

**Bruges Meeting & Convention Centre, Belgium** 

# 10<sup>th</sup> International Symposium on Wetland Pollutant Dynamics and Control

10 – 14 September 2023, Bruges, Belgium

#### **FINAL PROGRAM**











#### Platinum sponsors













## Gold sponsors







|            |  |   |  |  | BMCC Entrance Hall   | CATERING ROOM (4th FLOOF     |
|------------|--|---|--|--|--|------------------------------|
|            | 17:00 - 19:00  |   |  |  | Registration   | Welcome reception            |
|            |  |   |  |  |  |                              |
| ay 11 Sept |  | AUDITORIUM A (1st FLOOR)  | AUDITORIUM B (1st FLOOR)   | ROOMS 1+2 (3rd FLOOR)  | ROOMS 4+5 (3rd FLOOR)  | CATERING ROOM (4th FLOOF     |
|            | 08:00 - 09:00  |   |  |  |  | Registration & Welcome Coffe |
|            |  |   |  |  |  |                              |
|            | 09:00 - 09:10  | Plenary session I (Chairs: Diederik Rousseau & Gijs Du<br>CONFERENCE OPENING AND WELCOME      | ı Laing)   |  |  |                              |
|            | 03.00 03.10  | WETPOL OC   |  |  |  |                              |
|            | 09:10 - 09:20  | WELCOME TO BRUGES   |  |  |  |                              |
|            | 20.20.00.40  | Dirk De fauw (Mayor of Bruges)  |  |  |  |                              |
|            | 09:20 - 09:40  | WATER RELATED CHALLENGES IN FLANDERS  Tom De Vits (Cabinet of the Flemish Minister of Environ | nmont)   |  |  |                              |
|            | 09:40 - 10:05  |   | CHANGING FRAMEWORK – PERSPECTIVES FROM AQUAFIN,  |  |  |                              |
|            | 03.10 10.03  | THE REGIONAL WASTEWATER TREATMENT COMPANY   |  |  |  |                              |
|            |  | Birgit De Bock, Aquafin, Belgium  |  |  |  |                              |
|            | 10:05 - 10:30  | KEYNOTE: INTERREG AQUATUUR PROJECT: ENHANCIN  |  |  |  |                              |
|            |  | AVAILABILITY WITH NATURE-BASED GREEN-BLUE SOLU  | THONS IN THE SCHELDT MOUTH REGION  |  |  |                              |
|            |  | Simon De Paepe, Vlakwa, Belgium   |  |  |  |                              |
|            | 10:30 - 11:00  |   |  |  |  | Coffee & posters             |
|            |  |   |  |  |  |                              |
|            |  | Plenary session II (Chair: Emma McAteer)  |  |  |  |                              |
|            | 11:00 - 11:40  | KEYNOTE: THE IMPACT OF HIGH RELATIVE SEA LEVEL R  |  |  |  |                              |
|            |  | WETLANDS: "A HARBINGER OF CHANGE FOR THE WOR  | RLU'S STABLE COASTLINES"   |  |  |                              |
|            |  | John R. White, USA  |  |  |  |                              |
|            | 11.40 - 12.20  | KENNUTE: LISING WETLANDS TO MITIGATE NON-DOIN   | T SOLIDCE DOLLLITION   |  |  |                              |
|            | 11:40 - 12:20  | KEYNOTE: USING WETLANDS TO MITIGATE NON-POINT   | T SOURCE POLLUTION   |  |  |                              |
|            | 11:40 - 12:20  | KEYNOTE: USING WETLANDS TO MITIGATE NON-POIN<br>Karin Tonderski, Sweden                       | T SOURCE POLLUTION   |  |  |                              |
|            | 11:40 - 12:20<br>12:20 - 13:50                                   |   | T SOURCE POLLUTION   |  |  | Lunch & posters              |
|            |  |   | T SOURCE POLLUTION  HCH and PFAS removal (Chair: Pascal Molle)   | Microplastics I (Chair: Carmen Hernandez-Crespo)   | CSO treatment (Chair: Margit Kõiv-Vainik)  | Lunch & posters              |
|            | 12:20 - 13:50  |   | HCH and PFAS removal (Chair: Pascal Molle)   |  | , , ,  | Lunch & posters              |
|            |  |   |  | Microplastics I (Chair: Carmen Hernandez-Crespo) IMPACT OF MICROPLASTICS IN URBAN CONSTRUCTED WETLANDS   | NEW GERMAN CODE OF PRACTICE ON SPECIAL   | Lunch & posters              |
|            | 12:20 - 13:50  |   | HCH and PFAS removal (Chair: Pascal Molle) WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH-  | IMPACT OF MICROPLASTICS IN URBAN CONSTRUCTED   | , , ,  | Lunch & posters              |
|            | 12:20 - 13:50<br>13:50 - 14:10                                   | Karin Tonderski, Sweden   | HCH and PFAS removal (Chair: Pascal Molle) WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH- CONTAMINATED WATER Miroslav Cernik, Czech Republic   | IMPACT OF MICROPLASTICS IN URBAN CONSTRUCTED WETLANDS  Tanveer Adyel, Australia  | NEW GERMAN CODE OF PRACTICE ON SPECIAL APPLICATIONS OF TREATMENT WETLANDS FOR CSO AND STORMWATER Katharina Tondera, Germany  | Lunch & posters              |
