](#)
- A model for removal of microorganisms by slow sand filtration [Ana Maria de Roda Husman Netherlands 667627](#)
- Evaluation of water supply and sanitation condition of suburban community in Ulaanbaatar, Mongolia [Chimedtseren Nyamragchaa Mongolia 667644](#)
- High rate fixed film technologies for nitrogen removal [Troy Holst France 667669](#)
- Barcelona desalination plant: 200,000 m³/day of drinking water [Frédéric Gueguen France 667670](#)
- Micropollutants flux and removal in an advanced wastewater treatment plant [Patureau Dominique France 667672](#)
- Mixed culture PHA production as a means of biosolids management [Nicholas GuriEFF Australia 667677](#)
- Use of hydro-informatics technology in Central and Eastern Europe during the last decade [Tomas Metelka Czech Republic 667678](#)
- Antwerp Water Works going for growing integral water services: a never-ending challenge [Herman Crommelinck Belgium 667679](#)



- Coupling absorption at high energy and advanced oxidation process for VOC treatment **Pierre-Francois Biard** France 667746
- Combined experiences of thermal hydrolysis and anaerobic digestion: latest thinking on hydrolysis of secondary sludge only **Elodie Piat** France 667751
- Research and feedback on Grasse Roumigières MBR WWTP **Mathieu Gaillard** France 667754
- Odour removal using co-current biotrickling filter technology **Sylvie Baig** France 667755
- Customer services in public-private joint venture companies **Francisco Aguado** Spain 667775
- Biofilm reactor with hydrogel micro-carriers for nitrogen removal in wastewater treatment **Erno Fleit** Hungary 668039
- Sustainable reduction of water loss in urban water distribution systems **Erwin Kober** Germany 668143
- Decentralized wastewater treatment with the use of a submerged aerated biofilter as an option for the post-treatment of a septic tank effluent **Marcelo Nolasco** Brazil 668190
- Reducing sludge by coupling thermal hydrolysis and anaerobic digestion **Julien Chauzy** France 668196
- Revitalization of an artificially recharged groundwater source **Milan Dimkic** Serbia 668305
- Savings with upgraded performance through improved activated sludge denitrification in the combined activated sludge-biofilter system of the South-Pest wastewater treatment plant **A Jobbagy** Hungary 668332
- Optimum use of gravity springs in water supply systems **Katarina Tothova** Slovakia 668356
- Modelling of secondary clarifiers in the activated sludge process **Camelia Gavrilă** Romania 668364
- Effects of urgent measures implemented to protect the Ključ groundwater source **Zoran Radenkovic** Serbia 668365
- Need for decentralized wastewater treatment in the sensitive Mediterranean karstic areas **Nataša Atanasova** Slovenia 668368
- Dissolved oxygen concentration during complete nitrification **Milenko Ros** Slovenia 668378
- Operation optimization of several pumping stations interconnected to a complex water distribution network: case study **Andrei Georgescu** Romania 668422
- A strategy of extended water quality monitoring in a long distance water supply **Regine Fischeider** Germany 668436
- Consideration of the relation between water resources management and water supply and sewage management **Rojanschi Vladimir** Romania 668572
- An innovative scheme to preserve precious fresh water resources in Hong Kong **C K Fung** Chinese Hong Kong 668575
- The regulation of water and waste services in Portugal **Joao Almeida** Portugal 669011
- Second Joint Danube Survey: a comprehensive water quality investigation on a large river **Igor Liska** Austria 669170
- Design procedures to minimise power consumption in membrane bioreactors **John Messenger** Australia 669236
- Recycling in the context of Sydney's water cycle **Philip von Huben** Australia 669319



The industry forum will provide a unique opportunity to bring together water industry leaders and research and development practitioners for meaningful dialogue on the challenges and opportunities facing the water industry today.

Each day of the congress water industry leaders will host a series of 90-minute exchanges that will provide a platform for a new approach to collaboration between industrial water users, technology providers, utility organisations, consultants and research and development practitioners.

Participants will have the opportunity to engage with industry leaders through a combination of presentations and open discussion forums. Each day will culminate with a panel discussion on the day's themes where participants will have the chance to question the hosts of the exchanges.

