

Conference Programme

ISMET 8

2022 Global Conference



THE INTERNATIONAL SOCIETY FOR
MICROBIAL ELECTROCHEMISTRY AND TECHNOLOGY

(as of September 13, 2022)

REGISTRATION DESK IS OPEN:

Monday afternoon (Sept 19):

14:00 – 18:30

Tuesday - Thursday (Sept 20-22):

08:00 – 13:30 & 17:00 – 20:30

MONDAY, 19 – SEPTEMBER – 2022		WORKSHOP
10:00 – 14:00	ISMET8 – Workshop (Room A & B) 10:00 – 11:00 <i>Three (3) Short Lectures (Room A)</i> <i>Instructors: Paniz Izadi (UFZ), Antonio Berná (IMDEA Water), and Catarina Morais Paquete (U. NOVA de Lisboa)</i> 11:00 – 11:30 <i>Coffee break</i> 11:30 – 13:00 <i>Tutorials on 3 topics (30 min each) for two equal-sized groups (in Rooms A & B)</i> 13:00 – 14:00 <i>Quick lunch</i>	
14:00 - 18:00	FREE TIME, REGISTRATION TIME, POSTER SET UP (Group A)	

MONDAY, 19 – SEPTEMBER – 2022		AFTERNOON SESSION
18:00 - 18:45	WELCOME PLENARY – ROOM A Chairpersons: Nicolas Kalogerakis & Abraham Esteve-Núñez	
ID K-1	KEYNOTE #1: “Hops, Walks, and Spins: The Choreography of Extracellular Electron Transfer” Moh El-Naggar , <i>University of Southern California, Los Angeles (USA)</i>	
19:00 - 22:00	ICE-BREAKER & WELCOME PARTY at Conference Venue (Minoa Palace Hotel, next to the pool of the North Building – Conference Center near the beach)	

TUESDAY, 20 – SEPTEMBER – 2022		MORNING SESSIONS
09:00 - 09:40	Opening Ceremony – ROOM A	
	N. Kalogerakis, A. Esteve-Núñez , Conference co-Chairs N. Kalogeris , Vice Governor of the Region of Crete M. Lagoudakis , Rector, Technical University of Crete F. Harnisch , President ISMET	
09:40 - 10:30	PLENARY LECTURE – ROOM A Chairpersons: Nicolas Kalogerakis & Abraham Esteve-Núñez	
ID K-2	KEYNOTE#2: “Direct conversion of power to fuel: Electromethanogenesis” Amelia-Elena Rotaru , <i>University of Southern Denmark, Odense (Denmark)</i>	
10:30 - 11:00	Coffee break & Poster viewing (GROUP A)	
11:00 - 13:30 (ROOM A)	SESSION - 1A: Bioremediation, resource recovery & water treatment - I Chairpersons: Jung Rae Kim & Alberto Botti	
ID 01	Insights in ethanethiol degradation kinetics at biocathodes Margo Elzinga^{1,2}, Ayleen Lascaris¹, Johannes B.M. Klok¹⁻³, Annemiek ter Heijne¹, Cees J.N. Buisman^{1,3}. ¹ Environmental Technology, Wageningen University, Wageningen, The Netherlands ² Paqell B.V., Utrecht, The Netherlands ³ Wetsus, Centre of Excellence for Sustainable Water Technology, Leeuwarden, The Netherlands	
ID 18	Bioprospecting for electrochemically active perchlorate-reducing microorganisms from the atacama desert Felipe Torres-Rojas^a, Diana Muñoz^{a,c}, Camila Pía Canales^b and Ignacio T. Vargas^{a,c*} ^a Dept de Ingeniería Hidráulica y Ambiental, Pontificia Univ. Católica de Chile, Santiago, Chile. ^b Science Institute & Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland, Reykjavík, Iceland ^c Centro de Desarrollo Urbano Sustentable (CEDEUS), Chile	
ID 55	Removing smell from Hades (Άδης): Microbial electrochemical removal of phenol and sulfate in a closed system Shixiang Dai¹, Falk Harnisch¹, Mohammad Sufian Bin Hudari², Nina Sophie Keller², Steffen Kümmel², Benjamin Korth^{1*} and Carsten Vogt^{2*} ¹ Dept of Environmental Microbiology, Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany ² Dep of Isotope Biogeochemistry, Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany	
ID 56	Giving a hand to hygieia: an e-settler for wastewater polishing Alberto Botti¹, Narcis Pous², Hao-Yi Cheng³, Giulio Zanaroli¹ and Sebastià Puig² ¹ Dept. of Civil, Chemical, Environmental and Materials Engineering – DICAM, University of Bologna, Italy ² LEQUIA, Institute of the Environment, University of Girona, Girona, Spain. ³ State Key Lab of Urban Water Resource and Environment, School of Civil and Environmental Engineering, Harbin Institute of Technology Shenzhen, PR China	
ID 76	Production of biogenic palladium nanoparticles through electrochemical systems for the catalytic removal of micropollutants in wastewater Cindy Ka Y Law^{1,2}, Kankana Kundu^{1,2}, Luiza Bonin^{1,2}, Lorena Peñacoba-Antona^{3,4}, Eduardo Bolea-Fernandez⁵, Frank Vanhaecke⁵, Korneel Rabaey^{1,2}, Abraham Esteve-Núñez^{3,4,6}, Bart De Gussemé^{1,2}, Nico Boon^{1,2} ¹ Center for Microbial Ecology and Technology (CMET), Ghent University, Belgium ² Centre for Advanced Process Technology for Urban Resource recovery (CAPTURE), Gent, Belgium ³ METfilter S.L., Autovía A49 Sevilla-Huelva Km 28, Sevilla, Spain ⁴ IMDEA Water Institute, Av. Punto Com, 2, Parque Científico Tecnológico, Madrid, Spain ⁵ Atomic & Mass Spectrometry (A&MS) research group, Dept of Chemistry, Ghent University, Belgium ⁶ Univ. de Alcalá, Dept of Analytical Chemistry, Physical Chemistry and Chemical Engineering, Madrid, Spain	

ID 80	(Bio)electrochemical nitrogen recovery at full WWTP scale: Modelling and techno-economic assessment Veera Koskue¹, Veli-Pekka Pyrhönen¹, Stefano Freguia², Pablo Ledezma³ and Marika Kokko¹ ¹ Faculty of Engineering and Natural Sciences, Tampere University, Finland ² Department of Chemical Engineering, The University of Melbourne, Australia ³ Australian Centre for Water and Environmental Biotechnology, The University of Queensland, Australia
ID 81	Novel <i>in situ</i> groundwater remediation approach using bioelectrochemical systems and conductive nanoparticles Alexander Rostek¹, Robert Rameker¹, Mahshid Golalikhani¹, Detlef Diesing², and Rainer U. Meckenstock¹ ¹ Environmental Microbiology and Biotechnology (EMB), University of Duisburg-Essen, Germany ² Physical Chemistry, University of Duisburg-Essen, Germany
ID 94	Silver recovery from end-of-life photovoltaic panels using a microbial fuel cell Gerasimos Kanellos¹, Asimina Tremouli^{1,*}, Petros Tsakiridis², Emmanouella Remoundaki², Gerasimos Lyberatos^{1,3} ¹ School of Chemical Engineering, National Technical University of Athens, Athens, Greece. ² School of Mining and Metallurgical Engineering, National Technical University of Athens, Athens, Greece. ³ Institute of Chemical Engineering Sciences (ICE-HT), Patras, Greece.
FLASH ORAL PRESENTATIONS:	
ID 10	Sustainable Remediation of landfill leachate Contamination by utilizing a Bio-Electrochemical System (BES) Altaf AlBaho¹, Rory Doherty², Deepak Kumaresan³, Caroline Gauchotte-Lindsay⁴, Jonathan Gregg⁵ ¹ Queen's University of Belfast, SNBE, Belfast, UK, ² Queen's University of Belfast, SNBE, Belfast, UK, ³ Queen's University of Belfast, SBS, Belfast, UK, ⁴ University of Glasgow, SE, Glasgow, UK, ⁵ Queen's University of Belfast, SNBE, Belfast, UK.
ID 16	The potential of microbial electrochemical systems for martian in situ resource utilization Tiago P. Ramalho^{1,2}, Antoine Carissimo¹, Sven Kerzenmacher¹, Cyprien Verseux² and Guillaume Pillot¹ ¹ Center for Environmental Research and Sustainable Technology (UFT), Univ. of Bremen, Bremen, Germany ² Center of Applied Space Technology and Microgravity (ZARM), Univ. of Bremen, Bremen, Germany
ID 25	Effect of hydraulic conditions on PFR reactors with electro-conductive filterbeds to improve OC degradation Annegret Budach¹, Amanda Prado de Nicolás², Abraham Esteve Nuñez², Anja Miltner¹ and Matthias Kästner¹ ¹ Dept of Environmental Biotechnology, Helmholtz Centre for Environmental Research - UFZ, Germany ² Dept of Analytical Chemistry, Physical Chemistry and Chemical Engineering, University of Alcalá, Spain.
ID 62	Inducing the biosurfactant synthesis and electricity generation from waste vegetable oil in air-cathode microbial fuel cell Aleksander de Rosset¹, Grzegorz Pasternak¹ ¹ Laboratory of Microbial Electrochemical Systems, Wroclaw University of Science and Technology, Poland.
11:00 - 13:30 (ROOM B)	SESSION - 1B: Electrochemistry of microorganisms and enzymes Chairpersons: Miriam Rosenbaum & Jörg Deutzmann
ID I-1	Invited presentation: New instruments for high-throughput microbial electrochemistry Antonin Prévotau^{1,2}, Tom Molderez³, David Hernandez Villamor^{1,2}, Musa Aydogan³, Marian Verhelst³, Korneel Rabaey^{1,2} ¹ Center for Microbial Ecology and Technology (CMET), Ghent University, Ghent, Belgium ² Center for Advanced Process Technology for Urban Resource Recovery (CAPTURE), Ghent, Belgium ³ MICAS, KU Leuven, Kasteelpark Arenberg 10, Leuven, Belgium
ID 12	The electrical properties of cable bacteria: ripe for bioelectronics? Robin Bonnén¹, Koen Wouters², Leonid Digel¹, Lars Peter Nielsen¹, Jean V. Manca²

	¹ CEM, Aarhus University, Denmark ² X-LAB, Hasselt University, Belgium
ID 21	“Olympian battle”: Effect of methanogens on the activity and microbial community of <i>Geobacter</i> spp. dominated biofilm anodes Daniel Dzofou Ngoumelah^{1,2}, Anne Kuchenbuch², Falk Harnisch², Jörg Kretzschmar¹ ¹ DBFZ - German Biomass Research Centre, Leipzig, Germany ² Dept of Envi. Microbiology, UFZ – Helmholtz-Centre for Environmental Research, Leipzig, Germany
ID 31	Following the Άλκμαίων approach: Electrochemical and microbial dissection of electrified biotrickling filters Benjamin Korth¹, Narcís Pous², Richard Hönig¹, Philip Haus¹, Felipe Borim Corrêa¹, Ulisses Nunes da Rocha¹, Sebastià Puig², Falk Harnisch¹ ¹ Dept of Environmental Microbiology, Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany ² Lab of Chemical and Environmental Engineering (LEQUIA), University of Girona, Girona, Spain
ID 54	Cable bacteria filaments as an electrochemical working electrode Leonid Digel¹, Robin Bonnè¹, Maciej Mierzwa^{1,2}, Ileana-Alexandra Pavel², Elena Ferapontova³, Silvia E. Zieger⁴, Thomas Boesen^{1,3,5}, Alexander Kuhn², Falk Harnisch⁶ and Lars Peter Nielsen¹ ¹ Center for Electromicrobiology, Department of Biology, Aarhus University, Denmark ² Univ. Bordeaux, CNRS, Bordeaux INP, ISM, UMR 5255, Site ENSCBP, Pessac, France ³ iNANO, Aarhus University, Denmark, ⁴ Aarhus University Center for Water Technology, Aarhus University, Denmark, ⁵ Department of Molecular Biology and Genetics, Aarhus University, Denmark ⁶ Dept of Env. Microbiology, Helmholtz-Centre for Environmental Research - UFZ, Leipzig, Germany
ID 164	Improved process efficiency of bio-based succinic acid production and in situ electrochemical separation Chrysanthi Pateraki¹, Eleni Stylianou¹, Elena Magdalinou¹, Dimitrios Skliros², Emmanouil Flemetakis², Korneel Rabaey³, Apostolis Koutinas¹ ¹ Department of Food Science and Human Nutrition, Agricultural University of Athens, Athens, Greece ² Department of Biotechnology, Agricultural University of Athens, Athens, Greece ³ Lab of Microbial Ecology and Technology, Ghent University, Ghent, Belgium
ID 168	Enrichment strategy of chemolithotrophic biofilm for nitrogen fixation in MES Axel Rous, Eric Trably, Elie Le-Quemener and Nicolas Bernet INRAE, Univ Montpellier, LBE, Narbonne, France
	FLASH ORAL PRESENTATIONS:
ID 38	“Natura nihil frustra facit – Nature does nothing in vain” How to screen efficiently for electroactive microorganisms? Anne Kuchenbuch¹, Ronny Frank², José Vazquez Ramos², Heinz-Georg Jahnke², Falk Harnisch¹ ¹ UFZ – Helmholtz-Centre for Environmental Research, Dept of Env. Microbiology, Leipzig, Germany ² Centre for Biotechnology and Biomedicine, Molecular biological-biochemical Processing Technology, Leipzig University, Leipzig, Germany
ID 58	Substrate Specific Current Enhancement in Alzheimer`s Pathogen <i>Porphyromonas gingivalis</i> Divya Naradasu^a, Luo Dan^a, Sotaro Takano^a, Ariyoshi Wataru^b and Akihiro Okamoto^{a,c} ^a Intl Center for Materials Nanoarchitectonics, National Institute for Materials Science, Ibaraki, Japan. ^b Division of Infections and Molecular Biology, Department of Health Promotion, Science of Health Improvement, Kyushu Dental University, Kitakyushu, Japan. ^c Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan
ID 67	Soil microorganisms facilitated the electrode-driven trichloroethene dechlorination to ethene by <i>Dehalococcoides</i> species in a bioelectrochemical system Lingyu Meng¹, Naoko Yoshida¹, Zhiling Li² ¹ Department of Civil Engineering, Nagoya Institute of Technology (Nitech), Nagoya, Japan ² State Key Lab of Urban Water Resources and Environment, School of Environment, Harbin Institute of Technology, Harbin, China
ID 126	Microbial diversity in bioelectrochemical systems for CH₄ production using different anode surfaces

	René Cardeña^{1,2}, Gamaliel Ramirez-Ramirez¹, Angela Cabezas², Germán Buitrón¹ ¹ Laboratory for Research on Advanced Processes for Water Treatment, Instituto de Ingeniería, Unidad Académica Juriquilla, Universidad Nacional Autónoma de México, México. ² Instituto Tecnológico Regional Centro Sur, Universidad Tecnológica, Durazno, Uruguay.
ID 153	Physiology of <i>Synechocystis</i> sp. PCC 6803 under BPV conditions Hans Schneider, Bin Lai and Jens O. Kroemer¹ Department of Solar Materials, Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany
13:30 - 14:30	LUNCH (Minoa Palace Hotel)
14:30 - 17:00	NETWORKING TIME
15:00 - 16:30	ISMET8 SIDE-EVENT: 2nd ELECTRA STAKEHOLDERS WORKSHOP (Room A) <i>"Pilot testing of ELECTRA technologies for electro-bioremediation"</i> a) Brief overview of H2020-ELECTRA project technologies b) Presentation of technologies being tested on site c) Q & A

