

Aeration optimisation through nitrification control

● Tokyo Metropolitan Government has set a goal to reduce its emissions to 25% below 2000 levels by 2020. To aid this process, it has been working with Sanki Engineering to develop a new aeration control system which reduces blower energy consumption, therefore allowing Tokyo Metropolitan Government to optimise its activated sludge aeration systems.



Tokyo's main wastewater treatment plant

Aeration is usually controlled based on dissolved oxygen (DO) electrodes. The main principle behind that measurement method is a function of electrical current and the amount of oxygen reacting at the cathode's surface. However, tests undertaken at the University of California, Los Angeles (UCLA) have revealed a DO probe lag in estimating the oxygen trans-

fer parameter in clean water that can, in real wastewater conditions, be greater than 1%. The second way to control aeration is based on the ammonia concentration in the effluent.

DO control is the system which modulates DO at the end section of aeration tank. Ammonia-based and other standard control measures are mainly based on feedback, maintaining the ammonia

concentration in the effluent at 1-2mg nitrogen per litre. The problem with feedback control is that the system only acts on the process when changes are detected at the end section of aeration tank, which can be too late.

Tokyo Metropolitan Government and Sanki Engineering have studied an aeration control system, which calculates and supplies air necessary for each section of aeration tank. This has resulted in stable biological process and energy savings. Aquaconsult, an Austrian manufacturer of water treatment systems, supplied its AEROSTRIP fine bubble aerator with on / off operation for the system.

Experiments were undertaken at a continuous plug flow pilot plant with a capacity of 8m³. Each line was divided into four compartments with an ammonia sensor installed at the front section and a DO sensor at the end section of each compart-

ment. Both fluctuating and constant hydraulic retention times were tested.

Line one was controlled by the new nitrification rate control (NRC) system, and line two by the conventional DO aeration control. The NRC control method showed improvements in total nitrogen removal and increased the elimination rate by up to 9%.

The result was that the airflow has been reduced by more than 20% in comparison with the conventional DO-based control system. This aeration control system has the potential to reduce blower power consumption and contribute to reducing greenhouse gas emissions. Further testing is now planned. ●

Based on contributions from Shungo Aida, sales engineer at Sanki Engineering Company, Dr Christian Loderer, sales engineer at Aquaconsult Anlagenbau GmbH and the Bureau of Sewerage, Tokyo Metropolitan Government.

The WaterCloud: an online decision support system for emerging substances

Emerging substances enter the water cycle through point sources (effluent discharges from wastewater treatment plants and industry) and diffuse sources (agriculture and stormwater run-off). Discharges from diffuse sources are through their nature difficult to monitor and to control, but are of importance as they affect many players in the water cycle.

TAPES (Transnational Action Programme on Emerging Substances) is an EU INTER-REG IVC-funded project that brings stakeholders together in order to jointly decide how to deal with emerging substances. The aim of TAPES is to create an online decision support system (DSS) for emerging substances.

The DSS is a computer-based information system that supports decision making processes and in the case of emerging substances helps stakeholders to decide on where to best address the issue of particular substances, how this is best done and at which cost, considering the potential negative impacts on human health and the environment. The DSS combines existing knowledge and expertise on the subject of emerging substances and new knowledge generated within TAPES.

The four-year TAPES project encourages the joint operation of drinking water suppliers, wastewater treatment plant operators, water boards responsible for the quality of receiving waters and research experts on treatment technology, monitoring and

toxicological and environmental aspects. The TAPES partners work on the basis of the DDDID approach: design, develop, decide, implement and disseminate. The DDDID approach was first used by the TAPES experts group to

select a short-list of representative emerging substances in North-West Europe to be studied in the project. A selection was made from the most relevant groups of human pharmaceuticals, personal care and life-style products,

TAPES is bringing together stakeholders to jointly decide on how to deal with emerging substances



pesticides, herbicides, X-ray contrast media and flame retardants. Secondly, the DDDID approach was used to jointly decide on the research issues and to develop the research programme. The DSS needs knowledge on physicochemical properties, occurrence, sources, pathways, fate in the environment, and (eco-)toxicological properties, together with information on efficiency of potential abatement options on local and regional scales.

Within TAPES, practical research and demonstration is carried out on wastewater treatment, drinking water production, monitoring and analytical techniques, modelling of substances and their behaviour in water bodies, and technologies and measures to remove micropollutants. All results from TAPES partners are stored in the internet-based environment – the

WaterCloud – together with the data from literature and from other projects.

