

## Curriculum Vitae

### Hong Liu

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### Education

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B.E.	Environmental Engineering, Harbin Institute of Technology, China.	1996
M.S.	Environmental Engineering, Harbin Institute of Technology, China	1998
Ph.D.	Environmental Engineering, The University of Hong Kong	2003

### Appointments

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2017- Present	Professor, Biological & Ecological Engineering, Oregon State University
2011-2017	Associate Professor, Biological & Ecological Engineering, Oregon State University
2005-2011	Assistant Professor, Biological & Ecological Engineering, Oregon State University
2003-2005	Postdoctoral Researcher, Civil and Environmental Engineering, Pennsylvania State University
2002-2003	Research Assistant, Civil and Environmental Engineering, University of Hong Kong

### Publications

#### Refereed Books & Book Chapters

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1. Lin, H. Liu, H. Zhu, J. Gadhamshetty V. "Microbial Fuel Cell" in *Bioenergy: Principles and Applications*, John-Wiley Publishing. 2016.
2. Gao, N, Lesnik, K., Bermek H, Liu H. "Microbial Fuel cells: from Fundamentals to Wastewater Treatment Applications" in *Anaerobic Biotechnology*. World Scientific Publishing. 2015
3. Lesnik, K. Liu, H. "Microbial Fuel Cells: Microbes and Materials" in *Sustainable Energy Developments: Micro & Nano-Engineering of Fuel Cells*. Dennis Y.C. Leung. CRC Press. 2013
4. Fan, Y., Liu, H. "Key Materials for Microbial Fuel Cells" in *Materials for Low-Temperature Fuel Cells*. Edited by Ladewig, Jiang, Yan, to be published by Wiley 2012.
5. Liu, H. and Hongqiang Hu. "Microbial electrolysis: novel biotechnology for hydrogen production from biomass" to be published in "*Microbial Technologies in Advanced Biofuels Production*" edited by Patrick C. Hallenbeck, Springer publishing, 2010
6. Liu, H. "Microbial Electricity Generation from Cellulosic Biomass" in *Biofuel and Bioenergy from Biowastes and Residues*. Edited by Samir K, Khanal. ASCE Publishing, 2009
7. Liu, H. "Electricity generation from wastewater using novel microbial fuel cell technology" in *Anaerobic Biotechnology: Waste Treatment and Bioenergy Recovery*. Edited by Samir K, Khanal. Blackwell Publishing, 2008.

#### Refereed Journal Publications

1. Wang, Luguang. Trujillo, Stephanie, Liu, Hong. Selective inhibition of methanogenesis by acetylene in single chamber microbial electrolysis cells. *Bioresource Technology*. **2019**, 274: 557-560.
2. Xiaou Wang, Yimei Tian, Hong Liu, Xinhua Zhao, Sen Peng. The influence of incorporating microbial fuel cells on greenhouse gas emissions from constructed wetlands. *Science of The Total Environment*. **2019**, 656(15): 270-279.
3. Xiaou Wang, Yimei Tian, Hong Liu, Xinhua Zhao, Qing Wu. Effects of influent COD/TN ratio on nitrogen removal in integrated constructed wetland-microbial fuel cell systems. *Bioresource Technology*. **2019**, 271: 492-495.

