



**2024
NA-ISMET
CONFERENCE**

**April 3-5, 2024
Rice University**

A MESSAGE FROM THE 2024 NA-ISMET ORGANIZING COMMITTEE

DEAR NA-ISMET Participants,

On behalf of the Local Organizing Committee, it is our utmost pleasure to extend a warm welcome to each and every one of you to the 2024 North America International Society for Microbial Electrochemistry and Technology (NA ISMET) Conference!

As we gather for this prestigious event, we are filled with anticipation and excitement for the invaluable insights, collaborations, and discoveries that are bound to emerge over the coming days. With over 70 distinguished attendees from various corners of the globe, this conference promises to be a melting pot of expertise, innovation, and knowledge exchange.

Beyond the scientific program, we have also arranged social events and networking opportunities to foster meaningful connections and camaraderie among participants. Whether you're a seasoned researcher, a budding scientist, or an industry professional, we encourage you to seize the chance to connect with peers, share your experiences, and forge lasting collaborations.

Once again, welcome to the 2024 NA-ISMET Conference! May your experience be enriching, inspiring, and unforgettable.

Warm regards,

Caroline Ajo-Franklin (Rice University)

Benjamin (Keith) Keitz (University of Texas at Austin)

Z. Jason Ren (Princeton University)

Annette (Annie) Rowe (University of Cincinnati)

Jonathan (Joff) Silberg (Rice University)

CODE OF CONDUCT

Please review the code of conduct below:

- ISMET members shall not commit scientific misconduct, such as falsification or fabrication of data, plagiarism, etc. Scientific error and incorrect interpretation that occur as part of the scientific process does not count as misconduct.
 - ISMET members shall treat others equitably and respectfully without regard to race, ethnicity, color, religion, national origin, sex, sexual orientation, gender identity, age, marital status, disabilities, political affiliation, or any other personal characteristics protected from discrimination by harassment laws.
 - ISMET members shall abide by the event codes of conduct policy in place for both regional and international meetings.
 - ISMET members shall not engage in harassment of any person including students, trainees, employees, colleagues, research participants or others. Harassment is defined as unwelcome or unwanted attention or conduct that creates an environment where a reasonable person would feel unwelcome, intimidated, or abused.
 - ISMET members shall take responsibility for reporting breaches of conduct to the BOD.
 - By accepting membership, ISMET members agree to this code of conduct.

ORGANIZING COMMITTEE

Local Organizing Committee

Caroline Ajo-Franklin, Rice University

Benjamin (Keith) Keitz University of Texas at Austin

Z. Jason Ren Princeton University

Annette (Annie) Rowe, University of Cincinnati

Jonathan (Joff) Silberg, Rice University

Administration Support

Catherine Sheppard, Rice University

Lesa Tran Lu, Rice University

Kaylee Waldrip, Rice University

Conference email: naismet2024@gmail.com

SPEAKERS LIST

Keynote Speakers

Fernanda Leite Lobo, Federal University of Ceará

Dianne Newman, California Institute of Technology

Invited Speakers

Scott Banta, University of Columbia

Ariel Furst, Massachusetts Institute of Technology

Allon Hochbaum, University of California Irvine

Sam Light, University of Chicago

Akihiro Okamoto, National Institute of Material Sciences

Joshua Sackett, University of Michigan

Olja Simoska, University of South Carolina

Rafael Verduzco, Rice University

Contributed Talks

Santiago Boto, Hans-Knöll-Institute

Marko Chavez, University of Southern California

Anaisa Coelho, University of Southern California

J.S. Duetzmann, Stanford University

Biki Kundu, Rice University

Kevin Linowski, Oregon State University

Catarina Paquette, University of North Lisboa

Rossi Ruggero, John Hopkins

Joshua Sackett, University of Cincinnati

Anna Salvia, University of Surrey

Basem Zakria, Lawrence Berkeley National Laboratory

Fauziah Zakaria, University of Maryland

Xu Zhang, Rice University

CONFERENCE PROGRAM

Wednesday, April 3	
2:00pm-4:00pm	Arrival & Check-In (<i>BRC Lobby</i>) <i>All poster presenters can set up their posters in the BRC Event Hall.</i>
4:00pm-4:10pm	Welcome Remarks (<i>BRC Auditorium</i>) Caroline Ajo-Franklin, Rice University
4:10pm-5:00pm	Keynote #1: "A Fascination with Phenazines" (<i>BRC Auditorium</i>) Dianne Newman, California Institute of Technology
5:00pm-6:00pm	Poster Session I (<i>BRC Event Hall</i>) <i>Even-numbered posters will be presented at this session.</i>
Dinner recommendations that are close by	Lucille's - Hungry's - Local Foods - Ramen Gachi - Salento Bistrot - Roma