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| Monday 11 Sept |               | AUDITORIUM A (1st FLOOR)                        | AUDITORIUM B (1st FLOOR)  | ROOMS 1+2 (3rd FLOOR)  | ROOMS 4+5 (3rd FLOOR)   | CATERING ROOM (4th FLOOR) |
|----------------|---------------|---|---|--|---|---------------------------|
|                | 15:40 - 16:00 |   | Vertical flow wetlands I (Chair: Hana Brunhoferova) RED CERAMIC, AUTOCLAVED AERATED CONCRETE AND CHEMICALLY ACTIVATED AERATED CONCRETE AS NOVE MATERIALS FOR VERTICAL SUB-SUPERFICIAL |  | Microbial ecology (Chair: Otto Stein) GREY WATER AN ISSUE IN URBAN SLUMS – MICROBIAL COMMUNITY  |                           |
|                | 16:00 - 16:20 | Interreg project Aquatuur<br>start meeting      | CONSTRUCTED WETLANDS TREATING SYNTHETIC EFFLUENT Karina De Carvalho, Brazil INTEGRATING CIRCULAR ECONOMY AND BIODIVERSITY IN UPGRADING CONSTRUCTED WETLANDS (LIFE RENATURWAT)         | Jannis Wenk, UK MICROPLASTICS OCCURRENCE, CHARACTERIZATION, AND REMOVAL IN FULL-SCALE COMBINED SEWER OVERFLOW-CONSTRUCTED WETLAND SYSTEMS UPSTREAM CENTRALIZED WASTEWATER TREATMENT PLANTS | Uwe Kappelmeyer, Germany NOVEL LIGHTWEIGHT SUBSTRATE IN CONSTRUCTED WETLAND FOR DOMESTIC WASTEWATER TREATMENT: PREPARATION, PERFORMANCE AND MICROORGANISM COMMUNITY |                           |
|                | 16:20 - 16:40 | Interreg Vlanderen-Nederland Vanderen-Nederland | Carmen Hernandez Crespo & Núria Oliver, Spain PERFORMANCE EVALUATION OF OPERATIONAL CHANGES IN MODIFIED VERTICAL FLOW TREATMENT WETLANDS WITH ORNAMENTAL PLANTS UNDER ARID CONDITIONS | Chiara Sarti, Italy DO MICROPLASTICS IMPACT THE TREATMENT EFFICIENCY OF POLLUTANTS IN CONSTRUCTED WETLANDS?  | Ting Wei, China<br>MICROBIAL COMMUNITY DYNAMICS IN A COLD<br>CLIMATE TREATMENT WETLAND  |                           |
|                | 16:40 - 17:00 | Aquatuur  | Ismael Vera-Puerto, Chile DECENTRALISED WASTEWATER TREATMENT AND WATER REUSE FOR REGIONS WITH SEASONAL DROUGHT STRESS Jan Schütz, Germany   | Saurabh Dwivedi, India   | Stephanie Ayotte, USA   |                           |
|                | 17:00 - 18:30 |   |   |  |   | Posters & drinks          |

| esday 12 Sept |            | ROOMS 1+2 (3rd FLOOR)   | ROOMS 4+5 (3rd FLOOR)   | ROOM 6 (3rd FLOOR)  | ROOM 12 (3rd FLOOR)   | CATERING ROOM (4th FLOOR) |
|---------------|------------|---|---|---|---|---------------------------|
| 08:3          | 30 - 09:00 |   |   |   |   | Registration & Coffee     |
|               |            | Antibiotics removal & antimicrobial resistance (Chair: Pedro Carvalho)  | Intensification (Chair: Dion van Oirschot)  | Non-point source pollution I (Chair: Marco Hartl)   | Resource recovery & pathogen removal (Chair: Gabriela Dotro)  |                           |
| 09:0          | 00 - 09:20 | THE UK'S EFFORTS TO UNDERSTAND AND TACKLE ANTIMICROBIAL RESISTANCE (AMR): THE ROLE OF NATURE-BASED SOLUTIONS                                | NITRIFICATION AND DENITRIFICATION IN TAYA, A FILL AND DRAIN CONSTRUCTED WETLAND   | FAVOURABILITY MAPS FOR PLANNING NATURE-BASED SOLUTIONS FOR AGRICULTURAL WATER MANAGEMENT IN EUROPE  | WETLAND-DERIVED SLUDGE AS BIOFERTILIZER   |                           |
| 09:2          | 20 - 09:40 | Tao Lyu, UK ANTIBIOTICS AND MICROBIAL COMMUNITY DINAMYCS IN ESTUARINE ECOSYSTEMS AND WETLANDS (SALTMARSHES) ROLE IN POLLUTANTS REMOVAL      | Keren Aizenberg, Israel<br>RHIZOSPH'AIR – A SINGLE STAGE "FRENCH"<br>TREATMENT WETLANDS FOR NITROGEN REMOVAL. 2-<br>YEARS MONITORING OF INDUSTRIAL-SCALE PILOTS   | Fabio Masi, Italy USING SMALL RIPARIAN WETLANDS FOR SURFACE WATER PURIFICATION: EFFECT ON WATER NUTRIENT CONCENTRATION AND BIOFILM FUNCTION     | Ana Cano, Spain APPLICATION OF CONSTRUCTED WETLAND-DERIVED COMPOST: ASSESSMENT OF THE CIRCULARITY POTENTIAL   |                           |
| 09:4          | 40 - 10:00 | Marisa Almeida, Portugal<br>REMOVAL OF ENROFLOXACIN USING EICHHORNIA<br>CRASSIPES IN WETLANDS AT MICROCOSM SCALE                            | Alain Petitjean, France PRACTICAL EXAMPLES OF AERATED TREATMENT WETLANDS IN THE CZECH REPUBLIC  | Anne-Kirstine Dybdahl, Denmark ADDRESSING NUTRIENT REMOVAL FROM AGRICULTURAL RUNOFF AND SUBSURFACE DRAINAGE USTRIA AUSTRIA                      | Francesco Chioggia, Italy EFFECT OF GRANULOMETRY AND LOADING RATE IN VERTICAL SAND BED FILTER FOR PATHOGEN REMOVAL OF MUNICIPAL WASTEWATER  |                           |
