



19-24 SEPTEMBER 2010

Technical session

Seeking innovation for industrial wastewater reuse

This morning there will be a technical session titled 'Industrial wastewater treatment', which, across two parts, will cover novel treatment methods for industrial wastewater.

Dr Darren Sun, Associate Professor at the Nanyang Technological University in Singapore, will be chairing the first of these two sessions.

'We need to open up and let the public know about the applications

out there,' says Sun regarding industry participation in public awareness when it comes to industrial reuse.

'We also have to discuss opportunities created by technology. Technology allows for industrial wastewater to be reused, but [others in the industry] may not be aware of this at this stage. Information exchange is very, very important and we need to seek innovation.' ●

Industry Forum

Supporting better asset management

A significant amount of improvement is needed in asset management worldwide,' said Stewart Burn from CSIRO Land and Water, Australia, at yesterday's Halcrow-presented Industry Forum.

The theme of 'sustainable investment in infrastructure assets' was explored by the speakers, which included Burn, who outlined different levels of asset management for utilities as well as the PARMS (Pipeline Asset and Risk Management System) approach for asset deterioration modelling, which is widely used in Australia.

For the future, Burn said that intelligent networks were an area to look at and how they fit into this.

Strategic Asset Management Specialist Group chair Helena Alegre continued the discussions with an overview of the completed CARE-W and CARE-S (Computer-Aided Rehabilitation of Water / Sewer networks) projects, which looked at the problems of network ageing, and outlined current projects furthering this work.

Halcrow's Will Williams then finished the presentations with a discussion of the company's Water System Optimisation Suite for the optimization of energy use, design and upgrading, and investment.

Further discussions on asset management will be taking place throughout Thursday in Room 2. ●

Workshop

The 'forgotten issue' of lead

Yesterday morning's session on science and application of water treatment focused on the use of phosphate dosing to minimise metals in drinking water, a subject of particular interest to Dr Colin Hayes from Swansea University, UK, who chairs IWA's Metals and Related Substances in Drinking Water Specialist Group.

'There is a dilemma and a conflict, and I have an ambition to stir it up and do something about it,' he notes. He describes nickel, copper and, in particular, lead 'the forgotten issue', stating that the successful use of orthophosphate in the UK is not pursued in other European countries particularly due to environmental concerns. ●

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EXHIBITION HIGHLIGHTS

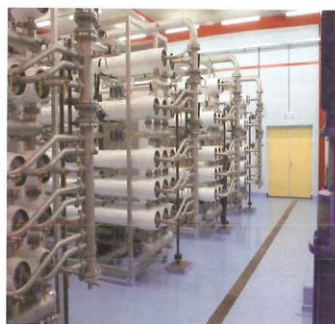


Yesterday's VIP tour of the Exhibition hall.

Green antiscalant for RO

During the IWA Exhibition 2010 Cosun Biobased Products (Booth 156) is presenting its green antiscalant Carboxy Methyl Inulin (CMI) and an accompanying case for reverse osmosis (RO) drinking water production. A special grade of CMI has

been developed for use in the production of potable water with membranes. A six month pilot test in an RO drinking water plant using groundwater in the Netherlands showed no scaling or biofouling, says the company, and CMI is now being used as antiscalant for all stacks of the RO plant.



Process control reduces loss and cost

Grundfos (Booth 226) is showing its control and automation solutions. This includes the AUTO-ADAPT monitoring solution for Grundfos sewage grinders and drainage, effluent and sewage pumps, which combines all sensors in a single pump that adapts automatically to conditions in the pit. The Grundfos Control MPC has also been released for pumps to reduce water loss through pressure management. The Grundfos Control MPC provides pressure control, gradual ramp-up and ramp-down, the cascade operation of up to six pumps, and monitoring and control with text messages.



Activated carbon for drinking water safety

Calgon Carbon Corporation (Booth 211) is showing information about its granular, powdered, and pelletized activated carbons for use in drinking water purification. Granular activated carbon removes unwanted natural organic matter and industrial chemicals to prevent the formation of disinfection by-products contaminants of emerging concern during disinfection operations. Calgon Carbon's potable custom reactivation services allow spent activated carbon to be recycled back to customer facilities for continued use. Calgon Carbon is also showing information about its ultraviolet disinfection and oxidation systems.