Thursday, April 4	
8:30am-9:00am	Breakfast (<i>BRC Lobby</i>)
9:00am-10:30am	Session 1: Biological Mechanisms of Extracellular Electron Transfer (<i>BRC Auditorium</i>) Annie Rowe, Moderator <ul style="list-style-type: none"> 9:00am-9:25am Allon Hochbaum "Bio-Inspired and De Novo Designs of Conductive and Responsive Protein Nanowires" 9:25am-9:50am Sam Light "Flavin-ylation Mediates Diverse Bacterial Extracytosolic Electron Transfer Activities" 9:50am-10:00am Catarina Paquete "Unraveling the Mto pathway of the iron-oxidizing bacterium <i>Sideroxydans lithotrophicus ES-1</i>" 10:00am-10:10am Anaisa Coelho "Unraveling the structure and electron transfer mechanisms in conductive cable bacteria" 10:10am-10:20am Joshua Sackett, "Extra Electron Uptake in Pure Culture and Communities" 10:20am-10:30am Biki Kundu, "Electronic Respiration in <i>Escherichia coli</i>"
10:30am-10:50am	Coffee Break and Poster Viewing (<i>BRC Lobby and BRC Event Hall</i>)
10:50am-12:10pm	Session 2: Exploring and Engineering the Microbe-Material Interface (<i>BRC Auditorium</i>) Keith Keitz, Moderator <ul style="list-style-type: none"> 10:50am-11:15am Rafael Verduzco "Organic Electrochemical Transistors for Monitoring and Amplifying Microbial EET" 11:15am-11:40am Akihiro Okamoto "Decoding Extracellular Electron Transfer: A New Glimpse into In-Vivo Enzyme Dynamics" 11:40am-11:50am Santiago Boto "Electron mediation in microbial electrosynthesis with <i>Clostridium ljungdahlii</i>: A key to unlocking the potential of synthesis from CO₂" 11:50am-12:00pm Basem Zakaria "Innovative Solutions for Efficient CO₂ bioconversion: Microbial Electrochemical Fluidized Bed Reactor and Electrocatalyst Integration" 12:00pm-12:10pm Marko Chavez "Investigating Periplasmic Electron Carrier with Electrochemical Studies of Patterned Biofilms"

12:10pm-1:10pm	Lunch (BRC Event Hall) <i>Boxed lunches will be provided.</i>
1:10pm-1:55pm	Session 3: Microbial Electrochemical Technologies for Sensing and Other Applications (BRC Auditorium) Joff Silberg, Moderator 1:10pm-1:35pm Scott Banta "Engineering of Acidithiobacillus ferrooxidans for Bioelectrocatalysis Applications" 1:35pm-2:00pm Elizabeth Windham "Chemical-dependent sulfite reductase switches for bioelectronics." 2:00pm-2:10pm Fauziah Zakaria "Rewiring redox-responsive promoters for electronic control of microbial gene expression " 2:10pm-2:20pm Xu Zhang "Multichannel bioelectronic sensing using engineered Escherichia coli" 2:20pm-2:30pm Anna Salvian "MFC-Based Biosensors For Wastewater Quality Monitoring From Laboratory Scale To Real Application: Effect Of The Chemical And Microbial Composition Of The Feedstock"
2:30pm-3:00pm	Coffee Break and Poster Viewing (BRC Lobby and BRC Event Hall)
3:00pm-4:00pm	Poster Session II (BRC Event Hall) <i>Odd-numbered posters will be presented at this session.</i>
4:30pm-4:45pm	Closing Day Remarks (BRC Event Hall)
5:00pm-8:00pm	Networking Reception (Marriott Hotel) 6580 Fannin St. Houston, TX 77030 <i>Dinner and drinks will be served. ***Please bring your ID to this event.</i>

Friday, April 5	
8:30am-9:00am	Breakfast (BRC Lobby)
9:00am-9:50am	Keynote #2: "Use of Activated Carbon at the anode of Microbial Fuel Cells for pH neutrality" (BRC Auditorium) Fernanda Leite Lobo, Federal University of Ceará
9:50am-10:40am	Session 4: Engineering Microbial Electrochemical Technologies (BRC Auditorium) Jason Ren, Moderator 9:50am-10:15am Ariel Furst "Harnessing Biochemical Electron Transfer for Equitable Technologies" 10:15am-10:40am Joshua Jack "Reshaping the bioeconomy: Next generation biohybrid CO ₂ valorization via novel C1 mediated processes"
10:40am-11:10am	Coffee Break and Poster Viewing (BRC Lobby and BRC Event Hall)
11:10am-11:40am	Session 4: Engineering Microbial Electrochemical Technologies - continued (BRC Auditorium) Z. Jason Ren, Moderator 11:10am-11:20am J.S. Deutzmann "Application of Microbial Electrosynthesis: Performance and Intermittency" 11:20am-11:30am Camila Llerena-Olivera "Finding the Ideal Microbial Electrolysis Cell Conditions with Acidimicrobium sp. Strain A6 to Enhance Ammonium Oxidation and PFAS Defluorination in Wastewater" 11:30am-11:40am Rossi Ruggero "Asymmetric and vapor-fed reactor designs for

	microbial electrochemical technologies”
11:40am-12:00pm	Closing Remarks and Conference Awards (<i>BRC Lobby and BRC Event Hall</i>) <i>To-go boxed lunches will be provided. Poster breakdown in the BRC Event Hall.</i>

