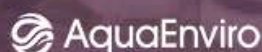


EUROPEAN WASTE WATER MANAGEMENT CONFERENCE

17-18 JULY 2018, MANCHESTER UNITED FOOTBALL STADIUM



Sponsored by



Conference Programme

Day 1 - Tuesday 17th July

ROOM 1 – Manchester Suite

9.30 -10.00 Conference Opening Plenary – Professor Carlos Chernicharo, Federal University of Minas Gerais, Brazil

PHOSPHORUS

Chair: Pete Vale, Severn Trent Water

10.05 – 10.30 **What to do with the phosphorus - a European perspective**
Thornton, C., European Sustainable Phosphorus Platform

10.30 – 10.55 **Alternative configurations for biological phosphorous removal – experience from the United States**
Koodie, T.¹, Shaw, A.¹, Chan, T.² and Steichen, M.², ¹Black & Veatch, UK, ²Black & Veatch, US

10.55 – 11.20 **Ferric direct from steel – a game-changing solution for P removal with Soneco®**
Stanford, C.¹, Yang, G.¹ and Morgan, G.², ¹Southern Water, ²Power and Water (KP2M Ltd), UK

11.20 – 11.45 **Coffee Break**

11.45 – 12.10 **Initial commissioning and operating experiences of low phosphorus limits of 0.5mg/l P**
Sunner, N.¹ and Mansuclal, A.², ¹Stantec UK Ltd, ²Stantec Treatment Ltd, UK

12.10 – 12.35 **From Bowerhill to Rugby – The implementation of the BioMag process in Severn Trent Water waste water treatment works at Rugby**
Radford, S.¹, Ruswa, E.² and Goodwin, J.¹, ¹Evoqua, ²Severn Trent Water, UK

12.35 – 13.00 **Meeting low phosphorous consents and other targets in a single stage using continuous filtration**
Barter, P. and Jarman, D., Hydro International, UK

13.00 – 14.00 **Lunch**

Chair: Chris Thornton, European Sustainable Phosphorus Platform

- 14.00 – 14.25 The impact of entrapment of algae on simultaneous nutrient removal**
Kube, M.¹, Spedding, B.², Fan, L.¹ and Roddick, F.¹, ¹RMIT University, Australia, ²South East Water Corporation, Australia
- 14.25 – 14.50 FilterClear – an ideal solution to achieve stringent total phosphorus standards**
Huo, C., Harnett, R. and Biddle, J., Bluewater Bio, UK
- 14.50 – 15.15 1-STEP® filter: the Magic bullet for phosphorus and nutrient removal**
Kramer, F.¹, Menkveld, W.², Gray, J.³ and Bechger, M.⁴, ¹Witteveen+Bos Consulting Engineers, the Netherlands, ²Nijhuis Water Technology, The Netherlands, ³Nijhuis Industries UK & Ireland, ⁴Waternet, The Netherlands
- 15.15 – 15.40 Does ferric dosing for phosphorus removal upset the nutrient balance for biological sewage treatment processes?**
Youdan, J., Healey, S., Walker, H. and Whittle, I., Wessex Water, UK
- 15.40 – 16.10 Coffee Break**
- 16.10 – 16.35 Leading the way with Mecana for low effluent P concentrations**
Cooper-Smith, G.¹ and Wohling, A.², ¹Eliquo Hydrok, UK, ²Mott MacDonald Bentley, UK
- 16.35 – 17.00 Risk managed portfolio approach to delivering phosphorus removal schemes**
Curtis, P., and Williams, S., @one Alliance, UK
- 17.00 – 17.25 Achieving enhanced biological phosphorus removal: have we forgotten how to design a bio-P plant?**
Dold, P. and Conidi, D., EnviroSim Associates Ltd, Canada

ROOM 2 – Salford Suite 2

CATCHMENTS & NETWORKS

Chair – Rowland Minall, Aqua Enviro

- 10.05 – 10.30 Peak flow equivalent treatment, trial testing of innovative technologies to Dŵr Cymru Welsh Water and the UK**
Wilson, V.¹ and Campbell, N.², ¹Dwr Cymru Welsh Water, UK ²Morgan Sindall, UK
- 10.30 – 10.55 Engineering a solution to a large wastewater catchment scheme**
Ridley, B., United Utilities, UK
- 10.55 – 11.20 Delivering holistic solutions and flexible permitting to improve river quality**
Bowman, B., Harris, T., Aboobakar, A. and Gowdy, R., United Utilities, UK
- 11.20 – 11.45 Coffee Break**
- 11.45 – 12.10 Infiltration detection – needs a bright spark**
Henley, P., WRc, UK

12.10 – 12.35 **Utilisation of waste water treatment Fats and Oils for biodiesel manufacture – challenges and potential innovation**
Kingsley, M. and Hogg, M., Argent Energy, UK

12.35 – 13.00 **Reducing the costs of pumping waste water using power logging and real-time efficiency displays**
Snoxell, J., Southern Water, UK

13.00 – 14.00 **Lunch**

FLUSH AND FORGET – WHOSE PROBLEM IS IT ANYWAY?

