Meeting Programme

Wednesday 3rd September

09:00 Workshop for Biofilm Electrochemistry (I).
Venue: Multipurpose Building
External Campus at Universidad de Alcalá
Ctra. Madrid-Barcelona, km. 33,600
28871 Alcalá de Henares

12:00 Lunch

13:00 Workshop for Biofilm Electrochemistry (II).

16:00 Registration
Venue: Facultad de Ciencias Económicas y Empresariales
Universidad de Alcalá
Plaza de la Victoria, 2
Alcalá de Henares

19:30 Guided visit to the old University of Alcalá
Venue: Universidad de Alcalá
Colegio San Ildefonso (Rectorado)
Plaza de San Diego
Alcalá de Henares

20:30 Welcome reception
Venue: Patio de Filósofos
Colegio San Ildefonso (Rectorado)
Universidad de Alcalá
Plaza de San Diego
Alcalá de Henares

Thursday, 4th September

09:00 **Opening comments.**
Abraham Esteve-Núñez & Korneel Rabaey

09:15 **Keynote**
Korneel Rabaey
University of Ghent

PARALLEL SESSIONS

SESSION 1. *Fundamentals of Microbial Extracellular Electron Transfer*
Venue: Conference Meeting

Chair: Carlos Salgueiro

10:00 **Invited speaker:** Leonard Tender. Center for Bio/Molecular Science and Engineering
Electrochemical, AFM, and single-cell resolution RAMAN analysis of anode-grown Geobacter sulfurreducens biofilms early in growth

Oral Communications:

10:25 (OC-01) *Unbalanced fermentation in Escherichia coli by heterologous production of an electron transport chain and electrode-interaction in microbial electrochemical cells*
Katrin Richter. Karlsruhe Institute of Technology

10:45 **Coffee break/Poster session**

11:15 **Invited speaker:** Ricardo Louro. University of Lisbon
Contactless extracellular electron transfer-molecular details of the interaction between outer membrane cytochromes and soluble redox shuttles

Oral Communications:

11.35 (OC-02) *The heme network: Uncoupling charge and discharge mechanisms for planktonic cells of Geobacter sulfurreducens using a Fluidised Bed Electrode*
Sara Tejedor. FCC Aqualia

11.55 (OC-03) *On the use of RAMAN microscopy for the study of cytochrome-based electron transport in electrochemically active biofilms*
Bernardino Virdis. The University of Queensland

12.15 (OC-04) *On the modeling of the surface area that actually contributes to the current density produced in microbial electrochemical systems*
Alexandro Carmona-Martínez. Institut National de la Recherche Agronomique (INRA)

SESSION 2. *METs and water treatment (I): removal of inorganic pollutant*
Venue: 1.7 Room

Chair: Albert Guisasola

10:00 **Invited speaker:** Martijn Bijsman. Wetsus

Oral Communications:

10:25 (OC-05) *Engineering reactor microbiomes of denitrifying Bioelectrochemical Systems*
N. Pous. University of Girona

10:45 **Coffee break/Poster session**

11:15 **Invited speaker:** Annemiek ter Heijne. Wageningen University

Oral Communications:

11:35 (OC-06) *Bioelectrochemical Recovery of Critical Metals*
Xochitl Dominguez-Benetton. Flemish Institute for Technological Research VITO

11:55 (OC-07) *Bioelectrochemical tetrathionate degradation with acidophilic microorganisms*
Mira L.K. Sulonen. Tampere University of Technology

12:15 (OC-08) *Nitrogen recovery from pig slurry in two-chamber bioelectrochemical system (BES)*
Ana Sotres. GIRO Joint Research Unit IRTA-UPC (IRTA)

12.35 **Lunch**

SESSION 3. *Microbial Electrochemical Synthesis*
Venue: Conference Meeting

Chair: Miriam Rosenbaum

13:35 **Invited speaker:** Tian Zhang. Technical University of Denmark
Microbial electrosynthesis:understanding and strengthening microbe-electrode interactions

Oral Communications:

14:05 (OC-09) *Bioelectrochemical reduction of CO2 to organic compounds*
Suman Bajracharya. Flemish Institute for Technological Research VITO

14:25 (OC-10) *A realistic approach for electromethanogenesis: coupling carbon capture to biogas upgrading*
Pau Batlle-Vilanova. University of Girona