POSTER PRESENTATIONS

Session I: Even Numbers	
2	<p><u>Electron Spin Effects in Extracellular Respiration</u> Sukenik N.^{1,2}, Niman C.M.¹, Dang T.¹, Chaves M.S.¹, Nwachukwu J², Thirumurthy M.A.², Jones A.K.², Naaman R.³, Santra K.³, Das T.K.³, Paltiel Y.⁴, Baczewski L.T.⁵, El-Naggar M.Y.¹</p> <p>¹University of Southern California, Los Angeles, California, USA ²Arizona State University, Tempe, Arizona, USA ³Weizmann Institute of Science, Rehovot, Israel ⁴The Hebrew University of Jerusalem, Jerusalem, Israel ⁵Polish Academy of Sciences, Warsaw, Poland</p>
4	<p><u>Extracellular Electron Transfer Efficiency is Regulated by the Biofilm Matrix</u> Jinyang, L.¹, Newman, D.K.^{1,2*}</p> <p>¹Division of Biology and Biological Engineering, Caltech, Pasadena, CA, USA ²Division of Geological and Planetary Sciences, Caltech, Pasadena, CA, USA</p>
6	<p><u>EET coupled Iron reduction– a Bacterial Pathogenesis Mechanism</u> Naradasu, D.^{1*}, Nobbs, A.H.¹, Akihiro, O.²</p> <p>¹Oral Microbiology, University of Bristol, Bristol, United Kingdom ²National Institute for Materials Science, Tsukuba, Japan</p>
8	<p><u>Extracellular electron transfer in the oral microbiome: an electrochemical investigation on one of the key players in surface colonization for pathogenicity</u> Abuyen, K.¹, Warren, M.², Tjokro, N.³, Sedghizadeh, P.³, Chen, C.³, El-Naggar, M.^{4**}</p> <p>¹Department of Biological Sciences, University of Southern California, Los Angeles, CA, USA ²Bridge Institute, USC, Los Angeles, CA, USA ³Herman Ostrow School of Dentistry, USC, Los Angeles, CA, USA ⁴Department of Physics and Astronomy, USC, Los Angeles, CA, USA</p>
10	<p><u>Unraveling the structure and electron transfer mechanisms in conductive cable bacteria</u> Coelho, A.^{1*}, Motiwala, Z.^{2,3}, Gati, C.^{2,3,4} & El-Naggar, M.Y.^{1,3,4}</p> <p>¹Department of Physics and Astronomy, University of Southern California, Los Angeles, CA, USA ²Bridge Institute, University of Southern California, Los Angeles, CA, USA ³Department of Biological Sciences, University of Southern California, Los Angeles, CA, USA ⁴Department of Chemistry, University of Southern California, Los Angeles, CA, USA USA</p>
12	<p><u>Investigation of Electron Transfer in Protein Nanowires found in <i>Geobacter Sulfurreducens</i></u> Rezaei, S.¹, Mustafa, K.² & Hochbaum, A.^{2,3*}</p> <p>¹Department of Biological Sciences, UC Irvine, Irvine, CA, USA ²Department of Chemistry, UC Irvine, Irvine, CA, USA ³Department of Materials Science and Engineering, UC Irvine, Irvine, CA, USA</p>
14	<p><u>Tuning redox small molecule compounds for one stop electron delivery or cyclic mediation of flux to photosynthetic electron transport chains of PSII-less cells</u> Lewis, C.^{1*}, Torres, C.¹, Khdour, O.² & Fromme, P.³</p> <p>¹ASU Biodesign Swette Center for Applied Biotechnology, Tempe, AZ, USA ²ASU Biodesign Center for Bioenergy 2, ASU Biodesign Center for Applied Structural Discovery Tempe, AZ, USA</p>
16	<p><u>Electronic Respiration in <i>Escherichia coli</i>.</u> Kundu, B.^{1*} and Ajo-Franklin, C.M.^{1,2}</p> <p>¹PhD Program in Systems, Synthetic, and Physical Biology, Rice University, Houston, TX, USA ²Department of Biosciences, Rice University, Houston, TX, USA</p>
18	<p><u>Unraveling the Mto pathway of the iron-oxidizing bacterium <i>Sideroxydans lithotrophicus ES-1</i></u> Paquete, C.M.^{1,2}, Coelho, A.^{1,a}, Jain, A.², Madjarov, J.¹, Todorovic, S.¹, Louro, R.O.¹, Gralnick, J.²</p>

