

Environmental Biotechnology Network On-Line ECR Conference 2021

In short sessions from Monday, 28 June 2021 - Thursday, 1 July 2021

DAY 1 - MONDAY 28 JUNE 2021

SESSION 1:

09:00 AM - 10:20 AM

Waste Management

Chair: Sanjay Nagarjan, Queen's University Belfast

Co-chair: David Livingstone, Queen's University Belfast

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|----------|----------|--|---|
| 09:00 AM | 09:15 AM | Arinze Ezieke University of Queensland | Management and valorisation of waste from the berry sector via AD |
| 09:15 AM | 09:30 AM | Serena Simonetti University of Aberdeen | Acidogenic fermentation of model food waste for the production of added-value chemicals: effect of substrate concentration and residence time |
| 09:30 AM | 09:45 AM | Cynthia Okoro-Shekhwaga University of Leeds | In-situ biomethanation using food waste: effect of sequential hydrogen acclimation |
| 09:45 AM | 10:00 AM | Precious Egbukwem University of Surrey | Treatment and agricultural reuse of mixed industrial and domestic wastewater reclaimed by biological process and ozonation |

Posters (click poster title for preview, click name for live session recording) :

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| 10:00 AM | 10:10 AM | Sarah Hunter University College London | Evaluating the impact of substrate chemical structure on anaerobic digestion of food waste |
| 10:10 AM | 10:20 AM | Rachel Schwartz-Narbonne Sheffield-Hallam University | Lipid biomarker tools to characterize wastewater reactor microbial communities |

10:20 AM 11:00 AM

BREAK

SESSION 2:

11:00 AM - 12:15 PM

Biochemical Valorisation

Chair: David Livingstone, Queen's University Belfast

Co-chair: Sanjay Nagarajan, Queen's University Belfast

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| 11:00 AM | 11:15 AM | Cristina Marzo Gago University of Cádiz | Production of lactic acid from exhausted sugar beet pulp by biotechnological process |
| 11:15 AM | 11:30 AM | Seongbong Heo University of Southampton | Integration of enrichment and production for PHA by decoupling carbon and nutrient limitation |
| 11:30 AM | 11:45 AM | Tararag Pincam University of Southampton | Combined alkaline and thermal pretreatment for enhanced volatile fatty acids production and phosphorus release from sewage sludge |
| 11:45 AM | 12:00 PM | Maria Ramos Suarez University of Southampton | Fed-batch acideogenic fermentation of organic residual solids: effect of different feeding modes |
| 12:00 PM | 12:15 PM | Robert Colston Cranfield University | Enhanced phosphorus removal and struvite recovery from fresh urine using biomineratisation |

DAY 2 - TUESDAY 29 JUNE 2021

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| SESSION 3: 09:00 AM - 10:20 AM | | | | | |
| Complex Microbial Communities Chair: Bing Guo, University of Surrey Co-chair: Rachel Schwartz-Narbonne, Sheffield Hallam University | | | | | |
| 09:00 AM | 09:15 AM | Viviane Runa University of Bath | New approaches to microbial ecology in biological phosphorus removal systems | | |
| 09:15 AM | 09:30 AM | Pavlina Theodosiou Newcastle University | Electroactive bacteria: How cool are they | | |
| 09:30 AM | 09:45 AM | Fabien Cholet University of Glasgow | Nitrification in coastal sediment driven by an unknown low-abundance AOB cluster | | |
| 09:45 AM | 10:00 AM | Anastasiia Kostrytsia University of Glasgow | DNA-SIP metagenomics to recover active ammonia- and nitrite oxidisers | | |
| Posters (click poster title for preview, click name for live session recording): | | | | | |
| 10:00 AM | 10:10 AM | Roman Bielski Loughborough University | Investigating metabolic diversity of ANAMMOX bacteria using pan-genome analysis | | |
| 10:10 AM | 10:20 AM | Beatriz Delgado-Corralles Northumbria University | Studying indoor air microbiome dynamics to promote a healthier environment | | |
| 10:20 AM | 11:00 AM | BREAK | | | |
| SESSION 4: 11:00 AM - 12:30 PM | | | | | |
| (Novel) Applications for microbial electron transfer Chair: Natalia Jawiarczyk, Cranfield University Co-chair: Angela Sherry, Northumbria University | | | | | |
| 11:00 AM | 11:15 AM | Emma Beirns Imperial College London | Co-metabolism of sulfonamides in anaerobic wastewater treatment incorporating direct interspecies electron transfer | | |
| 11:15 AM | 11:30 AM | Zhongli Wang Nottingham University | Biological selenate removal and recovery of selenium nanoparticles using iron-oxidizing microbial consortium | | |
| 11:30 AM | 11:45 AM | Maira Anam Nottingham University | Advanced three-dimensional anode structure for improved biophotovoltaic system operation | | |
| 11:45 AM | 12:00 PM | Jordan Day Newcastle University | A scalable model of biofilm behaviour and fluid flow in microbial electrochemical technologies | | |
| Posters (click poster title for preview, click name for live session recording) : | | | | | |
| 12:00 PM | 12:10 PM | Radwa Ibrahim Westminster University | Development of photosynthetic microbial fuel cells for azo dye degradation | | |
| 12:10 PM | 12:20 PM | Chenxiao Liu McGill University | Adding zero valent iron in improving low temperature anaerobic digestion with ozonated waste activated sludge | | |
| 12:20 PM | 12:30 PM | Najiaowa Yu University of Alberta | Differentiated biofilm communities on various packed granular activated carbon (GAC) in wastewater anaerobic digestion | | |