The themes will be as follows:

- Monday 8 September – Climate change: crisis driving innovation
- Tuesday 9 September – Municipalities: how can industry support the provision of basic services?
- Wednesday 10 September – Solutions for industrial water users: how can using technology and efficient operational management reduce water costs and protect the environment?
- Thursday 11 September – Sanitation: how can industry help to connect people to sustainable wastewater management systems?

Schönbrunn Palace, "Palmenhaus"
© Wien Tourismus / Willfried Gredler-Oxenbauer





These technical tours are optional.

All tours will depart from the Hilton Vienna Hotel, 1010 Vienna, Am Stadtpark. Please wear closed-in walking shoes.

IWA & IAWD reserve the right to cancel or limit attendance at any tour with monies refunded subject to minimum and maximum registration numbers.

First Vienna spring water main

Friday, 12 September

Tour A 8.00 am – 3.00 pm

Tour B 10.00 am – 5.00 pm

Truly excellent drinking water is part and parcel of the enviable quality of life enjoyed by Vienna's population. Vienna has a unique water supply system that continues to meet with great interest and recognition both in Austria and abroad. This excursion will take you to Kaiserbrunn, the source of the water that has been finding its way to Vienna for more than 130 years, solely propelled by the power of gravity. You will learn about our source protection and how this system is maintained with state-of-the-art technology. The programme includes a visit to the Water Museum Kaiserbrunn as well as to the spring chamber of Kaiserbrunn.

Cost: € 42,00 excluding VAT of 20% per person, including coffee break, lunch and transport.

Vienna's main wastewater treatment plant

Friday, 12 September

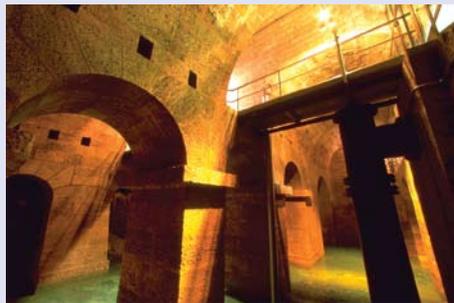
Tour A 8:30 am – 12.00 pm

Tour B 10.30 am – 2.00 pm

Tour C 12.30 pm – 4.00 pm

Vienna's main wastewater treatment plant began operations in 1980. It was designed for a population equivalent to 2.9 million as a mechanical/biological facility, using the contaminant-intensive activated sludge method for the biological part. In view of increasingly stringent sludge clarification requirements, a project was developed to provide for a second biological purification stage by means of special methods, such as the bypass and hybrid systems. The rated capacity is 4.0 million population equivalent, with a total cost of € 223 million. Construction work commenced in January 2000. The new installation entered into service in February 2005. Full operation as at the end of 2005 demonstrated that the required treatment efficiency could be achieved.

Cost: € 25,00 excluding VAT of 20% per person, including coffee break and transport.



Kaiserbrunn – spring chamber © Vienna Waterworks / Lois Lammerhuber



The museum at Kaiserbrunn © Vienna Waterworks



Aeration tank secondary stage © Ebs/F3-Dimko-Krischanz-Zeller



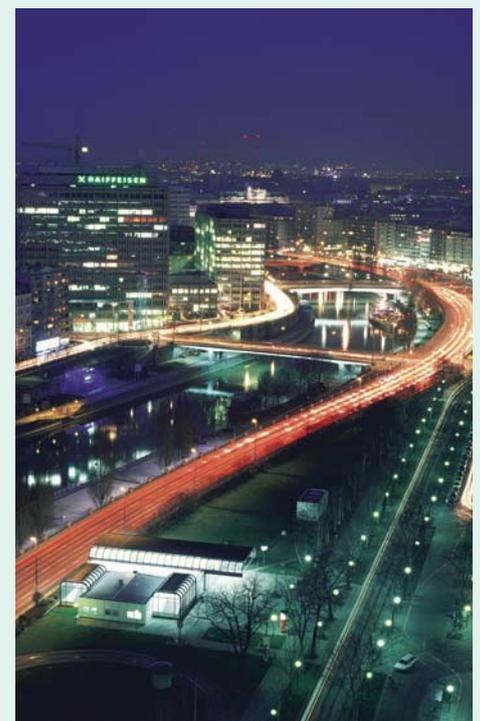
© Ebs/F3-Dimko-Krischanz-Zeller

IWA specialist groups are our core vehicle for issue-based interaction on scientific, technical and management topics.

