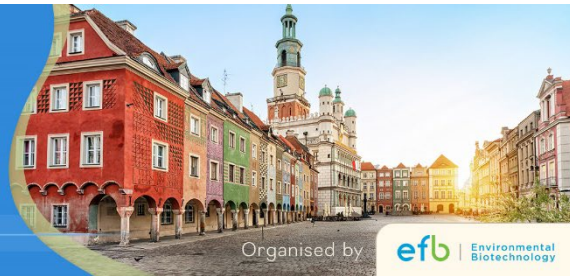


GREEN DEAL BIOTECHNOLOGY

6-8 November 2023 Poznań Poland



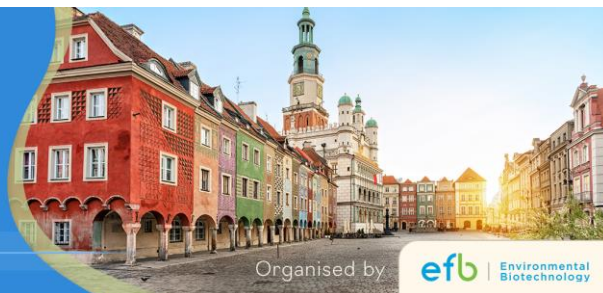
The Green Deal Biotechnology Conference took place in Poznań from 6-8 November 2023.

It was the first EFB live meeting to focus on the circular bioeconomy, which is currently in line with modern economic and scientific trends. The Green Deal Biotechnology highlighted the latest advances in achieving a circular economy in which environmental biotechnology plays an important role and it focused on 7 key challenges:

- Recovery of resources, including rare resources and novel bio-based value chains
- Healthy soil and food security
- Bioelectrochemistry for energy and water recovery
- Wastewater treatment
- Nanotechnology in environmental biotechnology
- Marine biotechnology
- Emerging micropollutants in aquatic and terrestrial environments

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Scientific Programme

06.11.2023 Monday

13:00 - 14:00 *Registration*

Opening ceremony

14:00 - 14:10 **Welcome and opening ceremony**

14:10 – 15:00 **Opening plenary lecture: Douglas Call**, North Carolina State University, USA

Session 1 Exploring the boundaries of emerging technologies (part I)

15:00 – 15:35 **Keynote lecture:** Ionic liquids as a potential emerging contaminant - deeper insight into their sorption, mobility and toxicity, **Łukasz Chrzanowski**, Poznań University of Technology, Poland

15:35 – 15:50 Biogenic manganese oxides-mediator systems for the removal of sulfonamides and their environmental implications, **Adam Sochacki**, Czech University of Life Sciences P, Czech Republic

15:50 – 16:05 Heavy metals change the chemical composition of outer membrane vesicles from endophytic *Rhizobium sp.*, **Iryna Bodnaruk**, University of Silesia, Poland

16:05 – 16:35 *Coffee break*

Session 2 Exploring the boundaries of emerging technologies (part II)

16:35 – 17:10 **Keynote lecture: Sergio Moya**, CIC BiomaGUNE, Spain

17:10 – 17:25 Microbial fuel cell modeling using artificial intelligence, **Alaa Abbas**, University of Naples Federico II, Egypt

17:25 – 17:40 Biowaste as Biostimulants: Unlocking Sustainable Agriculture, **Nuria De Diego**, Palacky University, Czech Republic

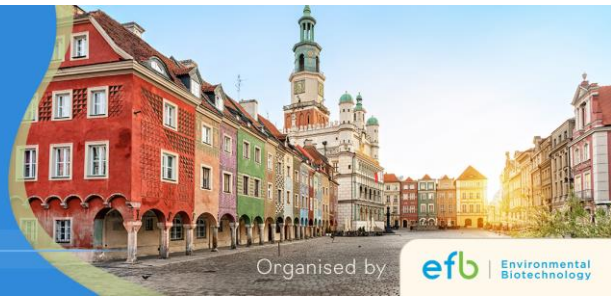
17:40 – 17:55 Efficient Methods to Accelerate Biostimulant Testing in Bio-based Value Chains, **Lukas Spichal**, Palacký University Olomouc, Czech Republic