TUESDAY, 20 – SEPTEMBER – 2022		AFTERNOON SESSIONS
17:00 - 18:30 (ROOM A)	SESSION - 2A: Bioremediation, resource recovery and water treatment – II Chairpersons: Federico Aulenta & Marco Zeppilli	
ID I-2	Invited presentation: Continuous electron shuttling by sulfide oxidizing bacteria as a novel strategy to produce electric current Annemiek Ter Heijne Dept of Agrotechnology and Food Sciences, Wageningen University (The Netherlands)	
ID 103	In search for electroactive petroleum degraders and biosurfactant producers in pristine and contaminated environments Grzegorz Pasternak¹, Bartosz Widera¹, Natalia Tyszkiewicz¹ ¹ Lab of Microbial Electrochemical Systems, Faculty of Chemistry, Wroclaw Univ. of Science and Tech, Poland	
ID 108	A two-stage bio(electro)chemical process for the removal of toluene and chloroform from contaminated groundwater Matteo Tucci¹, David Fernández-Verdejo², Albert Guisasola³, Paqui Blánquez², Ernest Marco-Urrea², Marco Resitano¹, Pamela Ciacia¹, Carolina Cruz Viggí¹, Federico Aulenta¹ ¹ Water Research Institute (IRSA), National Research Council (CNR), Monterotondo (RM), Italy ² Biorem UAB, Department of Chemical, Biological and Environmental Engineering, School of Engineering, Universitat Autònoma de Barcelona, Barcelona, Spain ³ GENOCOV, Department of Chemical, Biological and Environmental Engineering, School of Engineering, Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain	
ID 109	Efficient bioelectrochemical nitrogen recovery from high N-loaded wastewaters Zainab Ul¹, Mariella Belén Galeano¹, Mira Lotta Kristiina¹, Mireia Baeza², Juan Antonio Baeza¹, Albert Guisasola¹ ¹ GENOCOV, Departament d'Enginyeria Química, Biològica i Ambiental, Escola d'Enginyeria, and ² Departament de Química, Facultat de Ciències Universitat Autònoma de Barcelona	
	FLASH ORAL PRESENTATIONS:	
ID 113	Extremophilic microbial consortium selected for the bioelectrochemical treatment of saline textile effluents containing recalcitrant azo dyes	

	<p><u>Sirine Saadaoui</u>^{1,2,3}, Habib Chouchane¹, Ameer Cherif¹ and Benjamin Erable³</p> <p>¹Univ. Manouba, ISBST, Biotechpole Sidi Thabet, 2020, Ariana, Tunisia</p> <p>²Faculty of Sciences of Tunis, University of Tunis El Manar, Tunis, Tunisia</p> <p>³Laboratoire de génie chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France.</p>
ID 163	<p>Removal of oil pollution from marine sediments using bioelectrochemical system</p> <p><u>Jaak Truu</u>, Marika Truu, Kertu Tiirik</p> <p>Institute of Molecular and Cell Biology, University of Tartu, Estonia</p>
ID 171	<p>Nitrate removal from groundwater by fluidized BES with conductive activated carbon and vitreous carbon</p> <p><u>Xiaofei Wang</u>^{1,2*}, Michiel Verheye^{1,2} and Korneel Rabaey^{1,2}</p> <p>¹Center for Microbial Ecology and Technology (CMET), Ghent University, Ghent, Belgium</p> <p>²Centre for Advanced Process Technology for Urban Resource Recovery (CAPTURE), Ghent, Belgium</p>
ID 180	<p>Nitrate recovery in groundwater and single cell protein production in an in-situ electrolyzer</p> <p><u>Yufeng Jiang</u>, Yifeng Zhang</p> <p>Department of Environmental Engineering, Technical University of Denmark, Denmark</p>
ID 194	<p>Isolation of electroactive hydrocarbon-degrading consortia for on-site groundwater electrobioremediation</p> <p>Martí Aliaguilla¹, Laura Huidobro¹, Pablo Sánchez-Cueto¹, Daniele Molognoni¹, Pau Bosch-Jimenez¹, David Gramunt², Alfredo Pérez-de-Mora³, and Eduard Borràs¹</p> <p>¹LEITAT Technological Center, C/ de la Innovació 2, Terrassa, Spain</p> <p>²TAUW Iberia SAU, Centre d'Empreses de Noves Tecnologies, Cerdanyola del Vallès, Spain</p> <p>³TAUW GmbH, Dept. of Soil & Groundwater, Munich, Germany</p>
17:00 - 18:30 (ROOM B)	<p>SESSION - 2B: Scale-up of MET for commercialisation - I</p> <p>Chairpersons: Annemiek Ter Heijne & Daniele Molognoni</p>
ID 48	<p>Road trip: Nitrate electro-bioremediation from the laboratory to pilot plant</p> <p>Alba Ceballos-Escalera, Narcís Pous, M. Dolors Balaguer, Sebastià Puig</p> <p>LEQUIA, Institute of the Environment, University of Girona, Girona, Spain</p>
ID 83	<p>Design, set-up and operation of a fully-automated BES for thermophilic CO₂ reduction to acetate</p> <p><u>Laura Rovira-Alsina</u>¹, Sabine Spiess², Marianne Haberbauer², M. Dolors Balaguer¹ and Sebastià Puig¹</p> <p>¹LEQUIA. Institute of the Environment. University of Girona. Campus Montilivi, Girona, Catalonia, Spain.</p> <p>²K1-MET GmbH, Linz, Austria.</p>
ID 95	<p>Pilot-Scale Studies of A Novel Type Hydrogen-Producing Microbial Electrolysis Cells (MECs) Reactor Treating High-Strength Organic Wastes</p> <p><u>Jinsu Choi</u>, Junggyu Kim, Minsoo Kim, Heewon Jeon, Eunsil Bae, Ho Joon Lee and Dae-Yeol Cheong</p> <p>BioX Inc., Research Institute, Seodaemun-gu, Seoul, Republic of Korea</p>
ID 101	<p>Optimising the design of large scale microbial electrochemical technologies through mathematical modelling and high-performance computing</p> <p><u>Jordan Day</u>¹, Toby Wood² and Elizabeth Heidrich¹</p> <p>¹School of Engineering, Newcastle University, Newcastle-upon-Tyne, UK</p> <p>²School of Mathematics, Statistics and Physics, Newcastle University, Newcastle-upon-Tyne, UK</p>
ID 142	<p>METZero: turning wastewater treatment Net-Zero using Microbial Electrochemical Technologies (METs)</p> <p><u>Pavlina Theodosiou</u>¹, Ellen van Voorthuizen², Paul Lavender² and Elizabeth Heidrich¹</p> <p>¹Dept. of Environmental Engineering, School of Engineering, Newcastle University, UK</p> <p>²Water and Maritime, Royal Haskoning DHV, UK</p>
	FLASH ORAL PRESENTATIONS:
ID 102	<p>Enhancing hydrogen production from real industrial wastewater in a 150L MEC pilot plant</p>

	Oscar Guerrero-Sodric¹, Juan Antonio Baeza¹, Albert Guisasola¹ ¹ GENOCOV, Departament d'Enginyeria Química, Biològica i Ambiental, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain
ID 228	Potential of electricity generation from Microbial Fuel Cells using a pure culture of <i>Pseudomonas citronellolis</i> Constantina Varnava¹, Ioannis Ieropoulos², Argyro Tsipa^{1,3} ¹ Department of Civil and Environmental Engineering, University of Cyprus, Nicosia, Cyprus ² Water and Environmental Engineering Group, University of Southampton, Southampton, UK ³ Nireas International Water Research Centre, University of Cyprus, Nicosia, Cyprus
18:30 - 19:00	Coffee break & Poster Viewing (GROUP A)
19:00 – 20:30 (ROOM A)	SESSION – 3A: Bioremediation, resource recovery and water treatment - III Chairpersons: Ola Gomma & Yifeng Zhang
ID 125	Scale up of a sequential bioelectrochemical process for chlorinated aliphatic hydrocarbons removal from contaminated groundwater Marco Zeppilli, Edoardo Dell'Armi, Marco Petrangeli Papini, Mauro Majone Department of Chemistry, University of Rome Sapienza, Rome Italy
ID 138	Integrated hydroponics-microbial electrochemical technology for sewage management at households Ravi K. Yadav¹ and Sunil A. Patil¹ ¹ Department of Earth and Environmental Sciences, Indian Institute of Science Education and Research Mohali (IISER Mohali), Punjab, India.
ID 159	Electroactive beds for enhanced wastewater treatment applications in constructed wetlands and other processes Asheesh Kumar Yadav^{1,2}, Yolanda Sequera¹, Fernando Martinez¹ ¹ Dept of Chemical and Environmental Technology, Rey Juan Carlos University, Madrid, Spain. ² Dept of Environmental and Sustainability, CSIR-Institute Minerals and Materials Tech., Bhubaneswar, India
ID 169	Start-up strategies and performance of anaerobic digestion-microbial electrolysis cell integrated systems of cattle manure Feride Ece Kutlar, Mert Sanli, Amin Ghaderikia, Tuba Hande Erguder, Yasemin Dilsad Yilmazel Department of Environmental Engineering, Middle East Technical University, Ankara, Turkey
ID 189	Life cycle assessment and cost effectiveness analysis of bio- electrochemical remediation technologies (ELECTRA pilots) Victor Misev¹, Vinzenz Müller¹ and Christoph Hugi¹ ¹ University of Applied Sciences and Arts Northwestern Switzerland (FHNW), School of Life Sciences (HLS), Institute for Ecopreneurship (IEC)
ID 197	New insights into carbon properties to promote microbial electroactivity for wastewater treatment R. Berenguer¹, A. Prado^{2,3}, M. Ramírez-Moreno^{2,3}, M. Llorente², J.M. Ortiz³, and A. Esteve-Núñez^{2,3,4} ¹ Instituto Universitario de Materiales, Departamento Química Física, Universidad de Alicante, Alicante, Spain ² University of Alcalá, Dept of Analytical Chemistry, Physical Chemistry and Chemical Engineering, Spain ³ IMDEA Water Institute, Alcalá de Henares, Madrid, Spain ⁴ METfilter, Carrión de los Céspedes, Spain
	FLASH ORAL PRESENTATIONS:
ID 212	Development of algal fuel cells for decolourisation of azo dyes Radwa Ibrahim^{1,2}, Tajalli Keshavarz¹, Godfrey Kyazze¹ ¹ School of Life Sciences, University of Westminster, London, UK ² Department of Botany and Microbiology, Alexandria University, Alexandria, Egypt.
ID 225	Comparing the efficiency of constructed wetlands for hydrocarbon removal amended with oxygen supply via in situ electrochemical production versus nanobubble injection.

	Petroula Seridou¹, M. Vamvakia¹, E. Syranidou¹, A. Vlysidis¹, N. Kalogerakis¹ ¹ School of Chemical and Environmental Engineering, Technical University of Crete, Greece
19:00 – 20:30 (ROOM B)	SESSION – 3B: Scale-up of MET for commercialisation - II Chairpersons: Pablo Ledezma & Katharina Herkendell
ID 181	Optimization of low-voltage boosting for an air-cathode microbial fuel cell with an anion exchange membrane in a 246L wastewater treatment reactor Naoko Yoshida¹, Ayano Shimidzu¹, Toshiaki Hashimoto¹, Kyosuke Mitsuoka¹, Fumichika Tanaka¹ ¹ Department of Civil Engineering, Nagoya Institute of Technology (Nitech), Nagoya, Aichi, Japan
ID 183	From CO₂ to acetate: long-term operation of a scaled-up bioelectrochemical system in “real world” wastewater treatment plant Silvia Bolognesi¹, Radka Matová², M. Dolors Balaguer¹, Yeray Asensio³, Victor M. Monsalvo³ and Sebastià Puig¹ ¹ LEQUiA, Institute of the Environment, Universitat de Girona, Girona, Spain ² FCC Aqualia Czech Republic, Ostrava-Mariánské Hory a Hulváky, Czech Republic. ³ FCC Aqualia, Department of Innovation and Technology, Madrid, Spain
ID 187	Bioelectrochemically-improved anaerobic digestion for industrial wastewater valorization: from laboratory to pilot-scale Pau López Martí¹, David Moyano Domínguez¹, Daniele Molognoni¹, Silvia Mena Fernandez¹, Charbell De Soto², Xavier Tutó Cabedo², Pau Bosch-Jimenez¹ and Eduard Borràs¹ ¹ LEITAT Technological Center, C/ de la Innovació 2, Terrassa, Spain ² LEITAT Technological Center (DFactory), C/ 27, Barcelona, Spain
ID 190	Microbial desalination cell for low energy drinking water: the roadmap towards sustainable desalination Marina Ramírez-Moreno^{1,4}, Pau Ródenas¹, Martí Aliaguilla², Pau Bosch-Jimenez², Eduard Borràs², Naiara Hernández³, Patricia Zamora³, Víctor Monsalvo-García³, Frank Rogalla³, Juan Manuel Ortiz¹ and Abraham Esteve-Núñez^{1,4}. ¹ IMDEA Water Institute, Alcalá de Henares, Madrid, Spain, ² LEITAT Technological Center, Barcelona, Spain ³ FCC Aqualia S.A., Madrid, Spain ⁴ Analytical Chemistry, Physical Chemistry, and Chemical Eng. Dept, Universidad de Alcalá, Madrid, Spain.

WEDNESDAY, 21 – SEPTEMBER – 2022		MORNING SESSIONS
8:30 - 9:15	PLENARY LECTURE – ROOM A Chairpersons: Nicolas Kalogerakis & Abraham Esteve-Núñez	
ID K-3	KEYNOTE #3: “Achieving unprecedented current and power densities in microbial electrochemical technologies using zero-gap spacing and vapor-fed electrodes” Bruce Logan , <i>Engineering Energy & Environ. Inst., Dept of Civil & Environmental Eng., Penn State (USA)</i>	
9:15 - 10:45 (ROOM A)	SESSION - 4A: Extracellular electron transfer processes - I Chairpersons: Catarina Paquete and Changman Kim	
ID 44	Clarifying the early stages of microbial anode formation using real-time optical microscopy and image processing <u>Lucila Martinez Ostormujof¹</u> , Sébastien Teychené ¹ , Emmanuel Cid ¹ and Benjamin Erable ¹ ¹ Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France.	
ID 49	Characterization of exoelectrogenic biofilms using microfluidic reactors and a robotic imaging platform <u>Edina Klein</u> , René Wurst and Johannes Gescher Institute for Technical Microbiology, Hamburg University of Technology, Germany	
ID 52	Quinones and flavins have distinct, but complementary roles in extracellular electron transfer in <i>Lactiplantibacillus plantarum</i> <u>Joe Tolar</u> , Siliang Li, and Caroline M. Ajo-Franklin. Department of Biosciences, Rice University, Houston, Texas	
ID 68	Protein Nanowires to the rescue: How do Geobacter breathe without oxygen or soluble electron acceptors? <u>Nikhil S. Malvankar</u> Microbial Sciences Institute, Yale University, USA	
ID 75	Interfacing exoelectrogenic biofilms with magnetic and conductive nano- and microstructures <u>René Wurst</u> , Edina Klein, Johannes Gescher Institute of Technical Microbiology, Hamburg University of Technology (TUHH), Germany	
	FLASH ORAL PRESENTATIONS:	
ID 69	Revealing new electroactive bacteria that use phenazines as extracellular electron shuttles <u>Angel Franco¹</u> , Mahmoud Elbahnasy ^{1,2} and Miriam A. Rosenbaum ^{1,2} ¹ Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute, Jena, Germany ² Faculty of Biological Sciences, Friedrich Schiller University, Jena, Germany	
ID 71	Understanding redox mediator based Extracellular electron transfer in <i>E. coli</i> <u>Biki B. Kundu¹</u> , Caroline M. Ajo-Franklin ¹ ¹ PhD Program in Systems, Synthetic, and Physical Biology, Rice University, Houston, Texas, USA	
9:15 - 10:45 (ROOM B)	SESSION – 4B: Material science and reactor design – I Chairpersons: Sunil Patil & Paniz Izadi	
ID I-3	Invited presentation: Design of reactors for high current density and high coulombic efficiency hydrogen-mediated microbial electrosynthesis from CO ₂ Kun Guo¹ , Wenfang Cai ¹ , Kai Cui ¹ , Gaoyuan Shang ¹ and Zeyan Pan ¹ ¹ School of Chemical Engineering and Technology, Xi’an Jiaotong University, China	
ID 30	The Biophotovoltaics for biohydrogen production using sunlight and water <u>Bin Lai¹</u> , Hans Schneider ¹ , Maximillian Feußner ² , Jens Krömer ¹ ¹ Department of Solar Materials, Helmholtz Centre for Environmental Research – UFZ, Germany ² Interdisciplinary Center for Bioinformatics, University of Leipzig, Germany	