	<p>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 ^a now in University of Southern California, Los Angeles, CA, USA</p>
20	<p>Different nanowires are required for different acceptors Bond, D. R.^{1*}, Ammend, M.¹, & Chan, C. H¹ ¹BioTechnology Institute, Department of Plant and Microbial Biology, University of Minnesota-Twin Cities, St. Paul, MN, USA</p>
22	<p>Characterization of genes involved in extracellular electron uptake in <i>Shewanella oneidensis</i> MR-1 Yu, J-S.¹, Sackett, J.¹, Cunnane, A.¹, Rowe, A.R.^{1*} ¹University of Cincinnati, Cincinnati, OH, USA</p>
24	<p>Exploring the Molecular Factors Underlying the Enhancement of Electron Transfer by the MtrCAB complex Abubackar, H.N.¹*, Louro, R.O., Paquete, C.M. ¹Instituto de Tecnologia Química e Biológica António Xavier ² Universidade Nova de Lisboa, Avenida da República (EAN), Oeiras, Portugal</p>
26	<p>Elucidating Novel Mechanisms of Extracellular Electron Uptake in Cathode-Oxidizing Marine Microbial Consortia Sackett, J.D.^{1*} & Rowe, A.R.¹ ¹Department of Biological Sciences, University of Cincinnati, Cincinnati, Ohio, USA</p>
28	<p>The <i>in vivo</i> impact of electron transport on the bioenergetic state of cells along cable bacteria Yang, T.^{1*}, Seo, C.¹, Third, C.C.², So-on, D.D.² ¹Department of Physics and Astronomy, University of Southern California, USA; ²Department of Chemistry, University of Southern California, USA</p>
30	<p>Mechanistic Studies of Biotic-Abiotic Bacterial Electron Conduits Dang, T.^{1*}, El-Naggar, Y. M.^{1,2,3} ¹Molecular and Computational Biology, Department of Biological Sciences, ²University of Southern California, Los Angeles, CA, USA ³Department of Physics and Astronomy, University of Southern California, Los Angeles, CA, USA ⁴Department of Chemistry, University of Southern California, Los Angeles, CA, USA</p>
32	<p>Understanding the membrane components involved in the extracellular electron transfer process of haloalkaliphilic <i>Geobacter</i> <i>halelectricus</i> Sadhotra, C.^{1*}, Yadav, S.¹, Louro, R.O.², Paquete, C.M.² & Patil, S.A.^{1#} ¹Indian Institute of Science Education and Research Mohali (IISER Mohali), SAS Nagar, Punjab, India ²Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa Oeiras, Oeiras, Portugal</p>
34	<p>Investigating Chiral-Induced Spin Selectivity in Cytochrome Nanowires Harris, C.^{1*}, Yadav, S.¹, Sukenik, N.¹ & El-Naggar, M.Y.^{1,2,3} ¹Department of Physics and Astronomy, University of Southern California, Los Angeles, CA, USA ²Department of Biological Sciences, University of Southern California, Los Angeles, CA, USA ³Department of Chemistry, University of Southern California, Los Angeles, CA, USA</p>
36	<p>Whole-cell proteome analysis of <i>Desulfuromonas acetexigens</i> hints at possible pathways involved in extracellular electron transfer Sysoev, M., Katuri, K.P., Saikaly, P.E.* ¹Water Desalination and Reuse Center (WDRC), Biological and Environmental Science & Engineering (BESE) Division ² King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia</p>
38	<p>Chirality Induced Spin-Dependent Electron Transport through a Critical Bacterial Cell Surface Multiheme Electron Conduit Yadav, S.*, Sukenik, N., Chavez, M.S., & El-Naggar, M.Y.* ¹Department of Physics and Astronomy, University of Southern California, Los Angeles, CA, USA</p>
40	<p>Investigating mechanisms of Extracellular Electron Transfer in <i>Methanosarcina</i>: from metal reduction, to DIET, to the potential for electromethanogenesis Rowe, A.¹ Vu, L., Sriram S., Lessner, D. ¹Department of Biological Sciences, University of Cincinnati, Cincinnati, OH, USA</p>

