ECO STP2023

6th IWA International Conference on eco-Technologies for Wastewater Treatment

GIRONA, SPAIN
26th – 29th June

	Tuesday 27th June- TECHNICAL SESSIONS		
	Palau de Congressos / Conference Centre		
8:00	Registration open (*Hall 1)*		
	Room 1: Sala Cambra	Room 2: Sala Petita	Room 3: Sala Assaig
	T1. N& P recovery I I (8:45-10:30) *Chairs: Mathieu Sperandio (INSA-Toulouse) & Juan Baeza (Univ. Autonoma of Barcelona)*	**T5. Removal of recalcitrant and emerging pollutants I (8:45-10:30)** *Chairs: Manuela Antonelli (Univ.Politec. Milano) & Sonia Suarez (USC)*	**T8. Digitalization (8:45-10:30)** *Chairs: Rafael Gimenez (CETAQUA) & Paula Carrera (Univ. Ghent)*
8:45-9:00	1.1. Towards a sustainable biorefinery: integrated treatment of the liquid fraction of digestate from the organic fraction of municipal solid waste scale up from laboratory to pilot-scale. Queralt Farras, Eurecat	5.1. Improvement in the pharmaceutical removal from hospital wastewater in a full-scale hybrid PAC-MBR. Marina Gutiérrez, Univ. Ferrara	8.1. Fault-tolerant Control in WRRFs: A Practical Approach Using Case-Based Reasoning for Fault Identification. Sanaz Mohebali. modelEAU - Université Laval
9:00-9:15	1.2. Combined water and nutrient recovery from treated wastewater effluents: a case study from Northern Italy. Matia Mainardis, Univ. of Udine	5.2. Long-term performance of an anaerobic membrane bioreactor amended with graphene oxide treating municipal wastewater. Oriol Casabella, ICRA	8.2. The use of a low-cost monitoring dataset for sewer model calibration. Paul Schütz. Kompetenzzentrum Wasser Berlin
9:15-9:30	1.3. Recovery of ammonia and phosphate resources from wastewater using gas-permeable membranes. Matias Vanotti, USDA	5.3. The Study of a Hybrid System - Moving Bed Biofilm Reactor and Nanofiltration for the Elimination of Micropollutants in Wastewater. Muhammad Mukhlis Eshamuddin, Univ. Toulouse	8.3. Real-time monitoring of adsorption processes in wastewater by innovative spectroscopic sensors: a pilot-scale study. Cecilia Bruni. Univ. Politecnica delle Marche
9:30-9:45	1.4. Ammonia Removal and Recovery From Municipal Wastewater, Ana Soares, Cranfield Univ.	5.4. Presence of Organic Micropollutants and Antibiotic Resistance Genes in an Anaerobic-MBR integrated system (SIAM) treating urban sewage. Matias Rivadulla, Univ. Santiago de Compostela	8.4. Water reuse on the move: decision support for reclaimed water network design solutions. Joaquim Comas. ICRA

9:45-10:00	1.5. NPHarvest efficient nutrient recovery technology for making clean and safe fertilizers. Ana Mikola, Aalto Univ.	5.5. Bioreactors for immobilized fungus: Application to long-term continuous pesticides removal by Trametes versicolor. Montserrat Sarra, Univ. Autonoma de Barcelona	8.5. Energy optimization in water distribution systems: Data mining and quality forecasting approach for reducing pumping costs. David Abert. LEQUIA, UdG.
10:00-10:05	1.6. Applying electrodialysis technology for the concentration of nutrients from an anaerobic membrane reactor effluent: operational problems. Patricia Ruiz Barriga. Univ. Valencia	5.6. Effect of HRT and dissolved oxygen on the fate of pharmaceutical compounds and antibiotic resistance genes in a high-rate activated sludge reactor. Lorena Gonzalez, Univ. Vigo	8.6. Design and Deployment of sewage Monitoring Stations to Mine Information from neighbourhoods. Jordi Raich. s::can Iberia
10:05-10:10	1.7. Pilot Study for Recovery of Phosphate and Ammonia as Struvite from Semiconductor Wastewater. Jhy-Chern Liu. National Taiwan University of Science and Technology.	5.7. Combining Thermophilic Aerobic Reactor (TAR) with Mesophilic Anaerobic digestion (MAD) to improve sludge reduction and pharmaceuticals degradation, Yolaine Bessiere, INSA-Toulouse	8.7. Intelligent control of wastewater treatment plants by agent reinforcement learning. Oscar Emilio Aponte Rengifo, University of Salamanca
10:10-10:15	1.8. Effect of suspended solids content on ammonium recovery from pig slurry liquid fraction by liquid-liquid membrane contactors. Rubén Rodríguez-Alegre, LEITAT	Questions/discussion	8.8. Sustainable technologies and real-time monitoring for treating industrial wastewater: the case study of Solvay chemical plant at Rosignano Marittimo. Marco Parlapiano, Polytechnic University of Ancona
10:15-10:30	Questions/discussion		Questions/discussion
10:30-11:00	Coffee break		