The specialist groups act as the main mechanism for members to engage in IWA activities through conferences, workshops and seminars and the development of scientific and technical reports, best practice manuals and reference papers. There are currently 48 specialist groups with members in more than 130 countries. These groups act as an effective means of international networking to make good professional and business contacts and to promote information and skills sharing.

The IWA World Water Congresses provide opportunities for specialist groups to hold meetings and Vienna is no exception, with specialist group meetings taking place throughout the week. The purpose of these meetings is to allow members to meet each other, interact with the groups' management committees and discuss the groups' activities and plans for the future. These meetings are open to all delegates at the congress. Further details, dates and times of each specialist group meeting will be made available on the IWA website and in the congress programme.

A new initiative for Vienna will be the creation of a "specialist group island" which will serve as a meeting and information point and showcase the work and activities of each of the groups. The IWA specialist group programme officer and key specialist group leaders will be available to answer questions and provide details of how to become actively involved in the groups.



Over the roofs of Vienna: Danube canal © WienTourismus / F 3



Following the successful young water professionals (YWP) programme at the IWA World Water Congress in Beijing in 2006, the IWA YWP team has created a very ambitious programme for Vienna. Registration for the YWP programme is included in the price of a normal registration.

YWP lounge

A YWP lounge will be open during the event where young water professionals can relax after a presentation, take time out from the hectic congress schedule or simply meet and network with their peers.

Sunday 7 September

Workshop

This one-day workshop will allow young water professionals to meet established water professionals and discuss the future challenges faced by the water sector. There will also be a career panel providing information on various water sector opportunities for YWPs.

Monday 8 September

Breakfast

At this breakfast young water professionals and especially first-time congress attendees will be given information and practical advice that will make their time and experience at the Vienna congress as valuable and productive as possible.

Tuesday 9 September

CDWP meeting

In this session young water professionals will have the opportunity to discuss the Harremoës Lecture on energy and water with members of the Council of Distinguished Water Professionals (CDWP) and find out how this important topic will shape their decisions in the future.

Wednesday 10 September

PDA 2008 ceremony

Young water professionals are invited to attend the Professional Development Award (PDA) 2008 ceremony.

Career fair

A number of water industry companies and organisations will be represented at the career fair. This will give young water professionals the opportunity to talk directly to the staff about potential career opportunities.

Thursday 11 September

Open meeting

The YWP Programmes Team will hold an open meeting between the members of the YWP Programme Committee and all the young water professionals present at the congress. This is the perfect opportunity for you to give your ideas and suggestions on what the YWP Programme needs to focus on over the next two years.

Gala night

The city of Vienna has planned gala "night of nights" with young water professionals firmly in mind. The doors of the Vienna City Hall will be thrown open to IWA guests for a feast of buffet-style food, drink, music and dancing. At midnight the Vienna waltzes will be overtaken by midnight clubbing as young water professionals continue to dance the night away.

Modelling activated sludge plants

Friday 5 & Saturday 6 September
Vienna University of Technology
Wiedner Hauptstrasse 8-10, Vienna

This two-day introductory modelling workshop is organised by the "Good Modelling Practice – Guidelines for Use of Activated Sludge Models" IWA Task Group. Further information is available at www.modeleau.org/GMP_TG/.

The workshop is designed for people who don't have prior experience in activated sludge modelling. It will provide detailed instruction on mathematical models and their structure and use in the design, operation and control of activated sludge plants. There will be ample hands-on opportunities to use the models during the workshop.

Preliminary programme

Friday

- 8.30 Welcome
- 8.45 Overview of activated sludge modelling
- 9.20 Introduction to the ASIM simulation package
- 10.00 Morning tea
- 10.30 Case study
- 11.00 Introduction to activated sludge models
- 12.00 Lunch
- 1.30 Model setup and calibration
- 3.00 Afternoon tea
- 3.30 Model set-up and calibration (cont)

Saturday

- 8.30 Objectives of the IWA "Good Modelling Practice" Task Group
- 8.45 Data needs and data evaluation
- 9.45 Overview of simulation software packages
- 10.00 Morning tea
- 10.30 Modelling exercises
- 12.00 Lunch
- 1.30 Modelling exercises (cont)
- 3.00 Afternoon tea
- 3.30 Application of activated sludge models in practice
- 4.30 Closing

Registration

Course fee: € 340,00 IWA members, € 390,00 non-IWA members excluding VAT of 20%. The course is limited to 25 people on a first-come, first-served basis. Registration is via the congress registration form or online at www.iwa2008vienna.org.