| 10:0          | 00 - 10:20 | Maria Maine, Argentina A REVIEW ON ANTIBIOTICS REMOVAL: COMBINING GREY PROCESSES WITH GREEN PROCESS/CONSTRUCTED WETLAND Peiying Kang, China | VIT ROUS, CZECH REPUBLIC INTEXT PLATFORM: INNOVATIVE HYBRID INTENSIVE — EXTENSIVE TECHNOLOGIES FOR WASTEWATER TREATMENT IN SMALL COMMUNITIES. Rubén Hervas, Spain | Eriona Canga, Austria ARE RIPARIAN BUFFER STRIPS EFFECTIVE FOR NUTRIENT RETENTION UNDER COLD FROZEN CONDITIONS?  Mathieu Kumwimba, China        | Mayang Perdana, Czech Republic NUTRIENTS RECOVERY AND PATHOGEN REMOVAL FOR WASTEWATER REUSE COMBINING MICROALGAE AND CONSTRUCTED WETLAND SYSTEMS Enrique Lara, Spain                      |                           |
| 10:2          | 20 - 10:40 | reiyiig kang, Cimia   | HYBRID CONSTRUCTED WETLANDS FOR THE TREATMENT OF FLORICULTURE DRAINAGE WATER Flor Louage, Belgium   | IMPROVING THE RISK ASSESSMENT OF PHOSPHORUS LOSS FROM REWETTED RIPARIAN WETLANDS IN DENMARK Dominik Zak, Denmark                                | ELECTROCHEMICAL DISINFECTION SYSTEMS FOR WATER RECLAMATION FROM CONSTRUCTED WETLAND EFFLUENTS Suanny Mosquera-Romero, Ecuador   |                           |
| 10:4          | 40 - 11:10 |   |   |   |   | Coffee & Posters          |
|               |            | Antibiotics & pharmaceuticals removal (Chair: Huma Ilyas)   | Biochar (Chair: Asheesh Yadav)  | Non-point source pollution II (Chair: Birgit De Bock)   | Other wetland applications (Chair: Fabio Masi)  |                           |
| 11:1          | 10 - 11:30 | NATURE-BASED SOLUTIONS TO REDUCE ANTIBIOTICS<br>AND ANTIMICROBIAL RESISTANCE IN AQUATIC<br>ECOSYSTEMS                                       | BIOCHAR FROM RECOVERED CELLULOSE AS NEW<br>SUBSTRATE FOR MICROPOLLUTANT REMOVAL IN A<br>CIRCULAR ECONOMY PRESPECTIVE  | VERTECO® RAFT — LAB-SCALE AND PROTOTYPE TESTING<br>AND DEVELOPMENT OF A FLOATING WETLAND SYSTEM<br>TO MITIGATE EUTROPHICATION IN THE BALTIC SEA |   |                           |
| 11:3          | 30 - 11:50 | Victor Matamoros, Spain INNOVATIVE HYBRID INTENSIVE – EXTENSIVE RESOURCE RECOVERY FROM WASTEWATER IN SMALL COMMUNITIES                      | CONSTRUCTED WETLANDS  | WETLAND DESIGN FOR CLEANING OF THE WATER CHANNELS OF HO CHI MINH CITY   | Alexandros Stefanakis, Greece ASSESSMENT OF BASIC PROCESSES AND BACTERIAL COMMUNITY IN REED BED SYSTEMS FOR BEACH WRACK TREATMENT   |                           |
| 11:5          | 50 - 12:10 | Cristina Ávila, Spain TREATMENT WETLANDS FOR CONTROLLING WASTEWATER-BORN ANTIBIOTIC EMISSIONS   | Hafiz Khan, Belgium<br>IMMOBILIZATION OF CHROMIUM ENHANCED BY<br>ARBUSCULAR MYCORRHIZAL FUNGI IN SEMI-AQUATIC<br>HABITATS WITH BIOCHAR ADDITION                   | Piet Lens, Ireland EAST FORK WETLAND: LESSONS LEARNED FROM 14 YEARS OPERATION OF A 745-HA TREATMENT MARSH                                       | Alicja Kupczyk, Poland ASSESSMENT OF WATER BALANCES IN RE-DESIGNED ZERO DISCHARGE WILLOW EVAPOTRANSPIRATION SYSTEMS FOR TREATING DOMESTIC WASTEWATER IN AREAS WITH LOW PERMEABILITY SOILS |                           |
| 12:1          | 10 - 12:30 | Pedro Carvalho, Denmark   | Zhongbing Chen, Czech Republic REMOVAL MECHANISMS OF PERSISTENT ORGANIC POLLUTANTS BY BIOCHAR AND ITS POTENTIAL APPLICATION IN CONSTRUCTED WETLANDS               | Tim Noack, USA CONSTRUCTED WETLANDS FOR THE REMEDIATION OF CYANOTOXINS: A STORY OF BACTERIA, FUNGI AND TRANSFORMATION PRODUCTS                  | Laurence Gill , Ireland FIRST EXPERIENCES WITH NATURAL TREATMENT BASED ON WILLOWS FOR CONCENTRATE OF REVERSE OSMOSIS  |                           |
| 12:3          | 30 - 13:40 |   | Jingyu Wang, Denmark  | Alba Martinez, Denmark  | Thomas Rogier, Belgium  | Lunch & posters           |

| Tuesday 12 Sept |               | ROOMS 1+2 (3rd FLOOR)  | ROOMS 4+5 (3rd FLOOR)  | ROOM 6 (3rd FLOOR)  | ROOM 12 (3rd FLOOR)  | CATERING ROOM (4th FLOOR) |
|-----------------|---------------|--|--|---|--|---------------------------|
|                 |               | Natural wetlands, restoration & maintenance (Chair: Suzanne Lettens)   | Post-treatment (Chair: Flor Louage)  | Non-point source pollution III (Chair: Karin Tonderski)   | Vertical flow wetlands II (Chair: Magda Gajewska)  |                           |
|                 | 13:40 - 14:00 | TIDAL MARSH RESTORATION ON SAPELO ISLAND: A<br>LEGACY OF R.J. REYNOLDS, JR., EUGENE ODUM AND THE<br>UNIVERSITY OF GEORGIA MARINE INSTITUTE   | TREATMENT PLANT EFFLUENTS  | WETLANDS FED BY AGRICULTURAL RUNOFF AND DRAINAGE  | INFLUENCE OF MEDIA SIZE AND PLANT SPECIES ON NITRIFICATION IN UNSATURATED VERTICAL FLOW WETLANDS   |                           |