17:55 – 18:15 Flash poster presentations

18:15 - 20:00 Poster session and social event

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07.11.2023 Tuesday

Session 3 Marine biotechnology

- 9:00 – 9:35 **Keynote lecture: Ana Rotter**, National Institute of Biology, Marine Biology Station Piran, Slovenia
- 9:35 – 9:50 Enhancing viral resistance: triploid crossbreeding of rainbow trout and brook trout for sustainable salmonid aquaculture, **Radosław Kowalski**, Institute of Animal Production and Food Sciences, Poland
- 9:50 – 10:25 **Keynote lecture: Martin Pšenička**, University of South Bohemia, Czech Republic
- 10:25 – 10:40 Cyanoflan, a polymer produced by a marine cyanobacterium, can contribute to greener, **Rita Mota**, acib GmbH - Austrian Centre of Industrial Biotechnology, Austria

10:40 – 11:00 *Coffee break*

Session 4 Recovery of resources, including rare resources and novel bio-based value chains (part I)

- 11:00 – 11:35 **Keynote lecture:** From wastewater treatment to resource recovery: cultivation of microalgae for circular protein production, **Marcella Souza**, Ghent University, Belgium
- 11:35 – 11:50 Isolation of methanotrophic mono- and mixed- cultures and production of polyhydroxyalkanoate (PHA) copolymers from methane, **Mateusz Łęzyk**, Poznan University of Technology, Poland
- 11:50 – 12:05 Volatile fatty acids and methane production during the temperature-phased anaerobic digestion for carbon recovery and enhanced methane production at the WWTP, **Małgorzata Komorowska-Kaufman**, Poznan University of Technology, Poland
- 12:05 – 12:20 Effects of low and high-temperature thermal hydrolysis pre-treatment on the performance of energy-producing sludge management, **Sergio Rossano-Becerril**, University of Groningen, the Netherlands
- 12:20 – 12:35 Resources recovery through the acidogenic fermentation of food industry by-products performed in a lab-scale sequencing batch reactor, **Angela Marchetti**, La Sapienza University of Rome, Italy

12:35 – 14:00 *Lunch*

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Session 5 Recovery of resources, including rare resources and novel bio-based value chains (part II)

- 14:00 – 14:15 Biohydrogen and caproic acid - production in one- and two-stage continuous systems, **Dariusz Sobociński**, Adam Mickiewicz University, Poland
- 14:15 – 14:30 Bioaugmentation of open culture fermentation processes for carboxylates production, **Anna Duber**, Poznan University of Technology, Poland
- 14:30 – 14:45 The continuous production process of the applicative compounds using mixed microbial consortia, **Hanna Prusak**, Poznan University of Technology, Poland
- 14:45 – 15:00 Selection of materials with promising potential for the recovery of humic substances and co-occurring nutrients from by-products of the wastewater treatment, **Justyna Michalska**, Silesian University of Technology, Poland
- 15:00 – 15:15 Bioconversion of plastics' building blocks into bacterial cellulose towards circular economy, **Cátia Gil**, Nova school of science and technology, Portugal

15:15 – 15:45 *Coffee break*

Session 6 Recovery of resources, including rare resources and novel bio-based value chains (part III)

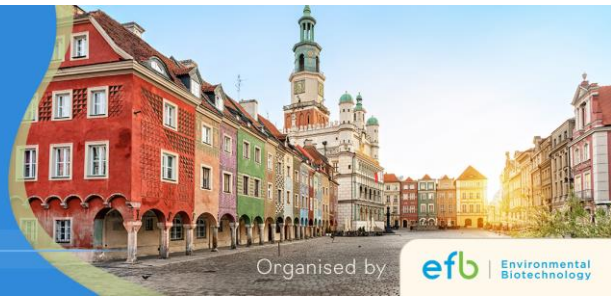
- 15:45 – 16:00 Biological methanation in a mesophilic CSTR system with *in-situ* hydrogen injection, **Grzegorz Cema**, Silesian University of Technology, Poland
- 16:00 – 16:15 Synergistic recycling and upcycling of blended textile waste via biotechnological approach, **Felice Quartinello**, University of Natural Resources and Life Sciences, Vienna, Austria
- 16:15 – 16:30 Recycling of complex waste materials using the power of microbes, **Klemens Kremser**, University of Natural Resources and Life Sciences, Vienna, Austria
- 16:30 – 16:45 From nuisance to treasure: unleashing *Procambarus clarkii*'s potential for sustainable metal recovery and valuable compound extraction, **Telma Veloso**, University of Aveiro, Portugal