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Keynote presentation

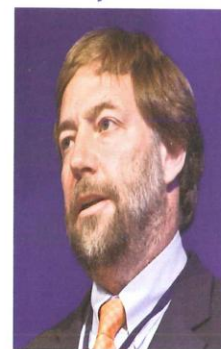
Recovering from disaster – the story from Chile

Yesterday, Pedro Pablo Kuczynski, chairman of the board of Chile's privatised Essbio water utility, made a fascinating keynote speech that looked at the impact of the February earthquake on the country's infrastructure systems, and those of his own company in particular.

Chile is one of the few countries in the world to have wholeheartedly embraced privatisation of its water utilities, so the response will provide a fascinating insight into the strengths and weaknesses of the private sector in responding to such an extreme event.

Kuczynski explains: 'In 1998 the country decided to give concessions for operations, the idea being to move from a very low percentage of sewage treatment – the average for Latin America is 15% – to where the developed countries are. Today we have 90% coverage and are in the top ten in the world, higher than the US and Canada.'

It is a sensitive issue, he acknowledges, with many countries and communities feeling that water and wastewater infrastructure must be operated by the state or the municipality. 'My aim was to shed light on the experience in Chile and the benefits of having a private operator. When you talk about rebuilding infrastructure that belongs to the



state, the process of hiring constructors, granting contracts and so on is a lot harder when you are working with public money. Private operators can work faster – they are closer to their shareholders and have the freedom to move faster.

'I would like to have people confronting these ideas, and discussing ways of solving the problems,' he continues. 'On some aspects I don't think we did the best, and in others I think we were very creative and found good solutions. It was quite a challenge.'

He adds: 'When you talk about team-building strategies or creating better efficiency, this emergency helped a lot. If you are not destroyed by working so hard, working full time, you come out as a good team.' ●

TODAY'S SELECTED HIGHLIGHTS

08:15

Keynote: Arjun Thapan, Water and urban development for Asian cities

09:15 ONWARDS

Industry Forum

09:15 ONWARDS

Africa Regional Forum

09:15-12:45

Bio Cluster workshop

12:45-14:15

Water and wastewater technologies in ancient civilizations Specialist Group open meeting in Room 6

16:15

Keynote: Khoo Teng Chye, Cities of the future

World Water Congress
and Exhibition

Denmark's Minister of the Environment, Karen Ellemann (LEFT), and Bernard Guirking of Suez Environnement yesterday. Ellemann highlighted her country's successes in tackling key water issues, noting: 'We've learned there is no contradiction between sustainable water management and economic development.' She stressed that strict regulation was a driver for the economy, adding that many successful Danish companies had developed technologies, tools and services against this background.

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Technical session

Stormwater pollution – the next hurdle to improving water quality

Peter Steen Mikkelsen, Associate Professor in the Department of Environmental Engineering at the Technical University of Denmark, will be chairing the 'Stormwater pollution and control' technical session this morning, which will be looking at pollution sources, priority pollutants, and processes of runoff and contaminant build-up in urban environments.

Mikkelsen has recently finished working on a European project called 'Source control options for reducing emissions of priority pollutants from stormwater and wastewater', and his personal research is how to model the fate of pollutants in stormwater systems from source to emission into the ground.

'[Stormwater pollution] is an issue in Europe where we have already implemented a lot of wastewater treatment, it's an issue in a large part of North America, basically anywhere where you don't

have any significant flooding problems and where you've reasonably dealt with wastewater treatment,' says Mikkelsen. 'Then you realise that the environment is still not at the level that you want it to be.'

Regarding recent areas of research within stormwater pollution control, Mikkelsen thinks that there have been big changes in understanding the processes involved. However, he says: 'at the moment there are very few cases of regulation to treat this sort of pollution, partly because it's poorly understood. It's very intermittent and it's also very difficult to monitor. So I think the big change now is to formulate a comprehensive understanding of where the sources come from, how they are released and how they are transported, then to design intelligent mitigation measures to combine treatment technologies with soft options such as source control. ●



'What for you is a developing country? How many of you have thought about them as a country that lacks the advantages of the developed world and of what it would take for them to have these advantages?' Bill Cosgrove, president of the Eco-Consult Group, posed this key question to a packed auditorium to begin yesterday's opening keynote address.