|                 | 14:00 - 14:20 | Christopher Craft, USA TRACKING COASTAL WETLAND AREA CHANGE INTEGRATING REMOTE SENSING WITH FIELD-BASED MEASUREMENTS   | Giuseppe Mancuso, Italy NATURE-BASED HYBRID SOLUTIONS TO REMOVE NITROGEN FROM MUNICIPAL WASTEWATER IN ARCTIC REGIONS   | Jan Vymazal, Czech Republic A SATURATED BUFFER ZONE AS COST-EFFECTIVE NATURE-BASED SOLUTION TO MITIGATE THE AGRICULTURAL NUTRIENT POLLUTION OF STREAMS IN DENMARK                           | Christopher Allen, USA THE USE OF VERTICAL FLOW CONSTRUCTED WETLANDS TO PHOSPHORUS AND NITROGEN REMOVAL FROM DOMESTIC WASTEWATER   |                           |
|                 | 14:20 - 14:40 | John White, USA ENVIRONMENTAL CONDITIONS MEDIATING DECOMPOSITION AND NUTRIENT RELEASE IN FORESTED PEATLANDS  | Heini Postila, Finland CONSTRUCTED WETLANDS TO REDUCE FIRST FLUSH AMMONIUM PEAKS IN WASTEWATER TREATMENT PLANT EFFLUENT: AN EXPLORATORY STUDY                          | Dominik Zak, Denmark ENHANCED DENITRIFICATION IN A CONSTRUCTED WETLAND BY RESHAPING SEDIMENT / WATER COLUMN INTERFACE: CHALLENGES WITH UPSCALING  | Adelaide Almeida, Portugal  PARTIAL SIPHON OPERATIONAL STRATEGY  STRENGTHENS THE NITROGEN REMOVAL  PERFORMANCE THROUGH INTENSIFIED OXYGEN  SUPPLY AND CARBON UTILIZATION ABILITY IN  PARTIALLY SATURATED VERTICAL FLOW WETLAND |                           |
|                 | 14:40 - 15:00 | Lipe Mendes, Ireland MAINTENANCE OF OXIDATION PONDS FOR WASTEWATER TREATMENT IN KENYA - CAN IT BE MADE EASIER BY USE OF AMPHIBIAN TRACTORS?  | Joost van den Bulk, The Netherlands<br>THE ROLE OF TREATMENT WETLANDS IN POTABLE<br>WATER REUSE  | Julien Tournebize, France ASSESSMENT OF NUTRIENT ACCUMULATION AND TRANSLOCATION IN PLANT BIOMASS IN A MATURE FREE-WATER SURFACE TREATMENT WETLAND MITIGATING DIFFUSE AGRICULTURAL POLLUTION | Shangwu Zuo, China<br>ADAPTING VERTICAL-FLOW CONSTRUCTED WETLANDS<br>FOR ON-DEMAND NUTRIENT REMOVAL FROM<br>GREYWATER  |                           |
|                 | 15:00 - 15:20 | Ruud Kampf, The Netherlands  | Rafael Vazquez-Burney, USA REMOVAL OF NITROGEN AND EMERGENT POLLUTANTS FROM MUNICIPAL WASTEWATER WITH WOODCHIP BIOREACTORS  Matthew Hopkins, Finland                   | Margit Koiv-Vainik, Estonia HYDROGEN AND OXYGEN ISOTOPES ALONG THE HYDRAULIC FLOW GRADIENTS AND PLANT-BED/DITCH SYSTEM IN FOUR CONSTRUCTED ROOT CHANNEL WETLANDS Weidong Wang, China        | Carlo Morandi, Germany OPTIMIZING DENITRIFICATION IN A COLD WEATHER TWO-STAGE VERTICAL FLOW TREATMENT WETLAND USING OPERATIONAL CONTROLS Otto Stein, USA   |                           |
|                 | 15:20 - 15:50 |  |  |   |  | Coffee & Posters          |
|                 | 15:50 - 16:10 | PPCP removal (Chair: Maria Alejandra Maine) CONSTRUCTED WETLANDS FOR REMOVAL OF MICROPOLLUTANTS FROM WASTEWATER TREATMENT PLANT EFFLUENT: AN EXPLORATORY STUDY   | Modelling (Chair: Nicolas Forquet) AUTOMATICALLY OPTIMIZING THE SIZING OF A WASTEWATER TREATMENT WETLAND CHAIN: CASE STUDY OF THE FRENCH SYSTEM                        | Bio-electrochemical systems (Chair: Carlos Arias) BOOSTING ELECTRIC VOLTAGE AND POWERING AN UV LAMP FOR EFFLUENT DISINFECTION IN A ELECTRO- WETLAND SYSTEM                                  | Vertical flow wetlands III (Chair: Jan Vymazal) MODIFIED PLASTERBOARD SHEET WASTE FROM THE CIVIL CONSTRUCTION INDUSTRY AS SUBSTRATE IN VERTICAL-FLOW CONSTRUCTED WETLAND   |                           |
|                 | 16:10 - 16:30 | Joost van den Bulk, The Netherlands ASSESSING AND MONITORING WETLAND EFFICIENCY WITH MINIATURISED BIOASSAYS- DOES THE SORPTION OF LIPOPHILIC SUBSTANCES TO PLASTIC MICROTITER PLATES CONFOUND RESULTS? | Zoé Legai, France USING NUMERICAL EXPERIMENTS TO DETERMINE THE INFLUENCE OF DESIGN PARAMETERS ON THE PERFORMANCE OF VERTICAL FLOW WETLANDS                             | Yaqian Zhao, China<br>EVALUATING THE IMPACT OF SEASONAL CHANGES IN<br>TEMPERATURE ON SECONDARY METLAND TREATMENT<br>PERFORMANCE   | Karina De Carvalho, Brazil<br>FUNCTIONS OF THE SUCCESSIVE STAGES OF VERTICAL<br>FLOW TREATMENT WETLANDS BASED ON BIOTIC AND<br>ABIOTIC SOLID/LIQUID INTERACTIONS   |                           |