Wastewater treatment technologies, such as a one-step effluent filter, are demonstrated by watercycle company Waternet from Amsterdam; and the dissolved air flotation (DAF) process has been used as a pre-treatment by WaterBoard de Dommel (Netherlands). Erftverband in Germany looks into the retention soil filter as post-treatment technology to reduce emerging substances in water courses. In addition, Erftverband looks into the fate of such substances in the aquatic environment and stores such information together with information on occurrence and the impact of advanced removal technologies in a model, which enables the determination of water quality in water bodies dependent on various emissions. The aim is to achieve good water

quality and to avoid temporal pollution peaks. All technologies and measures are evaluated and prioritised.

On the drinking water production site the focus is on the demonstration, improvement and optimisation of various removal technologies for specific emerging substances. Examples include the removal of substances using membrane filtration (removal of concentrated streams from Ion Exchange Chromatography (IEX) and removal of natural organic matter) by VITO Belgium, the use of oxidation processes in combination with activated carbon (de Watergroep, Belgium), ozone and activated carbon filtration (TZW/DVGW Germany), affinity adsorption with new innovative media (KWR, the Netherlands), and activated carbon adsorption processes for water pre-treated

by soil filtration (Fachhochschule Nordwestschweiz: FHNW).

Currently, the research programme is carried out by the partners in the project and the WaterCloud DSS tool is being prepared. Through uptake in the Watershare suite after finalising TAPES, the WaterCloud is further being developed into a benchmarked and user-friendly tool. In 2015, TAPES will organise an international conference to present the outcomes of the project and a demonstration of the DSS. ●

For more information, visit: www.TAPES-interreg.eu

Article supplied by Adriana D Hulsmann and Gerard van den Berg from KWR Watercycle Research Institute and Jan Peter van der Hoek from Waternet. Email: Adriana.Hulsmann@kwrwater.nl.

Generating energy from coffee wastewater

Latin America produces around 70% of the world's coffee, but coffee production generates large volumes of wastewater that is toxic and has a high organic content, which is regularly released untreated into rivers. This coffee wastewater also generates considerable greenhouse-gas emissions, particularly methane.

The Energy from Coffee Wastewater project by UTZ Certified, which started in 2010, was set up to address these environmental and health problems caused by the wastewater produced in the coffee industry. Tailor-made coffee

wastewater treatment systems and solid waste treatment mechanisms were installed in eight coffee farms in Nicaragua, ten in Honduras and one in Guatemala. The positive outcomes have now inspired UTZ Certified to replicate the initiative in other countries.

The Energy from Coffee Wastewater project has been implemented in a range of differently sized farms. One result of the project was the reduction in local deforestation of native trees and a better indoor environment for families as firewood could be replaced with domestic gas stoves for cooking, using biogas generated from the coffee

wastewater. Additional outcomes included the treatment of all water used in coffee processing, a 50% reduction in the volume of water used during coffee processing and a reduction in greenhouse gas emissions.

'Coffee production is only environmentally sustainable when water is used efficiently and polluted water from the wet-mill process is treated. Local eco-systems do not have the capacity to clean the large amounts of contaminated fluids,' says Han De Groot, executive director at UTZ Certified. 'Rural communities and coffee production depend intrinsically on a ready supply of fresh water. So if we want to talk



about coffee produced in a sustainable manner then wastewater must be treated when released into the environment.'

UTZ Certified is currently introducing the technology in Peru and Brazil. UTZ hopes to get further funds and industry's support to replicate the initiative in Africa and Asia. ●

Study calls for total manure use as fertilizer in Kaliningrad

A new study released by the HELCOM BASE Project, which was focusing on a way to reduce the flow of nutrients into the Baltic Sea, says that all the processed animal and poultry manure in Russia's Kaliningrad region could be used as an organic fertilizer, as there is a shortage in this area.

It is estimated that implementation of a manure handling plan for the Kaliningrad region will reduce the entry of nitrogen by

20-30% and phosphorus by 15% into the sea, which is equal to 1100 tonnes and 210 tonnes per year, respectively. The pilot activity under BASE Project was conducted by the State Scientific Institution North-West Research Institute of Agricultural Engineering and Electrification (SZNIIMESH) of the Russian Academy of Agricultural Sciences with the support of MTT Agrifood Research Finland.

