11th IWA International Symposium on Waste Management Problems in Agro-Industry
26-28 October 2022, Gdańsk (Poland)

**PROGRAM**

| **26.10.2022 (Wednesday)** | |
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| **Plenary session 1** | |
| **9:30-10:30** | **Chair: Işık Kabdaşlı Co-chair: Aneta Łuczkiewicz** |
| Krishna R. Pagilla (USA) | Pathways for decarbonization in the water sector |
| Jun Zhai (China) | Reduction of methane emission from wetlands: A new insight of manganese-dependent anaerobic methane oxidation |
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| **Technical session 1** | **Resource recovery** |
| **11:00-12:30** | **Chair: Alessandra Carucci Co-chair: Przemysław Kowal** |
| Xiang Li | Recovery of lactic acid and enhanced degradation of glucocorticoids, a potential COVID-19 remedy, from municipal and agricultural organic waste |
| Satoshi Akao | A new process for L-lactate purification: chitosan lactate production , anti-solvent crystallization, and recycling of chitosan |
| Sylwia Oleszek | Efficient separation and extraction of K and Mn from biomass ash |
| Hyojin Cho | A study on the improvement of biogas production in swine manure anaerobic treatment following ammonia enrichment recovery process |
| Tadashi Toyama | Enhanced paramylon production by Euglena gracilis via mixotrophic cultivation using sewage effluent and agro-food industrial wastes |
| Seferhan Yılmaz | PHA production potential of waste vegetable oil-based biodiesel production plants in Turkey |
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| **Technical session 2** | **Circular bioeconomy** |
| **13:30-15:00** | **Chair: Piotr Oleśkowicz-Popiel Co-chair: Dominika Sobotka** |
| Gianluigi Farru | Valorisation and suitable treatment of process waters from hydrothermal carbonization of agro-industrial residues |
| Eric Rovira Cal | MODEL2BIO: New modelling tool for agri-food waste valorisation. Simulation analysis of present and future value chains |
| Toshiki Fukushima | A Basic Study on Sewage Treatment Plants as a Circulation Base in the Watershed towards Carbon Neutral. |
| Katarzyna Sytek-Szmeichel | Experience in valorization of sugar beet pulp via hydrodynamic disintegration |
| R. Tomczak-Wandzel | Fish waste as co-substrate for anaerobic digestion - biogas and digestate fertilizing potentials |
| Imran Ahmad | Prevention, Control, and Mitigation Approach for fat, oil, and grease (FOG) in Restaurant Wastewater: An approach contributing towards Environmental Sustainability |
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| **Technical session 3** | **Water management in agriculture and food industry** |
| **15:30-17:00** | **Chair: Morihiro Maeda Co-chair: Ewa Wojciechowska** |
| Morihiro Maeda | Application of a catch crop at different growth periods to biological soil disinfestation |
| E.Gozde Ozbayram | Environmental friendly management of cyanobacteria blooms in rainwater harvesting ponds used for agricultural irrigation |
| Chihhao Fan | Source-Reduction Approach for Fertilizer Non-Point Source Control in Agricultural Farmland |
| Nicole Nawrot | Remediation of nutrients and potentially toxic elements (Cu, Cd, Pb, As) in agricultural runoff receivers using floating treatment wetlands: microcosm scale study |
| Meryem Bahadiroglu | A sound waste management strategy to reduce the environmental impacts for a restaurant |
| Tran Thi Minh Chau | Abiotic and biotic emissions of CO2 and CH4 from agricultural soil amended with kitchen compost at different temperatures |
| Stephen Nolan | Additive-based reductions in gaseous emissions from stored pig slurry |

