ECO STP2023

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

GIRONA, SPAIN
26th – 29th June

	Wednesday 28th June- TECHNICAL SESSIONS		
	Palau de Congressos / Conference Centre		
8:30	Registration open (*Hall 1)*		
	Room 1: Sala Cambra	Room 2: Sala Petita	Room 3: Sala Assaig
	T11. Recovery of added value chemicals (8:45-10:30) *Chairs: Albert Guisasola (UAB) & Tommaso Lotti (Univ. Florence)*	**T14. Aerobic granulation (8:45-10:30)** *Chairs: Liu Ye (UQ) & Damián Amador (FCC-AQUALIA)*	**T17. Nature based solutions (8:45-10:30)** *Chairs: Blanca Antizar (Isle utilities) & Silvia Bolognesi (LEQUIA-UdG)*
8:45-9:00	11.1. An electrochemical strategy by Lithium recovery from waste battery and brine desalination. Alberto Maimone. CETIM Technological	14.1. Unravelling the alpha factor for aerobic granular sludge reactors. Laurence Strubbe. Ghent University	17.1. Framework for a quantification approach of resource streams utilized by nature-based solutions in circular cities. Bernhard Pucher. University of Lisbon
9:00-9:15	11.2. From Waste Streams to Platform Chemicals. Isaac Owusu-Agyeman. KTH-Royal Institute of Technology	14.2. Determining the causes of the deterioration of granules in an aerobic granular sludge continuous flow system. Anuska Mosquera Corral. Univ. Santigao de Compostela	17.2. INTEXT Platforms: Innovative hybrid INTensive EXTensive technologies for wastewater treatment in small communities. Damian Amador Cabezali. AQUALIA-FCC.
9:15-9:30	11.3. High-rate production of carboxylic acids from carbohydrate-rich wastewaters. Ramon Ganigué. Ghent University	14.3. A Pilot-Scale Study on the Impact of Aerobic Granular Sludge on Membrane Filtration Performance. Eirini Tsertou. University of Antwerp	17.3. Green solutions for treating nitrate and micropollutants in groundwater to meet drinking standards: one year overview. Belén Fernández. IRTA.
9:30-9:45	11.4. CO2 bioelectrorecycling to butyric acid and its upgrade to butanol. Meritxell Romans Casas. LEQUIA-UdG	14.4. Combined Aerobic Granular Sludge and Gravity-Driven Membrane System for Energy-Efficient Wastewater Treatment and Reuse. Hari Ananda Rao. KAUST	17.4. Nature-Based Solution (NBS) as a tertiary wastewater treatment to reduce antibiotics into the aquatic ecosystems. Edward Jair Pastor López. CSIC-IDAEA

9:45-10:00	11.5. Innovative cell platforms to transform CO2 into fine chemicals for the pharmaceutical industry. Elisa Huang-Lin. Univ. Valladolid.	14.5. Getting the most out of existing infrastructure: Denmark and Spain put MABR and AGS technology to the test. Nerea Uri Carreno. VCS Denmark	17.5. Organic micropollutant removal from urban waters by MULTISOURCE Enhanced Natural Treatment Solutions. Pedro Carvalho. Aarhus University
10:00-10:05	11.6. Recovery of Cu and Zn from liquid anaerobic digestates via S. pasteurii induced carbonate precipitation: influence of pH and volatile fatty acids on metals precipitation. Ailén Maria Florencia Soto. Spanish National Research Council	14.6. Dynamics of antibiotic-resistant genes in aerobic granular systems in aerobic granular reactors treating real wastewater. David Correa-Galeote. Univ. of Granada	17.6. Assessment of intensified constructed wetlands for the attenuation of PMT compounds from groundwater and wastewater. Alicia Cano López. IDAEA-CSIC
10:05-10:10	11.7. Inhibition limits by undissociated acids in mixed culture fermentation and strategies to increase process capacity. Tomás Allegue. Khalifa University	14.7. Carbon and nitrogen removal from wastewater in a continuous upflow aerobic granular sludge blanket reactor. Anna Lanzetta. University of Naples	17.7. Application of novel filling materials in vertical subsurface flow constructed wetlands to treat the UASB effluent of domestic wastewater. Taxiarchis Seintos. National Technical University of Athens
10:10-10:15	11.8. Thermal hydrolysis pre-treatment has no positive influence on VFA production from sewage sludge. Ander Castro. CETAQUA	14.8. Kinetic characterization of Phosphorus Accumulating Organisms (PAO) and Glycogen Accumulating Organisms (GAO) anaerobic metabolism in Aerobic Granular Sludge (AGS). Jan Pietro Czellnik. University of Florence	17.8. Challenges and implementation of Nature-based solutions in Southern European countries. Ivan Blanco. AQUALIA- FCC
10:15-10:20	Questions/discussion	Questions/discussion	17.9. A decision-support tool for Nature-based Solutions selection and pre-sizing using hybrid models. Sophie Guillaume. INRAE
10:20-10:30			Questions/discussion
10:30-11:00	Coffee break		