|                 | 16:30 - 16:50 | Eberhard Küster, Germany ORGANIC MICROPOLLUTANTS ON MULTISOURCE PILOTS: RESULTS FROM A NON-TARGET SCREENING ANALYSIS   | Bernhard Pucher, Austria<br>HYDRAULIC CHARACTERIZATION IN A HYBRID AERATED<br>VERTICAL FLOW-HORIZONTAL FLOW TREATMENT<br>WETLAND                                       | Gabriela Dotro, UK MICROBIAL ELECTROCHEMICAL TECHNOLOGY CONSTRUCTED WETLAND FOR MUNICIPAL WASTEWATER TREATMENT  | Mathieu Gautier, France FULL SCALE CONSTRUCTED WETLAND WITH NOVEL POST-TREATMENT STEP AND CONTINUOUS MONITORING, AS ALTERNATIVE FOR SEWERAGE IN RURAL FLANDERS   |                           |
|                 | 16:50 - 17:10 | Vaidotas Kisielius, Denmark DEGRADATION AND TRANSFORMATION OF E2-3S IN HORIZONTAL FLOW CONSTRUCTED WETLAND   | Caroline Miyazaki, France MODELLING OF ARSENIC REMOVAL, FATE AND DISTRIBUTION IN SUBSURFACE FLOW CONSTRUCTED WETLANDS: PRELIMINARY RESULTS USING A PROCESS- BASED TOOL | Elisangela Heiderscheidt, Finland A DECADE OF ELECTROACTIVE CONSTRUCTED WETLANDS- ACHIEVEMENTS AND THE WAY FORWARD  | Jente Lezy, Belgium 5 YEARS OF PERFORMANCE OF A NOVEL DESIGN INVOLVING VERTICAL AND HORIZONTAL FLOW CONSTRUCTED WETLANDS FOR SEWAGE TREATMENT IN INDIA   |                           |
|                 |               | Ting Wei, China  | Diego Bravo-Riquelme, Chile  | Asheesh Yadav, India  | Nadeem Khalil, India   |                           |
|                 | 17:15 - 18:15 | YWP event<br>Nadine Sossalla, Norway & Marco Hartl, Austria  |  |   |  |                           |
|                 | 19:00         |  | Conference dinner @ Brewery De Halv  | e Maan (Address: Walplein 26, Bruges)   |  |                           |

|   | AUDITORIUM A (1st FLOOR)   | AUDITORIUM B (1st FLOOR)   | ROOMS 1+2 (3rd FLOOR)   | ROOMS 4+5 (3rd FLOOR)   | CATERING ROOM (4th FLO |
|---|--|--|---|---|------------------------|
| 08:30 - 09:00                                   |  |  |   |   | Registration & Coffee  |
|   | SUDS I (Chair: Mireille Martens)   | Green roofs & walls & greywater treatment (Chair: Tamara Avellan)  | Micropollutants removal (Chair: Jaime Nivala)   | Special wastewaters (Chair: Yaqian Zhao)  |                        |
| 09:00 - 09:20                                   | MULTISTAGE CONSTRUCTED WETLAND FOR WATER PROTECTION AGAINST URBAN DRAINAGE POLLUTION   | GUIDELINES FOR DESIGNING GREEN ROOFS AND GREEN WALLS FOR GREYWATER TREATMENT AND REUSE   | PERFORMANCE OF ARTIFICIAL WETLAND TO REDUCE<br>PESTICIDE FLOWS: A REVIEW OF 10 YEARS OF<br>MONITORING COUPLING MESOCOSM AND FIELD<br>RESULTS.   | SET-UP AND PERFORMANCE OF A CONSTRUCTED WETLAND SYSTEM TO IMPROVE LANDFILL LEACHATE MANAGEMENT CONTAINING PFAAS IN A CONVENTIONAL WASTEWATER TREATMENT PLANT  |                        |
|   | Magdalena Gajewska, Poland   | Fabio Masi, Italy  | Julien Tournebize, France   | Nicola Celadon, Italy   |                        |
| 09:20 - 09:40                                   | WHERE TREATMENT WETLAND KNOWLEDGE MEETS<br>SUSTAINABLE DRAINAGE SYSTEM ? AN OVERVIEW ON<br>DESIGN LINKS AND FUTURE RESEARCH TRENDS   | VERTICAL GREENING SYSTEMS AS MULTIFUNCTIONAL SYSTEMS FOR URBAN WATER TREATMENT REUSE AND CIRCULARITY   | PERFORMANCE OF CONSTRUCTED WETLANDS FOR THE REMOVAL OF PERSONAL CARE PRODUCTS   | IMPLEMENTATION OF LANDFILL LEACHATE TREATMENT WITH NATURE-BASED SOLUTIONS: LIFE GREEN ADAPT PROJECT   |                        |
|   | Anacleto Rizzo, Italy  | Bernhard Pucher, Austria   | Huma Ilyas, Belgium   | Luz Herrero, Spain  |                        |
| 09:40 - 10:00                                   | POLLUTANT REMOVAL IN BIOSWALES   | VERTECO® - VERTICAL GREEN WALL SYSTEM DEMONSTRATION FOR DOMESTIC WASTEWATER TREATMENT AND ON-SITE WATER AND NUTRIENT REUSE   | PESTIPOND PROJECT: FATE AND BEHAVIOR OF PESTICIDES IN PONDS AND AT THE CATCHMENT SCALE  | CARBAMAZEPINE AND DICLOFENAC REMOVAL FROM REAL INDUSTRIAL WASTEWATER USING HYBRID CONSTRUCTED WETLAND: PILOT STUDY  |                        |
|   | Emil Jespersen, Denmark  | Marco Hartl, Austria   | Julien Tournebize, France   | Othman Al-Mashaqbeh, Jordan   |                        |
| 10:00 - 10:20                                   | QUALITATIVE AND QUANTITATIVE ASSESSMENT OF<br>NATURE-BASED SOLUTIONS TO TACKLE URBAN<br>STORMWATER   |  | EMERGING CONTAMINANT BEHAVIOUR WITHIN A FULL-<br>SCALE FREE WATER SURFACE CONSTRUCTED WETLAND   |   |                        |
|   |  |  |   |   |                        |
|   | Loïc Maurer, France  | Silvia Venditti, Luxembourg  | Emma Vaughan, UK  | Oluwanisola Okeleji, UK   |                        |
| 10:20 - 10:50                                   | Loïc Maurer, France  | Silvia Venditti, Luxembourg  | Emma Vaughan, UK  | Oluwanisola Okeleji, UK   | Coffee & Posters       |