The study also identified several necessary measures to

ensure that the production of organic fertilizer from manure is both profitable and environmentally sustainable, to assist in the adoption and implementation of the manure management plan. To assist each individual farm in choosing the most appropriate technology, there is an online database of technologies, machines and equipment for manure processing at <http://eco.szni.ru>. The study says that decision makers should take advantage of the decision making

guidelines developed based on nutrient balance calculation, at the farm level as well as at the regional level. It also suggests that various decoupled subsidies should be used in order to support the production of organic fertilizer. ●

Final report: Preparation of long-term manure management plan for Kaliningrad Region is available to download for free at: <http://helcom.fi/helcom-at-work/publications/>

Arsenic reduction for drinking water

Arsenic (As) is a hazard. Its concentrations in food and drinking water are regulated worldwide for safeguarding human health.

Arsenic researchers across the world increasingly believe that the risks of As are more widespread than previously recognised and concentrations lower than the EU standard of 10µg/l may still pose significant risk to the health and lives of consumers. Toxicology research emphasising the health effects of As concentrations below 10µg/l is currently ongoing in many parts of the world. These concentrations are those that many Europeans, Americans and Canadians live with every day.

Brabant Water, the public water supply company in the Brabant province of the Netherlands, has started optimising one of its groundwater treatment locations, Dorst, in collaboration with KTH-International Groundwater Arsenic Research Group (GARG) for enhanced As removal, targeting effluent As concentrations below 1µg/l.

The drinking water treatment plant (DWTP) of Dorst produces 10Mm³ of drinking water per year from deep groundwater. The treatment includes ten parallel

treatment trains, each consisting of a raw water intake from a common reservoir (As ~12µg/l), a cascade aerator, a rapid sand filter and an effluent discharge to a common reservoir (As ~6µg/l) from where the water is subsequently distributed to communities in the southern part of the Netherlands. Brabant Water has studied the feasibility of a hybrid technique, advanced oxidation-coagulation-filtration (AOCF).

By laboratory jar testing, the most suitable coagulant for the raw water quality and the existing setup at DWTP Dorst was determined from three commonly used metal salts (ferrous sulphate, ferric chloride and alum). In accordance with what has been reported in literature, ferric chloride showed the highest As removal efficacy at the operational pH of Dorst (7.5–8). After selecting ferric chloride as the coagulant, its optimum combination dose with KMnO₄ oxidant was also determined through jar tests. Experiments led to various oxidant-coagulant dose combinations that could achieve a residual as concentration of lower than 1µg/l.

A pilot setup included two treatment trains, each consisting of a cascade and a rapid sand

filter. One of the filters used metal oxide coated sand (MOCS), collected from the full scale filters of DWTP Dorst. In the other filter virgin sand (VS) of equal particle size was used. In the effluent of VS media residual an As concentration of lower than 1µg/l was obtained consistently for several weeks; however, the effluent from MOCS contained a slightly higher concentration of As (1–1.5µg/l). The application of AOCF did not disturb the pre-existing removal processes of CH₄, Fe, Mn and NH₄⁺. However, a decrease in average filter run time from 96 to 24h was noticed for both the filters. In order to optimize the filter run time, dual media/double layer filtration with anthracite (1–1.6 mm) and finer sand (0.5–0.8 mm) was evaluated with the optimum chemical dosing combination. Average filter run time increased to more than 48h.

Currently Brabant Water is involved in the final phase of research project, i.e., dedicated filter trials at the DWTP Dorst, with one complete treatment train separated for the final trials. Effluent As concentration has dropped steadily below 1µg/l after dosing began. Average filter run time of 50+ hours at



Test column before addition of media

130m³/h (5m/h) has been successfully achieved, which fulfills the operational criteria of Brabant Water.

Based on experience at DWTP Dorst, AOCF appears to be an efficient, simple and affordable technology which can guarantee As concentrations below 1µg/l in drinking water supplies. Brabant Water has now approved the implementation of AOCF on the full scale and will be the first full-scale prototype in the Netherlands based on AOCF. ●

Adapted from an article by Arslan Ahmad, Tim van Dijk, Stephan van de Wetering, Martijn Groenendijk and Prosun Bhattacharya.