ID 36	What are the actual conditions in 3D porous bioelectrodes? Microprofiling to characterize local pH, H₂, electric field and redox potentials <u>Sanne M. de Smit</u>^{1,2}, Harry H. Bitter¹, David P.B.T.B. Strik² ¹ Biobased Chemistry and Technology, Wageningen University and Research, Netherlands ² Environmental Technology, Wageningen University and Research, Netherlands
ID 47	CO₂ recycling in 3-D printed three-chamber bio-electrosynthesis cells at moderate saline conditions <u>Paolo Dessì</u>^{1,2}, Claribel Buenaño³, <u>Santiago Martínez Sosa</u>¹, Simon Mills³, Deepak Pant⁴, Sebastià Puig², Vincent O'Flaherty³ and Pau Farràs¹ ¹ School of Chemistry and Energy Research Centre, Ryan Institute, National Univ. of Ireland Galway, Ireland ² LEQUiA, Institute of the Environment, University of Girona, Spain ³ Microbiology Department, School of Natural Sciences, National University of Ireland Galway, Ireland ⁴ Separation and Conversion Technology, Flemish Institute for Technological Research (VITO), Belgium
FLASH ORAL PRESENTATIONS:	
ID 03	Alternating current based electrochemical deposition of pure emeraldine salt redox state of polyaniline to modify mw- cnt/polyester microfiber nonwoven based flexible electrode for microbial fuel cell <u>Rahul Kandpal</u>^{1, 2, 3}, Syed Wazed Ali^{1,3*}, Shaikh Ziauddin Ahammad^{1,2*} ¹ School of Interdisciplinary Research (SIRe), Indian Institute of Technology Delhi, India ² Dept of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, India ³ Dept of Textile and Fibre Engineering, Indian Institute of Technology Delhi, New Delhi, India
ID 20	Polyaniline interweaved iron embedded in urea-formaldehyde resin-based carbon as a cost-effective catalyst for power generation in microbial fuel cell <u>Simran Kaur Dhillon</u>¹, <u>Patit P Kundu</u>¹ ¹ Department of Chemical Engineering, Indian Institute of Technology, Roorkee, India
10:45 – 11:10	Coffee break & Poster Viewing (GROUP A)
11:10 – 11:15	Group picture (coffee break area)
11:15 – 13:30 (ROOM A)	SESSION - 5A: Extracellular electron transfer processes - II Chairpersons: Akihiro Okamoto and Bin Lai
ID I-4	Invited presentation: Microbial Physiology at Fluctuating Electrosynthesis <u>Alfred Spormann</u> and Joerg Deutzmann Department of Civil & Environmental Engineering, Stanford University, CA, USA
ID 79	Elucidating the extracellular electron transfer pathway of <i>Sideroxydans lithotrophicus</i> ES-1 <u>Anaísa Coelho</u>¹, Abhiney Jain², Joana Madjarov¹, Smilja Todorovic¹, Ricardo O. Louro¹, Jeffrey A. Gralnick², <u>Catarina M. Paquete</u>¹ ¹ Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Portugal ² BioTechnology Institute and Department of Plant and Microbial Biology, University of Minnesota, USA
ID 85	The biogeochemical cycles of iron, sulfur and nitrogen come together at the level of multiheme cytochromes with clear evolutionary and structural relationships <u>Ricardo Soares</u>^{1,2}, <u>Nazua L. Costa</u>¹, <u>Catarina M. Paquete</u>¹, Claudia Andreini³ and Ricardo O. Louro^{1*} ¹ Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Portugal ² Instituto Nacional de Investigação Agrária e Veterinária, Portugal ³ Magnetic Resonance Center and Department of Chemistry, University of Florence, Sesto Fiorentino, Italy
ID 96	Metabolically and morphologically diverse swarmers appear frequently around active cable bacteria

	<p>Jamie JM Lustermans¹, Jesper J Bjerg^{1,2}, Casper A Thorup¹, Mantas Sereika³, Laurine DW Burdorf¹, Per H Nielsen³, Mads Albertsen³, Lars Peter Nielsen¹, Andreas Schramm¹ and Ian PG Marshall¹</p> <p>¹ Center for Electromicrobiology, Institute for Microbiology, Dept of Biology, Aarhus University, Denmark ² Microbial Systems Technology Excellence Centre, Dept of Biology, University of Antwerp, Wilrijk, Belgium ³ Center for Microbial Communities, Aalborg University, Denmark</p>
ID 105	<p>Mediated Electron Transfer in the supragingival microbiome.</p> <p>David Hernández Villamor^{1,2}, Riet Boydens^{1,2}, Tom Van de Wiele¹, Korneel Rabaey^{1,2} and Antonin Prévotau^{1,2}</p> <p>¹ Center for Microbial Ecology and Technology (CMET), Ghent University, Ghent, Belgium ² Center for Advanced Process Technology for Urban Resource Recovery (CAPTURE), Ghent, Belgium</p>
ID 116	<p>Function and role of accessory Mtr proteins from <i>Shewanella oneidensis</i></p> <p>Jeffrey A. Gralnick¹</p> <p>¹ BioTechnology Institute and Department of Plant and Microbial Biology, University of Minnesota, USA</p>
ID 123	<p>Unravelling EET-based anaerobic metabolisms and microorganisms from the haloalkaline sediments</p> <p>Sunil A. Patil, Srishti Chaudhary, Ramandeep Singh, Chetan Sadhotra and Sukrampal Yadav</p> <p>Dept of Earth and Environmental Sciences, IISER-Mohali, SAS Nagar, Punjab, India</p>
FLASH ORAL PRESENTATIONS:	
ID 141	<p>Uncovering novel mechanisms for electron uptake in cathode- oxidizing marine microbial consortia</p> <p>Joshua D. Sackett¹, Jin-Sang Yu¹, Nitin Kamble¹, Edmund Leach¹, Taruna Schuelke², Elizabeth Wilbanks², and Annette R. Rowe¹</p> <p>¹Department of Biological Sciences, University of Cincinnati, Cincinnati, Ohio, USA ²Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, USA</p>
ID 146	<p>The new electroactive Gram-positive bacterium <i>Paenibacillus profundus</i> YoMME</p> <p>Yolina Hubenova^{1,2} and Mario Mitov^{3,4}</p> <p>¹Institute of Electrochemistry and Energy Systems “Acad. Evgeni Budevski”, IEES- BAS, Sofia, Bulgaria ²Department of Biochemistry and Microbiology, Plovdiv University “Paisii Hilendarski”, Plovdiv, Bulgaria ³Department of Chemistry, South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria ⁴Innovative Center for Eco Energy Technologies, South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria</p>
11:15 - 13:30 (ROOM B)	<p>SESSION - 5B: Electrochemical, biological & systemic analysis of METs</p> <p>Chairpersons: Bruce Logan and Ignacio Vargas</p>
ID I-5	<p>Invited presentation:</p> <p>Perspectives and opportunities for combining electrochemical processes with fermentations</p> <p>Jamin C. Wood and Bernardino Viridis</p> <p>Australian Centre for Water and Environmental Biotechnology – ACWEB, Australia</p>
ID 04	<p>Real-time monitoring of biofilm thickness allows for determination of acetate limitations in bio-anodes</p> <p>João Pereira^{1,2}, Siqi Pang¹, Casper Borsje¹, Tom Sleutels^{1,3}, Bert Hamelers¹, Annemiek ter Heijne²</p> <p>¹Wetsus, European Centre of Excellence for Sustainable Water Technology, Leeuwarden, the Netherlands ²Environmental Technology, Wageningen University, Wageningen, the Netherlands ³Faculty of Science and Engineering, University of Groningen, Groningen, The Netherlands</p>
ID 13	<p>Electrochemical and microbiological response of exoelectrogenic biofilm to polyethylene microplastics in water</p> <p>Song Wang, Mingyi Xu, and Yifeng Zhang</p> <p>Department of Environmental Engineering, Technical University of Denmark, Lyngby, Denmark</p>
ID 14	<p>Opportunities for visual techniques to determine characteristics and limitations of electro-active biofilms</p> <p>Tom Sleutels^{1,2}, João Pereira^{1,3}, Sam de Nooy^{1,3}, Annemiek ter Heijne³</p> <p>¹Wetsus, European Centre of Excellence for Sustainable Water Technology, Leeuwarden, the Netherlands</p>

	² Faculty of Science and Engineering, University of Groningen, Groningen, the Netherlands ³ Environmental Technology, Wageningen University, Wageningen, the Netherlands
ID 33	“Every advantage in the past is judged in the light of the final issue” - Performance and functional stability of <i>Geobacter</i> spp. dominated biofilm anodes under anaerobic digestion conditions Jörg Kretzschmar^{1,*}, Daniel Dzofou Ngoumelah^{1,2}, Falk Harnisch² ¹ DBFZ - German Biomass Research Centre, Leipzig, Germany ² Dept of Environmental Microbiology, UFZ – Helmholtz-Centre for Env. Research, Leipzig, Germany
ID 114	Sprayable biofilm – Utilizing agarose hydrogels as 3D matrix for enhanced current production Melanie Knoll¹, Johannes Gescher¹ ¹ University of Technology Hamburg (TUHH), Institute of Technical Microbiology, Hamburg, Germany
ID 122	Exploring the energy storage capacity of biocathodes Daniela Carrillo-Peña¹, Guillermo Pelaz¹, Antonio Morán¹, Raúl Mateos¹ and Adrián Escapa² ¹ Chemical and Env. Bioprocess Engineering Group, Natural Resources Inst (IRENA), University of Leon, Spain ² Department of Electrical Engineering and Automatic Systems, University of Leon, Spain
ID 143	Exploring the metabolic “thermostat” of electroactive biofilms with microcalorimetry Pavlina Theodosiou¹ and Elizabeth Heidrich¹ ¹ Dept. of Environmental Engineering, School of Engineering, Newcastle University, UK
	FLASH ORAL PRESENTATIONS:
ID 217	Novel species identification and deep functional annotation of electrogenic biofilms, selectively enriched in microbial fuel cell (MFC) array Lukasz Szydlowski^{1,2}, Jiri Ehlich³, Pawel Szczerbiak², Noriko Shibata¹, and Igor Goryanin^{1,4,5} ¹ Okinawa Institute of Science and Technology, Biological Systems Unit, Onna, Japan ² Malopolska Centre of Biotechnology, Jagiellonian University, Krakow, Poland ³ Brno University of Technology, Faculty of Chemistry, Brno, Czechia ⁴ University of Edinburgh, School of Informatics, Edinburgh, UK ⁵ Tianjin Institute for Industrial Biotechnology, Tianjin, China
13:30 - 14:30	LUNCH (Minoa Palace Hotel)

14:30 - 16:30	NETWORKING TIME – POSTER SWITCHING TIME (Group A to B)
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WEDNESDAY, 21 – SEPTEMBER – 2022		AFTERNOON SESSIONS
16:30 - 17:00	Coffee break & Poster Viewing (GROUP B)	
17:00 - 18:30 (ROOM A)	SESSION - 6A: Extracellular electron transfer processes - III Chairpersons: Jeffrey Gralnick and Robin Bonn�	
ID 150	Submicromolar level additives boost microbial electrocatalysis of <i>Geobacter sulfurreducens</i> PCA by two orders of magnitude Yoshihide Tokuou¹, Akihiro Okamoto^{2,3} ¹ Faculty of Life and Environmental Sciences, University of Tsukuba, Ibaraki, Japan ² Intl Center for Materials Nanoarchitectonics (WPI-MANA), Natl Inst. for Material Science, Ibaraki, Japan ³ School of Chemical Sciences and Engineering, Hokkaido University, Kita-ku, Sapporo, Hokkaido, Japan.	
ID 155	Anomaly detection narrowed down genes identified by whole mutant library screening with carbon electrode based high-throughput electrochemistry Wenyuan Huang^{1,2}, Xizi Long¹, Gaku Imamura^{1,3}, Akihiro Okamoto^{1,2,*}	

	¹ International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science, Tsukuba, Japan ² Graduate School of Chemical Sciences and Engineering, Hokkaido University, Kita-ku, Sapporo, Japan ³ Graduate School of Information Science and Technology, Osaka University, Japan
ID 162	Hydrogenases are Essential for Mtr-Dependent 2,3-Butanediol Production During Inward Electron Transfer Kathryne C. Ford^{1,2}, Nick Tefft², Nisha Jangir², Michaela TerAvest² ¹ Department of Microbiology and Molecular Genetics, Michigan State University, USA ² Department of Biochemistry and Molecular Biology, Michigan State University, USA
ID 193	Atomic structure of the OmcE cytochrome filament by cryo-electron microscopy <u>Daniel R. Bond¹</u>, Allon Hochbaum^{2,3} ¹ Dept of Plant and Microbial Biology, and BioTechnology Institute, University of Minnesota, MN, USA ² University of California, Irvine, Irvine, CA, USA ³ University of Virginia School of Medicine, Charlottesville, VA, USA
FLASH ORAL PRESENTATIONS:	
ID 158	Materials informatics approach combined with high-throughput electrochemistry to model extracellular electron transport via electron shuttles Takashi Fuikawa¹, Ryo Tamura^{1,2}, Gaku Imamura^{1,3} and Akihiro Okamoto^{1,4} ¹ National Institute for Materials Science, Japan ² Graduate School of Frontier Sciences, The University of Tokyo, Japan ³ Graduate School of Information Science and Technology, Osaka University, Japan ⁴ Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan
ID 170	Corrosion of metallic iron by methanogens: the dual role of soluble CO₂ as a substrate and reactant for H₂ production Ioannis Vyrides¹, Despina Constantinou¹, Charis Samanides¹, Maria Andronikou¹ ¹ Dept of Chemical Engineering, Cyprus University of Technology, Limassol, Cyprus.
ID 179	Inward electron transfer in <i>S. oneidensis</i>: A thermodynamic barrier Shaylynn Miller and Michaela TerAvest Affiliation: Michigan State University, East Lansing, MI, USA.
17:00 - 18:30 (ROOM B)	SESSION – 6B: Material science and reactor design - II Chairpersons: Albert Guisasola and Benjamin Korth
ID 66	“Ηλεκτροχημικό άγγιγμα Μίδας – The electrochemical Midas touch” Scalability of the Kolbe electrolysis to pilot scale Luis F.M.Rosa, Katharina Neubert, Falk Harnisch* UFZ – Helmholtz-Centre for Environmental Research, Dept of Env. Microbiology, Leipzig, Germany
ID 77	Multi-scale modelling and design of mec for experimentally improving the energy efficiency of sewage treatment Serge Da Silva¹, Rémy Lacroix¹, Lorenzo Cristiani², Emma Roubaud², Luc Etcheverry², Alain Bergel², Régine Basseguy², Benjamin Erable² ¹ 6T-MIC Ingénieries, Castanet-Tolosan, France ² Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France
ID 89	Cellulose based fungal battery Carolina Reyes¹, Alexandre Poulin¹, Javier Ribera³, Francis W.M.R. Schwarze³, Gustav Nyström^{1,2} ¹ Laboratory for Cellulose and Wood Materials, Empa, Dübendorf, Switzerland ² Department of Health Science and Technology, ETH Zürich, Zürich, Switzerland ³ Laboratory for Cellulose and Wood Materials, Empa, Gallen, Switzerland
ID 111	Modification of carbon electrodes with redox mediators and its diazonium salts for MFC improvement Silvia Sato-Soto¹, Kaho Yamada², Toshikazu Fukushima², Seiya Tsujimura¹ ¹ Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba, Japan ² Environment Research Lab, Advanced Technology Research Labs, NIPPON STEEL CORPORATION, Japan
FLASH ORAL PRESENTATIONS:	

ID 40	Development of Innovative Soil Microbial Fuel Cells for Energy Harvesting <u>Jakub Dziegielowski¹, Mirella Di Lorenzo¹</u> ¹ Department of Chemical Engineering and Centre for Biosensors, Bioelectronics & Biodevices (C3Bio), University of Bath, Claverton Down, UK
ID 65	Membrane-Catholyte Selection for Microbial Electrolysis Cells for Brewery Wastewater Treatment <u>Isaac Vázquez¹, Oksana Bunk¹, Thomas Papyrin¹, Sven Kerzenmacher¹, Óscar Santiago¹</u> ¹ Center for Environmental Research and Sustainable Technology (UFT), University of Bremen, Germany
ID 232	Potential applications of a novel scalable rotating disk bioelectrochemical reactor (RDBER) <u>Johannes Eberhard Reiner¹, Max Hackbarth¹, Johannes Gescher² and Harald Horn¹</u> ¹ Engler-Bunte-Institute, Karlsruhe Institute of Technology, Germany ² Institute of Technical Microbiology, University of Technology Hamburg, Germany
19:15 - 23:30	Conference GALA DINNER Location: EUPHORIA hotel (Busses leave at 18:45 from MINOA PALACE the venue hotel)