42	<p>Multichannel bioelectronic sensing using engineered <i>Escherichia coli</i> Zhang, X.¹, Ajo-Franklin, C.M.^{1,4*} ¹Department of BioSciences ²Department of Bioengineering ³Department of Chemical and Biomolecular Engineering, ⁴Rice Synthetic Biology Institute, Rice University, 6100 Main Street, Houston, TX, USA</p>
44	<p>Engineering chemical-dependent sulfite reductase switches for bioelectronics Elizabeth Windham^{1,2*}, Dru Myerscough², Presley Bird^{1,2}, Ian J. Campbell², and Jonathan J. Silberg^{1,3,4} ¹Biochemistry and Cell Biology Graduate Program, Rice University, Houston, TX, USA ²Department of Biosciences, Rice University, Houston, TX, USA ³Department of Bioengineering, Rice University, Houston, TX, USA ⁴Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, USA</p>
46	<p>Programming electronic communication in lactic acid bacteria for environmental sensing Li, S.¹, Ajo-Franklin, C.M.^{1,2,3,*} ¹Department of BioSciences ²Department of Bioengineering ³Department of Chemical and Biomolecular Engineering, Rice University, USA</p>
48	<p>Hybrid Transistor for Biosensing and Biocomputing Gao, Y.¹, Zhou, Y.¹, Ji, X.², Graham, A.J.^{1,3}, Dundas, C.M.^{1,4}, Miniel Mahfoud, I.E.¹, Tibbett, B.M.¹, Tan, B.¹, Partipilo, G.¹, Dodabalapur, A.¹, Rivnay, J.², Keitz, B.K.^{1*} ¹University of Texas at Austin, Austin, TX, USA ²Northwestern University, Evanston, IL, USA ³University of California San Francisco, San Francisco, CA, USA ⁴Stanford University, Stanford, CA, USA</p>
50	<p>A modular design strategy for engineering two-component electrical systems for bioelectronics Sattari Khavas, D.^{1,*}, Windham, E.M.², and Silberg, J.J.³ ¹Chemical and Biomolecular Engineering Graduate Program ²Biochemistry and Cell Biology Graduate Program ³Biosciences Department, Rice University, Houston, TX, USA</p>
52	<p>Write, read, erase: transcriptional monitoring using chemical mediators Schwartz, S.K.¹, Silberg, J.J.^{1,2,3*} ¹Systems, Synthetic, and Physical Biology Graduate Program, Rice University, Houston, TX ²Department of BioSciences, Rice University, Houston, TX ³Department of Bioengineering, Rice University, Houston, TX ⁴Department of Chemical Engineering, Rice University, Houston, TX</p>
54	<p>Electrode Reduction by <i>Vibrio natriegens</i> for Marine Biosensing Using Genetic Control Carpenter, M.D.^{1,2*}, Daneman, M.², Ajo-Franklin, C.M.^{2,3,4} ¹Systems, Synthetic, and Physical Biology Graduate Program, Rice University, Houston, TX, USA ²Department of BioSciences, Rice University, Houston, TX, USA ³Department of Bioengineering, Rice University, Houston, TX, USA ⁴Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, USA</p>
56	<p>Electrically controlled gene expression in <i>Lactiplantibacillus plantarum</i> De Groote Tavares, C.^{1*}, Li, S.¹ Ajo-Franklin, C.¹ ¹Rice University, Houston, Texas, USA</p>
58	<p>MFC-Based Biosensors For Wastewater Quality Monitoring From Laboratory Scale To Real Application: Effect Of The Chemical And Microbial Composition Of The Feedstock Salvian, A.^{1,2*}, Farkas, D.², Ramirez Moreno, M.², Varcoe, J.R.¹, Avignone Rossa, C.², & Gadkari, S.^{*1} ¹School of Chemistry and Chemical Engineering, University of Surrey, Guildford, United Kingdom ²Department of Microbial Sciences, University of Surrey, Guildford, United Kingdom</p>
60	<p>Evaluating the effects of insertions, deletions, and fission on extracellular electron transfer mediated by MtrA</p>