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	Room 1: Sala Cambra	Room 2: Sala Petita	Room 3: Sala Assaig
	T12. Recovery of PHA and SCP (11:00-13:15) *Chairs: Maria Reis (UNL) & Zeynep Cetecioglu (KTH)*	**T15. Partial nitritation & anammox (11:00-13:15)** *Chairs: Jesús Colprim (LEQUIA-UdG) & Jan Dries (University of Antwerp)*	**T18. Environmental assessment ((11:00-13:15)** *Chairs: Bernhard Pucher (BOKU) & Mario Ruiz (Aigües de Barcelona)*
			11 :00-11 :05 Presentation 18.8
11:00-11:15	12.1. Volatile fatty acids yield and profile during sludge and food waste co-fermentation at different temperatures. Noemí Pérez i Esteban. University of Barcelona	15.1. Energy-efficient nitrogen removal from sewage: achieving mainstream partial nitritation/anammox via recurrent multi-stressor floc treatments. Michiel Van Tendeloo. University of Antwerp	18.1. Are circular economy strategies environmentally sustainable? Including the end-of-life stage when assessing seafood plastic packaging. Brais Vázquez Vázquez. Univ. de Santiago de Compostela.
11:15-11:30	12.2. Exploring the ammonia presence effect on PHA production of a phototrophic-chemotrophic consortium operated under Light-Feast/Dark-Aerated-Famine. Juliana Almeida. Institute for Health and Bioeconomy and UCIBIO	15.2. Sustainable Mainstream Deammonification by Ion Exchange and Bioregeneration via Partial Nitritation/Anammox. Sheldon Tarre. Technion	18.2. Environmental assessment of bio based Volatile Fatty Acids production from industrial wastewater. Lucía González. CETAQUA
11:30-11:45	12.3. Top-down engineering of natural phototrophic microbiomes into stable and productive consortia for the production of bioplastics. Eva Gonzalez Flo. Universitat Politècnica de Catalunya	15.3. Kinetic and stoichiometric characterization of a new thermophilic anaerobic ammonium oxidation culture. Lin Zeng. Ghent University.	18.3. Minimal liquid discharge desalination circularity and sustainability assessment. João Ribeiro. Brunel University London
11:45-12:00	12.4. Bioconversion of H2 to Single Cell Protein by Purple Bacteria consortia: Influence of environmental conditions on	15.4. Mainstream Aerobic Granular Sludge start-up from HRAS effluent targeting partial nitritation. Oriol Carbó. GS-Inima	18.4. Analysis and comparison of life cycle assessment approaches in mineral and recovered phosphorus fertilizer