Enquiries

Email Guenter.Langergraber@boku.ac.at





The IWA World Water Congress & Exhibition is the water sector's leading international event. The exhibition and congress take place concurrently and form an integrated whole that presents numerous opportunities for the 3,000 international delegates and 200 exhibitors to meet each other and share experiences. The compact setup of the exhibition and the location of the exhibition adjacent to the congress rooms encourage this interaction. The exhibition is also the launch pad for many leading-edge innovations, a place to spot emerging trends and to see the world's leading water-related products and services.

The exhibition offers an exclusive platform for world-leading companies, utilities, consultants, research institutes, NGOs and government bodies to showcase their capabilities. There will also be a number of national pavilions – from Austria, Germany, Israel, Italy, Japan, Korea, Norway, Singapore, Sweden and The Netherlands. The exhibition will be open to delegates throughout the whole event and on Wednesday 10 and Thursday 11 September it will be open to other visitors as well.

For more information please contact the exhibition secretariat on:
Tel. +31 23 7505105
Fax +31 23 7505106
Email info@iwa-exhibitions.com

Exhibitors as at 18 April 2008

Agbar Agua	Spain
AirTree Ozone Technology	UK
Amitech Germany	Germany
Andritz	Austria
Applied Chemicals Handels	Austria
Aquatic Informatics	Canada
Arkema	France
A.R.I. Flow Control Accessories	Israel
Ashland Austria	Austria
Austrian Association for Gas and Water (Austrian Pavilion)	Austria
Austrian Federal Ministry of Health, Family & Youth	Austria
Austrian Federal Ministry of Agriculture and Forestry, Environment and Water Management	Austria
Austrian Pavilion	Austria
Austrian Water & Waste Management Association	Austria
Avintos Flow Control Vertriebs	Germany
Bentophos	Belgium
Bentley (Haestad Water Solutions)	USA
Bergen Water and Sewerage Works	Norway
Berlinwasser Holding	Germany
Bermad	Israel
BGFW	Germany
Borealis	Austria
Borouge	Austria
Breivoll	Norway
Buderus Tiroler Röhren	Austria
BWT	Austria

Cav. Uff. Giacomo Cimberio	Italy
CEPEX	Spain
Chemviron Carbon	Belgium
Christ Water Technology Group	Austria
Chriwa	Germany
City of Vienna	Austria
DOW Europe	Belgium
DVGW Germany (German Pavilion)	Germany
Dutch Pavilion	The Netherlands
E-Hawle Armaturenwerke	Austria
Elster Messtechnik	Germany
Elster Metering	UK
Elster Metering	Belgium
Energie AG Wasser	Austria
Energy Recovery	USA
Erhard	Germany
ESRI	USA
ewt – ELIN Wasserwerkstechnik	Austria
Figawa Bundesvereinigung der Firmen im Gas-und Wasserfach	Germany
Franken Plastik	Germany
FUGRO Austria	Austria
Fuji Electric Water Environmental Systems	Japan
GE Water & Process Technologies	UK
Gelsenwasser	Germany
German Pavilion	Germany
GrahamTek Singapore	Singapore
Grundfos	Germany
GWA-Graz	
Artificial Groundwater Recharge	Austria
HACH Lange	Germany