| 10:20 - 10:50                                   | Loïc Maurer, France  SUDS II (Chair: Mathieu Gautier)  | Silvia Venditti, Luxembourg  LCA & sustainability (Chair: Alexandros Stefanakis)   | Emma Vaughan, UK  Role of plants & hydraulics (Chair: Maurizio Borin)   | Oluwanisola Okeleji, UK  Greenhouse gases & sequestration (Chair: Ülo Mander)   | Coffee & Posters       |
| 10:20 - 10:50<br>10:50 - 11:10                  |  |  |   | Greenhouse gases & sequestration (Chair: Ülo  | Coffee & Posters       |
|   | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN —   | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF   | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE   | Greenhouse gases & sequestration (Chair: Ülo<br>Mander)<br>GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE   | Coffee & Posters       |
| 10:50 - 11:10                                   | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN – CASE STUDY IN GDAŃSK  Magdalena Gajewska, Poland PREFERENTIAL FLOW IN PARTIALLY SATURATED TREATMENT WETLAND AND ITS IMPACT ON POLLUTANT   | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF   | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE TRICLOSAN IN CONSTRUCTED WETLANDS  Laurianne Bedard, Canada BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+  | Greenhouse gases & sequestration (Chair: Ülo Mander) GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE TREATMENT WETLAND Stephanie Ayotte, USA COMPARING ANALYSIS OF CARBON SINKS EFFECTS BETWEEN CONSTRUCTED WETLANDS AND NATURAL   | Coffee & Posters       |
| 10:50 - 11:10                                   | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN – CASE STUDY IN GDAŃSK  Magdalena Gajewska, Poland PREFERENTIAL FLOW IN PARTIALLY SATURATED TREATMENT WETLAND AND ITS IMPACT ON POLLUTANT RESIDENCE TIME  | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF CONSTRUCTED WETLANDS  | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE TRICLOSAN IN CONSTRUCTED WETLANDS  Laurianne Bedard, Canada BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+ SYSTEM, TREATING HCH POLLUTED SITES.   | Greenhouse gases & sequestration (Chair: Ülo Mander) GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE TREATMENT WETLAND  Stephanie Ayotte, USA COMPARING ANALYSIS OF CARBON SINKS EFFECTS BETWEEN CONSTRUCTED WETLANDS AND NATURAL WETLANDS Lei Yang, Taiwan MICROPOLLUTANT REMOVAL AND MICROBIAL   | Coffee & Posters       |
| 10:50 - 11:10<br>11:10 - 11:30                  | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN — CASE STUDY IN GDAŃSK  Magdalena Gajewska, Poland PREFERENTIAL FLOW IN PARTIALLY SATURATED TREATMENT WETLAND AND ITS IMPACT ON POLLUTANT RESIDENCE TIME Ania Morvannou, France THE ROLE OF NATURE-BASED SOLUTIONS FOR THE WATER FLOW MANAGEMENT IN A MEDITERRANEAN   | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF CONSTRUCTED WETLANDS  Tamara Avellan, Finland SURVEY ON SOCIO-ECONOMIC IMPACT OF THE WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH-   | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE TRICLOSAN IN CONSTRUCTED WETLANDS  Laurianne Bedard, Canada BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+ SYSTEM, TREATING HCH POLLUTED SITES.  Carlos Arias, Denmark EFFICIENCY OF HORIZONTAL MACROPHYTIC PONDS WITH PHRAGMITES AUSTRALIS AND ITS INFLUENCE ON  | Greenhouse gases & sequestration (Chair: Ülo Mander) GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE TREATMENT WETLAND Stephanie Ayotte, USA COMPARING ANALYSIS OF CARBON SINKS EFFECTS BETWEEN CONSTRUCTED WETLANDS AND NATURAL WETLANDS Lei Yang, Taiwan MICROPOLLUTANT REMOVAL AND MICROBIAL COMMUNITY DYNAMICS OF A 3-YEAR OLD CONSTRUCTED WETLAND WITH ADSORPTION   | Coffee & Posters       |
| 10:50 - 11:10<br>11:10 - 11:30                  | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN – CASE STUDY IN GDAÑSK  Magdalena Gajewska, Poland PREFERENTIAL FLOW IN PARTIALLY SATURATED TREATMENT WETLAND AND ITS IMPACT ON POLLUTANT RESIDENCE TIME Ania Morvannou, France THE ROLE OF NATURE-BASED SOLUTIONS FOR THE WATER FLOW MANAGEMENT IN A MEDITERRANEAN URBAN AREA  | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF CONSTRUCTED WETLANDS  Tamara Avellan, Finland SURVEY ON SOCIO-ECONOMIC IMPACT OF THE WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH- CONTAMINATED WATER  | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE TRICLOSAN IN CONSTRUCTED WETLANDS  Laurianne Bedard, Canada BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+ SYSTEM, TREATING HCH POLLUTED SITES.  Carlos Arias, Denmark EFFICIENCY OF HORIZONTAL MACROPHYTIC PONDS WITH PHRAGMITES AUSTRALIS AND ITS INFLUENCE ON THE POLLUTANTS ASSIMILATION BY THE PLANTS  | Greenhouse gases & sequestration (Chair: Ülo Mander) GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE TREATMENT WETLAND  Stephanie Ayotte, USA COMPARING ANALYSIS OF CARBON SINKS EFFECTS BETWEEN CONSTRUCTED WETLANDS AND NATURAL WETLANDS Lei Yang, Taiwan MICROPOLLUTANT REMOVAL AND MICROBIAL COMMUNITY DYNAMICS OF A 3-YEAR OLD CONSTRUCTED WETLAND WITH ADSORPTION SUBSTRATE  | Coffee & Posters       |