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	T2. N& P recovery II (11:00-13:15) *Chairs: Ana Soares (Cranfield Univ.) & Francesco Fatone (Univ. Polytechnic Marche)*	**T6. Removal of recalcitrant and emerging pollutants II (11:00-13:15)** *Chairs: Paola Verlichi (Univ. Ferrara) & Jelena Radjenovic (ICRA)*	**T9. Modelling (11:00-13:15)** Chairs: Joaquim Comas (ICRA) & Ruben Garcia (Grupo Gimeno)
11:00-11:15	2.1. Optimization of ammonia recovery from urine and digestate using transmembrane chemical absorption. mathieu Sperandio. INSA-TOULOUSE	6.1. Electrochemical degradation of per- and polyfluoroalkyl substances in real waste streams using boron- and borophene-doped graphene sponge electrode. Nick Duinslaeger. ICRA	9.1. A novel methodology for modelling SUDS using SWMM and Giswater: Case study on Montjuic Girona/Spain. Nicole Arnaud, UdG
11:15-11:30	2.2. Recovery of K-rich struvite after biological nitrogen removal. Emma Company Masó, LEQUIA-UdG	6.2. Assessment of PFAS pathways for environmental contamination during landfill leachate treatment. Nicola Lancioni. Marche Polytechnic University	9.2. Elucidating the field of application of 0D and 1D biofilm models integrated with the hydrodynamics of aerobic granular sludge reactors. Arianna Catenacci, Univ. Politecnico de Milano
11:30-11:45	2.3. Phosphorous recovery from waste aerobic granular sludge. Tommaso Lotti. Univ. of Florence	6.3. PFAS in textile wastewater: an integrated approach to reduce the environmental risk for their mixture. Beatrice Cantoni. Politecnico di Milano	9.3. Successful strategies for improving energy self-sufficiency at Grüneck wastewater treatment plant in Germany by improved aeration and food waste co-digestion, Konrad Koch, Tech.Univ.Munich
11:45-12:00	2.4. Recovering vivianite from manure: opportunities and bottlenecks. Sophie Banke. TU Delft	6.4. Integration of electrochemical processes in a landfill leachate treatment system for removal of the recalcitrant organic load. Nabil Mostefaqui. Université Gustave Eiffel.	9.4. Mass-balance-based approach in planning a measurement campaign for energy factory Tilburg. David Ysebaert. U.Gent
12:00-12:15	2.5. Nutrient recovery from source separated human urine as vivianite. Chibambila Simbeye. Univ. of Cape Town	6.5. Effective micropollutant depuration by a novel sustainable approach: coupling solar photo-Fenton with regenerated activated carbon. Paula Núñez-Tafalla. Univ. of Luxembourg	9.5. Development of a hydraulic and biological model for trickling filters. Model-based assessment of the 6.6operational strategy. Kepa Olaciregui Arizmendi, Ceit-BRTA

12:15-12:30	2.6. A Comprehensive Assessment of The Opportunities of Integrating a SSSF Into EBPR Systems in view of P Recovery. Mengqi Cheng. Univ. Autonoma of Barcelona.	6.6. Boosting active sites of municipal sludge-based biochar for Fenton-like degradation toward phenolic contaminants from water. Battuya Byambaa. Water Cycle Research Center	9.6. Model-based assessment of alternative modes of operation in a full-scale industrial wastewater treatment system. Xavier Flores-Alsina, DTU
12:30-12:45	2.7. Nutrient recovery from hydrolysed urine by Na-chabazite adsorption integrated with ammonia stripping and (K-)struvite precipitation. Haotian Wu. Univ. Laval	6.7. Adsorption on activated carbon for PFAS removal: should we act at the source or before the discharge into the environment? Manuela Antonelli. Politecnico di Milano	9.7. Modelling the Metabolism and Population Dynamics of Fermentation-Enhanced EBPR Processes. Rhys Thomson, The Univ. of Queensland
12:45-12:50	2.8. Development and experimental comparison of a precipitation model for struvite using a low-grade magnesium oxide (industrial by-product) as an alternative magnesium source. Beñat Elduayen-Echave. Ceit-BRTA	6.8. Electrochemical removal of antibiotics and multidrug-resistance bacteria using graphene sponge electrodes. Natalia Ormeño. ICRA	9.8. Mathematical modeling of the long-term dynamics of a sulfate-reducing UASB bioreactor from methanogenic to sulfidogenic conditions. Eric Valdés, Univ. Autonoma de Barcelona
12:50-12:55	2.9. BIOFERES: Advanced Recovery of Nutrients from sewage sludge to obtain value-added products for Agriculture: bio-stimulants and liquid fertilizers. Raquel Tamarit Coronado. FACSA	6.9. Emerging contaminants in sludge treatment reed beds: degradation or accumulation? Alba Martinez i Quer. Aarhus University	9.9. Influence of substrate characterization on trace metal dosing to improve biogas yield during anaerobic digestion: a dynamic model-based study. Susan George, Instituto de la Grasa CSIC
12:55-13:00	2.10. Continuous bioelectrochemical nitrogen recovery from high N-loaded wastewaters. Zainab Ul. Univ. Autonoma de Barcelona	6.10. Developing innovative eco-efficient process for Contaminants of Emerging Concern removal in wastewater reuse applications. Beatrice Cantoni. University of Western Ontario	9.10. CFD modelling as an emerging digital tool for the design and optimization of WWTPs: Learnings from two case studies. Hossein Norouzi Firouz, InsPyro
13:00-13:15	Questions/discussion	Questions/discussion	Questions/discussion
	Sala Exposicions / Terrace		