THURSDAY, 22 – SEPTEMBER – 2022		MORNING SESSIONS
8:30 - 9:15	PLENARY LECTURE – ROOM A Session Chairpersons: Nicolas Kalogerakis & Abraham Esteve-Núñez	
ID K-4	KEYNOTE #4: “Energetics of inward electron transfer in <i>Shewanella oneidensis</i>” Michaela A. TerAvest , <i>Dept of Biochemistry and Molecular Biology, Michigan State University (USA)</i>	
09:15 - 11:00 (ROOM A)	SESSION – 7A: Microbial electrochemical synthesis & electro-fermentation-I Chairpersons: Sara Tejedor-Sanz and Igor Vassilev	
ID I-6	Invited presentation: Insights into the interactions of acetogenic bacteria with cathodes during microbial electrosynthesis Jo Philips Department of Biological and Chemical Engineering, Aarhus University, Denmark	
ID 05	Reduced overpotential of methane-producing biocathodes Micaela Brandão Lavender^{1,2}, Siqi Pang¹, Dandan Liu^{1,2}, Ludovic Jourdin¹ and Annemiek ter Heijne¹ ¹ Environmental Technology, Wageningen University, Wageningen, The Netherlands ² Pagell B.V., Utrecht, The Netherlands .	
ID 17	Production of endotoxin-free biomass for feed and food applications by microbial electrosynthesis Antti Nyyssölä¹, Leo S. Ojala¹, Mikko Wuokko^{1,2}, Gopal Peddinti¹, Anu Tamminen¹, Irina Tsitko¹, Emilia Nordlund¹ and Michael Lienemann¹ ¹ VTT Technical Research Centre of Finland Ltd., Finland ² Neste Engineering Solutions Ltd., Finland.	
ID 60	Carbon negative and electrode-driven value-added chemical productions from CO₂ in a microbial electrosynthesis cell Jung Rae Kim, Shuwei Li, Minsoo Kim, Eunseo Kim ¹ School of Chemical Engineering, Pusan National University, Busan, Republic of Korea	
ID 78	The role of hydrogen for the performance of <i>Clostridium ljungdahlii</i> in microbial electrosynthesis Santiago T. Boto^{1,2}, Falk Harnisch³, Miriam A. Rosenbaum^{1,2} ¹ Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Inst., Jena, Germany ² Faculty of Biological Sciences, Friedrich Schiller University, Jena, Germany ³ UFZ – Helmholtz-Centre for Environmental Research GmbH, Leipzig, Germany	
	FLASH ORAL PRESENTATIONS:	
ID 19	Promotion of biological nitrogen fixation by electron donation from solid phase humin Takuya Kasai^{1,2}, Sujan Dey² and Arata Katayama^{1,2} ¹ Institute of Materials and Systems for Sustainability, Nagoya University, Japan ² Graduate School of Engineering, Nagoya University, Japan	
ID 23	Indoor CO₂ as renewable carbon source: coupling indoor CO₂ direct air capture to microbial electrosynthesis technologies Luis R. López¹, Paolo Dessì¹, Alba Cabrera-Codony, Pau Zamora¹, Bart Kraakman², M. Dolors Balaguer¹, Sebastià Puig ¹ LEQUIA, Institute of Environment, University of Girona, Girona, Spain ² Jacobs Engineering, Bristol, UK	
ID 41	Microbial electrosynthesis of commodity chemicals from CO₂: Progress and limitations Miriam Fernández-Ávila Cobo¹, Babak Rezaei², Stephan Sylvest Keller² Yifeng Zhang¹ ¹ Department Of Environmental Engineering, Technical University of Denmark, Denmark ² National Centre for Nano Fabrication and Characterization, Technical Univ. of Denmark, Denmark	

ID 227	Improvement of microbial electrosynthesis by pure homoacetogens using a low redox potential mediator María Fernanda Pérez-Bernal¹, Elie Desmond Le-Quémener¹, Paul V. Bernhardt², Éric Trably¹ and Nicolas Bernet¹. ¹ LBE, University of Montpellier, INRAE, Narbonne, France ² School of Chemistry and Molecular Biosciences, University of Queensland, Brisbane, Australia
09:15 - 11:00 (ROOM B)	SESSION – 7B: Novel Applications of METs Chairpersons: Luis Rosa & Marika Kokko
ID I-7	Invited presentation: Integration of bioelectrochemical systems to the biorefinery concept in Uruguay Ángela Cabezas Instituto Tecnológico Regional Centro Sur, Universidad Tecnológica, Durazno, Uruguay
ID 22	Electricity-driven ammonium accumulation into microbial protein Narcis Pous¹, M. Dolors Balaguer¹, Silvio Matassa², Paola Chiliza-Ramos³, Lluís Bañeras³ and Sebastià Puig¹ ¹ Laboratory of Chemical and Environmental Engineering (LEQUIA), University of Girona, Spain ² Department of Civil and Mechanical Engineering, University of Cassino and Southern Lazio, Italy ³ Group of Molecular Microbial Ecology, Institute of Aquatic Ecology, University of Girona, Spain
ID 27	Electrochemical recycling acetate and ammonia from wastewater and valorization into single cell protein by brewer's yeast Danfei Zeng¹, Yifeng Zhang¹ ¹ Department of Environmental Engineering, Technical University of Denmark, Denmark
ID 145	Towards practical application of microbial electrochemical snorkel for metal removal and recovery Mario Mitov^{1,2} and Yolina Hubenova^{3,4} ¹ Innovative Center for Eco Energy Technologies, South-West Univ. "Neofit Rilski", Blagoevgrad, Bulgaria ² Department of Chemistry, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria ³ Institute of Electrochemistry and Energy Systems "Acad. Evgeni Budevski", IIEES- BAS, Sofia, Bulgaria ⁴ Department of Biochemistry and Microbiology, Plovdiv University "Paisii Hilendarski", Plovdiv, Bulgaria
ID 185	Combining mixed culture-based polyhydroxyalkanoates production with microbial electrochemical technologies Gaia Salvatori, Matteo Di Luzio, Angela Marchetti, Lionel Tayou Nguemna, Mauro Majone, Marianna Villano Department of Chemistry, Sapienza University of Rome, Italy
	FLASH ORAL PRESENTATIONS:
ID 28	Biogas to edible single-cell protein in a bioinorganic electrosynthesis system Mingyi Xu¹, Dan Zhao¹, Yifeng Zhang¹ ¹ Dept of Environmental Engineering, Technical University of Denmark Kongens Lyngby, Denmark
ID 61	Biofilm suppression and bacteria killing on stainless steel based on electrochemical approach Mohammed Y. Emran¹, Waheed Miran¹, and Akihiro Okamoto^{1,2} ¹ International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials, Tsukuba, Japan ² Graduate School of Chemical Sciences and Engineering, Hokkaido University, Kita-ku, Sapporo, Japan
ID 99	A novel, electricity- and carbon dioxide-powered microbial electrochemical system to extract iron on mars and earth Antoine Carissimo¹, Sven Kerzenmacher¹, Jan-Henning Dirks², Michael W. Friedrich³ and Guillaume Pillot¹ ¹ Environmental Process Engineering research group, Center for Environmental Research and Sustainable Technology, University of Bremen, Germany ² Biological Structures and Biomimetics research group, Biomimetics-innovation-Center, Hochschule Bremen – City University of Applied Sciences, Germany ³ Microbial Ecophysiology research group, University of Bremen, Germany

ID 127	Bioelectrochemical system for flexible biogas production Janek R. Weiler¹, Melanie T. Knoll¹, Nikolai Jürgensen², An-Ping Zeng², Johannes Gescher¹ ¹ Institute of Technical Microbiology, University of Technology Hamburg, Hamburg, Germany ² Institute of Bioprocess and Biosystems Engineering, Univ. of Technology Hamburg, Hamburg, Germany
ID 200	The metabolic tuning of mixed purple phototrophic bacteria biofilms in heterotrophic conditions through microbial photo- electrosynthesis S. Díaz-Rullo Edreira¹, A. Prado², I.A. Vasiliadou³, JJ. Espada¹, R. Wattiez⁴, B. Leroy⁴, F. Martínez¹, D. Puyol¹ ¹ Chemical and Environmental Engineering Group (GIQA), Universidad Rey Juan Carlos, Madrid, Spain ² Electric Engineering Area, Polytechnic University of Cartagena, Cartagena, Spain ³ Department of Environmental Engineering, Democritus University of Thrace, Xanthi, Greece ⁴ Laboratory of Proteomics and Microbiology, University of Mons, Mons, Belgium
ID 211	e-Soil – Electro-active artificial soil for soil-less farming: nutrients cycling from food-industry wastewaters Giovanni Rusconi Clerici², Paolo Bombelli¹, Federico Körner¹, Stefano Pierpaolo Trasatti¹, Antonio Idá³, Abraham Esteve Núñez², Andrea Schievano¹ ¹ Department of Environmental Science and Policy, University of Milan, Italy ² Institute IMDEA agua, Alcalá de Henares, Spain ³ Algaria srl, via Bergognone, Milano, Italy
11:00 - 11:30	Coffee break & Poster Viewing (GROUP B)
11:30 - 13:30 (ROOM A)	SESSION – 8A: Microbial electrochemical synthesis & electro-fermentation-II Chairpersons: Angela Cabezas & Silvia Bolognesi
ID I-8	Invited presentation: <i>Sporomusa ovata</i> for bioelectrochemical acetate production Joana Madjarov^{1,2}, Catarina M. Paquete¹, Nils Rohbohm², Gonçalo Pereira¹, Bruno M. Fonseca¹, Largus T. Angenent² and Ricardo O. Louro¹ ¹ Inst. de Tecnologia Química e Biológica António Xavier (ITQB), Universidade Nova Lisboa, Oeiras, Portugal ² Environmental Biotechnology Group, Department of Geosciences, University of Tübingen, Germany
ID 118	Zooming in on the biocatalyst performance in biofilm-driven microbial Electrosynthesis Marijn Winkelhorst¹, Adrie Straathof¹, Ludovic Jourdin¹ ¹ Department of Biotechnology, Technological University of Delft, The Netherlands
ID 120	Response of hydrogenic and methanogenic communities to power outages in methanogenic biocathodes Guillermo Pelaz¹, Daniela Carrillo-Peña¹, Raúl Mateos¹, Antonio Morán¹ and Adrián Escapa² ¹ Chemical and Env. Bioprocess Engineering Group, Natural Resources Institute, University of Leon, Spain. ² Department of Electrical Engineering and Automatic Systems, University of Leon, Spain
ID 124	Brewery CO₂ sequestration through continuous electricity-driven bioproduction of acetic acid Moumita Roy¹, Sunil A. Patil¹ ¹ Dept of Earth and Environmental Sciences, IISER Mohali, SAS Nagar, Punjab, India
ID 134	Microbial Electrosynthesis Powered by Intermittent Electricity Joerg S. Deutzmann^a, Frauke Kracke^a, Alfred M. Spormann^{a, b} ^a Department of Civil and Environmental Engineering, Stanford University, Stanford, USA ^b Department of Chemical Engineering, Stanford University, Stanford, CA, USA
	FLASH ORAL PRESENTATIONS:
ID 84	Bio-electro CO₂ recycling into ethanol Meritxell Romans-Casas¹, Elisabet Perona-Vico², Paolo Dessì¹, Lluís Bañeras², M. Dolors Balaguer¹ Sebastià Puig^{1*} ¹ LEQUIA. Institute of the Environment. University of Girona. Girona, Spain. ² gEMM. Institute of Aquatic Ecology, University of Girona, Girona, Spain.

ID 104	Methanol as a co-substrate with carbon dioxide enhances butyrate production in microbial electrosynthesis Hui Yao¹, Igor Vassilev¹, and Marika Kokko¹ ¹ Faculty of Engineering and Natural Sciences, Tampere University, Tampere, Finland
ID 121	Alternating applied voltage speeds up electro-fermentation David Strik¹, Claire Kooiman¹, Kasper de Leeuw¹, Rick Litecia¹, Merve Atasoy^{1,2} ¹ Environmental Technology. Wageningen University & Research, the Netherlands ² Laboratory of Microbiology. Wageningen University & Research, the Netherlands
ID 130	Artificial electron mediator and biofilm matrix derive electron transfer in CO₂ electrosynthesis Young Eun Song^{1,2}, Abdelrhman Mohamed³, Changman Kim⁴, Minsoo Kim¹, Shuwei Li¹, Eric Sundstrom², Haluk Beyenal³, and Jung Rae Kim¹ ¹ School of Chemical Engineering, Pusan National University, Geumjeong-Gu, Busan, Republic of Korea ² Advanced Biofuel and Bioproducts Process Development Unit, Lawrence Berkeley National Laboratory, Emeryville, CA, USA ³ The Gene and Linda Voiland School of Chemical Engineering and Bioengineering, Washington State University, Pullman, WA, USA ⁴ Biotechnology and bioengineering, Chonnam National University, Buk-Gu, Gwangju, Republic of Korea
11:00 - 12:30 (ROOM B)	SESSION – 8B: MET-based sensor technology Chairpersons: Jörg Kretzschmar & Daniela Torruella
ID I-9	Invited presentation: New perspectives in microbial fuel cell technology for sensing applications Mirella Di Lorenzo Department of Chemical Engineering and Centre for Biosensors, Biosystems and Biodevices (C3Bio), University of Bath, Bath, UK
ID 11	Online monitored bioelectrochemical system for screening purposes in a commercial photometer André Gemünde¹ and Dirk Holtmann¹ ¹ TH Mittelhessen University of Applied Sciences, Institute of Bioprocess Engineering and Pharmaceutical Technology, Wiesenstraße 14, 35390 Giessen, Germany
ID 43	Real-time environmental monitoring of contaminants using living electronic sensors Lin Su^{1,2,3}, Joshua T. Atkinson^{1,4}, Xu Zhang¹, George N. Bennett^{1,5}, Jonathan J. Silberg^{1,5,6}, and Caroline M. Ajo-Franklin^{1,3,7} ¹ Department of BioSciences, Rice University, 6100 Main Street, Houston, TX, USA ² State Key Laboratory of Bioelectronics, Southeast University, Nanjing, PR China. ³ Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, USA ⁴ Systems, Synthetic, and Physical Biology Graduate Program, Rice University, Houston, TX, USA ⁵ Dept of Chemical and Biomolecular Engineering, Rice University, Houston, TX, USA ⁶ Department of Bioengineering, Rice University, Houston, TX, USA. ⁷ Molecular Biophysics and Integrated Bioimaging Div., Lawrence Berkeley Natl Labo, Berkeley, CA, USA.
ID 128	Sulfide as an electrochemical information channel for biosensing in <i>Escherichia coli</i> Matthew D. Carpenter^{1,2}, Xu Zhang², and Caroline M. Ajo-Franklin^{2,3,4} ¹ Systems, Synthetic, and Physical Biology Graduate Program, Rice University, TX, USA ² Department of BioSciences, Rice University, TX, USA ³ Department of Bioengineering, Rice University, TX, USA ⁴ Department of Chemical and Biomolecular Engineering, Rice University, TX, USA
ID 152	Electrochemical biosensor targeting <i>Porphyromonas gingivalis</i> from a saliva drop for home periodontitis diagnosis Dan Luo^{1,2}, Takashi Fujikawa¹ and Akihiro Okamoto^{1,2,*} ¹ National Institute for Materials Science, Tsukuba, Ibaraki, Japan ² Graduate School of Chemical Sciences and Engineering, Hokkaido University, Sapporo, Hokkaido, Japan
ID 192	Microbial electrochemical sensors for detecting petroleum hydrocarbon spill: From lab to outdoor experiences

	<u>Daniela Torruella-Salas^{1,2}</u>, Andres de Deus^{1,2}, Antonio Berná^{1,2}, Jesús Vázquez², Abraham Esteve-Núñez^{1,2} ¹ Departamento de Química Analítica, Química Física, e Ingeniería, Universidad de Alcalá, Madrid, Spain ² Nanoelectra S.L., Parque Tecnológico de la Universidad de Alcalá, Madrid, Spain
ID 202	Smart IoT biosensing: Advanced microbial electrochemical sensor with remote diagnosis capabilities <u>Antonio Berná¹</u>, Jesús Vázquez² and Abraham Esteve-Núñez³ ¹ IMDEA Water Institute, Madrid, Spain ² Nanoelectra S.L., Parque Tecnológico de la Universidad de Alcalá, Madrid, Spain ³ Universidad de Alcalá, Madrid, Spain
13:30 - 14:30	LUNCH (Minoa Palace Hotel)
14:30 - 16:30	NETWORKING TIME