DAY 3 - WEDNESDAY 30 JUNE 2021

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| SESSION 5: 09:00 AM - 10:50 AM | | Cross-disciplinary Environmental Biotechnology Applications Chair: Pavlina Theodosiou, Newcastle University Co-chair: Martina Daute, Abertay University | |
| 09:00 AM | 09:30 AM | Angela Sherry Northumbria University Jane Scott University of Newcastle | Fibre Highways: translocation of the microbiome for hydrocarbon bioremediation |
| 09:30 AM | 09:45 AM | Yuxiu Chen University of Surrey | Biocoatings: Painting bacteria on surfaces |
| 09:45 AM | 10:00 AM | Maryam Lamere University of Western England | Lessons learnt from field trials of the Pee Power ® in Uganda, Kenya and South Africa |
| 10:00 AM | 10:15 AM | David Livingstone Queen's University Belfast | Reducing the climate impact of intensive agriculture with strategically positioned willow coppice |
| 10:15 AM | 10:20 AM | Comfort break, followed by Posters (click poster title for preview, click name for live session recording) : | |
| 10:20 AM | 10:30 AM | Yuwei Pan Cranfield University | A paper-based electrochemical aptasensor for monitoring antibiotics in water |
| 10:30 AM | 10:40 AM | Xiaoqi Wen University of Southampton | Biochemical and microbial interactions with advanced coatings and sealants in biotechnology |
| 10:40 AM | 10:50 AM | Natalia Jawiarczyk Cranfield University | Bioadditives as an effective sewer fat, oil and grease (FOG) deposit management. |
| 10:50 AM | 11:05 AM | BREAK | |
| SESSION 6: 11:05 AM - 12:30 PM | | Engineering for higher yields Chair: Cynthia Okoro Shekwaga, University of Leeds Co-chair: Natalia Jawiarczyk, Cranfield University | |
| 11:05 AM | 11:20 AM | Khaled Almoalimi University of Southampton | Impact of draw solution type and chemistry on ammonia rejection during the thin-film composite (TFC) forward osmosis process |
| 11:20 AM | 11:35 AM | Aaron Brown University of Leeds | Valorisation of alternative feedstocks via the integration of hydrothermal carbonisation and anaerobic digestion |
| 11:35 AM | 11:50 AM | George Hurst Manchester Metropolitan University | Solid residue by-product from levulinic acid production as biogas enhancers and microbial diversity promoter in anaerobic digestion |
| 11:50 AM | 12:05 PM | Sanjay Nagarajan Queen's University Belfast | Using vortex-based hydrodynamic cavitation pre-treatment for enhancing biomethane yield from maize husk |
| 12:05 PM | 12:20 PM | Chai Lee University of Nottingham | Economic analysis of noncatalytic and catalytic supercritical water gasification with lignocellulosic biomass waste as feedstock |
| Posters (click poster title for preview, click name for live session recording) : | | | |
| 12:20 PM | 12:30 PM | Joseph Weaver Newcastle University | Modelling environmental bioreactors treating wastewater by integrating biological processes, floc microenvironments and computational fluid dynamics |

DAY 4 - THURSDAY 01 JULY 2021

| SESSION 7: 09:00 AM - 10:35 AM | | Enzymes and 'omics | |
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| | | Chair: Angela Sherry, Northumbria University Co-chair: Bing Guo, University of Surrey | |
| 09:00 AM | 09:15 AM | Prasenjit Ghosh National Institute of Technology Goa Bacterial degradation of carbazole, degradation pathway and elucidation of uptake mechanism | |
| 09:15 AM | 09:30 AM | Alice Banks Imperial College London Polyethylene terephthalate (PET) monomer metabolism and adaptation in environmentally isolated bacteria | |
| 09:30 AM | 09:45 AM | Valentine Okonkwo Glasgow University Suitability of the intI1 gene as proxy for inferring antimicrobial-resistance pollution: optimal intI1 primer selection | |
| 09:45 AM | 10:00 AM | John Allan Northumbria University New microbial chassis and new enzymatic technologies for MSW valorisation | |
| 10:00 AM | 10:05 AM | Comfort break, followed by Posters (click poster title for preview, click name for live session recording): | |
| 10:05 AM | 10:15 AM | Umar Abdulmutalib University of Surrey Enzymatic degradation of polyethylene terephthalate (PET) plastic: a greener approach to plastic recycling | |
| 10:15 AM | 10:25 AM | Josephine Giard Heriot-Watt University Diversity analysis and genome mining of microbial DNA data for the discovery of novel antibiotics | |
| 10:25 AM | 10:35 AM | Fatima Ceballos Rodriguez-Conde University College London Construction of a plastic-degrading synthetic microbial community | |
| 10:35 AM | 10:40 AM | CLOSE | |
| Networking videos - please visit our researcher videos | | | |
| All of our researcher videos can be found at https://ebnet.ac.uk/ecr2021-links/ and below (alphabetical order): | | | |
| Roman Bielski Loughborough University | Metabolic engineering of Anammox bacteria for mitigating nitrogen pollution and balancing the nitrogen cycle | | |
| Arinze Ezieke University of Queensland | Management and valorisation of waste from the berry sector via anaerobic digestion | | |
| Sailesh Karanjit University of Southampton | Novel hybrid biofilm technology to remove nutrients from wastewater | | |
| Jana Schniete Edgehill University | Back to soil: awakening the production of cryptic antibiotics in Streptomyces | | |
| Georgia Waldram Heriot-Watt University | Marine Oil Snow (MOS): Understanding the formation mechanisms and role in the microbial biodegradation of crude oil | | |
| Mohammad Zamzami University of Southampton | Upgrading sludge treatment plants (STPs) by dynamic membrane systems within Saudi Arabia | | |