| 10:50 - 11:10<br>11:10 - 11:30<br>11:30 - 11:50 | SUDS II (Chair: Mathieu Gautier)  TREATMENT CAPACITY OF ENHANCED RAIN GARDEN — CASE STUDY IN GDAŃSK  Magdalena Gajewska, Poland PREFERENTIAL FLOW IN PARTIALLY SATURATED TREATMENT WETLAND AND ITS IMPACT ON POLLUTANT RESIDENCE TIME Ania Morvannou, France THE ROLE OF NATURE-BASED SOLUTIONS FOR THE WATER FLOW MANAGEMENT IN A MEDITERRANEAN URBAN AREA  Liviana Sciuto, Italy CIRCULAR URBAN WATER SOLUTIONS WITH NATURE- | LCA & sustainability (Chair: Alexandros Stefanakis)  A WHOLELIFE COST AND CARBON PERSPECTIVE OF ALTERNATIVES TO SEPTIC TANKS UTILISING AEROBIC WETLANDS Gabriela Dotro, UK RAPID ASSESSMENT FOR SUSTAINABLE SUITABILITY OF CONSTRUCTED WETLANDS  Tamara Avellan, Finland SURVEY ON SOCIO-ECONOMIC IMPACT OF THE WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH- CONTAMINATED WATER  Pavla Svermova, Czech Republic LIFE CYCLE ASSESSMENT OF ENHANCED CONSTRUCTED WETLANDS FOR MICROPOLLUTANT REMOVAL FROM | Role of plants & hydraulics (Chair: Maurizio Borin)  NATIVE CANADIAN PLANTS TO PHYTOREMEDIATE TRICLOSAN IN CONSTRUCTED WETLANDS  Laurianne Bedard, Canada BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+ SYSTEM, TREATING HCH POLLUTED SITES.  Carlos Arias, Denmark EFFICIENCY OF HORIZONTAL MACROPHYTIC PONDS WITH PHRAGMITES AUSTRALIS AND ITS INFLUENCE ON THE POLLUTANTS ASSIMILATION BY THE PLANTS  Renata Ferreira, Portugal SIMULATION OF THE HYDRAULIC BEHAVIOUR OF A TREATMENT WETLAND IN THE MEDITERRANEN AREA | Greenhouse gases & sequestration (Chair: Ülo Mander) GREENHOUSE GAS EMISSIONS FROM A COLD-CLIMATE TREATMENT WETLAND Stephanie Ayotte, USA COMPARING ANALYSIS OF CARBON SINKS EFFECTS BETWEEN CONSTRUCTED WETLANDS AND NATURAL WETLANDS LEI Yang, Taiwan MICROPOLLUTANT REMOVAL AND MICROBIAL COMMUNITY DYNAMICS OF A 3-YEAR OLD CONSTRUCTED WETLAND WITH ADSORPTION SUBSTRATE Thomas Wagner, The Netherlands PERFORMANCE OF FLOATING TREATMENT WETLANDS IN PONDS WITH HIGH EUTROPHIC LEVEL DURING | Coffee & Posters       |

| Thursday 14 Sept | AUDITORIUM A (1st F | LOOR) AUDITORIUM B (1st FLOOR)  | ROOMS 1+2 (3rd FLOOR) | ROOMS 4+5 (3rd FLOOR) | CATERING ROOM (4th FLOOR) |
|------------------|---------------------|---|-----------------------|-----------------------|---------------------------|
|                  | 13:40 - 14:20       | Plenary session III (Chair: Gijs Du Laing)  KEYNOTE: ARE WETLANDS A SOURCE OR SINK OF GREENHOUSE GASES?     |                       |                       |                           |
|                  | 14:20 - 15:00       | Ülo Mander, Estonia  KEYNOTE: TREATMENT WETLANDS 3rd EDITION  Jaime Nivala, France                          |                       |                       |                           |
|                  | 15:00 - 15:30       |   |                       |                       | Coffee                    |
|                  | 15:30 - 16:10       | Plenary session IV (Chair: Diederik Rousseau)  KEYNOTE: MAKING THE BUSINESS CASE FOR NATURI BASED SOLUTIONS | E-                    |                       |                           |
|                  | 16:10 - 16:45       | France Guertin, USA AWARDS AND CONFERENCE CLOSING SESSION WETPOL OC   |                       |                       |                           |

#### LIST OF POSTER PRESENTATIONS

| #  | Name                   | Country        | POSTER TITLE   |
|----|------------------------|----------------|--|
| 1  | Guna Bavithra          | Portugal       | TESTING LOCAL AGRO-WASTE MATERIALS AS SUBSTRATE CANDIDATES FOR CONSTRUCTED WETLANDS TREATING CYANOTOXIN CONTAMINATED WATER                         |
| 2  | Alisson Borges         | Brazil         | AUXIN AND GIBBERELIN AMMENDMENT FOR FLUORIDE PHYTOREMEDIATION: A SCREENING STUDY   |
| 3  | Alisson Borges         | Brazil         | CONSTRUCTED WETLANDS FOR WATER DEFLUORIDATION  |