China study explores antibiotic resistant genes in freshwater resources

Antibiotics are widely used in concentrated animal feeding operations and human medicine, but this extensive use of antibiotics has accelerated the propagation of resistance genes among different bacteria. Antibiotic resistance genes (ARGs) are usually found in mobile genetic elements, thereby facilitating the diffusion of these ARGs into various environmental compartments through horizontal gene transfer.

Long persistence in the environment and easy migration and transformation among different flora means ARGs cause greater harm than antibiotic residues in the environment.

Most previous studies have focused on the presence of ARGs

in inland rivers and river tributaries, aquaculture facilities, river basins, swine farms and wastewater utilities. However, few studies have focused on inland freshwater bodies close to richly populated areas. Research has therefore been undertaken in Bosten Lake, located in the southern region of Yanqi Basin in Korla City, Xinjiang, China.

In recent years, because of the excessive development of the basin, industrial wastewater and domestic sewage have been discharged uncontrollably into canals, thus causing serious pollution in Bosten Lake, destroying the ecological environment, and increasing lake salinity. Large-scale urbanisation has affected the environment of the lake in various aspects, so

therefore examining the ARG concentration in Bosten Lake is necessary.

Bosten Lake was selected as the research area to investigate the abundance and distribution of sulphonamide and tetracycline resistance genes in freshwater lake systems, which are the main sources of water resources to locals. Real-time polymerase chain reaction (PCR) was applied to quantify the ARG pollution.

High concentrations of sulfonamide and tetracycline resistance genes and resistant bacteria were found in the lake. This finding was attributed to the possible prolonged exposure of the lake to antibiotics. It has been clearly demonstrated that aquatic ecosystems are acting as a major reservoir for the evolution and propagation of ARGs and antibi-

otic-resistant bacteria. Moving forward, obtaining further information on various ARGs in the environment under various conditions, such as different pH, temperature and presence of heavy metals, is necessary in order to further assess the risks posed by ARGs and develop appropriate mitigation and control strategies. ●

Distribution of antibiotic resistance genes in Bosten Lake, Xinjiang, China

Water Science & Technology 2014, Volume 70(5), pp925-931.

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THE PRESIDENT

Setting priorities for a new strategic direction

Spending a few days more in beautiful Portugal, I reflect on the Lisbon World Water Congress & Exhibition. What a wonderful Congress we had! It surely set a new standard for how we want to organize our bi-annual meetings: reflecting on the future and bringing professionals together that are all focused on water science and solutions that matter.

This congress set also the scene for a change of President for the IWA. Glen Daigger, who stepped back after four years of very successful leadership in many respects, made an emotional farewell address at the closing ceremony of the congress. During his presidency, the IWA made great progress due to his dedication, commitment, and the time he spent travelling around the globe and working closely with the IWA Executive Director, Ger Bergkamp, and the Board of Directors. It is now the point in time where we – all the members of IWA as well as me personally – should thank him for his great contribution towards making the IWA more powerful and respected throughout the world. The great effort made by our Portuguese friends and members towards holding an exceptional event made it a fitting end point to Glen's presidency.

The IWA is a fast train moving forward towards a bright future in the water industry. Lisbon was also the start of my new role as president of the IWA. When Glen handed over this task to me I felt very honoured as it was the members of the IWA

who put their trust in me when I was elected by the Governing Assembly in Istanbul a year ago. In my introductory speech I tried to convey my key messages to the audience in the large plenary hall of the congress centre, still full of delegates. The President is the chair of the IWA Board of Directors who are responsible and liable for the association and have to make the strategic decisions. The president is 'primus inter pares' and has to work closely with the Executive Director who operates the association.

The IWA has developed a new strategic plan for the next four years and it will be my first task to take care of its implementation, which will require a set of priorities. IWA should maintain the equilibrium between bottom-up and top-down. In this respect, I would like to focus on three major aspects: Specialist Groups; Young Water Professionals; and policy influence.

The bottom-up development is mainly driven by Specialist Groups and the Young Water Professional members. Both are supported by the IWA staff, but have great freedom to develop content and take on their own responsibilities. I want to strengthen the role of Specialist Groups, and especially the Young Water Professionals, as both are extremely important for the future of the IWA; the first for creating a sound scientific background for the IWA's output of more than 30 conferences per year and scientific publications, and the second through the rapidly evolving

number of YWP chapters around the globe. The IWA has to control the quality and as such protect our increasingly valued brand.