	microbial kinetics. Rosario Rodero Raya (INRAE-LBE & Univ. Valladolid)		production. Lori Manoukian. McGill University
12:00-12:15	12.5. The potential of H2S- and CO-tolerant hydrogen-oxidizing bacteria to convert sewage sludge into microbial protein through aerobic syngas fermentation. Vincenzo Pelagalli. Univ. of Cassino and Southern Lazio	15.5. Sensitivity of anammox bacteria under mainstream conditions: combined effect of low temperature and pH with inhibitory concentrations of free ammonia/free nitrous acid. Alba Pedrouso. Univ. de Santiago de Compostela	18.5. End-user Perspective Life Cycle Environmental Impacts of Wastewater-derived Phosphorus Products. Ka Leung Lam. Duke Kunshan University
12:15-12:30	12.6. Integration of heterotrophic microalgae beads bioreactor in microbial electrosynthesis for bioelectro-conversion of carbon dioxide into bio-oil and proteins. Silvia Bolognesi. LEQUIA-UdG	15.6. Nitrogen Removal/Recovery in the mainstream of a WWTP including ultrafiltration after the primary treatment: Partial Nitrification+Anammox vs. Ion Exchange+Hollow fiber membrane contactors. Jesús Godifredo. IIAMA	18.6. How sustainable is the digitalization of treatment stages for micropollutant removal? Jueying Qian. University of Kassel
12:30-12:45	12.7. Co-treatment of urban wastewater and municipal solid waste by mixed phototrophic cultures to generate PHA by varying organic carbon loads. Sandra Chacón. Universidad Rey Juan Carlos de Móstoles.	15.7. Influence of free nitrous acid on nitrifiers to introduce shortcut nitrification in the mainstream of WWTP. Edyta Laskawiec. Silesian University of Technology	18.7. Utilising sustainable value propositions to understand the value creation of circular actions in wastewater systems. David Renfrew, Brunel University London
12:45-12:50	12.8. Maximising the production of composition-specific polyhydroxyalkanoates from volatile fatty acids. Anuska Mosquera. Univ. de Santiago de Compostela	15.8. When its worthwhile to include the nitrite pathway in a WWTP with C/N/P removal? Àlex Gaona. Univ. Autònoma de Barcelona.	18.8. *Life cycle assessment of on-site nature-based wastewater treatment and reuse systems. Natasa Atanasova. University of Ljubljana **(moved at the beginning of the session)**
12:50-12:55	12.9. Resources from wastewater: employment of an advanced strategy for polyhydroxyalkanoates (PHA) synthesis and recovery. Antonio Mineo. Palermo	15.9. A novel wastewater treatment process incorporating acidophilic ammonia oxidation. Min Zheng, The University of Queensland.	18.9. Sustainability assessment at early stages of technology development: phosphorus recovery for fertiliser from

	University & Laura Isern-Cazorla (Universitat Autònoma de Barcelona		dairy wastewater. Marta Behjat. Chalmers University of Technology
12:55-13:00	12.10. Acidogenic fermentation of model carbohydrate/protein mixtures: how does substrate organic composition impact? Ana Vázquez-Fernández. Univ. Autònoma de Barcelona	15.10. Long-term effect of shortcut biological nitrogen removal as energy saving strategy for liquid waste treatment. Laura Palli. GIDA spa	Questions/discussion
13:00-13:15	Questions/discussion	Questions/discussion	
	Sala Exposicions / Terrace		
13:15-14:15	Lunch		
	Room 1: Sala Cambra	Room 2: Sala Petita	Room 3: Sala Assaig
	T13. Energy Recovery (14:15-16:00) *Chairs: Frank Rogalla (AQUALIA-FCC) & Francisca Sousa Braga (DTU & Skanderborg Spildevand A/S)*	**T16. GHG & Microbial community dynamics (14:15-16:00)** Chairs: Adrian Ohemen (UQ) & Evina Katsou (Brunel Univ.)	**T19. Decentralized systems (14:15-16:00)** *Chairs: Pedro Carvalho (DTU) & Laura Rovira (LEQUIA-UdG)*
14:15-14:30	13.1. Energy recovery from wastewater: ammonia and hydrogen production from nitrogen-containing waste streams. Ruben Asiain-Mira. AQUALIA-FCC.	16.1. The long-term full-scale monitoring of GHG from an Australian WWTP demonstrated the upstream carbon capture can stimulate downstream emissions. Liu Ye, The Univ. of Queensland	19.1. Lessons learned from phosphorus chemical precipitation in small wastewater treatment plants. Sophie Besnault. INRAE
14:30-14:45	13.2. Anaerobic microbial electrochemical fluidized membrane bioreactor for domestic wastewater treatment and reuse with energy recovery. Hari Ananda Rao. KAUST	16.2. Real-time monitoring and data-driven management of N2O generation in biological reactors. Laura Flores. CETAQUA	19.2. Nitrate electro-bioremediation as a decentralised water treatment: from the proof-of-concept to the on-site technology validation. Alba Ceballos-Escalera. LEQUIA-UdG