Chair: Amber Bullen, Yorkshire Water

14.00 – 14.25 **Fat, Oil, Greases (FOG) and Unflushables Project (Southern Water)**
Gabos, E., Southern Water, UK

14.25 – 14.50 **Dealing with unflushables in the sewers**
Drinkwater, A. and Dolata, G., WRc, UK

14.50 – 15.15 **Consumer information is key to prevent wipe blockages**
Lagemaat, M., EDANA, Belgium

15.15 – 15.40 **Panel Discussion on Flushables**

Marines Lagemaat, Scientific and Technical Affairs Director, EDANA
Andy Drinkwater, Principal Engineer, WRc
Elvira Gabos, FOG and Unflushables Manager, Southern Water

ROOM 3 – Salford Suite 1

NOVEL AND EMERGING PROCESSES

Chair – Martin Jolly, Aqua Enviro

10.05 – 10.30 **Trends in advanced wastewater treatment: Implementing anaerobic secondary processes in the UK**
Soares, A., Cranfield University

10.30 – 10.55 **SUEZ Zeelung MABR Pilot at Thames Water demonstrates stable nitrification activity and elevated aeration efficiencies at low temperatures**
Monti, A., Martin, I. and Peeters, J., SUEZ Water Technologies and Solutions

10.55 – 11.20 **Achieving high-rate anaerobic performance with a novel prebiotic and biomedica**
Keenan, M., EKO GEA, Slovenia

11.20 – 11.45 **Coffee Break**

11.45 – 12.10 **C-TECH – A reduced footprint advanced cyclic activated sludge technology with simultaneous nitrification and denitrification, and biological phosphorous (bio-P) removal in a single treatment step**
Hazard, B.¹, Bullen, T.¹, Jabornig, S.² and Wurscher, K.², ¹Trant Engineering, UK
²SFC Umwelttechnik, Austria

- 12.10 – 12.35 Performance improvement of wastewater transport systems and treatment processes by advanced monitoring and predictive control**
Icke, O.¹, Lubbers, C.¹, van Eijden, R.¹, de Koning, M.¹, Huising, C.² and de Wit, R.³,
¹Royal HaskoningDHV, ²Water authority Vallei en Veluwe, The Netherlands,
³Water board Limburg, The Netherlands
- 12.35 – 13.00 Recovery and valorisation of cellulose from sewage: The road to circularity**
Marcelis, P. and Wessels, C., CirTec B.V., The Netherlands
- 13.00 – 14.00 Lunch**

SUSTAINABLE SOLUTIONS

Chair: Karyn Georges, Head of Wastewater, Isle Utilities

- 14.00 – 14.25 Nereda®: The future in sustainable wastewater treatment**
Thompson, A. and Oliver, B., Royal HaskoningDHV, UK
- 14.25 – 14.50 Severn Trent Water's Rural Strategy: Two stage vertical flow reed beds (VFRB) for landscape integration and lower OPEX costs – lessons learnt from first UK plant**
Blanco, I., Bajón Fernández, Y., Ruswa, E., Cunliffe, D., Pereira, L. and Richards, A., Severn Trent Water, UK
- 14.50 – 15.15 Considerations in developing a biologically-based decentralised water treatment solution for the global market**
Hannon, L.¹, Herron, D.², Perfido, D.², Dussaussois, J.⁴, Salvado, V.⁵ and Clifford, E.¹, ¹College of Engineering and Informatics, NUI Galway, Ireland, ²Aqua Enviro, UK, ³R2M Solution s.r.l., Italy, ³Nobatek, France, ⁵University of Girona, Spain
- 15.15 – 15.40 Struvia - a cost effective technology for phosphorus recovery**
Bigot, B.¹, Bundgaard, E.² and Paillard, H.³, ¹Veolia Water Technologies, UK, ²KRÜGER A/S, ³Veolia
- 15.40 – 16.10 Coffee Break**
- 16.10 – 16.35 Energetic flexibility on wastewater treatment plants – concepts, simulation and practical tests**
Hobus, I.¹, Kolisch, G.¹, Pyro, P.¹ and Schäfer, M.², ¹Wupperverbandsgesellschaft für integrale Wasserwirtschaft mbH, Germany, ²Institute of Urban Water Management, University of Kaiserslautern, Germany
- 16.35 – 17.00 Integrating sustainability indicators in the monitoring and control strategy of WWTPs - Moving towards a smart digital water society**
Vasilaki V.¹ Volcke, E.I.P.², Nandi, A.K.¹, van Loosdrecht³, M.C.M., Katsou E.¹,
¹Brunel University London, UK, ²Ghent University, Belgium, ³Delft University of Technology, The Netherlands
- 17.00 – 17.25 RE-DIRECT - Regional Development and Integration of unused biomass wastes as resources for circular products and economic transformation**
Wilcox Brooke, A., Severn Wye Energy Agency, UK

