



Innovations in Wastewater Treatment

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Leeds University Business School, UK

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Consultancy and events in
environmental science and
engineering

Outline

Over the past decade it has been apparent that the UK Water Industry can make a major contribution to the Government aims of a Circular Economy in which materials from wastes are returned to other productive parts of the economy, thus reducing the amount of waste for ultimate disposal. Estimates by Defra of the potential annual value to UK businesses are as high as £23 billion and this could be achieved through low cost or no cost improvements in use of resources. Globally, McKinsey has estimated the annual value of resource efficiency as up to \$3.7 trillion. This has led to a significant research initiative to identify potential resources available for recovery from wastewaters. It has long been recognised that the potential energy in domestic wastewater is in excess of the energy required for its full treatment and thus energy recovery was one of the first technologies to be adopted on a wide scale in the UK. The success of this approach has meant that energy neutral wastewater treatment will be a real possibility within the next two decades. Attention is now focused on other materials in particular the nutrients N and P. It is thought that if all the P available in domestic wastewaters could be recovered it would reduce our imports of this material to close to zero. However economically viable P recovery is difficult due to its low concentration and low unit cost and thus with existing capital-intensive technologies, it is only viable at the larger works. Again a significant research initiative is underway to develop lower cost technologies that can be applied at smaller facilities.

It is the aim of this event to examine those technologies that have recently emerged and been successfully applied for resource recovery at a commercial scale. As well as learning of how these technologies have been applied and the benefits they bring, it will help to inform delegates as to what makes a successful research project and how the impact of such projects can be optimized. It will also look to the future and examine other potential resources that might be recovered economically and consider the best approaches to ensure the commercial success of any research initiatives investigating such routes.

Programme

Sorting out the EN for testing grease traps

Mike Norton, Marsh Industries Ltd, UK

Kinetic control of an innovative fully gravitational submerged anaerobic membrane bioreactor for wastewater treatment

Santiago Ruiz-Pacheco, Charles J. Banks and Sonia Heaven, University of Southampton, UK

Microbe granulation Technology - treating wastewater and digesting Sludge in record times and efficiencies

Jonathan Lee¹ and Andrew Tay², ¹Hycura, ²University of Calgary, Canada

Nutrient recovery by novel membrane stripping

Luchien Luning and Marijn van de Vec, Sustec Consulting and Contracting, The Netherlands



BOF steel slag and apatite in full-scale constructed wetlands for sustainable phosphorus removal

Naiara Fonseca,^{1,2} Eve Cripps-Germain², Pete Pearce², Gabriella Dotro¹, Bruce Jefferson¹, ¹School of Energy, Environment and Agrifood, Cranfield University, UK, ²Thames Water Utilities Ltd, UK

Enhancing P recovery from wastewater as struvite. Stream management, design, built and operation of a crystallization reactor

Sofia Grau, Depuración de Aguas del Mediterráneo (DAM), Spain

Comparison of phosphorus recovery from pyrolysis and incineration residues

Rosanna Kleeman^{1,2}, Jonathan Chenoweth¹, Roland Cliff¹, Eve Germain-Cripps², Stephen Morse¹, Pete Pearce², Devendra Saroj¹, ¹University of Surrey, ²Thames water, UK

Towards energy-positive wastewater treatment by high loaded a-stage and activated sludge retention by dynamic filtration – performance analysis

Kees Roest¹, B. Daamen¹, T.P.H. van den Brand¹, M.S. de Graaff¹, M.C.M. van Loosdrecht¹, ¹KWR Watercycle Research Institute, The Netherlands, ²Bert Daamen Water & Energy, Kampen, The Netherlands

Improved sewage treatment process for removing phosphate using electrolysis and ultrasound

Philip Morgan, Power & Water, UK

Cost effective retrofitting of existing sewage ponds - A case study for rural areas

Florian Pfeiffer¹ and Anna Massagué², ¹Systems S&P, ²Suez Advanced Solutions UK, UK

Venue

This event is being held at Leeds University Business School.

Venue, travel and accommodation details will be sent out upon registration.

Booking

To register visit www.aquaenviro.co.uk or email Clare for a booking form e. clarehunter@aquaviro.co.uk

Delegates attending this event will also have access the [IWA Wastewater Pond Technologies Conference](#) on the 22 March.

Fees

Full Delegate £340 (+VAT) = £408

Students, Academics and Charities £100 (+VAT) = £120