In his presentation, he argued that a lack of development can present an opportunity to learn from the mistakes made in the developed world. 'We must help them to avoid the mistakes we made, and help them to grow and be more successful than we,' he said.

Describing a number of imagined developing world scenarios, he argued that issues such as hunger and job creation had to be dealt with alongside health, and that in this 'we are talking about the foundations of integrated water management'. Mr Cosgrove urged the audience to imagine a situation in which water specialists worked with all other key stakeholders across the spectrum of need. 'How realistic is this imaginary world?' he asked. 'Perhaps it is not far off.'

Workshop

Forging the future of urban water management

Steve Moddemeyer, Principal with Green Canadian architects CollinsWoerman and coordinator of the IWA Cities of the Future programme, will chair the two-day Cities of the Future workshop, presenting an intriguing new approach to urban services planning.

The workshop, starting today, will begin with an overview of the vision and the imperatives – population growth, climate change, and rising global incomes – and the need to manage change and what this will mean for the community, Moddemeyer says.

'The issue is the way we design infrastructure – traditionally it has been very resource intensive, but this is not sustainable,' he explains. 'There are examples of efficient designing, but they are the exception rather than the rule.'

The world's population boom – an extra million people a week – will need and demand and should have access to water, and most will live in cities, Moddemeyer observes.

'There is a global impulse to cities, but the models are not as efficient as they should be,' he notes. 'The current way we design cities has to change and that needs to start now, because it will take a generation. We need good examples, as broadly as possible so people can see how it can be done. It doesn't have to be fancy new technology – though this can help – we have equipment that can do it now, but people have to be open, to understand the imperatives and the options, and to managing change. It's about getting people to understand that they can do things differently.'

Tomorrow there is a session entitled Turkish Cities of the Future, which looks at the agreement IWA has with the Turkish Ministry of Environment and Forestry to



conduct a three-year Cities of the Future programme with three cities (Istanbul, Kayseri and Trabzon).

'Turkey is a very good partner – the average age is 26, very young, there has been strong economic growth through the recession, and a €50 billion (\$64 billion) requirement for infrastructure over the next 15 years to bring it to European standards,' Moddemeyer explains. A panel of key IWA experts and Turkish academics will take part in this discussion.

The last session at the end of the two-day workshop, the Montreal Declaration, will provide a wrap-up. It will involve non-water experts in various fields such as planning and urban design, who have been asked to attend all of the sessions and provide feedback from their own perspective, critiquing the workshop outcomes – what they have found exciting and what could possibly be problematic. 'It is an attempt to say what we all really mean and what the next steps should be,' Moddemeyer concludes. 'To understand what it will take to broaden and deepen this so that in ten years, we are saying "this is how we do things".' ●

IWA Publishing book launch

There will be a reception with wine and nibbles at 16:00 today at the IWA Publishing stand (Booth 141) to launch the new title 'Water infrastructure for sustainable communities: China and the world'. IWA Publishing would like to invite you along to the reception where the authors, Xiaodi Hao, Vladimir Novotny and Valerie Nelson, will be there to discuss their new book.

The book reveals how imaginative concepts are being developed and implemented to ensure that cities, towns, and villages and their water resources can become ecologically sustainable and provide clean water. It results in water management systems that would be resilient to extreme events such as excessive flows, severe droughts, and deteriorated water and urban ecosystem quality.

A particular emphasis is placed on learning lessons from the many innovative projects being designed in China and other initiatives around the world.

The IWA Publishing team looks forward to meeting you there.

TODAY AT THE IWA DEVELOPMENT CORNER

One of the IWA Development Corner discussions today, 'Peak phosphorus – the next "inconvenient truth"?', will be looking at the possibilities of recycling phosphate from water and sanitation systems for use in agriculture. Dr Arno Rosemarin, Research & Communications Manager for the EcoSanRes Programme at the Stockholm Environment Institute, who will be speaking on this topic, says the objective of his work with the EcoSanRes Programme 'is to provide good sanitation and hygiene, but also to save on natural resources and to equip rural communities with readily available nutrients from these sanitation units'.