14:45 (OC-11) *Direct biocatalysis of methane from carbon dioxide by a lithoautotrophic archaeon*
Pascal F. Beese-Vasbender. Max-Planck-Institut für Eisenforschung

15:05 **Coffee break/Poster Session**

15:35 (OC-12) *Electro-fermentation: membrane electrolysis drives the rapid valorisation of biorefinery thin stillage*
Stephen J Andersen. University of Ghent

15:55 (OC-13) *Three-chamber microbial electrolysis cell as a post-treatment step to refine both biogas and liquid effluent from anaerobic digestion*
M. Zeppilli. University of Rome

SESSION 4. *METs and water treatment (II): removal of organic pollutant*
Venue: 1.7 Room

Chair: Tom Curtis

13:35 **Invited speaker:** Abraham Esteve-Núñez. University of Alcalá
How are MET in bed? From fixed to mobile

Oral Communications:

14:05 (OC-14) *Reductive dechlorination in a pilot-scale membraneless bioelectrochemical reactor and effect of competing reactions*
Roberta Verdini. University of Rome

14:25 (OC-15) *Development of on-site power generation modular system for wastewater sludge valorisation using a combination of partial anaerobic digestion and microbial fuel cell technologies*
Marta Macias Aragonés. IDENER

14:45 (OC-16) *Laccase from Trametes versicolor can help to improve the performance of microbial fuel cells and to efficiently degrade micropollutants from wastewater*
Sabine Sabé. University of Freiburg

15:05 **Coffee break/Poster Session**

15:35 (OC-17) *Energy-Efficient Wastewater Treatment in Microbial Fuel Cells and Microbial Electrolysis Cells*
B. Tartakovsky. National Research Council of Canada

15:55 (OC-18) *On the challenges of scaling up and performance assessment of bioelectrochemical systems based on a technical scale microbial electrolysis cell*
Robert Keith Brown. TU-Braunschweig

16:10 **The Pitch from sessions S1, S3, S5**

Venue: Meeting Room

(PP-01) *A new tool for modelling electroactive microbial biofilms based on direct electron transfer*
Luis F. M. Rosa

(PP-02) *Electrochemical Investigation of Aerobic Biocathodes at Different Poised Potentials: Evidence for Mediated Extracellular Electron Transfer*
Edward Milner

(PP-03) *Follow the red road of cytochromes in G. sulfurreducens: a key step to understand extracellular electron transfer pathways*
Carlos Salgueiro

(PP-04) *Combination of bioanode and biocathode for the conversion of wastes into biocommodities using microbial electrosynthesis*
E. Desmond-Le Quemener

(PP-05) *Domestic wastewater treatment in parallel to methane production in a semipilot MEC*
Ruben Moreno

(PP-06) *Simultaneous production and extraction of acetate from CO2 during microbial electrosynthesis*
Sylvia Gildemyn

(PP-07) *Screening for New Microbial Electroreduction Biocatalysts*
Tatiana de Campos Rodrigues

(PP-08) *Acid-Tolerant Microorganisms for the Treatment of Acid Mine Drainage through MFC Systems*
Eduardo Leiva

(PP-09) *Unclassified γ-Proteobacteria are dominant in biofilms of high performing oxygen reducing biocathodes*
David P. B. T. B. Strik

(PP-10) *Strategies for cleaning up ATRAZINE-polluted soils using Microbial Electroremediating Cells (MERCs)*
Ainara Domínguez-Garay

The Pitch from sessions S2, S4, S6

Venue: 1.7 Room

16:10 (PP-11) *An innovative bioelectrochemical-anaerobic digestion-coupled system for in-situ ammonia recovery and biogas enhancement: process performance and microbial ecology*
Yifeng Zhang

(PP-12) *High performance configuration on MFC for copper recovery*
P. Rodenas

(PP-13) *Treatment of olive brine wastewater by bioelectrochemical systems*
Marone Antonella

(PP-14) *Bioelectro-Catalytic Valorization of Dark Fermentation Effluents by Acetate Oxidizing Bacteria in Bioelectrochemical System (BES)*
Sandipam Srikanth

(PP-15) *Improved COD removal and ammonia recovery from anaerobic digestion and bioelectrochemical integrated system (BES)*
Míriam Cerrillo