THURSDAY, 22 – SEPTEMBER – 2022		AFTERNOON SESSIONS
16:30 - 17:00	Poster Viewing (GROUP B)	
17:00 - 18:30 (ROOM A)	SESSION-9A: Microbial electrochemical synthesis & electro-fermentation-III Chairpersons: Marianna Villano and Laura Rovira	
ID 135	Electricity for driving carbon-efficient biomanufacturing via fermentations Sara Tejedor-Sanz^{1,2,3}, Eric T Stevens⁴, Maria L Marco⁴, Caroline M Ajo-Franklin² and Eric Sundstrom³ ¹ Department of BioSciences, Rice University, Houston, TX, USA ² Biological Nanostructures Facility, The MolecularFoundry, Lawrence Berkeley National Laboratory, USA ³ Advanced Biofuels Process Development Unit, Lawrence Berkeley National Laboratory, USA ⁴ Department of Food Science & Technology, University of California -Davis, USA	
ID 154	Microbial electrosymbiosis for CO₂ reduction using a co-culture of <i>Rhodobacter capsulatus</i> and <i>Sporomusa ovata</i> <u>Suman Bajracharya¹</u>, Adolf Krige¹, Leonidas Matsakas¹, Ulrika Rova¹, Paul Christakopoulos¹ ¹ Dept of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, Sweden	
ID 178	Altered biofilm characteristics of <i>Sporomusa ovata</i> by ALE with the aim to improve the biofilm formation on a cathode for MES <u>Louise Vinther Grøn¹</u>, Laura Muñoz¹, Tobias Sandfeld Jensen², Klaus Koren² and Jo Philips¹ ¹ Dept of Biological and Chemical Engineering, Aarhus University, Denmark ² Dept of Biology, Aarhus University, Denmark	
ID 223	Fluid-like electrodes overcome the biofilm-based paradigm for growing electroactive planktonic Purple Phototrophic Bacteria <u>Carlos Manchon^{a,b}</u>, Fernando Muniesa-Merino, ^a Daniel Serna, ^a Yeray Asensio, ^a Colin Wardman, ^{a,c} and Abraham Esteve-Núñez^{a,b} ^a Universidad de Alcalá, Alcalá de Henares, Madrid, España ^b Nanoelectra S.L., Madrid, Spain. ^c IMDEA Water Institute, Alcalá de Henares, Madrid, Spain	
	FLASH ORAL PRESENTATIONS:	
ID 131	The VIVALDI project: Integrating bio/electrochemistry in the emerging CO₂-based industry <u>Albert Guisasola</u> GENOCOV, Dept d'Enginyeria Química, Biològica i Ambiental, Escola d'Enginyeria, UAB, Spain	

ID 213	Bioelectrochemical ammonia production by <i>Acidithiobacillus ferrooxidans</i> mutants with modified regulation of nitrogenase Atsushi Kouzuma, Shohei Yamada and Kazuya Watanabe School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, Japan
ID 215	Elucidating factors necessary for extracellular electron transport in <i>E. coli</i> Lukas Kneuer¹, Johannes Gescher¹ ¹ Institute of Technical Microbiology, Hamburg University of Technology (TUHH), Germany
17:00 - 18:30 (ROOM B)	SESSION – 9B: Material science and reactor design - III Chairpersons: Uwe Schröder and Mariana Ramírez Moreno
ID 115	Multiscale computational modelling as enabler for the rational design of microbial electrosynthesis reactors for CO₂ reduction to C2-C6 organics <u>Oriol Cabau-Peinado</u>, Adrie J.J. Straathof and Ludovic Jourdin Dept of Biotechnology, Faculty of Applied Sciences, Delft University of Technology, the Netherlands
ID 132	Computational fluid dynamics as a tool to understand and mitigate mass diffusion issues in pilot-scale bioelectrochemical systems Rholand Jordi Navarro, Martí Cortada, Oscar Guerrero, Juan Antonio Baeza and <u>Albert Guisasola</u> Dept. of Chemical, Biological and Environmental Engineering, Univ. Autònoma de Barcelona, Spain
ID 148	Guidelines for the design of bioelectrochemical systems for ammonia recovery from wastewater Mariella Belén Galeano¹, Zainab Ul Kausar¹, Mira Lotta Kristiina Sulonen¹, Mireia Baeza Labat², Juan Antonio Baeza¹ and Albert Guisasola Canudas¹ ¹ GENOCOV, Departament d'Enginyeria Química, Biològica i Ambiental, Escola d'Enginyeria, and ² Departament de Química, Facultat de Ciències, Universitat Autònoma de Barcelona, Spain
ID 175	Optimization of soil microbial fuel cell: influence of feeding duration, electrode factors and diversity factor of uncontrolled mixed microbial communities <u>Meshack Imologie Simeon</u>^{1,2} and Ruth Freitag¹ ¹ Chair of Process Biotechnology, School of Engineering Science, University of Bayreuth, Germany ² Department of agricultural and Bioresources Engineering, Federal University of Technology, Minna
FLASH ORAL PRESENTATIONS:	
ID 32	A single-chamber bioelectrochemical system without an ion-exchange membrane for Power-to-X and basic research <u>Nils Rohbohm</u>¹, Tianran Sun², and Largus T. Angenent¹ Environmental Biotechnology, Center for Applied Geosciences, Univ. of Tübingen, Tübingen, Germany Laboratory of Soil Environmental Science and Technology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Haidian, Beijing, PR China
ID 144	From CAD to Geobacter: 3D-printed spherical micro-anodes for use in bioelectrochemical systems <u>George Papaharalabos</u>¹, Elia Judith Martínez¹, Xiomar Gómez¹ and Antonio Moran Palao¹ ¹ Chemical and Environmental Bioprocess Engineering Group, Natural Resources Institute, University of León, León, Spain
ID 167	Bacterial imprinting with <i>G. sulfurreducens</i> for next generation microbial electrochemical technologies <u>Jack Reeder</u>¹, Liz Heidrich¹, Matt Unthank², Marloes Peeters¹ ¹ Newcastle University, School of Engineering, Merz Court, Newcastle upon Tyne, UK ² Northumbria University, Dept of Applied Sciences, Newcastle upon Tyne, UK
ID 172	Improving microbial desalination cell performance by cathode modification using BiOCl/gCN as electro-catalyst <u>Sadik Rahman</u>¹, Noor Juma¹, Md. Abdullah Al-Mamun¹ and Ahmad Sana¹ ¹ Dept of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman
ID 177	Novel Design of Microbial Desalination Cell for Acid-Base Recovery <u>Abdullah Al-Mamun</u>, Azhar Al Hinai

	Department of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman
18:30 - 19:00	Coffee break & Poster removal (GROUP B)

19:00 - 19:45	CLOSING PLENARY– ROOM A Session Chairpersons: Nicolas Kalogerakis & Abraham Esteve-Núñez
ID K-5	KEYNOTE#5: “METs for a sustainable future of water sector: case studies of real implementation”, Juan M. Ortiz , <i>IMDEA WATER, Technological Park of University of Alcala, Alcalá de Henares, Madrid (Spain)</i>

19:45 - 20:15	State of ISMET, ISMET Fellows & ISMET Awards (Falk Harnisch)
20:15 - 20:30	CLOSING CEREMONIES & CONFERENCE AWARDS (Best POSTER & Best ORAL by a Graduate Student)
20:30	END OF CONFERENCE

FRIDAY, 23 – SEPTEMBER – 2022	
08:00-18:00	Conference trip Knossos (option 1) or Rethymno (option 2)

Conference Programme

(as of September 13, 2022)

ISMET 8

2022 Global Conference



THE INTERNATIONAL SOCIETY FOR
MICROBIAL ELECTROCHEMISTRY AND TECHNOLOGY

POSTER PRESENTATIONS

Poster Group A:

Tuesday all day & Wednesday morning

Poster Group B:

Wednesday afternoon & Thursday all day

POSTER GROUP A

T1 Bioremediation, resource recovery and water treatment

ID 10	<p>Sustainable Remediation of landfill leachate Contamination by utilizing a Bio-Electrochemical System (BES)</p> <p>Altat AlBaho¹, Rory Doherty², Deepak Kumaresan³, Caroline Gauchotte-Lindsay⁴, Jonathan Gregg⁵</p> <p>¹ Queen's University of Belfast, SNBE, Belfast, UK, ² Queen's University of Belfast, SNBE, Belfast, UK, ³ Queen's University of Belfast, SBS, Belfast, UK, ⁴ University of Glasgow, SE, Glasgow, UK, ⁵ Queen's University of Belfast, SNBE, Belfast, UK.</p>
ID 16	<p>The potential of microbial electrochemical systems for martian in situ resource utilization</p> <p>Tiago P. Ramalho^{1,2}, Antoine Carissimo¹, Sven Kerzenmacher¹, Cyprien Verseux² and Guillaume Pillot¹</p> <p>¹ Center for Environmental Research and Sustainable Technology (UFT), Univ. of Bremen, Bremen, Germany ² Center of Applied Space Technology and Microgravity (ZARM), Univ. of Bremen, Bremen, Germany</p>
ID 25	<p>Effect of hydraulic conditions on PFR reactors with electro-conductive filterbeds to improve OC degradation</p> <p>Annegret Budach¹, Amanda Prado de Nicolás², Abraham Esteve Nuñez², Anja Miltner¹ and Matthias Kästner¹</p> <p>¹ Dept of Environmental Biotechnology, Helmholtz Centre for Environmental Research - UFZ, Germany ² Dept of Analytical Chemistry, Physical Chemistry and Chemical Engineering, University of Alcalá, Spain.</p>
ID 35	<p>Effect of organic loading rate on wastewater treatment and energy generation in a scaled-up MFC</p> <p>Ana Carla Sorgato¹, Thamires Custódio Jeremias¹, Maria Ángeles Lobo-Recio², Fernanda Leite Lobo³, Flávio Rubens Lapolli¹</p> <p>¹ Dept. of Sanitary and Environmental Engineering, Federal University of Santa Catarina, Brazil ² Dept. of Energy and Sustainability, Federal University of Santa Catarina, Brazil</p>

	³ Dept. of Hydraulic and Environmental Engineering, Federal University of Ceará, Brazil
ID 53	Impact of the inoculation strategy on the long-term performances of bioelectrochemical systems treating primary clarifier effluent Larzillière Valentin^{1,2}, de Fouchécour Florence², Bureau Chrystelle², Bouchez Théodore², Moscoviz Roman¹ ¹ SUEZ, Centre International de Recherche Sur l'Eau et l'Environnement (CIRSEE), Le Pecq, France ² Université Paris-Saclay, INRAE, PROSE, Antony, France
ID 62	Inducing the biosurfactant synthesis and electricity generation from waste vegetable oil in air-cathode microbial fuel cell Aleksander de Rosset¹, Grzegorz Pasternak¹ ¹ Laboratory of Microbial Electrochemical Systems, Wroclaw University of Science and Technology, Poland.
ID 72	Indium recovery from 2nd generation photovoltaic panels using the microbial fuel cell technology Theofilos Kamperidis¹, Asimina Tremouli^{1,*}, Elias Couvas¹, Petros E. Tsakiridis², Emmanouella Remoundaki², Gerasimos Lyberatos^{1,3} ¹ School of Chemical Engineering, National Technical University of Athens, Athens, Greece ² School of Mining and Metallurgical Engineering, National Technical University of Athens, Athens, Greece ³ Institute of Chemical Engineering Sciences (ICE-HT), Platani, Patras, Greece
ID 74	Crude oil biodegradation in Microbial Fuel Cells accompanied with biosurfactant synthesis Bartosz Widera¹, Grzegorz Pasternak¹ ¹ Laboratory of Microbial Electrochemical Systems, Dept of Process Engineering and Technology of Polymer and Carbon Materials, Wroclaw University of Science and Technology, Poland
ID 92	Heavy metal and ammonia mixture toxicity towards mixed electroactive biofilms Sam Settle¹, Richard Law¹ and Elizabeth Heidrich¹ ¹ School of Engineering, Newcastle University, Newcastle-upon-Tyne, United Kingdom
ID 98	Stimulating the anaerobic biodegradation of petroleum hydrocarbons in soils with electrically conductive materials Carolina Cruz Viggi¹, Matteo Tucci¹, Marco Resitano¹, Valentina Palushi¹, Neda Amanat², Berardino Barbati², Marco Petrangeli Papini² and Federico Aulenta¹ ¹ Water Research Institute (IRSA), National Research Council (CNR), Montelibretti (RM), Italy ² Department of Chemistry, Sapienza University of Rome, Rome, Italy
ID 113	Extremophilic microbial consortium selected for the bioelectrochemical treatment of saline textile effluents containing recalcitrant azo dyes Sirine Saadaoui^{1,2,3}, Habib Chouchane¹, Ameer Cherif¹ and Benjamin Erable³ ¹ Univ. Manouba, ISBST, Biotechpole Sidi Thabet, 2020, Ariana, Tunisia ² Faculty of Sciences of Tunis, University of Tunis El Manar, Tunis, Tunisia ³ Laboratoire de génie chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France.
ID 149	Two-stage process of dark fermentation and microbial electrolysis cells (MECs) for the bio-electroconversion of industrial wastewaters into hydrogen Silvia De los Santos¹, Luc Etcheverry¹, Benjamin Erable¹ ¹ Laboratoire de Génie Chimique, CNRS, INPT, UPS, Toulouse, France
ID 157	Novel quadruple microbial desalination and chemical recovery cell (MDCRC) for enhanced recovery and desalination Jagdeep Kumar Nayak¹, Sadik Rahman¹, Md. Abdullah Al Mamun¹ and Ahmad Sana¹ ¹Department of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman
ID 161	Bioelectrochemical system for TCE reductive dechlorination: effect of pinewood biochar Edoardo Dell'Armi¹, Marco Zeppilli, Mauro Majone and Marco Petrangeli Papini ¹ "Sapienza" University of Rome, Department of Chemistry, Rome, Italy
ID 163	Removal of oil pollution from marine sediments using bioelectrochemical system Jaak Truu, Marika Truu, Kertu Tiirik Institute of Molecular and Cell Biology, University of Tartu, Estonia

ID 166	Simultaneous azo dye and chromium removal from dyeing process effluent using Microbial Electrolysis Cells <u>Daniel Farkas¹</u> , Mira Sulonen ¹ , Claudio Avignone-Rossa ¹ Patrick Jacobs ² and Alfredo Pérez de Mora ² ¹ Systems Microbiology Laboratory, Dept. of Microbial Sciences, University of Surrey, UK ² Dept. of Soil & Groundwater, TAUW GmbH, Berlin, Germany ³ Dept. of Soil & Groundwater, TAUW GmbH, Munich, Germany
ID 171	Nitrate removal from groundwater by fluidized BES with conductive activated carbon and vitreous carbon <u>Xiaofei Wang^{1,2*}</u> , Michiel Verheye ^{1,2} and Korneel Rabaey ^{1,2} ¹ Center for Microbial Ecology and Technology (CMET), Ghent University, Ghent, Belgium ² Centre for Advanced Process Technology for Urban Resource Recovery (CAPTURE), Ghent, Belgium
ID 176	Which strategy is better for enhanced digestion of wastewater biosolids? Substrate pre-treatment or application of Anaerobic Digestion-Microbial Electrolysis Cell (AD-MEC) integrated system <u>Mert Şanlı¹</u> , Yasemin Dilsad Yilmazel ¹ ¹ Department of Environmental Engineering, Middle East Technical University, Ankara, Turkey
ID 180	Nitrate recovery in groundwater and single cell protein production in an in-situ electrolyzer <u>Yufeng Jiang, Yifeng Zhang</u> Department of Environmental Engineering, Technical University of Denmark, Denmark
ID 191	Treating landfill leachate through natural clay adsorption (palygorskite): Leachate characterization and adsorption capacities <u>Sajjad Ahmad Siddiqi¹</u> , Abdullah Al-Mamun ¹ and Ahmad Sana ¹ ¹ Dept of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman
ID 194	Isolation of electroactive hydrocarbon-degrading consortia for on-site groundwater electrobioremediation Martí Aliaguilla ¹ , Laura Huidobro ¹ , Pablo Sánchez-Cueto ¹ , Daniele Molognoni ¹ , Pau Bosch-Jimenez ¹ , David Gramunt ² , Alfredo Pérez-de-Mora ³ , and <u>Eduard Borràs¹</u> ¹ LEITAT Technological Center, C/ de la Innovació 2, Terrassa, Spain ² TAUW Iberia SAU, Centre d'Empreses de Noves Tecnologies, Cerdanyola del Vallès, Spain ³ TAUW GmbH, Dept. of Soil & Groundwater, Munich, Germany
ID 199	Growth inhibition of sulfate reducing bacteria by chitosan/lignosulfonate nanocomposite (CS@ LS) in sea inject water <u>Kashif Rasool</u> , Ravi P Pandey, P Abdul Rasheed, Tricia Gomez, Enas S Al-Absi, Gheyath K Nasrallah, Khaled A Mahmoud ¹ Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University, Qatar Foundation, Doha, Qatar ² Biomedical Research Center, Qatar University, Doha, Qatar ³ Dept of Biomedical Science, College of Health Sciences, Qatar University, Doha, Qatar
ID 205	Optimization of bio-electrochemical ammonium oxidation by regulating the autotrophic-heterotrophic acclimation condition of anammox bacteria in bio-electrochemical system (BES) <u>Wenjuan Zhao¹</u> , Preetam Sharma ² , Eileen H Yu ² and Shuiliang Chen ¹ ¹ Dept of Chemistry and Chemical Engineering and Nanofiber Engineering, Jiangxi Normal University, Nanchang, China ² Dept of Chemical Engineering, Loughborough University, UK
ID 210	Enrichment of electroactive formate-utilizing bacteria from ferruginous lake waters <u>Astolfo Valero^{1,2}</u> , Daniel A. Petrash ^{1,3} , Falk Harnisch ⁴ , and Benjamin Korth ⁴ ¹ Soil and Water Research Infrastructure, Biology Centre of the Czech Academy of Sciences, Czechia ² Faculty of Science, University of South Bohemia, Czechia ³ Dept of Environmental Geochemistry and Biogeochemistry, Czech Geological Survey, Czechia ⁴ Dept of Environmental Microbiology, Helmholtz Centre for Environmental Research – UFZ, Germany