13:15-14:15	Lunch		
	Room 1: Sala Cambra	Room 2: Sala Petita	Room 3: Sala Assaig
	T3. Water Reuse (14:15-16:00) *Chairs: Jordi Raich (S::can Iberia) & Matia Mainardis (University of Udine)*	**T7. Algal systems for WW treatment and RR (14:15-16:00)** Chairs: Ramon Barat (Univ. Polytecnic Valencia) & Rosario Rodero Raya (INRAE-LBE & Univ. Valladolid)	**T10. Membranes (14:15-16:00)** *Chairs: Watsa Khongnakorn (Prince of Songkla Univ.) & Vicky Ruano (Univ. Valencia)*
14:15-14:30	3.1. Wall2Water, the NAWAMED pilot of living wall for greywater treatment and reuse in Mediterranean countries. Anacleto Rizzo. IRIDRA Srl	7.1. Microalgae Biorefinery for Sustainable Recovery of Bioproducts and Bioenergy from Wastewater. Evelyn Ruales Dávila. Univ.Politècnica de Catalunya	10.1. Produced water treatment by membrane aerated biofilm reactors at elevated oxygen partial pressures. Borja Valverde. DTU
14:30-14:45	3.2. Feasibility assessment of reclaimed wastewater reuse in agriculture: how we do it. Luca Penserini. Politecnico di Milano	7.2. The Effect of Light Cycling in the Formation of Algae-Bacteria Aggregated Flocs. Holly Stolberg. The Univ. of Queensland	10.2. Biological Processes Modelling for Integrated MBR Systems: A Review of the State-of-the-Art. Giorgio Mannina. Palermo University.
14:45-15:00	3.3. Fertilizer drawn forward osmosis for greywater treatment and subsequent reuse in hydroponics. Esther Mendoza. ICRA	7.3. Anaerobic and microalgae-based treatments: potential for virus inactivation during secondary treatment of municipal wastewater. Andres Torres-Franco. Univ. of Valladolid	10.3. Modelling the impacts of operational conditions on the performance of a full-scale membrane aerated biofilm reactor. Xavier Flores-Alsina, DTU.
15:00-15:15	3.4. LIFE AMIA. An innovative combination of wastewater technologies to promote water reuse and sustainable treatment. RUBEN GARCIA TIRADO. Grupo Gimeno	7.4. Pilot Scale Wastewater Remediation Using Algae Bacterial Aggregated Flocs (ABAF). Andrew Ward. The Univ. of Queensland	10.4. (short presentation, 15:00-15:05) Granular Anaerobic Membrane Bioreactor for low-energy domestic wastewater treatment. Lucie Sanchez. Univ. de Montpellier
15:15-15:30	3.5. Towards water self-sufficiency: pilot operation of an off-grid water cycle based on rainwater harvesting and low-tech, biological greywater treatment in an	7.5. Comparison of High Rate Algal Pond mesocosm performance using filamentous algae or microalgae. Rupert Craggs. Nat. Inst. Water and Atmospheric Research NZ.	10.5. (short presentation, 15:05-15:10)Low temperature anaerobic membrane bioreactor (AnMBR) demonstrator plant: effects of influent

