

Main Room

8:30-9:10 Plenary: "Industrial biotechnology for CO₂ conversion"

Heleen De Wever

Chair: *Sebastià Puig*

9:15-10:35 Parallel Session 5: Microbial electrosynthesis and electro-fermentation

Chair: *Eileen Yu*

Insights in the electro-fermentation process with ¹³C-labelled experiments supported by NMR spectroscopy analysis.

Gaia Salvatori

Experimental optimization of long chain fatty acids synthesis from CO₂ using statistical design.

Narnepati Krishna Chaitanya.

Enhancing butanol production by *Clostridium beijerinckii* through cathodic electro-fermentation approach.

Daniele Molognoni

Statistical analysis on factors affecting microbial electrosynthesis (MES).

Lakshmi Pathi Thulluru

Voleu crear models per fer una drecera? Development of a model for microbial electrosynthesis with planktonic cells and mediator based electron transfer.

Johannes Nelles

10:35 – 10:45 Coffee Break

10:45-12:20 Parallel Session 8: Microbial electrosynthesis and electro-fermentation

Chair: *Marianna Villano*

Bioinorganic electrosynthesis of single-cell protein from CO₂ and green electricity.

Mingyi Xu

Alliance of microbial electrochemical technologies and fermentation for the conversion of carbon dioxide into elongated chemical building blocks.

Meritxell Romans Casas

3D bioprinted MES biofilms enhancing the acetate production rate of *Sporomusa ovata*.

Adolf Krige

Towards bioelectrochemical degradation of hydrophobic wastes coupled with synthesis of biosurfactants.

Grzegorz Pasternak

In-situ production of microbial protein with reclaimed ammonium in a microbial electrochemical recovery conversion cell.

Xiaoyong Yang

Biogas upgradation through CO₂ conversion into acetic acid via microbial electrosynthesis.

Moumita Roy

12:25-13:00 Plenary session: Horizon Europe

Lydia González

Chair: *Sebastià Puig*

13:00-14:00 Lunch

Tuesday,
14th
September 2021

Main Room

14:00-14:40 Plenary session: Synthetic biology for electroactive marine bacteria

Sarah Glaven

Chair: *Sebastià Puig*

14:45-16:05 Parallel Session 11: Electro-microbiology

Chair: *Ricardo O Louro*

Competition of two highly specialized and efficient acetoclastic electroactive bacteria for acetate in biofilm anode of microbial electrolysis cell.

Krishna Katuri

Enhancing power generation and biocompatibility exo-electrogenic bacteria in microbial fuel cell using NiWO₄/rGO as anode electro-catalyst and optimized process parameter.

Geetanjali

Haloalkaliphilic nitrate-reducing electroactive microbial biofilm enriched from the Lonar Lake sediments.

Srishti Chaudhary

The “electro-fermentation effect” of *Geobacter sulfurreducens* co-cultured with *Clostridium pasteurianum* is not induced by electron transfer.

Elie Desmond-Le Quéméner

Design of electroactive bacteria by coupling genetic networks to redox environments.

Angel Goñi-Moreno

16:05-16:15 Coffee Break

16:15-17:30 Parallel Session 13: Electro-microbiology

Chair: *Luis Bañeras Vives*

La última batalla: Interaction between *Geobacter* spp. dominated biofilms and anaerobic digestion effluents.

Daniel Dzofou Ngoumelah

Bacteria coated cathodes as an in-situ hydrogen evolving platform for Microbial Electrosynthesis.

Elisabet Perona-Vico

Selection and enrichment of electroactive microbial communities for removal of pharmaceuticals in microbial electrochemical systems.

Razieh Rafieenia

How can microbial heat help in optimising the energy conversion of Microbial Electrochemical Systems (MES)?.

Pavlina Theodosiou

17:30-18:00 ISMET event - News

**Tuesday,
14th
September 2021**

Room 2

9:15-10:35 Parallel Session 6: Microbial electrosynthesis and electro-fermentation

Chair: *Lars Angenent*

Theory of transport and recovery in microbial electrosynthesis of acetate from CO₂.

Jouke Dykstra

Power-to-algae: carbon dioxide to bio-oil in a BES-supported microalgae biorefinery.