ID 212	Development of algal fuel cells for decolourisation of azo dyes <u>Radwa Ibrahim^{1,2}, Tajalli Keshavarz¹, Godfrey Kyazze¹</u> ¹ School of Life Sciences, University of Westminster, London, UK ² Department of Botany and Microbiology, Alexandria University, Alexandria, Egypt.
ID 214	Bioelectrochemical ammonium removal from recirculating aquaculture system waters <u>Veera Koskue¹, Thao Nguyen¹, Johannes Jermakka^{1,2} and Marika Kokko¹</u> ¹ Faculty of Engineering and Natural Sciences, Tampere University, Tampere, Finland ² Tampere University of Applied Sciences, Tampere, Finland
ID 222	Ecotoxicity test batteries for the monitoring of bio-electrochemical system based remediation technologies <u>Mónika Molnár¹, Zsófia Berkl¹, Éva Farkas¹, Ildikó Fekete-Kertész¹, Rita Márton¹, Imre Németh¹, Szabina Molnár¹, Emese Vaszita¹, Viktória Feigl¹</u> ¹ Budapest University of Technology and Economics, Faculty of Chemical Technology and Biotechnology, Dept of Applied Biotechnology and Food Science, Hungary
ID 225	Comparing the efficiency of constructed wetlands for hydrocarbon removal amended with oxygen supply via in situ electrochemical production versus nanobubble injection. <u>Petroula Seridou¹, M. Vamvakia¹, E. Syranidou¹, A. Vlysidis¹, N. Kalogerakis¹</u> ¹ School of Chemical and Environmental Engineering, Technical University of Crete, Greece
ID 226	Coupled bioelectrochemical system with phytoremediation for metal removal from polluted groundwater <u>Aqib Hassan Ali Khan¹, Blanca Velasco Arroyo¹, Martí Aliaguilla², Eduard Borràs², Carlos Rad³, Carlos Rumbo¹, Andrea Martínez³, Sandra Curiel-Alegre, Juan Antonio Tamayo-Ramos¹, Sonia Martel¹, and Rocío Barros¹</u> ¹ International Research Center in Critical Raw Materials for Advanced Industrial Technologies (ICCRAM), University of Burgos, Burgos, Spain. ² LEITAT Technological Center, Circular Economy Department, Terrassa, Spain ³ Research Group in Composting (UBUCOMP). University of Burgos, Faculty of Sciences, Burgos Spain.
T3 Electrochemistry of microorganisms and enzymes	
ID 07	Electrochemically active biofilm on AISI 1020 steel and its corrosion potential <u>Vitor da Silva Liduino, Eliana Flávia Camporese Sérvulo and Magali Christe Cammarota</u> School of Chemistry - Federal University of Rio de Janeiro, Brazil
ID 38	“Natura nihil frustra facit – Nature does nothing in vain” How to screen efficiently for electroactive microorganisms? <u>Anne Kuchenbuch¹, Ronny Frank², José Vazquez Ramos², Heinz-Georg Jahnke², Falk Harnisch¹</u> ¹ UFZ – Helmholtz-Centre for Environmental Research, Dept of Env. Microbiology, Leipzig, Germany ² Centre for Biotechnology and Biomedicine, Molecular biological-biochemical Processing Technology, Leipzig University, Leipzig, Germany
ID 58	Substrate Specific Current Enhancement in Alzheimer`s Pathogen <i>Porphyromonas gingivalis</i> <u>Divya Naradasu^a, Luo Dan^a, Sotaro Takano^a, Ariyoshi Wataru^b and Akihiro Okamoto^{a,c}</u> ^a Intl Center for Materials Nanoarchitectonics, National Institute for Materials Science, Ibaraki, Japan. ^b Division of Infections and Molecular Biology, Department of Health Promotion, Science of Health Improvement, Kyushu Dental University, Kitakyushu, Japan. ^c Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan
ID 64	Characterisation of methanogens utilizing formate as sole carbon source <u>Björn Sabel-Becker¹, Marc Pfitzer¹, Dirk Holtmann¹</u> ¹ Technische Hochschule Mittelhessen Gießen University of Applied Sciences, Dept of Life Science Engineering, Institute of Bioprocess Engineering and Pharmaceutical Technology, Germany
ID 67	Soil microorganisms facilitated the electrode-driven trichloroethene dechlorination to ethene by <i>Dehalococcoides</i> species in a bioelectrochemical system <u>Lingyu Meng¹, Naoko Yoshida¹, Zhiling Li²</u> ¹ Department of Civil Engineering, Nagoya Institute of Technology (Nitech), Nagoya, Japan

	² State Key Lab of Urban Water Resources and Environment, School of Environment, Harbin Institute of Technology, Harbin, China
ID 73	Microorganisms enriched from soil in Sri Lanka as power producers in crude oil-fed MFC Natalia Tyszkiewicz and Grzegorz Pasternak Lab of Microbial Electrochemical Systems, Wrocław University of Science and Technology, Wrocław, Poland
ID 86	<i>Shewanella loihica</i> and the effect of temperature on its electrochemical performance Thessa Van Limbergen¹, Olivier Nouwen², Sofie Thijs², Jaco Vangronsveld^{2,3}, Jean V. Manca¹ ¹ UHasselt, X-LAB, Agoralaan, Diepenbeek, Belgium ² UHasselt, Environmental biology, Centre for Environmental Sciences, Diepenbeek, Belgium ³ Dept of Plant Physiology and Biophysics, Institute of Biological Sciences, MCS University, Lublin, Poland
ID 126	Microbial diversity in bioelectrochemical systems for CH₄ production using different anode surfaces René Cardeña^{1,2}, Gamaliel Ramirez-Ramirez¹, Angela Cabezas², Germán Buitrón¹ ¹ Laboratory for Research on Advanced Processes for Water Treatment, Instituto de Ingeniería, Unidad Académica Juriquilla, Universidad Nacional Autónoma de México, México. ² Instituto Tecnológico Regional Centro Sur, Universidad Tecnológica, Durazno, Uruguay.
ID 147	Metabolic engineering of <i>Klebsiella pneumoniae</i> for value-added chemical production Changman Kim¹, Gagyeong Park¹, Seorin Moon¹, Ha Rim, Chae¹, Jung Rae Kim² ¹ Dept of Biotechnology and Bioengineering, Chonnam National University, Republic of Korea ² School of Chemical and Biomolecular Engineering, Pusan National University, Republic of Korea.
ID 153	Physiology of <i>Synechocystis</i> sp. PCC 6803 under BPV conditions Hans Schneider, Bin Lai and Jens O. Kroemer¹ Department of Solar Materials, Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany
ID 173	The impact of substrate cross-feeding on microbial population dynamics and performance of electromethanogenic reactors Amin Ghaderikia¹, Bilgin Taskin², Yasemin Dilsad Yilmazel^{1,*} ¹ Dept of Environmental Engineering, Middle East Technical University, Ankara, Turkey ² Dept of Agricultural Biotechnology, Van Yuzuncu Yil University, Van, Turkey.
ID 182	External resistance regulates current generation and metabolite profile in microbial fuel cells operating with <i>Pseudomonas aeruginosa</i> strains Ana Clara Bonizol Zani¹, Erica Janaína Rodrigues de Almeida¹, João Pedro Rueda Furlan², Eliana Guedes Stehling², Adalgisa Rodrigues de Andrade¹, and Valeria Reginatto¹. ¹ Dept. of Chemistry - University of São Paulo, Brazil ² Faculty of Pharmaceutical Science at Ribeirão Preto -University of São Paulo - Brazil
ID 195	Enrichment of exoelectroactive butyrate-oxidizing biocatalyst for hydrogen production from percolate in a microbial electrolysis cell Ahmed Elreedy, Mahshid Golalikhani, Johannes Gescher Institute of Technical Microbiology, Hamburg University of Technology, Hamburg, Germany
ID 216	A zero-gap electrolyzer for methanogenic carbon dioxide (CO₂) reduction using a wastewater-based electrolyte Ramineh Rad^{1,3}, Tito Gehring², Edith Nettmann², Marc Wichern², Ulf-Peter Apfel^{1,3} ¹ Ruhr University Bochum, Inorganic Chemistry I, Bochum, Germany ² Ruhr University Bochum, Urban Water Management and Environmental Technology, Bochum, Germany ³ Fraunhofer UMSICHT, Oberhausen, Germany
ID 229	Novel electron transfer pathways in <i>Cupriavidus necator</i> Oliver Lenz¹, Stefan Frielingsdorf¹, Elena Rossini¹ ¹ Technische Universität Berlin, Department of Chemistry, Berlin, Germany
T4-A Material science and reactor design	
ID 15	Cellophane as an alternative separator for MEC operation with anaerobic digester effluent Simone Colantoni¹, Óscar Santiago¹, Sven Kerzenmacher¹ ¹ Center for Env. Research and Sustainable Technology (UFT), University of Bremen, Bremen, Germany

ID 26	Efficient hydrogen production in a microbial photoelectrochemical cell with Cu₂O photoelectrode <u>Michele Morgante</u> ¹ , Nick Vlachopoulos ² , Anders Hagfeldt ³ , Christos Comninellis ⁴ , Kevin Sivula ⁵ , Fabian Fischer ^{1,6} ¹ Inst. of Life Technologies, HES-SO Valais, Univ. of Applied Sciences Western Switzerland, Sion, Switzerland ² Lab of Photomolecular Science, Inst. of Chemical Sciences and Engineering, EPFL, Lausanne, Switzerland ³ Dept of Chemistry, Angstrom Laboratory, Uppsala University, Uppsala, Sweden ⁴ Institute of Chemical Sciences and Engineering, EPFL, Lausanne, Switzerland ⁵ Lab for Molecular Engineering of Optoelectronic Nanomaterials, Inst. of Chemical Sciences and Engineering, EPFL, Lausanne, Switzerland ⁶ Inst. of Sustainable Energy, HES-SO Valais, Univ. of Applied Sciences Western Switzerland, Sion, Switzerland
ID 29	Electrodes from green waste for bioelectrochemical systems <u>Alexander Langsdorf</u> ¹ , Tim Nicklas Crienitz ¹ , Marianne Volkmar ² , Markus Stöckl ³ , Roland Ulber ² , Dirk Holtmann ¹ ¹ Inst. of Bioprocess Engineering and Pharm. Technology, Univ. of Applied Sciences Mittelhessen, Germany ² Institute of Bioprocess Engineering, University of Kaiserslautern, Germany ³ Dept of Chemical Technology, DECHEMA Research Institute, Germany
ID 45	Graphite felt/Cobalt oxide/Polyaniline composite modified anodes for power generation in Soil Microbial Fuel Cells <u>Simran Kaur Dhillon</u> ^{1,2} , Patit Paban Kundu ^{1*} , Mirella Di Lorenzo ^{2*} ¹ Dept of Chemical Engineering, Indian Institute of Technology – Roorkee, India ² Dept of Chemical Eng. and Centre for Biosensors, Bioelectr. & Biodevices (C3Bio), Univ. of Bath, Claverton Down, UK
ID 46	Understanding the Effects of Kinetic Limitations on Degradation Rates for Different Substrates in Microbial Fuel Cells (MFCs) <u>Hannah Bird</u> ¹ , Elizabeth Heidrich ¹ , Sharon Velasquez-Orta ¹ ¹ School of Engineering, Newcastle University, Newcastle upon Tyne, UK
ID 90	Improvement of the start-up time and acetate productivity of microbial electrosynthesis cell using polyaniline (PANI/GF) modified graphite felt electrode <u>Eunseo Kim</u> ¹ , Minsoo Kim ¹ , Shuwei Li ¹ , Jung Rae Kim ¹ ¹ School of Chemical Engineering, Pusan National University, Busan, Republic of Korea
ID 117	CO₂ electro-recycling and energy production: a comparison between naturally doped biochar-base electrodes <u>Andrea Goglio</u> , Hager Galal Elsayed Elboghady, Arianna Carrara, Mirko Cucina, Fabrizio Adani Gruppo Ricicla Lab., Department of Agricultural and Environmental Sciences, University of Milan, Italy
ID 151	Innovative designing of electroactive wetlands for enhanced azo dye treatment and bioelectricity generation <u>Yamini Mittal</u> ^{1,2} , Pratiksha Srivastava ³ and Asheesh Kumar Yadav ^{1,2,4} ¹ CSIR-Institute of Minerals and Materials Technology, Bhubaneswar, Odisha, India ² Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh, India ³ Biotechnological Processes Unit, IMDEA Energy, Avda. Ramón de la Sagra 3, Móstoles, Madrid, Spain ⁴ Dept of Chemical and Environmental Technology, Rey Juan Carlos University, Madrid, Spain.
ID 208	Surface modification of carbon catalysts for efficient production of H₂O₂ in bioelectrochemical systems <u>Hyunji Eom</u> , Eunjin Jwa, Yoon-Cheul Jeung, Kyo Sik Hwang, Namjo Jeong, Joo-Youn Nam Marine Energy Convergence and Integration Research Team, Jeju Global Research Center, Korea Institute of Energy Research, Korea
T7-A Electrochemical, biological & systemic analysis of METs	
ID 59	Electroactive biofilm development under controlled hydrodynamic in a Couette- Taylor electrochemical reactor <u>Florent Bouchon</u> ¹ , Ahlem Filali ¹ , Théodore Bouchez ¹ , Alain Bergel ² and Yannick Fayolle ¹ ¹ Université Paris-Saclay, INRAE, PRocédés biotechnologiques au Service de l'Environnement, Antony, France ² Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INP, UPS, Toulouse, France