| 4  | Nathan Bourke          | Ireland        | THE EFFECTS OF LEAD/ZINC MINE WASTEWATER ON MACROPHYTE STRESS  |
| 5  | Yamei Cai              | P.R. China     | SCENARIO ANALYSIS OF MICROPLASTICS FLOW IN CONSTRUCTED WETLAND   |
| 6  | Öykü Çömez             | Czech Republic | THE IMPACT OF BIOFILTER MEDIA ADDITIVE AND IRRIGATION METHOD ON THE REMOVAL PERFORMANCE FOR MICROPOLLUTANTS FROM LIGHT GREYWATER                   |
| 7  | Elisa Costamagna       | Italy          | CONSTRUCTED WETLANDS HYDRODYNAMIC MODELLING FOR ENZYMATIC ACTIVITY ANALYSIS  |
| 8  | Gisela Di Luca         | Argentia       | PERFORMANCE OF CANNA INDICA FLOATING TREATMENT WETLANDS IN THE REMOVAL OF CR SPECIES   |
| 9  | Natalia Donoso         | Ecuador        | SWOT ANALYSIS FOR THE IMPLEMENTATION OF CONSTRUCTED WETLANDS TREATING COFFEE PROCESSING WASTEWATER IN ECUADOR                                      |
| 10 | Vittoria Giannini      | Italy          | WATER REQUIREMENTS AND SAP FLOW SPEED IN POPLAR PLANTATION UNDER DIFFERENT AGRONOMIC MANAGEMENTS   |
| 11 | Hernan Haddad          | Argentia       | ROOT MORPHOMETRICAL RESPONSE IN PLANTS GROWING IN A WETLAND CONSTRUCTED FOR THE TREATMENT OF A METALLURGICAL EFFLUENT                              |
| 12 | Marco Hartl            | Austria        | DIVAGRI - MULTIFUNCTIONAL CONSTRUCTED WETLANDS WITH A FOCUS ON PRODUCTIVE PLANTS FOR FURTHER VALORISATION IN SEVEN AFRICAN PILOT SITES             |
| 13 | Perry Hoendervangers   | Belgium        | BENCHMARKING AND THE INTEGRATION OF NATURE-BASED SOLUTIONS AND ENGINEERED TECHNOLOGIES FOR ENHANCED PESTICIDE REMOVAL                              |
| 14 | Ashlene Hudson         | Ireland        | MICROBIAL COMMUNITY AND SEDIMENT QUALITY OF A CONSTRUCTED WETLAND TREATING ALKALINE LEACHATE AFTER 5.5 YEARS OPERATION                             |
| 15 | Peiying Kang           | P.R. China     | THE OCCURRENCE AND TOXICITY OF EMERGING CONTAMINANTS AND THEIR REMOVAL USING CONSTRUCTED WETLANDS: A REVIEW  |
| 16 | Vladimir Léon          | Peru           | ACID ROCK DRAINAGE REMEDIATION WITH CONSTRUCTED WETLANDS IN ANCASH HIGHLANDS - PERÚ  |
| 17 | Maria Maine            | Argentia       | CONSTRUCTED WETLANDS FOR FINAL POLISHING OF SLAUGHTERHOUSE EFFLUENT  |
| 18 | Adrian Martinez-Biosca | Spain          | ASSESSMENT OF SURFACE FLOW ARTIFICIAL WETLANDS IN THE CONTROL OF POLLUTION FROM URBAN RUNOFF IN L'ALBUFERA DE VALENCIA NATURAL PARK.               |
| 19 | Lipe Mendes            | Ireland        | RECOVERY OF WATER QUALITY FROM DRAINED FORESTED PEATLANDS WITH BIOCHAR   |
| 20 | Mercedes Mufarrege     | Argentia       | ROOT MORPHOMETRY AND TOLERANCE OF CANNA INDICA IN FLOATING TREATMENT WETLANDS FOR CR(III) AND CR(VI) REMOVAL                                       |
| 21 | Fernanda Muniz Sacco   | Luxembourg     | PERSONAL CARE PRODUCTS REMOVAL FROM GREYWATER USING NATURE-BASED SOLUTIONS FOR WATER REUSE IN SUSTAINABLE BUILDINGS: THE "RECARE" PROJECT APPROACH |
| 22 | Emanuel Nocetti        | Argentia       | COMPARISON OF HYBRID WETLAND ARRANGEMENTS FOR DAIRY WASTEWATER TREATMENT   |
| 23 | Eugenia Olguín         | México         | FLOATING TREATMENT WETLANDS, COMPOSED OF Pontederia sagittata AND Cyperus papyrus, FOR THE REMOVAL OF MICROPLASTICS IN TWO URBAN PONDS             |
| 24 | Dee Philips            | UK             | WASTEWATER TREATMENT AND GREENHOUSE GAS EMISSIONS: HERBACEOUS VS WOODY HORIZONTAL CONSTRUCTED WETLANDS   |
| 25 | Pau Porras Socias      | Portugal       | THE ROLE OF SPARGANIUM ERECTUM, SUBSTRATES AND MICROORGANISMS IN CONSTRUCTED WETLANDS TREATING ANAEROBIC DIGESTION EFFLUENTS                       |
| 26 | Tongxin Ren            | Czech Republic | PARTIALLY-SATURATED CONSTRUCTED WETLANDS AS PERFORMANCE ALL-ROUNDERS FOR THE REMOVAL OF HOUSEHOLD MICROPOLLUTANTS                                  |
| 27 | Ailen Soto             | Portugal       | VERTICAL FLOW CONSTRUCTED WETLANDS FOR ANAEROBIC DIGESTATE SAFE REUSE: MICROPLASTICS, METALS AND PATHOGENS REMOVAL, FATE AND PERSISTENCE           |
| 28 | Joana Strycharz        | Poland         | REMOVAL OF ORGANICS AND NUTRIENTS IN FLOATING TREATMENT WETLANDS COMBINED WITH MICROBIAL FUEL CELLS UNDER DIFFERENT ORGANIC LOADING RATES          |
| 29 | Ewa Wojciechowska      | Poland         | STRAW AND WOOD BIOCHAR APPLICATION TO MARGINAL SOIL FOR MISCANTHUS GIGANTEUS ENERGY BIOMASS PRODUCTION: A POT SCALE STUDY                          |

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