14:45-15:00	13.3. Optimising anaerobic digesters with thermal pre-treatment by understanding sludge composition full-scale and laboratory results on trace elements and enzyme supplementation. Yadira Bajon Fernandez. Cranfield University	16.3. Unraveling the N2O emissions from thermophilic nitrification reactors. Ramon Ganigué. Ghent Univ.	19.3. Innovative decentralized wastewater treatment project for 400 households and local industry, combining water, nutrient and energy recovery. Bart De Gusseme. Ghent University
15:00-15:15	13.4. High-rate Activated Sludge at very short SRT: key factors for process Stability and Performance of COD fractions removal. Joan Canals GSInima- Lequia UdG.	16.4. A laboratory-scale study to mitigate greenhouse gas emissions from open sludge lagoons. Sarah Aucote. Univ. of Queensland.	19.4. The third route: Techno-economic analysis of extreme water and wastewater decentralization. Irene Barnosell. LEQUIA-UdG
15:15-15:30	13.5. An integrated system to produce bio-based volatile fatty acids for the industry and biogas from sewage sludge. Ander Castro. CETAQUA	16.5. Nitrous oxide production for nitrogen valorisation on side stream of an urban waste water treatment plant. Lluc Olmo. Univ. Autònoma de Barcelona.	19.5. Occurrence and fate of Organic Micropollutants and Antibiotic Resistance Genes during Separated Decentralised Treatment of Black Water and Grey Water. Francisco Omil. Univ. Santiago de Compostela
15:30-15:35	13.6. Influence of carbon-coated zero-valent iron-based nanoparticle concentration on continuous photosynthetic biogas upgrading. Edwin Gilbert Hoyos. Univ. de Valladolid	16.6. Low nitrous oxide emissions and its mechanisms in a pilot-scale mainstream Partial Nitritation/Anammox process. Haoran Duan. The Univ. of Queensland.	19.6. Decentralized hybrid wastewater treatment system for water reuse on a campsite at Costa Daurada. Queralt Plana Puig, EURECAT
15:35-15:40	13.7. Enhancing bioelectrochemical hydrogen production from industrial wastewater in a 150 L microbial electrolysis cell pilot plant. Oscar Guerrero. Univ. Autònoma de Barcelona	16.7. Characterization of hydrogenotrophic methanogenic cultures through a novel pressurized headspace-free Hydrogen Uptake Rate methodology. Manuel Fachal. Univ. Autònoma de Barcelona	19.7. Biocarriers-facilitated Gravity-driven Membrane Reactor for Decentralized Wastewater Treatment under Cold Climate. Bing Wu. University of Iceland
15:40-15:45	13.8. Organic loading rate and pH as optimization parameters for biohydrogen production via dark fermentation coupled	16.8. Seasonal microbial community dynamics at Lleida WWTP: filamentous bulking and nitrification	19.8. Freshwater microbial communities as a potential nature-based solution for wastewater tertiary treatment in small

	with microbial electrolysis cells. Jose Antonio Magdalena. LBE-INRAE	deterioration events. Sergi Astals. Univ. de Barcelona.	facilities. Lluis Bertrans Tubau. BETA Tech Center- Univ. Vic
15:45-16:00	Questions/discussion	Questions/discussion	
16:00-16:30	Coffee break		
CLOSING CEREMONY			
Room: Sala Sinfònica			
16:30-17:45	*Chair: Prof. Juan Lema, Univ. Santiago de Compostela* Closing Plenary 1: Prof. Gustav Olson, Lund University (Sweeden): "*Water - key indicator of global warming and basis for energy and food production*" Closing Plenary 2: Prof. Krishna Pagilla, Nevada Water Innovation Institute (USA): "*Drivers and Strategies of Wastewater Reclamation for Potable Reuse*"		
17:45-18:15	Chairs: *Maite Pijuan (ICRA) & Ignasi Rodriguez-Roda (LEQUIA-UdG)* Statement from the Director of the Catalan Water Agency (ACA), Mr. Samuel Reyes Closing remarks, Poster & Platform awards and announcement Next EcoSTP25.		
	Palau de Congressos (Conference Centre) Sala Exposicions		
20:00-01:00	Gala dinner		