ID 63	Effect of different cathode potentials on the performance of CO₂-reducing methanogenic biocathodes Sabine Spiess, Sarah Haneschläger, Clemens Habermaier, Amaia Sasiain, Marianne Haberbauer K1-MET GmbH, Linz, Austria
ID 91	Colorimetric isolation of a novel electrochemically active <i>Pseudomonas</i> strain using tungsten nanorods for bioelectrochemical applications Himanshu Khandelwal^a, Sakuntala Mutyala^a, Minsoo Kim^a, Young Eun Song^b, Shuwei Li^a, Min Jang^c, Sang- Eun Oh^d, Jung Rae Kim^{a,*} ^a School of Chemical Engineering, Pusan National University, Republic of Korea ^b Advanced Biofuel and Bioproducts Process Development Unit, Lawrence Berkeley Natl Lab, Emeryville, USA ^c Dept of Environmental Engineering, Kwangwoon University, Nowon-Gu, Seoul, Republic of Korea ^d Dept of Biological Environment, Kangwon National University, Chuncheon, Gangwondo, Republic of Korea
ID 93	qPCR analysis for the metabolic shift of <i>Klebsiella pneumoniae</i> L17 with glycerol substrate under oxidation of zero-valent iron Da Seul Kong¹, Changman Kim^{2,3}, Eun Joo Park¹, Mutyala Sakuntala¹ and Jung Rae Kim^{1,*} ¹ School of Chemical Engineering, Pusan National University, Busan, Korea ² Advanced Biofuel and Bioproducts Process Development Unit, Lawrence Berkeley Natl Lab, Emeryville, USA ³ Dept of Biotechnology and Bioengineering, Chonnam National University, Gwangju, Republic of Korea
ID 106	Microbial & Electrochemical CO₂ Reduction for Synthesis is alike Cupid & Psyche? Paniz Izadi¹ and Falk Harnisch¹ ¹ Dept of Environmental Microbiology, Helmholtz-Centre for Environmental Research - UFZ, Leipzig, Germany
ID 119	Enrichment and characterization of pharmaceutical-tolerant microbial communities in microbial electrochemical systems Razieh Rafieenia ¹, Mohamed Mahmoud ², Fatma El-Gohary ², and Claudio Avignone Rossa ¹ ¹ Dept of Microbial Sciences, University of Surrey, Guildford, UK ² Water Pollution Research Department, National Research Centre, Dokki, Cairo, Egypt
ID 203	Graphene nanowalls as electrode material in microbial fuel cells Roger Amade^{1,2}, Ashbir Singh Dhillon¹, Joan Martí¹, Islam Alshaikh¹, Enric Bertran Serra^{1,2}, Jordi Dachs³, Maria Vila³, ¹ ENPHOCAMAT Group, Department of Applied Physics, University of Barcelona, Spain ² Institute of Nanoscience and Nanotechnology (IN2UB), University of Barcelona, Spain ³ Department of Environmental Chemistry, IDAEA-CSIC, Barcelona, Spain
ID 204	Real saline water desalination using brewery wastewater as an energy source in microbial desalination cell Marina Ramírez-Moreno^{1,3}, Juan Manuel Ortiz¹, Pau Ródenas¹, Patricia Zamora², Víctor Monsalvo², Frank Rogalla² and Abraham Esteve-Núñez^{1,3} ¹ IMDEA Water Institute, Alcalá de Henares, Madrid, Spain ² Aqualia, Innovation and Technology Department, Madrid, Spain ³ Analytical Chemistry, Physical Chemistry, and Chemical Eng. Dept, Universidad de Alcalá, Madrid, Spain.
T8 Scale-up of MET for commercialisation	
ID 37	Implementation of the pilot-scale setup at a household for the treatment of domestic wastewater with the aim to achieve solid free sewer Jain Suransh¹ and Arvind Kumar Mungray¹ ¹ Dept of Chemical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat, India
ID 102	Enhancing hydrogen production from real industrial wastewater in a 150L MEC pilot plant Oscar Guerrero-Sodric¹, Juan Antonio Baeza¹, Albert Guisasola¹ ¹ GENOCOV, Departament d'Enginyeria Química, Biològica i Ambiental, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain
ID 196	Scaling-up of the modified electrode Microbial Electrolysis Cell for simultaneous hydrogen production and bioremediation Rahul Gautam^{1,2}, Neil V Rees², Robert Steinberger Wilckens², Uttam K Ghosh¹ ¹ Dept of Polymer and Process Engineering, Indian Institute of Technology – Roorkee, India

	² School of Chemical Engineering, University of Birmingham, UK
ID 198	Microbial ecology of hydrocarbon degradation in a bioelectrochemical system Azariel Ruiz-Valencia¹, Christoph Keuschnig¹, Timothy M. Vogel¹ ¹ Environmental Microbial Genomics, CNRS, Ecole Centrale de Lyon, Université de Lyon, Ecully, France
ID 221	Pilot scale electromethanogenic reactor treating brewery wastewater – progress to commercial implementation Kyle Bowman^{1,2}, George Fudge¹, William Gambier¹, Ben Jobling-Purser¹, Thomas Fudge¹, Izzet Kale³, Godfrey Kyazze². ¹ WASE Ltd. - London, UK ² Water Research Group, School of Life Sciences - University of Westminster, UK. ³ School of Computer Science and Engineering – University of Westminster, UK.
ID 228	Potential of electricity generation from Microbial Fuel Cells using a pure culture of <i>Pseudomonas citronellolis</i> Constantina Varnava¹, Ioannis Ieropoulos², Argyro Tsipa^{1,3} ¹ Department of Civil and Environmental Engineering, University of Cyprus, Nicosia, Cyprus ² Water and Environmental Engineering Group, University of Southampton, Southampton, UK ³ Nireas International Water Research Centre, University of Cyprus, Nicosia, Cyprus

POSTER GROUP B

T2 Extracellular electron transfer processes

ID 02	<p>Microbial phononic enhancement from self-metabolized electrons transferred via interfaced graphene nano-dots</p> <p>Sheldon Cotts¹, Bijentimala Keisham², Roshan Nemade¹, Angelo Giles¹, Vikas Berry^{1*}</p> <p>¹Department of Chemical Engineering, University of Illinois at Chicago, Chicago, IL USA ²Pritzker School of Molecular Engineering, University of Chicago, Chicago, IL USA</p>
ID 24	<p>Conjugative plasmids inhibit extracellular electron transfer in <i>Geobacter sulfurreducens</i></p> <p>Mathias Fessler¹, Jonas Stenl�kke Madsen² and Yifeng Zhang¹</p> <p>¹Department of Environmental Engineering, Technical University of Denmark, Denmark ²Department of Biology, University of Copenhagen, Denmark</p>
ID 34	<p>The anoxic cross-membrane glucose uptake pathway of <i>Pseudomonas putida</i> in an anode-driven bioelectrochemical system</p> <p>Laura Pause¹, Bin Lai¹, Jens O. Kr�mer¹</p> <p>¹AG Systems Biotechnology, Department of Solar Materials, UFZ – Helmholtz Centre for Environmental Research, Leipzig, Germany</p>
ID 39	<p>Chemical imaging of highly conductive nickel protein wires in cable bacteria</p> <p>Bent Smets¹, Eric Boschker¹, Filip Meysman¹</p> <p>¹Microbial Systems Technology, University of Antwerp, Belgium</p>
ID 51	<p>Production of chemicals by molecular-biological optimization of <i>Shewanella oneidensis</i> MR-1 in a BES</p> <p>Hannah Wohlers¹, Dirk Holtmann¹</p> <p>¹Technische Hochschule Mittelhessen, Gie�en , Germany</p>
ID 69	<p>Revealing new electroactive bacteria that use phenazines as extracellular electron shuttles</p> <p>Angel Franco¹, Mahmoud Elbahnasy^{1,2} and Miriam A. Rosenbaum^{1,2}</p> <p>¹Leibniz Institute for Natural Product Research and Infection Biology – Hans Kn�ll Institute, Jena, Germany ²Faculty of Biological Sciences, Friedrich Schiller University, Jena, Germany</p>
ID 70	<p>Differences in H₂ consumption characteristics by Acetogens: Does it influence microbial electrosynthesis rates?</p> <p>Laura Mu�oz¹, Louise Gr�n¹, Jo Philips¹.</p> <p>¹Biological and Chemical engineering department, Aarhus University, Aarhus, Denmark</p>
ID 71	<p>Understanding redox mediator based Extracellular electron transfer in <i>E. coli</i></p> <p>Biki B. Kundu¹, Caroline M. Ajo-Franklin¹</p> <p>¹PhD Program in Systems, Synthetic, and Physical Biology, Rice University, Houston, Texas, USA</p>
ID 82	<p>Exploring natural redox mediators for cathodic microbial electron consumption</p> <p>Annika Leni�^{1,2}, Gerald Lackner³ and Miriam A. Rosenbaum^{1,2}</p> <p>¹Bio Pilot Plant, Leibniz Inst. for Natural Product Research and Infection Biology – HKI Jena, Germany ²Faculty of Biological Sciences, Friedrich-Schiller-University, Germany ³Synthetic Microbiology, Leibniz Inst. for Natural Product Research and Infection Biology – HKI Jena, Germany</p>
ID 97	<p>Mixed-species microbial electroactivity in the presence of a competing electron acceptor</p> <p>Kartik Aiyer¹ and Lucinda Elizabeth Doyle¹</p> <p>¹Dept of Biochemical Engineering and Biotechnology, Indian Institute of Technology – Delhi, India</p>
ID 100	<p>Anode assisted aerobic respiration with <i>Bacillus subtilis</i></p> <p>Yu Sun¹, Marika Kokko¹ and Igor Vassilev¹</p> <p>¹Faculty of Engineering and Natural Sciences, Tampere University, Tampere, Finland</p>
ID 137	<p>Electrochemical gating for catabolic pathway regulation of electrochemically active <i>Pseudomonas putida</i></p> <p>Mutyala Sakuntala¹, Himanshu Khandelwal¹, Minsoo Kim¹, Da Seul Kong and Jung Rae Kim¹</p> <p>¹School of Chemical Engineering, Pusan National University, Busan, Republic of Korea</p>

ID 139	Inter-species transport of outer-membrane cytochromes via the fusion of membrane vesicle to cell surface <u>Xizi Long¹, Wei-peng Li^{1, 2}, Satoshi Takenawa¹, Kataoka-Hamai Chiho¹ and Akihiro Okamoto^{1,3*}</u> ¹ Intl Center for Materials Nanoarchitectonics, National Institute for Materials Science, Ibaraki, Japan ² Dept of Medicinal and Applied Chemistry, Kaohsiung Medical University, Kaohsiung, Taiwan ³ Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan
ID 140	Elucidation of metabolic mechanism of electron-transport biofilm with extremely low assimilation rate in microbial fuel cell for wastewater treatment <u>Li Xie¹, Naoko Yoshida¹</u> ¹ Department of Civil Engineering, Nagoya Institute of Technology (Nitech), Nagoya, Aichi, Japan
ID 141	Uncovering novel mechanisms for electron uptake in cathode- oxidizing marine microbial consortia <u>Joshua D. Sackett¹, Jin-Sang Yu¹, Nitin Kamble¹, Edmund Leach¹, Taruna Schuelke², Elizabeth Wilbanks², and Annette R. Rowe¹</u> ¹ Department of Biological Sciences, University of Cincinnati, Cincinnati, Ohio, USA ² Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, USA
ID 146	The new electroactive Gram-positive bacterium <i>Paenibacillus profundus</i> YoMME <u>Yolina Hubenova^{1,2} and Mario Mitov^{3,4}</u> ¹ Institute of Electrochemistry and Energy Systems “Acad. Evgeni Budevski”, IEEs- BAS, Sofia, Bulgaria ² Department of Biochemistry and Microbiology, Plovdiv Univ. “Paisii Hilendarski”, Plovdiv, Bulgaria ³ Department of Chemistry, South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria ⁴ Innovative Center for Eco Energy Technologies, SW University “Neofit Rilski”, Blagoevgrad, Bulgaria
ID 158	Materials informatics approach combined with high-throughput electrochemistry to model extracellular electron transport via electron shuttles <u>Takashi Fuikawa¹, Ryo Tamura^{1, 2}, Gaku Imamura^{1, 3} and Akihiro Okamoto^{1, 4}</u> ¹ National Institute for Materials Science, Japan ² Graduate School of Frontier Sciences, The University of Tokyo, Japan ³ Graduate School of Information Science and Technology, Osaka University, Japan ⁴ Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan
ID 165	The surface biology of an electroactive methanogen – <i>Methanosarcina barkeri</i> <u>Abdalluh Jabaley¹, Daniel Chevrier², Damien Faivre², Per Morgen³ & Amelia-Elena Rotaru¹</u> ¹ Department of Biology, University of Southern Denmark, Denmark ² Biosciences and Biotechnologies Institute of Aix-Marseille, France ³ Department of Farmacy, Physics and Chemistry, University of Southern Denmark, Denmark
ID 170	Corrosion of metallic iron by methanogens: the dual role of soluble CO₂ as a substrate and reactant for H₂ production <u>Ioannis Vyrides¹, Despina Constantinou¹, Charis Samanides¹, Maria Andronikou¹</u> ¹ Dept of Chemical Engineering, Cyprus University of Technology, Limassol, Cyprus.
ID 179	Inward electron transfer in <i>S. oneidensis</i>: A thermodynamic barrier <u>Shaylynn Miller and Michaela TerAvest</u> Affiliation: Michigan State University, East Lansing, MI, USA.
ID 201	Effect of conductive magnetite nanoparticles on anodic and cathodic electron transfer processes in bioelectrochemical systems <u>Clara Marandola¹, Lorenzo Cristiani¹, Carolina Cruz Viggi², Marco Resitano², Matteo Tucci², Marco Zeppilli¹, Sebastià Puig³, Marianna Villano¹</u> ¹ Department of Chemistry, Sapienza University of Rome, Italy ² Water Research Institute (IRSA), National Research Council (CNR), Monterotondo, Italy ³ LEQUIA, Institute of Environment, University of Girona, Girona, Spain
ID 209	CO₂ bioconversion to CH₄ when Zero-Valent Iron is added to anaerobic granular sludge in a system under mild environmental conditions <u>Maria Andronikou¹ and Ioannis Vyrides¹</u> ¹ Department of Chemical Engineering, Cyprus University of Technology, Lemesos, Cyprus
T4-B Material science and reactor design	

ID 03	<p>Alternating current based electrochemical deposition of pure emeraldine salt redox state of polyaniline to modify mw- cnt/polyester microfiber nonwoven based flexible electrode for microbial fuel cell</p> <p><u>Rahul Kandpal</u>^{1, 2, 3}, <u>Syed Wazed Ali</u>^{1,3*}, <u>Shaikh Ziauddin Ahammad</u>^{1,2*}</p> <p>¹School of Interdisciplinary Research (SIR), Indian Institute of Technology Delhi, India ²Dept of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, India ³Dept of Textile and Fibre Engineering, Indian Institute of Technology Delhi, New Delhi, India</p>
ID 20	<p>Polyaniline interweaved iron embedded in urea-formaldehyde resin-based carbon as a cost-effective catalyst for power generation in microbial fuel cell</p> <p><u>Simran Kaur Dhillon</u>¹, <u>Patit P Kundu</u>¹</p> <p>¹Department of Chemical Engineering, Indian Institute of Technology, Roorkee, India</p>
ID 32	<p>A single-chamber bioelectrochemical system without an ion-exchange membrane for Power-to-X and basic research</p> <p><u>Nils Rohbohm</u>¹, <u>Tianran Sun</u>², and <u>Largus T. Angenent</u>¹</p> <p>¹Env. Biotechnology, Center for Applied Geosciences, Univ. of Tübingen, Tübingen, Germany ²Laboratory of Soil Environmental Science and Technology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Haidian, Beijing, PR China</p>
ID 40	<p>Development of Innovative Soil Microbial Fuel Cells for Energy Harvesting</p> <p><u>Jakub Dziegielowski</u>¹, <u>Mirella Di Lorenzo</u>¹</p> <p>¹Department of Chemical Engineering and Centre for Biosensors, Bioelectronics & Biodevices (C3Bio), University of Bath, Claverton Down, UK</p>
ID 65	<p>Membrane-Catholyte Selection for Microbial Electrolysis Cells for Brewery Wastewater Treatment</p> <p><u>Isaac Vázquez</u>¹, <u>Oksana Bunk</u>¹, <u>Thomas Papyrin</u>¹, <u>Sven Kerzenmacher</u>¹, <u>Óscar Santiago</u>¹</p> <p>¹Center for Environmental Research and Sustainable Technology (UFT), Univ. of Bremen, Germany</p>
ID 232	<p>Potential applications of a novel scalable rotating disk bioelectrochemical reactor (RDBER)</p> <p><u>Johannes Eberhard Reiner</u>¹, <u>Max Hackbarth</u>¹, <u>Johannes Gescher</u>² and <u>Harald Horn</u>¹</p> <p>¹Engler-Bunte-Institute, Karlsruhe Institute of Technology, Germany ²Institute of Technical Microbiology, University of Technology Hamburg, Germany</p>
ID 144	<p>From CAD to Geobacter: 3D-printed spherical micro-anodes for use in bioelectrochemical systems</p> <p><u>George Papaharalabos</u>¹, <u>Elia Judith Martínez</u>¹, <u>Xiomar Gómez</u>¹ and <u>Antonio Moran Palao</u>¹</p> <p>¹Chemical and Env. Bioprocess Eng. Group, Natural Resources Institute, Univ. of León, León, Spain</p>
ID 167	<p>Bacterial imprinting with <i>G. sulfurreducens</i> for next generation microbial electrochemical technologies</p> <p><u>Jack Reeder</u>¹, <u>Liz Heidrich</u>¹, <u>Matt Unthank</u>², <u>Marloes Peeters</u>¹</p> <p>¹Newcastle University, School of Engineering, Merz Court, Newcastle upon Tyne, UK ²Northumbria University, Dept of Applied Sciences, Newcastle upon Tyne, UK</p>
ID 172	<p>Improving microbial desalination cell performance by cathode modification using BiOCl/gCN as electro-catalyst</p> <p><u>Sadik Rahman</u>¹, <u>Noor Juma</u>¹, <u>Md. Abdullah Al-Mamun</u>¹ and <u>Ahmad Sana</u>¹</p> <p>¹Dept of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman</p>
ID 177	<p>Novel Design of Microbial Desalination Cell for Acid-Base Recovery</p> <p><u>Abdullah Al-Mamun</u>, <u>Azhar Al Hinai</u></p> <p>Department of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman</p>
T5 Microbial electrochemical synthesis and electro-fermentation	
ID 09	<p>Promotion effect of humin on acetate electrosynthesis from carbon dioxide by <i>Moorella thermoacetica</i> JCM 9320</p> <p><u>Biec Nhu Ha</u>¹, <u>Duyen Minh Pham</u>², <u>Takuya Kasai</u>^{1,2}, and <u>Arata Katayama</u>^{1,2,*}</p> <p>¹Dept of Civil Engineering, Graduate School of Engineering, Nagoya University, Japan ²Institute of Materials and Systems for Sustainability, Nagoya University, Japan</p>