	<p>Truong, A.T.^{1,2*}, Bird, P.^{1,2}, and Silberg, J.J.^{1,3,4} ¹Biochemistry and Cell Biology Graduate Program ²Department of Biosciences ³Department of Bioengineering ⁴Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, USA</p>
62	<p>Organic Electrochemical Transistors and Redox Hydrogels for Amplifying Microbial EET Bontapalle, S.¹, Saxena, R.², Zuo, X.¹ & Verduzco, R.^{1,3*} ¹Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, USA ²Applied Physics Program, Rice University, Houston, TX, USA ³Department of Materials Science and NanoEngineering, Rice University, Houston, TX, USA</p>
64	<p>Rewiring redox-responsive promoters for electronic control of microbial gene expression Zakaria, F.R.^{1,2*}, Chen, C.-Y.^{1,2}, Chu, M.J.^{1,3}, Payne, G.F.^{2,4} & Bentley, W.E.^{2,4} ¹Fischell Department of Bioengineering, University of Maryland, College Park, MD, USA ²Institute for Bioscience and Biotechnology Research, Rockville, MD, USA ³U.S. Army Research Laboratory, Adelphi, MD, USA ⁴Robert E. Fischell Institute for Biomedical Devices, College Park, MD, USA</p>
<h2>Session II: Odd Numbers</h2>	
1	<p>Controlling the conductivity of light-patterned biofilms. Atkinson, J.T.^{1,2,3*}, Chavez, M.S.¹, Niman, C.M.¹, Zhao, F.¹, Sukenik, N.¹, Gralnick, J.A.^{4,5}, Boedicker, J.Q.¹, & El-Naggar, M.Y.^{1,6,7} ¹Department of Physics and Astronomy, University of Southern California, Los Angeles, CA, USA ²Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ, USA ³Omenn-Darling Bioengineering Institute, Princeton University, Princeton, NJ, USA ⁴Biotechnology Institute, University of Minnesota, Twin Cities, St. Paul, MN, USA ⁵Department of Plant and Microbial Biology, University of Minnesota, Twin Cities, St. Paul, MN, USA ⁶Department of Biological Sciences, University of Southern California, Los Angeles, CA, USA ⁷Department of Chemistry, University of Southern California, Los Angeles, CA, USA</p>
3	<p>Innovative Solutions for Efficient CO₂ bioconversion: Microbial Electrochemical Fluidized Bed Reactor and Electrocatalyst Integration Zakaria, B.S.¹, Lanzilotti, A., Tejedor-Sanz, S.* ¹Advanced Biofuels and Bioproducts Process Development Unit, Emeryville, CA, USA ²Biological Systems and Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, CA, USA</p>
5	<p>Conduction in <i>Shewanella oneidensis</i> MR-1 biofilms uninhibited in periplasmic cytochrome deficient mutants Niman, C.M.^{1#}, Zhao, F.^{1#}, Chavez, M.S.¹, Gralnick, J.A.², El-Naggar, M.Y.^{1*}, & Boedicker, J.Q.¹ ¹University of Southern California, Los Angeles, CA, USA ²University of Minnesota-Twin Cities, St. Paul, MN, USA</p>
7	<p>Understanding the membrane components involved in the extracellular electron transfer process of haloalkaliphilic <i>Geoalkalibacter halelectricus</i> Sadhotra, C.^{1*}, Yadav, S.¹, Louro, R.O.², Paquete, C.M.² & Patil, S.A.^{1#} ¹Indian Institute of Science Education and Research Mohali (IISER Mohali), SAS Nagar, Punjab, India ²Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa Oeiras, Oeiras, Portugal</p>
9	<p>Electron mediation in microbial electrosynthesis with <i>Clostridium ljungdahlii</i>: A key to unlocking the potential of synthesis from CO₂ Boto, S.T.^{1,2*}, Al-Sbei, S.^{1,2}, Harnisch, F.³, Rosenbaum, M.A.^{1,2} ¹Leibniz Institute for Natural Product Research and Infection Biology (HKI), Jena, Germany ²Faculty of Biological Sciences, Friedrich Schiller University, Jena, Germany ³UFZ – Helmholtz-Centre for Environmental Research GmbH, Leipzig, Germany</p>
11	<p>Using a porous 3D RVC biocathode for microbial electrosynthesis in a zero-gap flow cell with a catholyte flow over design Yu, N.^{1*}, Bian, B.¹, Logan, B. E.¹ ¹Department of Civil and Environmental Engineering, The Pennsylvania State University, University Park, PA, USA</p>

