

10.04.2022

Pre-conference workshop for Young Water Professionals Workshop

Decision Analysis Processes to Support Wastewater Management and Reuse

Organised by: Dr. Lisa Scholten (Delft University of Technology), Dr. Tara Saharan (Delft University of Technology), Mr. Anshuman (The Energy and Resources Institute)

DAY I - 11.04.2022

Opening ceremony

Welcome Speech	
Jan Oleszkiewicz	Energy self-sufficient water resource recovery facility in Canadian condition
Aquanet	
Marek Przytułski (Development Director, Business Line Water, Veolia) Tomasz Skonieczny (Business Development Manager, Veolia)	ANITA TM Mox for sidestream treatment. Lessons learned over 10 years of experience.

1. P recovery
Chairman: Mathieu Sperandio (INSA Toulouse)
Co-chairman: Katarzyna Jaszczyszyn (Poznan University of Technology)

Carsten Meye	A Strategic Approach to Sewage Sludge Disposal and Phosphorus Recovery
Isabell Allwicher	Extraction behaviour of phosphorus and other components from sewage sludge ash with variation of process settings
Zaheer Ahmed Shariff	Recovery of phosphorus from dried sewage sludge and subsequent purification using reactive extraction
Lobna Amin	Vivianite Formation Potential Profile in a Full-scale Municipal Wastewater Treatment plant
Marina Maia	Phosphate recovery from urine waste streams to be used as a fertilizer
Jan-Hendrik Ehm	Dealing with the obligation to recover phosphorus in the Ruhr region: A case study

2. Deammonification - anammox
Chairman: Stephanie Klaus (HRSD)
Co-chairman: Małgorzata Komorowska-Kaufman (Poznan University of Technology)

Marjetka Levstek	Operation of the full-scale DEMON process with micro-screen versus hydro-cyclone for anammox-retention
Mojololuwa Ladipo -Obasa	Partial Denitrification-Anammox (PdNA) application in mainstream IFAS configuration using raw fermentate as carbon source.
Rahil Fofana	Robustness and stability of partial denitrification – anammox (PdNA) in deep-bed polishing filters: low temperature and backwashing shear
Weiqiang Zhu	Feasibility of a return-sludge nursery reactor to biostimulate mainstream anammox bacteria
Ivar Zekker	Deammonification Nitrogen Removal and Anodic Biofilms Use in Microbial Fuel Cell Technology
Dominika Grubba	The effect of sulphate on the efficiency of anaerobic ammonia oxidation

3. Process intensification
Chairman: Haydee De Clippeleir (DC Water)
Co-chairman: Agnieszka Szuster-Janiaczyk (Poznan University of Technology)

Christian Remy	Thermal or thermo-alkaline hydrolysis for waste activated sludge? Comparison of pros and cons for a Berlin WWTP
Frances Okoye	Combined Pretreatment of Municipal Sludge with Free Nitrous Acid and Ultrasonication
Antonella Piaggio	Specific Methanogenic Activity of AnMBR sludge subjected to limited aeration: an adaptation process
Laurence Strubbe	Could the treatment capacity of a continuous wastewater treatment plant be increased with aerobic granular sludge?
Thiago Bressani Ribeiro	Influence of mass transfer characteristics on nitrogen removal in sponge-bed trickling filters
Khoa Nam Ngo	Improving clarifier performance and energy efficiency through full-scale high-rate contract stabilization implementation

Workshop

Alternatives for phosphorus recovery
Chairman: Anna Mikola (Aalto University) and Mathieu Sperandio (INSA Toulouse)

DAY II - 12.04.2022

Workshop

Nutrient recovery from decentralized operations
Chairman Frank Rogala (Aqualia)

4. Nutrient recovery
Chairman: Anna Mikola (Aalto University)
Co-chairman: Katarzyna Jaszczyszyn (Poznan University of Technology)