My third priority is to enable the IWA to have more influence on water and related economic policy. Strong and effective management of the IWA has to be behind policy-influencing initiatives, creating new knowledge and experience to inform policy makers. This includes, for example, the implementation of the human right on drinking water and sanitation on a global scale. This represents still an enormous task for many governments and is linked to finding new and adapted solutions, especially in developing countries where human capacity is probably the most limiting factor for progress.

In these three areas, innovation will play an important role. We have agreed in the IWA that innovation is directly related to practice. An example of such an innovation is the new Water Regulators Forum and the publication of the Lisbon Charter on Water Regulation, which sets out a framework for regulation and regulators on a global scale. The same will happen with the issue of a document related to the implementation of the Human Right on Drinking Water and Sanitation, which will appear early next year. Both topics will continue to be prominent in our schedule for the future.

The IWA has a bright future, there is no doubt, but it will be within an increasingly competitive area of global relevance. Only with



an atmosphere of confidence and trust within the IWA and between the members can we all work together to make a difference. Hard and dedicated work by all members of the IWA, combined with a cooperative spirit, is necessary for us to meet our ambitious goals.

Contributing to the IWA has many satisfying rewards. Your work in furthering the IWA as a member or an 'affiliate' provides you with the opportunity to grow both personally and professionally, expanding your knowledge and your expertise. It enables you to contribute to a valuable and urgently needed progress in water management through being part of a network of friends and building on mutual trust. This will become more and more relevant in the future where access to knowledge and experience will be key to making lasting progress towards universal access water and sanitation and sustainability of water management. ●

Professor Dr Helmut Kroiss
President
International Water Association

Report released on human resource capacity gaps

IWA's study into human resource capacity gaps has been released, called 'An Avoidable Crisis: WASH Human Resource Capacity Gaps in 15 Developing Economies'.

'The human resources capacity gap study was initiated in 2008 under the funding of DFID (UK Department for International Development),' explains Kirsten de Vette, IWA Programmes Officer. 'An international reference group developed assessment methods to assess human resource capacity gaps at the national level. This was

tested and piloted in five countries and the revised methodology was applied in another ten countries. So the synthesis report brings everything together into one place.'

For a copy of the report, please visit www.iwa-network.org/hrcg or for more information contact Kirsten.deVette@iwahq.org.

The latest edition of 'A World of Opportunities – Working in the International Water Sector' is also now available – please visit www.my-water-career.com to download your free copy. ●



IWA Programmes Officer
Kirsten de Vette
launching the capacity
gap report at the
IWA World Water
Congress in Lisbon.

IWA
the international
water association



Executive Director Shaping our water future

urban infrastructure that will exist in 2050 still to be built, there is an enormous opportunity to get it right.

Yet, to shape the world's water future, we need to address the issues at scale and on time. We need to recognise that the challenge ahead is unprecedented – billions of people gaining access to modern water and sanitation services and cities and industries reducing water pollution dramatically... no small feat to accomplish. To get there we need to work on many fronts: technological innovation and entrepreneurship; behaviour change and social movements; audacious government policies and regulations; and investments from public and private entities alike. As I said in the Guardian newspaper the other day: 'If mobile phones can spread as quickly as they have, why can't sanitation?'

The above sets the context in which the IWA will further develop as a global network of water professionals. Professionals from 109 countries participated in the World Water Congress & Exhibition, scientists from around the world publish articles in the IWA journals and join IWA Specialist Groups, regulators from 56 countries joined the 1st Global Water Regulators Forum in Lisbon. Yet, to be able to

'shape our water future' and contribute to overall sustainability, the IWA will need to be even more open and more inclusive for all professionals around the world interested in improving water services and water management. The endorsement of the IWA Strategic Plan 2014-2018 by the IWA Governing Assembly in Lisbon marks the start of the further evolution of the IWA in that sense.

As a first step, the IWA will develop online capabilities for members and participants to be truly part of a global, virtual network of professionals. We have made a start and launched a new IWA website (www.iwa-network.org). Have a look and provide us with your feedback! We will further develop tools for you to be able to network online and make it easy for you to create international groups of professionals working on water issues around the world. We are also looking into enlarging the number of languages in which people in the IWA network communicate; expanding beyond English to, for example, Chinese, French, Spanish and Portuguese.