Day 2 – Wednesday 18th July

ROOM 1 - Manchester Suite

PLENARY

- 9.15 – 9.45** **Why Venture Capital has spectacularly failed in the water sector ... and how it is about to change**
Dr Piers Clark, Founder and Chairman, Isle Utilities

PRIORITY SUBSTANCES & EMERGING CONTAMINANTS

Chair – Arthur Thornton, Atkins

- 9.50 – 10.15** **UKWIR Chemical Investigation Programme – Developments, outputs and investment**
Jenner, S.¹ and Hughes, J.², ¹United Utilities, UK, ²Thames Water, UK
- 10.15 – 10.40** **PR19 Solutions for removal of priority substances**
How, D.¹, Piano, E.¹, Glancy, V.¹, Bahloul, M.¹ and Hill, M.², ¹Arup, UK, ²Yorkshire Water, UK
- 10.40 – 11.05** **C-ION – An innovative advanced oxidation process based on the injection of non-thermal plasma for the removal of trace substances from drinking and waste water**
Hazard, B.¹, Bullen, T.¹, Jabornig, S.², Wutscher, K.², Rupprich, M.³ and Obholzer, T.³, ¹Trant Engineering, UK, ²SFC Umwelttechnik, ³Management Centre Innsbruck, Austria
- 11.05 – 11.30** **Coffee Break**
- 11.30 – 11.55** **Effective removal of priority substances using the Nyex™ treatment process**
Brown, N., Carson, E. and Campen, A.K., Arvia, UK
- 11.55 – 12.20** **Elimination of micro pollutants by powder and granular activated carbon in final filtration units at municipal WWTPs**
Kolisch, G.¹, Taudien, Y.¹, Bornemann, C.², ¹Wupperverbandsgesellschaft für integrale Wasserwirtschaft mbH, Germany, ²Wupperverband, Germany
- 12.20 – 12.45** **Removal of emerging contaminants and pathogens on an innovative hybrid PAC/membrane process**
Sauvignet, P.¹, Gaid, K.¹, Daines, C.², Leparc, J.², ¹Veolia, Technical and Performance Department, France, ²Veolia Environnement Research & Innovation, France
- 12.45 – 13.45** **Lunch**

13.45 – 15.00 Panel Discussion on Priority Substances and Emerging Contaminants

Chair: Arthur Thornton, Atkins

Dr. Rachel Gomes, Associate Professor Chemical and Environmental Engineering, Nottingham University

Jason Snape, Senior Principal Environmental Scientist/ SHE Research and Foresight Director at AstraZeneca

Alice Horton, Ecotoxicologist and NERC Knowledge Exchange Fellow, Centre for Ecology & Hydrology

15.05 – 15.30 Conference Closing Session

Dr David Tompkins, Aqua Enviro

Presentation of Young Professionals & Students Poster Award

ROOM 2 – Salford Suite 2

ENGINEERING AND PROCESS OPTIMISATION

Chair: Steve Bungay, HELIX ECL

10.15 – 10.40 Energy data management principles for water utilities

Gunaratnam, M.¹, Cherchi, C.², Badruzzaman, M.², Grenfell, R.¹ and Jacangelo, J.²,
¹Stantec, UK, ²Stantec, USA

10.40 – 11.05 Hydraulic design and its impact on the performance of the wastewater treatment works

Sherwood, J., United Utilities, UK

11.05 – 11.30 Coffee Break

11.30 – 11.55 Optimisation of plastic media percolating filters

Nikolova-Kuscu, R.¹, Jarvis, S.¹, Brown, P.¹ and Pearce, P.², ¹Thames Water Utilities, UK, ²Farmiloe Fisher Environment Ltd, UK