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| **27.10.2022 (Thursday)** | |
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| **Plenary session 2** | |
| **9:00-10:30** | **Chair: Taku Fujiwara Co-chair: Ewa Zaborowska** |
| Xiang Li (China) | Recovery of valuable products from food waste fermentation: hydrothermal intensification and mixed microbial consortium regulation |
| Jianhua Guo (Australia) | Applications of novel nitrogen-cycling microorganisms towards carbon neutral wastewater treatment |
| Francisco Jesus Fernandez Morales (Spain) | Integration of fermentative processes and bioelectrochemical systems. Application to agro-industrial effluents |
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| **Technical session 4** | **Intensification of biogas production** |
| **11:00-12:30** | **Chair: Joanna Surmacz-Górska Co-chair: Grzegorz Boczkaj** |
| Nathalie Carlier | Poul-AR: Pre-treatment of poultry manure enabling high yield thermophilic mono-digestion. |
| Taira Hidaka | Effect of oxidation reduction potential on methane emission from anaerobic septic systems |
| Yu-Chen Liu | Potential of low-frequency ultrasound in improving biogas production from dissolved air floatation waste from dairy wastewater |
| M.S. Hellal | Optimising start-up of anaerobic digestion of organic waste using CSTR prior enrichment of biogas through bio-methanation |
| Hubert Byliński | Effect of low-thermal pretreatment of WAS on methane production during anaerobic digestion |
| Ioannis Kontogeorgos | Hydrolysis of Organic Fraction of Municipal Solid Waste (OFMSW) through Low Temperature Disintegration (LTD), preliminary results |
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| **Technical session 5** | **Biological treatment processes** |
| **13:30-15:00** | **Chair: Giorgio Mannina Co-chair: Jakub Drewnowski** |
| Giorgio Mannina | Enhancing MBR operation for water reuse: a pilot plant experiments |
| Youhei Nomura | Nutrient removal from hydroponic effluent by cultivation of macroalga Ulva prolifera |
| Chigozie Ugwu | Treatment of Hydroponic Effluent by Microalga Chromochloris zofingiensis |
| Daisuke Inoue | Influence of sugars, amino acids and organic acids on biomass production of duckweed (Lemna minor) |
| Adam Sochacki | Unsaturated constructed wetlands with manganese oxides as a post-treatment for denitrifying woodchip constructed wetlands - removal of pesticide metabolites and other contaminants |
| Dilsad Soylu | Aerobic biodegradability and nitrification of a mixed organized industrial district wastewater |
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| **Technical session 6** | **Advanced treatment processes** |
| **15:30-17:00** | **Chair: E. Gözde Özbayram Co-chair: Joanna Majtacz** |
| Malgorzata Komorowska-Kaufman | Effect of mid-temperature alkaline pre-treatment on disintegration of waste activated sludge, methane yield and digestate dewatering |
| Grzegorz Boczkaj | Advanced chemical processes based on caviation for wastewater management in agroindustry |
| Zahra Askarniya | Cavitation-assisted technologies for the bioconversion of food wastes into value-added products |
| Vikas Kumar | A novel low-cost microfluidic platform for easy and rapid relative quantification of methanogens in engineered anaerobic digestion systems |
| Özlem Karahan Özgün | Performance of conventional and advanced treatment processes for the removal of endocrine disrupting chemicals (EDCs) in industrial wastewaters |
| Idil Arslan-Alaton | Persulfate-enhanced lanthanum iron oxide-mediated photocatalysis can rapidly degrade hydrolyzed Reactive Black 5 dye |
| Kübra Doğan | Combining photochemical treatability and Life Cycle Assessment studies helps to ease decision making for the removal of iprodione from tap water |