(PP-16) *Biomass retention on electrodes rather than electrical current enhances stability in anaerobic digestion*
Jan B. A. Arends

(PP-17) *Hydrodynamic modelling for anode design in Microbial Fuel Cells*
Albert Vilà

(PP-18) *Electrochemical Engineering of Current Density Distributor for Unipolar Electrodes*
Yolanda Álvarez Gallego

(PP-19) *Microbial Electrochemical Constructed Wetlands (METlands): design and operation conditions for enhancing the removal of pollutants in real urban wastewater*
Arantxa Aguirre-Sierra

(PP-20) *Development and fabrication of a stand alone, handheld biosensor system by combining a novel carbon nanotube (CNT) microtube electrode with arabinose sensing S. oneidensis JG410*
Malte Heyer

17:00-18.30 **Poster Session**

21:00 **Banquet**
Venue: Parador de Alcalá de Henares
Calle Colegios, 8
Alcalá de Henares

Friday 5th September

SESSION 5. *Environmental Applications & Microbial Ecology*
Venue: Meeting Room

Chair: Alain Bergel

09:00 **Invited speaker:** Cesar Torres. University of Arizona
Microbial hydrolysis and its role in microbial electrochemistry applications

09:30 (OC-19) *Bioelectrode-based approach for enhancing nitrate and nitrite removal and electricity generation from eutrophic lakes*
Yifeng Zhang. Technical University of Denmark

09:50 (OC-20) *An innovative bioelectrochemical approach to accelerate hydrocarbons biodegradation in anoxic contaminated marine sediments: the "Oil-Spill Snorkel"*
Carolina Cruz Viggi. University of Rome

10:10 (OC-21) *Towards understanding interspecies communication and synergism in Pseudomonas aeruginosa co-cultures for application in current production*
Erick Bosire. RWTH Aache

10:30 **Coffee break/Poster Session**

11:00 **Invited speaker:** Frédéric Barrière. University of Rennes
A single sediment Microbial Fuel Cell powering a wireless telecommunication system

11:30 (OC-22) *Comparison of microbial communities at full-scale hybrid Microbial Electrochemical Constructed Wetlands (METlands) for urban wastewater treatment*
Tristano Baccheti. IMDEA AGUA

11:50 (OC-23) *From monitoring to steering microbiomes in BES using single cell analysis*
Christin Koch. Helmholtz Centre for Environmental Research – UFZ

12:10 (OC-24) *Effect of light on mixed community-based bioanodes*
Dorin-Mirel Popescu. Newcastle University

12:30 **Lunch**

SESSION 6. *System Architecture in MET*
Venue: 1.7 Room

Chair: Falk Harsnich

9:00 **Invited speaker:** Bruce Logan. University of Pennsylvania
Effective wastewater treatment using microbial fuel cells and anaerobic fluidized bed membrane bioreactors

Oral Communications:

9:30 (OC-25) *Microbial Fuel Cell-based Biochemical Oxygen Demand Sensors*
Martin Spurr. Newcastle University

9:50 (OC-26) *Iron oxide nanoparticles-coated stainless steel felt: a promising anodic material for microbial electrochemical systems*
Kun Guo. University of Ghent

10:10 (OC-27) *Maximum Power Point Tracking strategy applied to Microbial Fuel Cells to reduce start-up time and minimize overpotentials*
Daniele Molognoni. University of Pavia

10:30 **Coffee break/Poster Session**

11:00 **Invited speaker:** Uwe Schroeder. TU-Braunschweig
The development of microbial electrochemical technologies and the need for terminology and classification

11:30 (OC-28) *Granular capacitive bio-anodes in a fluidized bed reactor for scaling-up Microbial Fuel Cells*
Tom H.J.A. Sleutels. Wetsus, Centre of Excellence for Sustainable Water Technology

11:50 (OC-29) *A novel anaerobic electrochemical membrane bioreactor (AnEMBR) for energy recovery and water reclamation from low-organic strength solutions*
Krishna Katuri. King Abdullah University

12:10 (OC-30) *A novel carbon nanotube modified scaffold creates an efficient biocathode material for improved microbial electrosynthesis*
Ludovic Jourdin. University of Queensland

12:30 **Lunch**

13:30 **ISMET in Europe. Quo vadis, EU - ISMET?**

13:45 **General conclusions**
Awards
Closing ceremony