Session 7 Carbon capture

- 16:45 – 17:20 **Keynote lecture:** Carbon capture and storage – a positive contribution to net zero or just greenwashing by big oil, **Derek Saward**, United Kingdom
- 17:20 – 17:35 Engineered cyanobacteria for power industry waste valorisation, **Maurycy Daroch**, Peking University Shenzhen Graduate School, China

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17:35 – 18:00 *Coffee break*

Session 8 European policy for the circular bioeconomy, food security and the environment

18:00 – 18:30 **Keynote lecture: Peter Wehrheim**, European Commission

18:30 – 19:00 **Panel discussion**

Tomasz Calikowski, European Commission –panel discussion moderator

08.11.2023 Wednesday

Session 9 Healthy soil and food

9:00 – 9:35 **Keynote lecture: Katie Field**, University of Sheffield, United Kingdom

9:35 – 9:50 Is it possible to reduce cadmium accumulation in crop tissues? A case study using tomato seedlings and bacterial endophytes, **Magdalena Noszczyńska**, University of Silesia, Poland

9:50 – 10:05 Using on-farm trials in predicting soybean yield in Nigeria: the application of machine learning models, **Muhammad Kabiru**, Mohammed VI Polytechnic University, Morocco

10:05 – 10:20 Upcycling of hemp seed oil cake (*Cannabis sativa*) by applying tempeh fermentation (*Rhizopus oligosporus*), **Marianna Raczek**, Institute of Animal Reproduction and Food Research, Polish Academy of Sciences, Poland

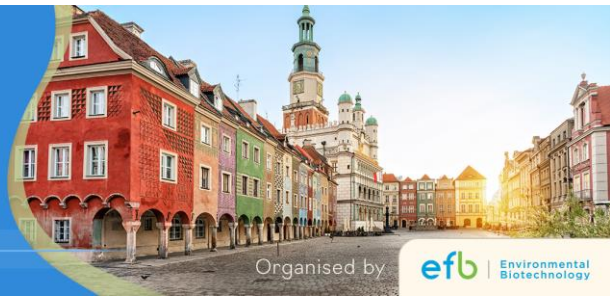
10:20 – 10:35 Drivers of soil microbial community and diversity in soybean rhizosphere in Ghana, **Alfred Balenor Buernor**, AgroBiosciences Program, College of Sustainable Agriculture and Environmental Sciences, Mohammed VI Polytechnic University, Morocco

10:35 – 10:50 Bioaugmentation with glyphosate-degrading bacterial community as a tool to increase plant resistance towards glyphosate and glyphosate based ionic liquids, **Marta Woźniak-Karczewska**, Poznan University of Technology, Poland

10:50 – 11:10 *Coffee break*

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Session 10 Wastewater treatment

- 11:10 – 11:45 **Keynote lecture: Benjamin Horemans**, KU Leuven, Belgium
- 11:45 – 12:00 Bacterial OMV as bacteria-plant interaction linker. What do we know about it? **Małgorzata Pawlik**, University of Silesia, Poland
- 12:00 – 12:15 Evaluation of filter additives effect on the efficiency of biofilters for greywater treatment – long term results from close to real conditions, **Jaroslav Vacula**, Faculty of Environmental Sciences, Czech University of Life Sciences Prague, Czech Republic

Closing ceremony and closing keynote lecture

- 12:15 – 12:55 **Closing plenary lecture:** Unlocking the potential of new breeding techniques for the European Green Deal, **Ivo Frébort**, Palacký University Olomouc, Czech Republic
- 12:55 – 13:10 **Closing ceremony**