HACH Company	USA	Ludwig Frischhut	Germany	Rubinetterie Bresciane Bonomi	Italy
Hammerer-System-Consulting	Austria	Maddalena	Italy	Rudas & Karig	Hungary
Heraeus Noblelight GmbH	Germany	Marco Fantozzi	Italy	S-can Messtechnik	Austria
HOBAS Rohre	Austria	MbOnline	Austria	Sandnes Local Municipality	Norway
Hydrometer	Austria	Miya	Israel	SAPPEL	Austria
IAWD, The International Association of Waterworks in the Danube Catchment Area	Austria	MOM Vizmerestechikai Zrt	Austria	Schlumberger Water Services	Canada
IDEXX	Germany	MTA-Messtechnik GmbH	Austria	SebaKMT	Germany
IEICI (Israeli Pavilion)	Israel	Municipality of Fredrikstad	Norway	Sewerin	Germany
Inge	Germany	Netherlands Water Partnership (NWP)	The Netherlands	Singapore Pavilion	Singapore
Innovazione & Progetti (Italian Pavilion)	Italy	Dutch Water Pavilion	The Netherlands	Siemens	Germany
Isoil Industria	Italy	NIVA, Norwegian Institute for Water Research	Norway	SINTEF	Norway
Italian Pavilion	Italy	Norit	The Netherlands	Stavanger Water & Sewerage Works	Norway
ITT	USA	Norwegian Directorate for Nature Management	Norway	SUEZ Environment	France
IWA International Water Association	UK	Norwegian Pavilion	Norway	Swedish Pavilion	Sweden
IWA Publishing		Norwegian Water (Norwegian Pavilion)	Norway	SWENTEC (Swedish Pavilion)	Sweden
Japan Pavilion	Japan	Nova Siria	Italy	Systea	Italy
Japan Water Works Association (Japan Pavilion)	Japan	OFS - Oberflächenschutz und Betonsanierung GmbH	Austria	Taisei Kiko Co	Japan
JSC SVAROG	Russia	Optiqua Technologies	Singapore	Transdanubian Regional Waterworks	Hungary
Kerasal	Germany	Oslo Water & Swerage Works	Norway	Trondheim Water & Sewerage Work	Norway
Kersten Kunststoffcoating	Germany	Pall Corporation	France	Ultra-Flo	Singapore
Kisters	Germany	Phoslock Water Solutions	Belgium	VA Tech Wabag	Austria
Kiwa Water Research (KWR)	The Netherlands	Picenum Plast	Italy	VAG Armaturen	Germany
Kommunalkredit Public Consulting	Austria	Pipeline Austria	Austria	Veolia Eau	France
Kontinentale GB der ÖAG	Austria	Praher Valves	Austria	Vewin, Association of Dutch Water Companies	The Netherlands
Korean Pavilion	Korea	PSI Products	Germany	Water21	UK
Krammer Armaturen	Austria	PUB (Singapore Pavilion)	Singapore	WEF, Water Environment Federation	USA
KWWA (Korean Pavilion)	Korea	Puncak Niaga	Malaysia	WILO	Germany
LIT Technology	Russia	Pure Technologies	Canada	X-Flow	The Netherlands
Lockheed Martin	USA	Rabmer Bau- und Installations	Austria	YSI Hydrodata	UK
		Rand Water	South Africa		





These sightseeing tours are organised by Austropa Interconvention. They have been developed especially for congress participants and partners. Spaces are limited so to avoid disappointment please book your tickets well before arriving in Vienna.

Return times of tours are approximate. Austropa Interconvention reserves the right to cancel or limit attendance at any tour (with deposits refunded) subject to minimum and maximum registration numbers.

For more information please contact Helga Eismair or Heike Faustmann Austropa Interconvention
Tel. +43 1 588 00 517 or 534
Fax +43 1 588 00 520
Email iwa2008@interconvention.at

Book your tickets online at www.austropa-interconvention.at/congress/iwa2008



Historic Vienna, Schoenbrunn Palace

Monday 8 September 2 pm – 5.30 pm
Departs from Austria Center Vienna

To provide you with a first impression of Vienna, we start at the Ringstrasse, a boulevard with numerous magnificent buildings. The excursion's highlight is a tour through Schönbrunn Palace.

Price: € 36,00 including VAT per person including bus, guide and admission fee.



Walk through "Old Vienna"

Tuesday 9 September 10 am – 12 noon
Departs from Albertinaplatz at the Tourist Information Office

This walk through the small lanes and yards of old Vienna will show you parts of the city that cannot be accessed on a regular sightseeing tour.

Price: € 19,00 including VAT per person including guide and admission fee.



Romantic Danube Valley – "Wachau"

Wednesday 10 September 9 am – 6 pm
Departs from Austria Center Vienna

The first destination on this tour is Melk, where you will visit the astonishing baroque monastery and admire a breathtaking view of the Danube. After lunch you will go on a Danube boat trip to the medieval town of Dürnstein.

Price: € 95,00 including VAT per person including bus, guide, boat excursion, admission fees and lunch.