Silvia Bolognesi

Screening for hyperthermophilic electroautotrophs for the microbial electrosynthesis of organic compounds.

Guillaume Pillot

Characterization of fluidized vs. fixed granular activated carbon beds as cathodes for microbial electrosynthesis of carboxylates from CO₂.

Igor Vassilev

Insights into electro-fermentation of caproate from CO₂ and ethanol.

Laura Rovira-Alsina

10:35-10:45 Coffee Break

10:45-12:20 Parallel Session 9: Microbial electrosynthesis and electro-fermentation

Chair: *Marika Kokko*

CO₂ conversion by combining a Cu electrocatalyst and microorganisms.

Konstantina-Roxani Chatzipanagiotou

Biocathode and photoanode development for solar energy-driven microbial electrosynthesis.

Paolo Dessi

A general model for biofilm-driven microbial electrosynthesis of carboxylates from CO₂.

Oriol Cabau Peinado

The impact of cathode acclimation methods on electro-trophic biofilm formation and performance of electromethanogenic cells.

Amin Ghaderikia

Bioelectrosynthesis of organic acids from CO₂ using fluidized bed electrodes in a 3 phase reactor.

María Llorente Remartínez

Strategies for increasing production of bio-products from CO₂ by Microbial electrosynthesis (MES).

Eileen Yu

13:00-14:00 Lunch

**Tuesday,
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September 2021**

Room 2

14:45-16:05 Parallel Session 12: Bioremediation, water treatment and resource recovery from waste

Chair: *Marco Zeppilli*

Large-scale literature meta-analysis: the impact of the bioelectrochemical process configurations on the electrochemical and wastewater treatment performances.

Roman Moscoviz

Filtrating Microbial Fuel Cells for biofertiliser and energy production.

Iwona Gajda

Exploring avoided environmental impacts and resource recovery from desalination brine through Microbial Desalination Cell treatment.

Rosa Anna Nastro

Optimization of filtering anodes for the integration of bioelectrochemical systems into anaerobic membrane bioreactors.

Pavari Viwatthanasittiphong

Comprehensive and long-term assessment of critical operational parameters of a pilot MEC for hydrogen production from urban wastewater.

Oscar Guerrero

16:05-16:15 Coffee Break

16:15-17:30 Parallel Session 14: Bioremediation, water treatment and resource recovery from waste

Chair: *Albert Guissaola*

Low energy consuming bioelectrochemical system for ammonium recovery from wastewater as liquid fertilizer.

Eduard Borràs

Ammonia recovery from digestates in a three-chambered bioelectrochemical system through hydrophobic membranes.

Miriam Cerrillo Moreno

Effect of hydraulic conditions in PFR reactors using bio-electrochemical processes to influence greenhouse gas emission.

Annegret Budach

Simulation of Pilot Scale Microbial Electrochemical Technologies.

Jordan Day

Note: The time zone is UTC+2.

**Tuesday,
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September 2021**

Room 3

9:15-10:35 Parallel Session 7: Novel applications of METs

Chair: *Tom Sleutels*

Biophotovoltaics for hydrogen production using cyanobacteria.

Bin Lai

Hyperthermophilic hydrogen production by iron reducing Archaea in microbial electrolysis cells (MECs).

Yasemin Dilsad Yilmazel

Electrifying biotrickling filters for the treatment of aquaponics wastewater.

Narcis Pous

Metabolic Pathway Involved in CO₂ Fixation under Photo-Bioelectrochemical conditions by a Purple Phototrophic Bacteria Biofilm.

Sara Díaz-Rullo Edreira

10:35-10:45 Coffee Break

10:45-12:20 Parallel Session 10: Novel applications of METs & MET-based sensor technology

Chair: *Annemiek Ter Heijne*

Bidirectional microbial biofilms with sulfur based energy storage.

Paniz Izadi

Bioenergetic and biotechnological implications of extracellular electron transfer in lactic acid bacteria.

Sara Tejedor Sanz

Microbial activity and biomass monitoring in freshwater ecosystems using a MEC-based biosensor.

Marta Fernandez-Gatell

Microbial Electrochemical Systems: Principles, Construction and Biosensing Applications.

Rabeay Hassan

Biocathodes with graphene oxide coatings enhance methane production

Daniela Carrillo

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