11.55 – 12.20 Upgrading existing assets to improve operational performance - A complex problem with a simple solution: MBBR & IFAS

Albizuri, J.¹ and Jeal, W.², ¹Veolia AnoxKaldnes, ²Veolia Water Technologies, UK

12.20 – 12.45 Hybrid Activated Sludge: exploiting biochemistry to double capacity

Biddle, J., Bluewater Bio, UK

12.45 – 13.45 Lunch

Chair – Jeremy Biddle, Bluewater Bio

13.45 – 14.10 Optimisation of existing assets using intelligent dissolved air flotation

Gray, J.¹ and Menkveld, W.², ¹Nijhuis UK and Ireland, ²Nijhuis Water Technologies, the Netherlands

14.10 – 14.35 IFAS for highly cost-efficient performance uprating
O'Brien, L.¹ and Green, R.², ¹Elquo Hydrok, UK, ²CiM6, UK

14.35 – 15.00 Optimisation of wastewater treatment using remote monitoring and enhanced analytics
Reeves, R., Southern Water, UK

POSTERS

The *in-situ* treatment of landfill leachate, using the natural process of bioremediation and chemical adsorption into a fixed bed column

Morris, S.¹, Garcia-Cabellos, G.¹, Enright, D.², Ryan, D.¹ and Enright, A-M.¹, ¹EnviroCore, Institute of Technology Carlow, Ireland, ²Institute of Technology Tralee, Ireland

The impact of entrapment of algae on simultaneous nutrient removal

Kube, M.¹, Spedding, B.², Fan, L.¹ and Roddick, F.¹, ¹RMIT University, Australia, ²South East Water Corporation, Australia

Microplastics characterisation in a tertiary wastewater treatment plant in the UK

Blair, R.M.¹, Waldron, S.¹, Gauchotte-Lindsay, C.¹ and Phoenix, V.², ¹University of Glasgow, Glasgow, ²University of Strathclyde, Glasgow

Applying a novel approach for monitoring microplastics in wastewater effluent

Horton, A.A., Jürgens, M.D., Lahive, E., Johnson, A.C., Spurgeon, D.J. and Svendsen, C., Centre for Ecology and Hydrology, UK

Initial studies on screening the effect of pharmaceutically contaminated wastewater on the anaerobic digestion process

Alenzi A., Hunter, C. and Pahl, O., School of Engineering & Built Environment, Glasgow Caledonian University, Scotland

Assessing the contribution of wastewater treatment to microplastic pollution

Stanton, T.¹, Johnson, M.¹, Nathanail, P.², Gomes, R.L.³, ¹School of Geography, University of Nottingham, ²Land Quality Management Ltd, University of Nottingham Innovation Park, ³Food, Water, Waste Research Group, Faculty of Engineering, University of Nottingham

Phosphorous recovery and the Phos4You project in Ireland

O'Dwyer, D.¹, Harrington, J.¹, O'Donnell, C.², Power, N.², Barnett, D.², Fitzgibbon, K.³, Byrne, E.³, ¹School of Building & Civil Engineering, and Sustainable Infrastructure Research & Innovation Group, Cork Institute of Technology, ²Department of Civil, Structural and Environmental Engineering and Sustainable Infrastructure Research & Innovation Group, Cork Institute of Technology ³Water Systems & Services Innovation Centre, Nimbus Centre, Cork Institute of Technology, Ireland

***Chlamydomonas acidophila* as an alternative for Phosphorous recovery from wastewater**

Reichelt, L.-D., Escudero, A., Hunter, C., Pahl, O., Glasgow Caledonian University, UK

RE-DIRECT - Regional Development and Integration of unused biomass wastes as Resources for Circular products and economic Transformation

Wilcox Brooke, A., Severn Wye Energy Agency, UK

Zero-valent iron immobilized polyester nonwoven for fenton degradation of methylene blue

Morshed, M. N.^{1,2,3,4}, Behary, N.^{1,2}, Bouazizi, N.^{1,2}, Nierstrasz, V.³, ¹Ecole Nationale Supérieure des

Arts et Industries Textiles (ENSAIT), France, ²Université de Lille, France, ³University of Borås, Sweden,
⁴Soochow University, China

Coagulation-flocculation with biopolymers: A treatment technology for the removal of trace metals from municipal wastewater

Hargreaves, A.J.¹, Vale, P.², Whelan, J.², Alibardi, L.^{2,3}, Constantino, C.¹, Dotro, G.³, Cartmell, E.⁴ and Campo, P.¹, ¹Atkins, ²Severn Trent Water, ³Cranfield Water Science Institute, ⁴Scottish Water, UK