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## POSTERS

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| Shunpei Takahama | Survey of advanced projects for the construction of a resource recovery system that cooperate wastewater treatment with solid waste treatment to produce bioenergy and fertilizer |
| Keugtae Kim | Mainstream partial nitritation using blue wavelength and raw wastewater |
| Kirill Fedorov | Combination of hydrodynamic cavitation with advanced oxidation processes: activation of persulfate and percarbonate |
| Eric Rovira Cal | Selective VFA production from whole and protein-free cheese whey. A biorefinery approach |
| Sylwia Oleszek | Environmental threats from microplastics in the agricultural area: review. |
| Junya Zhang | Virome help the reduction rather than proliferation of antibiotic resistance genes in anaerobic digestion system |
| Thu Huong Nguyen | Enhancement of azo dye anaerobic bio-treatment performance with ferroferric oxide supplement |
| Takahiro Watari | Ferroferric oxide supplement for anaerobic treatment of natural rubber processing wastewater |
| Tsuyoshi Imai | Agronomic benefits of phosphorus fertilizers developed from biochar loaded with layered double hydroxides |
| Junichi Mori | The efficient denitrification from anaerobic digestate |
| Özlem Karahan Özgün | Occurrence of endocrine disruptors in chemical industry wastewaters and their fate in treatment systems |
| Özlem Karahan Özgün | A new open-source software for more sustainable wastewater treatment |
| Ewa Wojciechowska | Floating Treatment Wetlands combined with Microbial Fuel Cells: low-cost systems for pollutants removal coupled with bioelectricity generation |
| Abu Bakar Nur Adlin | Simultaneous N and P removal for aquaria; A new approach towards eliminating water exchange in recirculating aquaria system |
| Işık Kabdaşlı | Model assessment of energy recovery potential from textile wastewater by high-rate membrane activated sludge process-Benchmarking against sewage |
| Shohei Riya | Carbon and nitrogen balances in pyrolysis of solid-state anaerobic digestion residue |
| Toru Miwa | Estimation of gel fouling cause in MBR treating real sewage |
| Minh Ngoc Nguyen, Hiroyuki Arai | Nutrient Loads from a strawberry greenhouse |
| Takehide Hama | Arsenic pollution of irrigation water by a volcanic eruption and its risk mitigation using ICT |
| Guandong Su | Enhanced biobutanol production via co-fermentation of dough and okara waste |
| Doga Binay | A user-friendly software tool for performing dynamic simulations of constructed wetlands |
| Bogna Śniatała | Integrated macronutrient recovery from anaerobic digester liquors |
| Fatos Germirli Babuna | Environmental impacts of a pilot scale facility producing volatile fatty acids from waste |
| S. Tarkian Eivaraghi | Toxicity assessment of domestic effluents for reuse in irrigation |

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| FJ Fernandez Morales | Sustainable energy valorization of winery wastewaters. |
| P.M. Bosco Mofatto | Sewage sludge reduction by using an OSA-MBR pilot plant |
| A. Mineo | Polyhydroxyalkanoates production from waste water: optimizing the enrichment, accumulation and extraction steps |
| Encarnación Díaz Domínguez | Effect of pretreatment with ozone in a biorefinery scenario for the production of volatile fatty acids |
| Dominika Poproch | Possibility of using sludge from drinking water treatment processes |
| Filip Brodowski | Lactate-based carboxylate platform: evaluation of the influence of feedstock composition on production efficiency |
| Aleksandra Gęsicka | Selection of mixed methanotrophic cultures with high potential for the production of PHB from biogas |
| Xia Gu | Bacteria Inactivation and Biofilm Disruption through Indigenous Prophage Activation Using Low-Intensity Cold Atmospheric Plasma |
| Shuanglan Cheng | Elucidating the microbial ecological mechanisms on the electro-fermentation of caproate production from acetate via ethanol-driven chain elongation |
| Xianbao Xu | Overcoming carboxylic acid inhibition by granular consortia in high-load food waste fermentation for efficient lactate accumulation |
| A.B. Mpofu | Anaerobic co-digestion of tannery effluents: Process optimisation for resource recovery, recycling and reuse in a biocircular economy |
| Aleksander Czapla | Application of composite materials as an sustainable solution for management problems in water supply and sewage disposal systems |
| M.S. Shourjeh | Modelling of N2O emission in SBRs under various DO set points towards novel shortcut nitrogen-cycling processes for minimizing GHG in WWTPs |
| Ishita Sarkar | Enhancing agricultural productivity of chickpeas using low-grade rock phosphate enriched human urine |
| Spyros Kyritsis | Decision support system for wastewater and biosolids reuse in agriculture applications |