At the same time, we work to reach those professionals based in countries that, so far, have had little interaction with the IWA network. To

that end, we are strengthening the IWA regional 'hubs' in Bangkok, Nairobi, Dakar, Bucharest and Beijing, and will develop a few new 'hubs'. The role of these 'hubs' and the IWA Regional Directors and the other IWA staff is to better service the IWA members and participants and explore new avenues to realising the IWA strategy by reaching out to others. In many instances, they will also have a more active, catalytic role to develop special initiatives with members and partners. These could focus on, for example, non-revenue water, water safety planning, cities and basins of the future, urban sanitation or stakeholder engagement. There are tremendous opportunities for the IWA network participants to be more actively involved in pushing the boundaries of what is possible and what is being done at the (sub) regional and national levels. Let me extend an open invitation to all of you to engage and seek out new opportunities to connect and contribute to the IWA network and further the impact of the water agenda in your area. ●

**Dr Ger Bergkamp,
Executive Director, IWA**

The scene-setting keynote of Hans Rosling at the IWA World Water Congress & Exhibition not only presented past demographic and health data in a new way, it also provided a glimpse of what is to come. The future we are shaping will take place in a world with increasingly fewer divisions between poor and rich nations. By 2050 the world will be more homogeneous, with the vast majority of people living in Asia in middle-income countries. They will have access to basic water and sanitation services. However, a tremendous effort will be required to ensure water efficiency and water quality is where it needs to be. To get there we need major investment in reducing water loss, wastewater treatment and reducing industrial pollution of surface and groundwaters. With roughly 60% of the

2014 IWA award winners announced

At the opening ceremony of this year's IWA World Water Congress the 2014 winners of the IWA awards were announced.

The IWA Global Water Award was awarded to Dr Qiu Baoxing, Vice-chairman of the Committee of Population, Resources and Environment, CPPCC National Committee, People's Republic of China, and the IWA Young Water Professionals Award went to Dr Inga Jacobs of the Water Research Commission, South Africa. The IWA Women in Water Award meanwhile was awarded

to Sue Murphy, CEO of Water Corporation of Western Australia, and the IWA Professional Development Award was presented to Maynilad Water Services, the Philippines.

This year's IWA Award for Outstanding Contribution to Water Management and Science went to Professor Harro Bode, the IWA Outstanding Service Award went to Professor Mogens Henze, and the IWA Publishing Award went to Professor Dragan Savic. Also, Honorary membership was awarded to Paul Reiter. ●



Entertainment at the Lisbon Congress opening ceremony

2014 IWA Women in Water Award

'I feel very humbled, almost a little bit fraudulent, because there are lots and lots of women who do amazing things in the water industry and to be singled out is a great honour,' says Sue Murphy, CEO of Water Corporation of Western Australia and the 2014 winner of

the IWA Women in Water Award, which was presented to her at the IWA World Water Congress & Exhibition.

'I think the water industry is one that recognises talent and I think talent comes in all shapes and sizes, so it's great if it gives women

opportunities. It fascinates me when you look at the developing world, water is very much women's business and it's only in the Western world as we've made technological changes that we've moved it from being women's business to men's business.



I think it's appropriate to make water women's business again because I think women generally care more about the community role, community expectations and the success of their community, and water and wastewater services are the ultimate enabler.'

Ms Murphy says that it is important to take a step back and really understand how vast

the difference can be for women if water and sanitation services are available. She refers to the point Swedish statistician Hans Rosling made in his keynote speech at the Congress where the tragedy isn't just that young girls don't go to school for as long as boys, it was that they go to school and then are taken out of it once they reach puberty

and their potential that they know they have is not realised. 'I think just sharing stories, telling people about what other people go through and helping people understand how privileged they are is a good start,' she says with regards to how to make people more aware of these issues.

'I think the IWA plays a great role by sharing knowledge,' she

adds. 'If we can shorten the learning curve for developing countries and developing utilities that would be great, but sometimes it's not just about applying something that works somewhere else. I think we can learn both ways. I think sometimes we can get to clever and we need to be occasionally reminded of the basics too.' ●

Clusters launched at IWA Congress

Three new Clusters were launched at the IWA Congress in Lisbon last month: the Resource Recovery Cluster, Networks Cluster and BioCluster.