	inhabited demonstration house in Switzerland. Devi Bühler. Univ. Gent.		characterisation and site operation. Matthew Palmer, Severn Trent
15:30-15:35	3.6. Tertiary wastewater treatment and natural pigment recovery by cyanobacteria: fate of organic microcontaminants. Marta Bellver Catalá. Univ. Politecnica de Catalunya.	7.6. Wastewater grown microalgae as biofertilizer: Contaminants of Emerging Concern, heavy metals and pathogens assessment. Ana Álvarez González. Univ. Politècnica de Catalunya.	10.6. (short presentation, 15:10-15:15)New framework for standardized notation in membrane filtration modelling for resource recovery from municipal wastewater. Valeria Sandoval. Univ. de València
15:35-15:40	3.7. Plant growth potential of hotel greywater reuse in hydroponic system. Josephine Vosse. ICRA	7.7. Effect of veterinary antibiotics and heavy metals in the composition and valorization of a consortium of microalgae and bacteria. Elena M. Rojo. Univ, of Valladolid	10.7. (short presentation, 15:15-15:20) Recycled membranes for treating urban wastewater using gravity-driven force. Bianca Zappulla. LEQUIA-UdG
15:40-15:45	3.8. Integration of forward osmosis into a granular anaerobic membrane bioreactor for low energy and high quality water reuse and energy production: potential and challenges. Pere Olives. LEQUIA-UdG	7.8. Valorisation of microalgae grown in food waste digestate as biofertilizer. Ana Álvarez González. Univ. Politècnica de Catalunya.	Questions/discussion (15:20-15:45)
15:45-16:00	Questions/discussion	Questions/discussion	IWA SG MBR MODELLING (15:45-16:00)
16:00-16:30	Coffee break		

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	T4. WW treament for Water reclamation (16:30-18:15) *Chairs: Wolfgang Gernjak (ICRA) & Javier Marugan (URJC)*	**Workshop I. Sewer Epidemiology (16:30-18:15)** *Chairs: Laura Guerrero Latorre (ICRA) & Jorge Rodriguez (Khalifa University)*	**Workshop II. Urban Hydrosocial Cycle: Why should engineers care? (16:30-18:15)** *Chairs: Alexandra Popartan (LEQUIA-UdG) & Josep Pueyo (ICRA)*
16:30-16:45	4.1. Comparing Efficiency in Solar Water Treatment: Photovoltaic-LED vs. Compound Parabolic Collector Photoreactors. MARIA DOLORES MOLINA RAMIREZ. Univ. Rey Juan Carlos	Zooming in to the neighbourhood level: a year-long wastewater-based epidemiology SARS-CoV-2 monitoring campaign. Ian Zammit. ICRA Development of a method to detect recent human adenovirus F41 variants in wastewater: Is it linked to the new acute hepatitis? Zeynep Cetecioglu, KTH SARS-CoV-2 surveillance in the wastewater of Stockholm and Malmö: the Swedish perspective. Mariel Perez-Zabaleta, KTH Surveillance of SARS-CoV-2 in sewage from buildings housing residents with different vulnerability levels. Anna Pico, ICRA Questions/ Discussion	Assessment of flood vulnerability through a multidimensional index. Ana Noemi Gomez Vaca. Univ. Girona Eco-cultural technologies for rural and Maori community on-site wastewater treatment in New Zealand, Rupert Craggs, Nat. Inst. Water and Atmospheric Research NZ Socio-economic criteria for preventing and controlling phosphorus pollution from municipal wastewater effluents. Edgar Martin Hernandez. Univ. Laval A hydrosocial approach to domestic water users satisfaction through Agent-Based Modelling. Pol Vidal Lamolla. LEQUIA-UdG Roadmap and strategic routes to mitigate micropollutant occurrence in surface water bodies through WWTP upgrade. Morgan Abily. ICRA
16:45-17:00	4.2. Peroxymonosulfate/Solar process for the simultaneous disinfection and decontamination of urban wastewater at pilot plant scale. Ilaria Berruti. CIEMAT-PSA		
17:00-17:15	4.3. Chlorine-free inactivation of E. coli in water with manganese oxide-doped graphene-based electrodes. Anna Segués. ICRA		
17:15-17:30	4.4. LIFE RECYCLO: Recycling wastewater from small and medium sized laundries with advanced oxidation process. Baptiste Mathon. Treewater		
17:30-17:45	4.5. Innovative Dual Membrane System for Integrated Water-energy Recovery from Municipal Wastewater. Conghui He. Tsinghua Univ.		
17:45-17:50	4.6. Application of UV-B and UV-C light-emitting diodes (LEDs) for the removal of		

	diclofenac in drinking water. Cristina Pablos Carro. Univ. Rey Juan Carlos		
17:50-17:55	4.7. Natural based solutions combined with solar processes at pilot scale for urban wastewater reclamation. Alba Hernández Zanoletty. PSA-CIEMAT		Questions/discussion
17:55-18:00	4.8. Assessment of the Integration of a Vermifilter and a Zooplankton-Based Reactor for the Removal of Microcontaminants to Produce Reusable Water. Manuela Hidalgo. Univ. Girona		
18:00-18:15	Questions/discussion		
18:15-18:45	Poster session		
18:45-20:00	Girona City guided tour Meeting point: Main entrance of the Girona Conference Centre (Passeig de la Devesa, 35. Girona)		