The sanitation sector is 'highly dysfunctional' he says, especially in developing countries. 'On top of that, phosphorus reserves, the sources of our fertiliser, seem to be depleted. For the past 50 years or so we've had industrial-scale agriculture and phosphorus is going into our rivers and oceans.'

'The challenge to agriculture is to close the loop,' says Rosemarin. He points out the link between overpopulation, poor supply systems and sanitation, health and education. 'The biggest problem in the world is overpopulation, we're going to go through nine billion [people] in 40 years' time and we don't have enough fertiliser to feed these people.' Poor sanitation facilities in school means girls do not go to school during their menstruation period, and due to poor water supplies, many have to find clean water each day. 'So the indirect effect of putting in toilets is a human right at work, and one that can return nutrients to the village farmers.'

'It's treated as a waste so it's not designed for reuse,' he says regarding wastewater. '[Wastewater treatment] is not at all in-line for the kind of stuff that the world needs for the food security problem that is already with us. The sector has to get much more sustainable.' ●

Workshop

Ensuring safe drinking water for all

Over half of the world has a piped supply, yet we know little about the safety of those supplies,' commented Dr Jamie Bartram, Professor and Director of the Global Water Institute at the Gillings School of Global Public Health, University of North Carolina at Chapel Hill, yesterday as he chaired the workshop on drinking water safety.

The theme of the workshop links closely with IWA's activities in this area. In particular, IWA has had significant involvement in the development and implementation of new management practices, and the application of new technologies, with the IWA Bonn Charter for Safe Drinking Water providing a framework outlining the institutional, managerial and operational

requirements for the effective provision of safe drinking water.

'Our main area of involvement around water safety is promoting and supporting implementation of Water Safety Plans (WSPs),' explains Tom Williams, Programmes Officer for WSPs at IWA. Discussing yesterday's workshop, Williams says that its aim was to develop programming that is more comprehensive than WSPs alone. He says that the aim of the workshop was 'to look at the spectrum of interventions for water safety, see which ones are successful, see how they could effectively be scaled up, but moreover see how they can complement and work together in a more coherent fashion'. ●

WHAT DOES IWA MEAN TO YOU?

Delegates are invited to help IWA by composing a sentence that says what IWA means to them, and in the process stand a chance to win a registration to the IWA World Water Congress & Exhibition to be held in Busan, Korea in 2012. With other prizes on offer too, delegates are asked to visit the IWA stand in the Exhibition hall over the next two days where they will have their photograph taken and complete a card with their sentence. The Busan registration will be the first prize in the draw to be made on Thursday. Second prize will be a £100 token to spend on books from IWA Publishing, and third prize will be a 2011 individual membership to IWA.

Technical session

Current challenges in microbial detection

In terms of the microbial challenge, we focus on studying how pathogens, specifically bacteria, may survive under different conditions in a viable but non-culturable stage,' explains Xingfang Li, Associate Professor in the Division of Analytical and Environmental Toxicology at Canada's University of Alberta, who chaired yesterday's session 'Detection methods for microbial hazards'. 'Routinely used methods will not be able to detect this kind of bacteria,' says Li.

She explains that the first step is to understand what environmental conditions lead to this bacterial state, then how long bacteria can stay in a viable non-culturable stage, and once they are in this stage, how they can become capable of growing. 'Once we

understand these basics, then we can devise the assays that will be able to target these pathogenic bacteria.'

As well as the threat of pathogens in drinking water, Li also points out the importance of studying the chemical threat from disinfection by-products. 'The chemical side of the story is that we do emphasize that we must eliminate those microbes that cause problems, but at the same time we need to understand what kind of conditions and processes will achieve the complete elimination of microbes but do not produce toxic chemicals from the disinfection process.'

Li refers to her current work on haloquinones in water, noting that some literature has shown that they may cause DNA damage. ●

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