The Resource Recovery Cluster will look at how to build bridges between different areas of the water sector in order to explore opportunities for a cyclic economy. 'We will need to transition from our network of water and its management towards networks that deal with issues of regulation, traceability, liability and, most of all, supply and demand coupled to economics of use and reuse,' explains Professor Willy Verstraete, Honorary Professor

at Ghent University, Belgium and chair of the new Cluster.

Meanwhile, the IWA's new Networks Cluster is the start of an initiative with a core aim that water networks will be designed to be safe, sustainable and resilient – or Safe and SuRe for short. Professor David Butler of the UK's Exeter University and chair of the new Cluster says that the aim is to bring together IWA Specialist Groups and other experts to form a collaborative platform on networks. 'This Cluster is needed for two key reasons,' he explains. 'Firstly, it will form a natural "home" for network-related issues within IWA, bringing together

disparate and yet important network issues and advances. Secondly, much work is needed to prepare networks of all types for emerging external threats such as climate change and urbanisation, together with internal threats such as asset degradation. Such networks will need to be designed not only for safety (e.g. health, environment) but also for sustainability and resilience – Safe and SuRe.'

Finally, the IWA / ISME BioCluster was launched in a workshop on biotechnology and its applications. Professor Dr Hans-Curt Flemming of the University of Duisburg-Essen, chair of the BioCluster, says that

they 'want to make the BioCluster a little more prominent, because what is obvious is that people from different societies, from different tribes, have started to talk to one another and the International Society for Microbial Ecology (ISME) has a lot of knowledge about how microorganisms function, how they interact, and how they can be used and manipulated, and this is exactly what people from IWA need in order to engineer microorganisms or keep them at bay.' The first BioCluster awards were also given, to Bruce Rittmann for lifetime achievement and Mari Winkler, who Flemming says is a 'rising star'. ●

EVENTS

1st Specialist Conference on Municipal Water Management and Sanitation in Developing Countries

2-4 December 2014, Bangkok, Thailand

● This conference aims to discuss the wastewater and sanitation challenge from an integrated perspective and different angles, following the 'from toilet to source' concept, which means that any toilet wastewater sooner or later becomes a water source. With an 'integrated perspective', which acknowledges that if a sector is analysed in isolation, only sub-optimal solutions may be determined, this event considers wastewater alongside stormwater, sludge and solid waste management.

To foster the integrated perspective, this conference is supported by three IWA Specialist Groups; namely the SG on Water Management and Sanitation in Developing Countries, the SG on Sludge Management and the SG on Urban Drainage. The conference is also co-organised by the Japan



Bangkok, Thailand. Credit: WorldWide / Shutterstock.com.

Sanitation Consortium, the Wastewater Management Authority (Thailand), the Faculty of Engineering (Prince of Songkla University, Thailand) and Environmental Engineering

Association of Thailand with GIZ as a strategic knowledge partner.

Email: suchitra@ait.asia
Web: www.iwa2014ait.com

For more information on all of IWA's conferences, visit www.iwahq.org

DECEMBER 2014

Water21, Media Partner:

Pollutec 2014

2-5 December 2014, Lyon, France

The 4th IWA Regional Conference on Membrane Technology

3-6 December 2014, Ho Chi Minh City, Vietnam

JANUARY 2015

Water21, Media Partner:

3rd Water Research Conference

11-14 January 2015, Shenzhen, China

3rd International Conference on Faecal Sludge Management Innovations in Faecal Sludge Management Making complete access to sanitation a reality

19-22 January 2015, Hanoi, Vietnam

3W Expo 2015 + CPPE 2015

Exhibition on Water, Environment and Chemical Engineering

29-31 January 2015, Bangkok, Thailand

7th International Young Water Professional Conference

7-11 December 2014, Taipei, Chinese Taiwan

● Currently, new technologies are changing our daily lives at a rapid rate, including how we manage water. It is very important to advance technologies that support environmental protection. Using eco-friendly green technologies is of growing importance and young water professionals will be the ones to take this further in the future.

This conference will be a good platform for young water professionals to exchange their ideas on the latest developments. The organisers invite you to join the conference to share your ideas with water people from all over the world.

Email: ywp2014@iwahq.org

Web: www.iwa-ywp7.org

New Developments in IT & Water Conference 2015

8-10 February 2015, Rotterdam, The Netherlands

● IT-enabled solutions for integrated urban water management are the key to realising a significant reduction in water consumption, environmental emissions and costs, and an improvement of water quality and control of installations. Today, water management only addresses autonomous parts, leading to a highly segregated water sector.