Juho Uzokurt Kaljunen	Optimization of the pilot-scale NPHarvest process in field tests using digester reject water
Katarina Knezevic	Nutrient recovery from fermentation wastewater by electrodialysis and process control optimisation
Estelle M. Goonesekera	Residual phosphorus supply for methanotrophic cultivation and microbial protein production
Perrine Devos	Ionic strength characterization of sidestreams in WRRFs: towards nutrient recovery implementation
Marinus Jan Moerland	(Hyper-)thermophilic anaerobic digestion of concentrated BW for pathogen removal and safe nutrient recovery
Ruben Asiain-Mira	Hydrogen production from urea in decentralised wastewater systems

5. Hybrid activated sludge processes
Chairman: Alessandro di Biase (University of Manitoba)
Co-chairman: Małgorzata Komorowska-Kaufman (Poznan University of Technology)

Giuseppe Guglielmi	Process intensification with Membrane Aerated Biofilm Reactor enables low-SRT nitrification and improves sludge settleability: a long-term experimental study
Josep Manzano	Installation and Start-up of the first MABR drop-in solution in UK in this spot
Karol Trojanowicz	Monitoring of deammonification process in the pilot-scale hybrid reactor (IFAS) by activity tests
Evangelos Stataris	Optimization of a novel one-stage IFAS-SBR unit for thermally pre-treated sludge reject water treatment
Evangelia Themeli	Biological nitrogen removal from landfill leachate with an IFAS-SBR
Zahra Bachari	Influence of carrier surface area and surface area loading rate for aerobic moving bed biofilm reactors treating synthetic beet sugar industry wastewater

6. Modeling, monitoring and control of nutrient removal processes
Chairman: Zhiguo Yuan (University of Queensland)
Co-chairman: Rafał Brodziak (Poznan University of Technology)

MJ Mehrani	Model development for integration of complete ammonia oxidation (comammox) into the two-step nitrification activated sludge systems
Abbas Alloul	Towards a mechanistic model to simulate microbial selection and wastewater treatment of purple bacteria in open raceway ponds
McKenna Farmer	Investigation of nitrogen bioconcentration from mainstream wastewater using culture- and bioinformatics-based approaches
P. Budai	A flexible, ORP-based phenotype activity model for simulating biological phosphorus removal processes
Peter Leonard	Development of real-time control strategies for the optimisation of nitrogen and phosphorus removal in Intermittently Aerated Sequencing Batch Reactor technology
Milan Lánský	Improved nitrogen removal efficiency by implementation of intermittent aeration

7. Recovery of valuable organic products
Chairman: Michele Laurenzi (TU Delft)
Co-chairman: Karolina Mazurkiewicz (Poznan University of Technology)

Santo Fabio Corsino	Enhanced polyhydroxyalkanoate production in membrane bioreactor system from citrus processing wastewater treatment
Abdo BOU SARKIS	Connecting physico-chemical characteristics with gelling properties of alginate like exopolymers recovered from wastewater granular sludge
Anna Duber	Acid whey wastewater valorisation to caproate using reactor microbiome
Elin Ossiansson	Preparing wastewater for resource efficient treatment: pre-filtration combined with carbon source production
Xiang Li	High optically active L-lactate production from co-fermentation of food waste and waste activated sludge: impact of salinity and ammonia
Ana Vázquez-Fernández	Volatile Fatty Acids production by acidogenic fermentation of sucrose in a sequencing-batch reactor under different organic loading rates and C/N ratios

8. Photoprocesses in wastewater treatment
Chairman: Frank Rogala (Aqualia)
Co-chairman: Tomasz Schiller (Poznan University of Technology)

Chul Park	The photogranulation process: potential for aeration-free and net autotrophic wastewater treatment
Lukas M. Trebuch	Photogranules: A game changer in biological wastewater treatment
Safae Sali	The role of nutrients limitation and depletion in carbon removal by purple bacteria from industrial wastewater
Patricia Zamora, Daniel Puyol	Photo-biorefinery concept using Purple Phototrophic Bacteria to produce value-added compounds from wastewater
Zouhayr Arbib, Gabriel Acien	Microalgae-based processes for resource recovery from wastewater
Jeremy Guest	Characterization of an Intensive Microalgal Treatment Process for Phosphorus Recovery from Wastewater