13	<p>High-Performance Bioelectrochemical Hydrogen Production from Low-Conductivity Wastewater through Integrated Pretreatment and Compact Electrode Assemblies</p> <p>Wang, L.^{1,2}, Linowski, K.², Liu, H.^{2,*}</p> <p>¹Department of Biological Engineering, Utah State University, Logan, Utah, USA ²Department of Biological and Ecological Engineering, Corvallis, OR, USA</p>
15	<p>Using a non-precious metal catalyst for long-term enhancement of methane production in a zero-gap microbial electrosynthesis cell</p> <p>Bian, B.¹, Yu, N.¹, Akbari, A.¹, Logan, B.E.^{1*}</p> <p>¹Department of Civil and Environmental Engineering, The Pennsylvania State University, University Park, PA, USA</p>
17	<p>Mitigation of Membrane Fouling by Alkaline-produced Bioelectrochemically-assisted Osmotic Membrane Bioreactor</p> <p>Chao-Chin, Chang¹, Chang-Ping, Yu², Chieh-Yun, Wu, Jia-Zhe, Jiang, Chen-An, Hsu., Yi-Li, Lin^{1*}</p> <p>¹Department of Safety, Health and Environmental Engineering, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan (ROC) ²Graduate Institute of Environmental Engineering, National Taiwan University, Taipei, Taiwan (ROC)</p>
19	<p>Using Ni-based Gas diffusion electrodes for bioelectrochemical ammonia recovery from waste water: a feasible option?</p> <p>Galeano, M.B.^{1*}, Fernández-Verdejo, D.¹, Sulonen, M.^{1,2}, Baeza, M.¹, Baeza, J.A.¹, Guisasola, A.¹</p> <p>¹Universitat Autònoma de Barcelona, Cerdanyola del Valles, Catalunya, Spain ²VTT Technical Research Centre of Finland Ltd, Espoo, Finland</p>
21	<p>Using 3D Printed Electrochemical Reactors to Test Bioelectrocatalytic Reduction of Carbon Dioxide to Formate</p> <p>Ishkov, I.P.^{1*}, Gralnick, J.A.¹</p> <p>¹Department of Plant and Microbial Biology, BioTechnology Institute, University of Minnesota-Twin Cities, St. Paul, MN, USA</p>
23	<p>Applying a Virginia Coastline Cable Bacteria Enrichment Culture to Remediate in Crude Oil Contaminated Sediment</p> <p>Kasper, C.¹, Maier, W.¹, Li, C.^{1*}</p> <p>¹Integrated Science and Technology, School of Integrated Science, James Madison University, Harrisonburg, VA, USA</p>
25	<p>Reshaping the bioeconomy: Next generation biohybrid CO₂ valorization via novel C1 mediated processes</p> <p>Jack, J.^{1,2*}</p> <p>¹University of Michigan, Ann Arbor, MI, USA ²Global CO₂ Initiative, Ann Arbor, MI, USA</p>
27	<p>Enhancing the Performance of Microbial Fuel Cells via Metabolic Engineering of <i>Escherichia coli</i> for Phenazine Production</p> <p>Simoska, O.^{1,a} and Minteer, S.D.^{2,b}</p> <p>¹The University of South Carolina, Chemistry and Biochemistry Department, 631 Sumter Street, Columbia, SC, USA ²The University of Utah, Chemistry Department, 315 South 1400 East, RM 2020, Salt Lake City, UT, USA</p>
29	<p>Effect of start-up strategies with functionally redundant and efficient acetoclastic electroactive bacteria on the performance of microbial electrolysis cells fed with domestic wastewater</p> <p>Bader, M.A.^{1,2}, Rao Hari, A.¹, Katuri, K.P.^{1,*}, Saikaly, P.E.^{1,2,*}</p> <p>¹Water Desalination and Reuse Center (WDRC), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Kingdom of Saudi Arabia ²Environmental Science and Engineering Program, Biological and Environmental Science and Engineering (BESE) Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Kingdom of Saudi Arabia</p>
31	<p>Biophotovoltaic operation in 3 Liter Triple stacked MFC reactor employing porous carbon electrode.</p>

	<p>Abdul Quadir, M.G.¹, Boghossian, A.A.², Trotta, M.³, Fischer, F.^{1*} ¹ School of Engineering, Institute of Life Technologies, HES-SO Valais, Sion, Switzerland ² Institute of Chemical Sciences and Engineering, EPFL, Lausanne, Switzerland ³ Institute for Physical-Chemical Processes (IPCF), CNR, Italy</p>
33	<p>Application of Microbial Electrosynthesis: Performance and Intermittency Deutzmann J.S.^{1,2*}, Kracke F., Spormann A.M.^{1,2} ¹ Stanford University, Stanford, CA, USA; ² Novo Nordisk Foundation CO₂ Research Center, Aarhus University, Aarhus, DK</p>
35	<p>CFD simulation to investigate flow dynamics in a single chamber microbial electrolysis cell Feilner, S.^{1*}, Espejo, M.¹, Herkendell, K.¹ Garcia, M.² & Molognoni, D.² ¹ Friedrich-Alexander-Universität, Erlangen-Nürnberg, Germany ² Leitai Technological Center, Terrassa, Barcelona, Spain</p>
37	<p>Leveraging lactic acid bacteria electroactivity in engineered microbiomes for organic waste valorization Leininger, A.^{1,2*}, May, H.D.², Ren, Z.J.^{1,2} ¹ Princeton University, Dept. Civil and Environmental Engineering, Princeton, NJ, USA ² Andlinger Center for Energy and the Environment, Princeton University, Princeton, NJ, USA</p>
39	<p>Use of Activated Carbon at the anode of Microbial Fuel Cells for pH neutrality Rodrigues, I.C.B.^{1*}, Lobo, F.L.², Leão, V.A.³ ¹ Universidade Federal de São João del-Rei, Ouro Branco, Minas Gerais, Brasil; ² Universidade Federal do Ceará, Fortaleza, Ceará, Brasil; ³ Universidade Federal de Ouro Preto, Ouro Preto, Minas Gerais, Brasil</p>
41	<p>Integrating Research of Microbial Electrochemistry and Technology into Teaching: Example of Culturing Cable Bacteria as a Laboratory Activity Li, C.^{1*}, Reimers, C.E.², Shannon, K.², Buser, J.², Colwell, R.² ¹ Integrated Science and Technology, School of Integrated Science, James Madison University, Harrisonburg, VA, USA ² College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, Corvallis, OR, USA</p>
43	<p>In-Situ Hydrogen Production from Waste Crude Oil in Two-Phase Microbial Electrolysis Cells: A Proof-Of-Concept Study Barefoot, G.¹ and Li, C.^{1*} ¹ Integrated Science and Technology, School of Integrated Science, James Madison University, Harrisonburg, VA, USA</p>
45	<p>Investigating the Influence and Conversion of Fermentation End Products in Microbial Electrolysis Cells Linowski, K.¹, Long, F.¹, Liu, H.^{1*} ¹ Oregon State University, Corvallis, OR, USA</p>
47	<p>Finding the Ideal Microbial Electrolysis Cell Conditions with <i>Acidimicrobium</i> sp. Strain A6 to Enhance Ammonium Oxidation and PFAS Defluorination in Wastewater Llerena-Olivera, C.^{1*}, Jiang, J.^{1,2}, Ren, Z. J.^{1,2}, & Jaffé, P. R.¹ ¹ Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ, USA ² Andlinger Center for Energy and the Environment, Princeton University, Princeton, NJ, USA</p>
49	<p>Membrane electrolysis distillation (MED) for volatile fatty acids separation from pH-neutral wastewater Lu, S.^a, McGaughey, A.^a, Im, S.^b, Liu, Y.^b, Wang, X.^b, Leininger, A.^a, Jassby, D.^b, Hoek, E.^b, Ren, Z.J.^{a*}</p>
51	<p>Influence of cell voltage on synthesis of caproate from carbon dioxide in a direct current powered microbial electrosynthesis cell Krishna Chaitanya, N.^{1*}, Pavithra, S N.¹, Akanksha, R.¹ & Pritha, C.^{1,2} ¹ Department of Civil Engineering, Indian Institute of Technology Hyderabad, Sangareddy, Telangana, India ² Department of Climate Change, Indian Institute of Technology Hyderabad, Sangareddy, Telangana, India</p>