ID 19	Promotion of biological nitrogen fixation by electron donation from solid phase humin <u>Takuya Kasai^{1,2}, Sujan Dey² and Arata Katayama^{1,2}</u> ¹ Institute of Materials and Systems for Sustainability, Nagoya University, Japan ² Graduate School of Engineering, Nagoya University, Japan
ID 23	Indoor CO₂ as renewable carbon source: coupling indoor CO₂ direct air capture to microbial electrosynthesis technologies <u>Luis R. López¹, Paolo Dessì¹, Alba Cabrera-Codony, Pau Zamora¹, Bart Kraakman², M. Dolors Balaguer¹, Sebastià Puig¹</u> ¹ LEQUIA, Institute of Environment, University of Girona, Girona, Spain ² Jacobs Engineering, Bristol, UK
ID 41	Microbial electrosynthesis of commodity chemicals from CO₂: Progress and limitations <u>Miriam Fernández-Ávila Cobo¹, Babak Rezaei², Stephan Sylvest Keller² Yifeng Zhang¹</u> ¹ Department Of Environmental Engineering, Technical University of Denmark, Denmark ² National Centre for Nano Fabrication and Characterization, Technical Univ. of Denmark, Denmark
ID 57	CO₂ conversion to Formate – controllable, continuous substrate provision systems for formatotrophs <u>Marc Pfitzer¹ and Dirk Holtmann¹</u> ¹ TH Mittelhessen University of Applied Sciences, Institute of Bioprocess Engineering and Pharmaceutical Technology, Giessen, Germany
ID 84	Bio-electro CO₂ recycling into ethanol <u>Meritxell Romans-Casas¹, Elisabet Perona-Vico², Paolo Dessì¹, Lluís Bañeras², M. Dolors Balaguer¹ Sebastià Puig^{1*}</u> ¹ LEQUIA. Institute of the Environment. University of Girona. Girona, Spain. ² gEMM. Institute of Aquatic Ecology, University of Girona, Girona, Spain.
ID 104	Methanol as a co-substrate with carbon dioxide enhances butyrate production in microbial electrosynthesis <u>Hui Yao¹, Igor Vassilev¹, and Marika Kokko¹</u> ¹ Faculty of Engineering and Natural Sciences, Tampere University, Tampere, Finland
ID 107	Electrode-based polyhydroxybutyrate (PHB) production from CO₂ by microbial electrosynthesis of <i>Rhodobacter sphaeroides</i> <u>Shuwei Li, Minsoo Kim, Jung Rae Kim</u> School of Chemical Engineering, Pusan National University, Busan, Republic of Korea
ID 121	Alternating applied voltage speeds up electro-fermentation <u>David Strik¹, Claire Kooiman¹, Kasper de Leeuw¹, Rick Litecia¹, Merve Atasoy^{1,2}</u> ¹ Environmental Technology. Wageningen University & Research, the Netherlands ² Laboratory of Microbiology. Wageningen University & Research, the Netherlands
ID 129	Acetogenic inoculum selection and activation from mixed sludge for acetate bioelectrosynthesis <u>Jacopo Ferretti, Riccardo Minardi, Lorenzo Cristiani, Marianna Villano, Mauro Majone, Marco Zeppilli</u> Dept of Chemistry, Sapienza University of Rome, Rome, Italy
ID 130	Artificial electron mediator and biofilm matrix derive electron transfer in CO₂ electrosynthesis <u>Young Eun Song^{1,2}, Abdelrhman Mohamed³, Changman Kim⁴, Minsoo Kim¹, Shuwei Li¹, Eric Sundstrom², Haluk Beyenal³, and Jung Rae Kim¹</u> ¹ School of Chemical Engineering, Pusan National University, Geumjeong-Gu, Busan, Republic of Korea ² Advanced Biofuel and Bioproducts Process Development Unit, Lawrence Berkeley National Laboratory, Emeryville, CA, USA ³ The Gene and Linda Voiland School of Chemical Engineering and Bioengineering, Washington State University, Pullman, WA, USA ⁴ Biotechnology and bioengineering, Chonnam National University, Buk-Gu, Gwangju, Republic of Korea
ID 131	The VIVALDI project: Integrating bio/electrochemistry in the emerging CO₂-based industry <u>Albert Guisasola</u>

	GENOCOV, Dept d'Enginyeria Química, Biològica i Ambiental, Escola d'Enginyeria, UAB, Spain
ID 133	Electrode-attached cell driven biogas upgrading of anaerobic digestion effluent CO₂ to CH₄ using a microbial electrosynthesis cell <u>Minsoo Kim¹</u> , Shuwei Li ¹ , Young Eun Song ² , Dong-Yeol Lee ³ and Jung Rae Kim ^{1*} ¹ School of Chemical Engineering, Pusan National University, Republic of Korea ² Advanced Biofuel and Bioproducts Process Dev Unit, Lawrence Berkeley National Laboratory, USA ³ Environmental Solution Team, GS Engineering & Construction, Republic of Korea
ID 156	Study of hydrogen production mechanisms from wastewaters in a microbial electrolysis cell <u>Lorenzo Cristiani¹</u> , Clara Marandola ¹ , Damiano Ferialud ¹ , Remy Lacroix ² , Benjamin Erable ³ , Marco Zeppilli ¹ , Marianna Villano ¹ ¹ Department of Chemistry, Sapienza University of Rome, Italy ² 6T-MIC Ingénieries, Castanet-Tolosan, France ³ Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France
ID 188	Direct power to gas by <i>Methanosarcina barkeri</i> Malene Arreborg ¹ and Amelia-Elena Rotaru ¹ ¹ Department of Biology, University of Southern Denmark, Denmark
ID 206	Transcriptome and proteome analysis of two cathodic obligate anaerobes for targeted development of better microbial electrosynthesis <u>Sara Al Sbei^{1,2}</u> , Maliheh Abdollahi Mirbadi ³ , Falk Harnisch ³ , Miriam A. Rosenbaum ^{1,2} ¹ Leibniz Institute for Natural Product Research and Infection Biology, Hans-Knöll-Institute, Germany ² Faculty of Biological Science, Friedrich-Schiller-University Jena, Germany ³ Dept of Env. Microbiology, UFZ-Helmholtz Centre for Environmental Research, Leipzig, Germany
ID 207	Taming the challenge of the anode reaction for microbial electrosynthesis from CO₂ like Poseidon horses <u>Maliheh Abdollahi Mirbadi¹</u> , Sara Al Sbei ² , Miriam A. Rosenbaum ² , Falk Harnisch ¹ ¹ Dept of Env. Microbiology, Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany ² bBio Pilot Plant, Leibniz Inst. for Natural Product Research and Infection Biology – HKI-Jena, Germany
ID 213	Bioelectrochemical ammonia production by <i>Acidithiobacillus ferrooxidans</i> mutants with modified regulation of nitrogenase Atsushi Kouzuma, Shohei Yamada and Kazuya Watanabe School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, Japan
ID 215	Elucidating factors necessary for extracellular electron transport in <i>E. coli</i> Lukas Kneuer ¹ , Johannes Gescher ¹ ¹ Institute of Technical Microbiology, Hamburg University of Technology (TUHH), Germany
ID 218	Improvement of biohydrogen production by electro-fermentation stimulating the ethanol-type pathway <u>René Cardaña^{1,2}</u> , Casandra Valencia-Ojeda ¹ , Luis Felipe Cházaro-Ruiz ¹ , Elías Razo-Flores ¹ ¹ Instituto Potosino de Investigación Científica y Tecnológica A.C., División de Ciencias Ambientales, San Luis Potosí, SLP, México ² Environmental Microbiology and Biotechnology Lab, Dept of Environmental Sciences, Instituto Tecnológico Regional Centro Sur, Universidad Tecnológica, Durazno, Uruguay
ID 219	Friendship between metals, granular activated carbon and microbes improves microbial electrosynthesis performance <u>Igor Vassilev¹</u> , Davide Bergna ^{2,3} , Ulla Lassi ^{2,3} and Marika Kokko ¹ ¹ Faculty of Engineering and Natural Sciences, Tampere University, Finland ² Research Unit of Sustainable Chemistry, University of Oulu, Finland ³ Applied Chemistry, University of Jyväskylä, Kokkola University Consortium Chydenius, Finland
ID 224	Photoelectroheterotrophic production of polyhydroxybutyrate (PHB) in purple phototrophic bacteria <u>Fernando Muniesa-Merino¹</u> , Carlos Manchon ^{1,2} , and Abraham Esteve-Nuñez ^{*1,2} ¹ Universidad de Alcalá, Alcalá de Henares, Madrid, Spain. ² Nanoelectra S.L., Madrid, Spain.

ID 227	Improvement of microbial electrosynthesis by pure homoacetogens using a low redox potential mediator María Fernanda Pérez-Bernal¹, Elie Desmond Le-Quémener¹, Paul V. Bernhardt², Éric Trably¹ and Nicolas Bernet¹. ¹ LBE, University of Montpellier, INRAE, Narbonne, France ² School of Chemistry and Molecular Biosciences, University of Queensland, Brisbane, Australia
ID 230	CO₂ fixation for value-added chemical production using <i>Clostridium ljungdahlii</i> as a host strain in a bioelectrochemical system Chae-ho Im¹, Oskar Modin², and Yvonne Nygård¹ ¹ Division of Industrial biotechnology, Department of Biology and Biological Engineering, Industrial Biotechnology, Chalmers University of Technology, Gothenburg, Sweden ² Division of Water Environment Technology, Department of Architecture and Civil Engineering, Chalmers University of Technology, Gothenburg, Sweden
ID 231	Using intrinsic fluorescent spectra to monitor electro-activity of 3D-bioprinted <i>C. ljungdahlii</i> MES cells Adolf Krige¹, Kerstin Ramser², Lisbeth Olsson³, Yvonne Nygård³, Ulrika Rova¹ and Paul Christakopoulos¹ ¹ Biochemical Process Engineering, Dept of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, Luleå, Sweden ² Experimental Mechanics, Division of Fluid and Experimental Mechanics, Department of Engineering Sciences and Mathematics, Luleå University of Technology, Luleå, Sweden ³ Dept of Biology and Biological Engineering, Chalmers University of Technology, Gothenburg, Sweden
T6 MET-based sensor technology	
ID 42	Whole bacterial cell surface modified screen printed nitrate biosensor based on direct electron transfer of <i>Bacillus</i> sp. electropolymerized within polyaniline films Hossam E. M. Sayour¹, Nashwa Youssef², Ihab Adly³, Hani Ragai⁴, Khaled Kirah⁴, Ola M. Gomaa⁵ ¹ Molecular Biomimetic Research Group, Biomedical Chemistry Unit, Chemistry Dept., Animal Health Research Institute (AHRI), Agricultural Research Center (ARC), Dokki, Egypt ² Solid State Physics and Accelerators Department, National Center for Radiation Research and Technology, Egyptian Atomic Energy Authority, Cairo-Egypt ³ Faculty of Engineering, British University in Egypt (BUE), Suez desert road, El Sherouk City-Egypt ⁴ Faculty of Engineering, Ain Shams University, Cairo-Egypt ⁵ Radiation Microbiology Department, National Center for Radiation Research and Technology, Egyptian Atomic Energy Authority, Cairo, Egypt
T7-B Electrochemical, biological & systemic analysis of METs	
ID 217	Novel species identification and deep functional annotation of electrogenic biofilms, selectively enriched in microbial fuel cell (MFC) array Lukasz Szydlowski^{1,2}, Jiri Ehlich³, Pawel Szczepiak², Noriko Shibata¹, and Igor Goryanin^{1,4,5} ¹ Okinawa Institute of Science and Technology, Biological Systems Unit, Onna, Japan ² Malopolska Centre of Biotechnology, Jagiellonian University, Krakow, Poland ³ Brno University of Technology, Faculty of Chemistry, Brno, Czechia ⁴ University of Edinburgh, School of Informatics, Edinburgh, UK ⁵ Tianjin Institute for Industrial Biotechnology, Tianjin, China
T9 - Novel Applications of METs	
ID 28	Biogas to edible single-cell protein in a bioinorganic electrosynthesis system Mingyi Xu¹, Dan Zhao¹, Yifeng Zhang¹ ¹ Dept of Environmental Engineering, Technical University of Denmark Kongens Lyngby, Denmark
ID 61	Biofilm suppression and bacteria killing on stainless steel based on electrochemical approach Mohammed Y. Emran¹, Waheed Miran¹, and Akihiro Okamoto^{1,2} ¹ International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials, Tsukuba, Japan ² Graduate School of Chemical Sciences and Engineering, Hokkaido University, Kita-ku, Sapporo, Japan

ID 99	<p>A novel, electricity- and carbon dioxide-powered microbial electrochemical system to extract iron on mars and earth</p> <p><u>Antoine Carissimo¹</u>, Sven Kerzenmacher¹, Jan-Henning Dirks², Michael W. Friedrich³ and Guillaume Pillot¹</p> <p>¹Environmental Process Engineering research group, Center for Environmental Research and Sustainable Technology, University of Bremen, Germany</p> <p>²Biological Structures and Biomimetics research group, Biomimetics-innovation-Center, Hochschule Bremen – City University of Applied Sciences, Germany</p> <p>³Microbial Ecophysiology research group, University of Bremen, Germany</p>
ID 127	<p>Bioelectrochemical system for flexible biogas production</p> <p><u>Janek R. Weiler¹</u>, Melanie T. Knoll¹, Nikolai Jürgensen², An-Ping Zeng², Johannes Gescher¹</p> <p>¹Institute of Technical Microbiology, University of Technology Hamburg, Hamburg, Germany</p> <p>²Institute of Bioprocess and Biosystems Engineering, Univ. of Technology Hamburg, Hamburg, Germany</p>
ID 200	<p>The metabolic tuning of mixed purple phototrophic bacteria biofilms in heterotrophic conditions through microbial photo- electrosynthesis</p> <p><u>S. Díaz-Rullo Edreira¹</u>, A. Prado², I.A. Vasiliadou³, JJ. Espada¹, R. Wattiez⁴, B. Leroy⁴, F. Martínez¹, D. Puyol¹</p> <p>¹Chemical and Environmental Engineering Group (GIQA), Universidad Rey Juan Carlos, Madrid, Spain</p> <p>²Electric Engineering Area, Polytechnic University of Cartagena, Cartagena, Spain</p> <p>³Department of Environmental Engineering, Democritus University of Thrace, Xanthi, Greece</p> <p>⁴Laboratory of Proteomics and Microbiology, University of Mons, Mons, Belgium</p>
ID 211	<p>e-Soil – Electro-active artificial soil for soil-less farming: nutrients cycling from food-industry wastewaters</p> <p><u>Giovanni Rusconi Clerici²</u>, Paolo Bombelli¹, Federico Körner¹, Stefano Pierpaolo Trasatti¹, Antonio Idá³, Abraham Esteve Núñez², Andrea Schievano¹</p> <p>¹Department of Environmental Science and Policy, University of Milan, Italy</p> <p>²Institute IMDEA agua, Alcalá de Henares, Spain</p> <p>³Algaria srl, via Bergognone, Milano, Italy</p>
ID 220	<p>Cable Bacteria as electrical signal carriers & the transmission of music</p> <p><u>Koen Wouters¹</u>, Robin Bonn��^{1,2} and Jean Manca¹</p> <p>¹UHasselt, X-LAB, Diepenbeek, Belgium</p> <p>²Center for Electromicrobiology, Department of Biology, Aarhus University, Aarhus, Denmark</p>
ID 233	<p>Effect of carbon material type on biofilm formation and subsequent electrochemistry for <i>Pseudomonas Fluorescens</i> under anaerobic conditions.</p> <p><u>Chyntol Kanhimbe¹</u>, James M Courtney¹, Neil V Rees¹, Rahul Gautam^{1,2}, Robert Steinberger Wilckens¹</p> <p>¹School of Chemical Engineering, University of Birmingham, UK</p> <p>²Dept of Polymer and Process Engineering, Indian Institute of Technology, Roorkee, India</p>