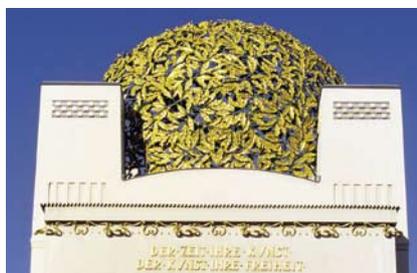
The Habsburgers' Treasury

Thursday 11 September
10 am – 12 noon

Departs from Albertinaplatz at the Tourist Information Office

On this walking tour you will admire treasures in the oldest part of the Imperial Palace which has a history of more than 1,000 years. You will also see the showrooms and private apartments of Emperor Franz Josef I and his wife, Empress Elisabeth.

Price: € 30,00 including VAT per person including guide and admission fee.



Art Nouveau in Vienna

Friday 12 September 10 am – 12 noon
Departs from Albertinaplatz at the Tourist Information Office

On this walking tour of the city we will show you some renowned and extraordinarily beautiful Art Nouveau buildings. The highlight is a guided tour through the Secession.

Price: € 23,00 including VAT per person including guide and admission fee.



Café Gloriette © WienTourismus / Popp & Hackner

Partners are invited to register and enjoy the friendly atmosphere that has become a tradition at IWA congresses. You are sure to make new friends and renew old friendships in this beautiful city filled with history, culture and charm.

On Monday morning at 9 am at the Hilton Vienna Hotel, 1010 Vienna, Am Stadtpark all registered partners are invited to meet friends, plan the next few days in Vienna and if you have not already done so book extra tours via the tour operators who will be present.

Partner registration is € 130,00 excluding VAT of 20%. It includes a ticket to the Sunday opening ceremony and welcome reception, the Thursday closing ceremony and the Thursday gala night to dine, drink and enjoy music and dancing.

Partner registration is via the registration form or online at www.iwa2008vienna.org



"Sacher" chocolate cake © WienTourismus / Robert Osmark

Useful information

Airport transfers

City Airport Train

A journey on the City Airport Train (CAT) from the Vienna International Airport to the City Air Terminal only takes 16 minutes. The fare is € 8,00 for a one-way ticket if you pre-book online at www.citytrain.com.

Taxis

Taxis are available from in front of the airport arrival hall. The price to the city is approximately € 30,00.

Insurance

You are advised to arrange your own travel insurance to cover medical expenses and all other risks. IWA and IAWD will not be held liable for damage or loss of luggage or personal belongings or for injury, loss or damage of any nature caused to participants.

Currency

The Austrian currency is the Euro "€".

Shopping

Shops are open on weekdays from 9.00 am to 6.00 pm and some shops are open until 8.00 pm on Thursday or Friday.

On Saturday most shops are open from 9.00 am to 1.00 pm, with larger shops and malls opening until 5.00 pm. With very few exceptions, shops are closed on Sundays.

Weather

Vienna's temperature in late summer ranges from 15°C to 25°C.

Electricity

The main voltage in Austria is 220 V AC. Connector plugs and outlets correspond generally to the Euro-norm, but as a precaution bring along an adaptor.

Official language

English is the official language for the congress. However, the opening ceremony and selected presentations will be given in German, with simultaneous translation into English.

When you can register on-site

The registration desk will be located in the main foyer of the Austria Center Vienna.

Open hours

Saturday 6 September 1.00 – 6.00 pm
Sunday 7 September 8.00 am – 6.00 pm
Monday 8 September 8.00 am – 6.00 pm
Tuesday 9 September 8.00 am – 6.00 pm
Wednesday 10 September 8.00 am – 6.00 pm
Thursday 11 September 8.00 am – 3.30 pm

Passport and visa requirements

Citizens of all countries need a valid travel document to enter Austria. You are advised to check the exact passport and visa

requirements with your nearest Austrian consulate.

The Austrian Foreign Ministry website at <http://www.bmeia.gv.at> and Wikipedia at <http://www.wikipedia.org> also provide information.

Public transport

Vienna boasts a modern, efficient public transport system consisting of tramways, underground (U-Bahn), city railway (Schnellbahn, S-Bahn) and buses. Almost all hotels have easy access to the public transport system.

All delegates will receive a ticket which is valid for the whole time of the congress giving you free access to Vienna's public transport system.

There will be no shuttle service from hotels to the conference venue; so you are requested to use public transport.

Disclaimers

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OzAccom
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