53	<p>Optimization of a zero-gap cell and methanogenic reactor assembly operated with catholyte derived from real wastewater streams</p> <p>Rad, R.^{1,2,3}, Gehring, T.^{2*}, Siegmund, D.^{1,3}, Wichern, M.², Apfel, U-P.^{1,3*}</p> <p>¹Ruhr University Bochum, Inorganic Chemistry I, Bochum, Germany ²Ruhr University Bochum, Urban Water Management and Environmental Technology, Bochum, Germany ³Fraunhofer UMSICHT, Oberhausen, Germany</p>
55	<p>Bioelectrochemical Metal-Recovery: closing the lithium loop</p> <p>Ramirez-Moreno, M.^{1*}, Gadkari, S.², Sadhukhan, J.², Avignone Rossa, C.¹</p> <p>¹Department of Microbial Sciences ²School of Chemistry and Chemical Engineering, University of Surrey, Guildford GU2 7XH, UK</p>
57	<p>Combining biochemical and electro- driving forces to extract precious metals in urban mining</p> <p>Xie, A., Zou, S.[*]</p> <p>Department of Civil and Environmental Engineering, Auburn University, Auburn, AL, USA</p>
59	<p>Electrochemical Platform of Controllable pH Gradients in Microbial Systems</p> <p>Wang, J.^{1*} & Xie, Y.¹</p> <p>¹University of California, Los Angeles, Los Angeles, CA, USA</p>
61	<p>Investigating Electromethanogenic Microbial Electrolysis Cells using Electrochemical Impedance Spectroscopy</p> <p>Torrigino, F.^{1*}, Espejo M.¹, Herkendell, K.¹</p> <p>¹Friedrich-Alexander-Universität (FAU) Erlangen-Nürnberg, Nuremberg, Germany</p>
63	<p>Modeling mediated electron transport in microbial electro-photosynthesis</p> <p>Lewis, C.M.^{1,3}, Sahoo, S.^{2,3}, Fromme, P.¹, Torres C.I.^{2,3}</p> <p>¹School of Molecular Sciences, Arizona State University, Tempe, AZ, USA ²School for Engineering of Matter, Transport and Energy, Arizona State University, Tempe, AZ, USA ³Biodesign Swette Center for Environmental Biotechnology, Arizona State University, Tempe, AZ, USA</p>
65	<p>Asymmetric and vapor-fed reactor designs for microbial electrochemical technologies</p> <p>Rossi, R.^{1*}, Wang, L.², Du, H.¹, Yoon, N.¹,</p> <p>¹Johns Hopkins University, Baltimore, MD, USA ²Utah State University, Logan, UT, USA</p>
67	<p>Is microbial fuel cell a sustainable treatment technology for petroleum hydrocarbon containing wastewater?</p> <p>M Geethapriyai^{1,2}, Indumathi M Nambi^{1*} Guhan Jayaraman</p> <p>¹Department of Bio-technology, Bhupat and Jyoti Mehta School of Biosciences, Indian Institute of Technology Madras, Chennai, 600036, India ²Environmental Engineering Division, Department of Civil Engineering, Indian Institute of Technology Madras, Chennai, 600 036, India</p>