9. Water reuse and emerging contaminants in wastewater
Chairman: Tao Guihe (PUB Singapore)
Co-chairman: Agnieszka Szuster-Janiaczyk (Poznan University of Technology)

Charles Bott	Water reuse practice using granular activated carbon: the SWIFT program
Klara Ramm	Water recovery from waste water treatment plants as part of the local water cycle
J. Jeż-Walkowiak Aleksandra Makala	Variability of organic matter composition in the artificial infiltration intake of a river water
Jakub Zdarta	Multifunctional biocatalytic systems for removal of estrogens from water solutions
Iwona Lasocka-Gomuta	Application of iron-containing sediments derived from drinking water treatment in wastewater treatment plants

DAY III - 13.04.2022

Workshop

Simultaneous Recovery of Energy, organics and Nutrients and generation of valuable products from municipal wastewater.
Chairman: Zbysław Dymaczewski (Poznan University of Technology)

10. Energy recovery
Chairman: Jörg Krampe (TU Wien)
Co-chairman: Tomasz Schiller (Poznan University of Technology)

Alessandro di Biase	Controlling biofilm retention time in an A-stage high rate MBBR reactor for organic carbon redirection
Jiseon You	Nutrient and energy recovery from wastewater using microbial fuel cell and potential use as fertiliser for urban agriculture
Christian Hubert	Biosolids treatment as source for a demand-driven energy generation
Lucie Sanchez	Granular Anaerobic submerged Membrane Bioreactor for energy recovery and domestic wastewater treatment
Andrea Gianico	Co-digesting waste activated sludge with food waste to enhance energy recovery: role of trace elements in process stability
Magdalena Budyń-Górzna	Enhancement of biogas production at a municipal WWTP

11. P removal
Chairman: James Barnard & Danielle Davelaar
Co-chairman: Karolina Mazurkiewicz (Poznan University of Technology)

James Barnard	Conversion of the McAlpine Treatment Plant to Biological Phosphorus Removal
Jeremiah Otieno	Contribution of Denitrifying Polyphosphate Organisms to Enhanced Biological Phosphorus Removal and Greenhouse Gas Emissions
Congcong Zhang	Does the integration of a side-stream sludge fermenter reactor really help EBPR?
Miguel Roldán	Analysis of a full-scale Phosphorus solubilisation and extraction process for its recovery in Murcia-Este WWTP
Dimitris Andreadakis	Evaluating the effect of FNA on denitrifying PAOs
Xavier Foster	Optimisation of hybrid anion exchange nanotechnology (HAIX-Nano) for phosphorus removal: Towards sustainable resin regeneration

12. LCA and Carbon Footprint
Chairman: Ewa Zaborowska (Gdansk University of Technology)
Co-chairman: Paulina Szulc (Poznan University of Technology)

Mathilde Besson	Evaluation of the impact of urbanism on source separation system by life cycle assessment
Juho Uzokurt Kaljunen Sofia Högstrand	NPHarvest pilot tests with digested black water: life cycle assessment for nutrient recovery
Adam Kovalovszki	Analysing the impact of food waste disposal through the sink via life cycle assessment
Mojtaba Maktabifard	Carbon footprint evaluation of wastewater treatment plants - proposing a functional unit
Arne Freyschmidt	Reduction of GHG Emissions for Sludge Water Treatment in Biofilm Systems - A Pilot-Scale Study on N2O Formation and Emission as a Function of Aeration Strategies
Michelle Young	A Thermodynamic Analysis of Intermediary Metabolic Steps and Nitrous Oxide Production in Ammonium-Oxidizing Bacteria

Closing ceremony

Norbert Jardin	Optimizing Nutrient Removal and Energy Efficiency at Large Wastewater Treatment Plants – Practical Experiences from a Plant Operator
Elzbieta Plaza	Mainstream Anammox for wastewater treatment; challenges and perspectives
Clement Roche	Continuous flow densification and aerobic granulation in full-scale facilities: European Experience and Implementations
Closing remarks	