IT-enabled solutions can solve the segregation that now hinders water organisations, technology providers and integrators to make the best use of new and available technologies to improve efficiency. They offer potential to embed real-time forecasting, advanced monitoring, model-based control and new approaches of active consumer involvement.

The New Developments in IT & Water Congress is an international event that will include the depth and breadth of relevant IT solutions in every aspect of the water cycle, recognising that while IT solutions in water management are implemented locally, research and best practice are advanced through sharing results and knowledge globally.

Email: IT@iwconferences.com

Web: <http://iwconferences.com/the-new-developments-in-it-water>



Photo credit: Peshkova / Shutterstock.com

3rd International Conference on Faecal Sludge Management

19-21 January 2015, Hanoi, Vietnam

● The aim of this conference is to present practical innovative solutions that can be applied at scale in the world's rapidly growing cities, how to develop tools to assess the generation of faecal sludge, the pathways it takes from containment to disposal, and the constraints to establishing an effective chain of services to manage it. In addition, the conference informs about new pit emptying and waste treatment technologies and sustainable business models to apply them. It is all about a transformative innovation that will make a tremendous contribution to improving the lives of billions of people today and generations in the future.

Key themes of the conference include: faecal sludge management as a business; faecal sludge desludging and transportation; maximising resource recovery; the health and environmental risks of faecal sludge management; and the socio-cultural aspects of onsite sanitation.

Email: organisation@fsm3.org

Web: www.fsm3.org

2nd IWA Malaysia Young Water Professionals Conference

17-20 March 2015, Kuala Lumpur, Malaysia

● This conference is the second conference organised by the IWA Malaysia Young Water Professionals Chapter via collaborations with the Institute of Environment and Water Resource Management (IPASA), UTM Water Research Alliance, The Malaysian Water Association (MWA) and IWA. The aim of the conference is to provide an international forum for young researchers and senior professionals in water and wastewater sciences; to present their work and meet their peers in multidisciplinary fields of water for career advancement. This conference encourages scientific dialogue, knowledge transfer and mentoring between young and senior water professionals of various backgrounds and expertise.

Email: mywp@utm.my

Web: www.utm.my/ywp15

DEADLINES

● 1 November 2014 for the submission of abstracts for the 10th IWA International Conference on Water Reclamation and Reuse (5-9 July 2015, Harbin, China)

● 15 December 2014 for the submission of abstracts for the 6th IWA Specialist Conference on Natural Organic Matter in Drinking Water (7-10 September 2015, Malmo, Sweden)

● 15 February 2015 for the submission of abstracts for the 12th IWA Specialised Conference on Design, Operation and Economics of Large Wastewater Treatment Plants (6-9 September 2015, Prague, Czech Republic)

FEBRUARY 2015

New Developments in IT and Water
8-10 February 2015, The Hague, The Netherlands

MARCH 2015

Ecobuild 2015
3-5 March 2015, London, UK

Water21, Media Partner: 7th Global Leakage Summit
17-18 March 2015, London, UK

2nd IWA Malaysia Young Water Professionals Conference 2015
17-20 March 2015, Kuala Lumpur, Malaysia

Wasser Berlin 2015
24-27 March 2015, Berlin, Germany

APRIL 2015

7th World Water Forum
12-17 April 2015, Daegu Metropolitan City, Republic of Korea

9th Water Tech Funding Forum
16-17 April 2015, New York, US

IFAT Eurasia
16-18 April 2015, Ankara, Turkey

IWA Specialist Conference on Water Efficiency and Performance Indicators / Benchmarking
19-25 April 2015, Cincinnati, Ohio, USA

Cities of the Future - Transitions to the Urban Water Service of Tomorrow
28-30 April 2015, Mulheim an der Ruhr, Germany

MAY 2015

IWA Balkan YWP Conference
10-12 May 2015, Thessaloniki, Greece

Regional Utility Management Conference Improving Performance in Emerging Economies
13-15 May 2015, Tirana, Albania

IWA Nutrient Removal and Recovery 2015: moving innovation into practice
18-21 May 2015, Gdansk, Poland

IWA Symposium on Environmental Nanotechnology 2015
20-22 May 2015, Dalian, China

COMING IWA EVENTS

IWA Development Congress 2015
19-22 October 2015, Jordan

For a full diary listing and web links, see the Events section at water21online.com