4. Xiaoou Wang, Yimei Tian, Hong Liu, Xinhua Zhao, Sen Peng Optimizing the performance of organics and nutrient removal in constructed wetland–microbial fuel cell systems. *Science of The Total Environment*. **2019**, 653: 860-871.
5. Tunc Catal, Hong Liu, Yanzhen Fan, Hakan Bermek. A clean technology to convert sucrose and lignocellulose in microbial electrochemical cells into electricity and hydrogen. *Bioresource Technology Reports*. **2018** doi.org/10.1016/j.biteb.2018.10.002
6. Shuo Han, Hong Liu, Charles Zhou and Han-jie Ying. Growth of carbon nanotubes on graphene as 3D biocathode for NAD<sup>+</sup>/NADH balance model and high-rate production in microbial electrochemical synthesis from CO<sub>2</sub>. *Journal of Materials Chemistry A*. **2018**: 10.1039/C8TA10465D
7. Gao, N., B Qu, Z Xing, X Ji, E Zhang, H Liu. **2018** Development of novel polyethylene air-cathode material for microbial fuel cells. *Energy* 155, 763-771.
8. Li, C., L Wang, H Liu. **2018**. Enhanced redox conductivity and enriched Geobacteraceae of exoelectrogenic biofilms in response to static magnetic field. *Applied Microbiology and Biotechnology*, 102, 1-11
9. L Wang, L Singh, H Liu. **2018**. Revealing the impact of hydrogen production-consumption loop against efficient hydrogen recovery in single chamber microbial electrolysis cells (MECs). *International Journal of Hydrogen Energy*. 43, 13064-13071
10. Puranjan, M., Thakur, S., Mahapatra, DM, Wahid, ZA, Liu, H., Singh, L. **2018**. Impacts of nano-metal oxides on hydrogen production in anaerobic digestion of palm oil mill effluent- A novel approach. *International Journal of Hydrogen Energy*. 43(5):2666-2676.
11. Kumar, R, Singh, L, Wahid, ZA, Mahapatra, DM, Liu H. **2018**. Novel mesoporous MnCo<sub>2</sub>O<sub>4</sub> nanorods as oxygen reduction catalyst at neutral pH in microbial fuel cells. *Bioresour Technol.* 24(254)1-6.
12. Li, C, Lesnik, K, Liu, H. **2018**. Conductive properties of methanogenic biofilms. *Bioelectrochemistry*. 119: 220-226.
13. Cai, W., Geng, J., Pu, K., Ma, Q., Jing, D., Wang, Y., Chen, Q., Liu, H. **2018**. Investigation of a two-dimensional model on microbial fuel cell with different biofilm porosities and external resistances. *Chemical Engineering Journal* 333:572-582
14. Lesnik, K, Liu, H. **2017**. Predicting Microbial Fuel Cell Biofilm Communities and Bioreactor Performance using Artificial Neural Networks. *Environmental Science and Technology*. 51(18): 10881-10892.
15. Li, C, Lesnik, K, Liu, H. **2017**. Stay Connected: Electrical Conductivity in Microbial Aggregates. *Biotechnology Advances*. 35(6): 669-680.
16. Wang, L., Xie, B., Gao, N., Min, B., Liu, H. **2017**. Urea Removal Coupled with Enhanced Electricity Generation in Single-Chambered Microbial Fuel Cells. *Environmental Science and Pollution Research*, 24(25):20401-20408
17. Xing, Z., Gao, N., Qi, Y., Ji, X., Liu, H. **2017**. Influence of enhanced carbon crystallinity of nanoporous graphite on the cathode performance of microbial fuel cells. *Carbon*. 115, 271-278.
18. Abourached, C., English, M., Liu, H. **2016**. Wastewater Treatment by Microbial Fuel Cell (MFC) Prior Irrigation Water Reuse. *J. Cleaner Production*. 137, 144-149.
19. Li, C., Lesnik, K., Fan, Y., Liu, H. **2016**. Millimeter scale electron conduction through exoelectrogenic mixed species biofilms. *FEMS Microbiol. Letters*. <http://dx.doi.org/10.1093/femsle/fnw153>.
20. Li, C., Lesnik, K., Fan, Y., Liu, H. **2016**. Redox Conductivity of Current-Producing Mixed Species Biofilms. *PLoS ONE*. 11(5): e0155247. doi:10.1371.
21. Janicek, A., Gao, N., Fan, Y., Liu, H. **2015**. High Performance Activated Carbon/Carbon Cloth Cathodes for Microbial Fuel Cells. *Fuel Cells*, 15 (6), 855-861.
22. Catal, T., Lesnik, K., Liu, H. **2015**. Suppression of methanogenesis for hydrogen production in single-chamber microbial electrolysis cells using various antibiotics, *Bioresource Technol.* 187, 77-83.
23. Janicek, A., Fan, Y., Liu, H. **2015**. Performance and Stability of Different Cathode Base Materials for Use in Microbial Fuel Cells, *J. Power Sources*, 280, 159-165.

24. Du, Y., Feng, Y., Qu, Y., Liu, J., Ren, N., Liu, H. **2014**. Electricity Generation and Pollutant Degradation Using a Novel Biocathode Coupled Photoelectrochemical Cell. *Environ. Sci. Technol.*, 48 (13), pp 7634–7641.
25. Abourached, C., Lesnik, K., Liu, H., **2014**. Enhanced power generation and energy conversion of sewage sludge by CEA–microbial fuel cells, *Bioresource Technol.* 166, 229-234.
26. Wu, W., Lesnik, K., Xu, S., Wang, L., Liu, H. **2014**. Impact of tobramycin on the performance of microbial fuel cell. *Microbial Cell Factories*. 13 (1), 91.
27. Lesnik, K., Liu, H. **2014**. Establishing a core microbiome in acetate-fed microbial fuel cells. *Appl Microbiol Biotechnol* 98:4187–4196.
28. Abourached, C., Lesnik, K., Liu, H. **2014**. Efficacy of single-chamber microbial fuel cells for removal of cadmium and zinc with simultaneous electricity production. *Water Research*. 51(15): 228-233.
29. Janisack A., Fan, Y., Liu, H. **2014**. Design of microbial fuel cells for practical application: a review and analysis of scaled-up studies. *Biofuels*. 51(1) .
30. Bermek H., Catal T., Akan, S., Ulutas, M., Mert Kumru, Mine O" zgu"ven, Liu, H., O" zc,elik, B., Akarsubas, A. **2014**. Olive mill wastewater treatment in single-chamber air-cathode microbial fuel cells. *World J Microbiol Biotechnol.* 30(4):1177-85.
31. Li, C., Lesnik, K., Liu, H. **2013**. Microbial Conversion of Waste Glycerol from Biodiesel Production into Value-Added Products. *Energies* 6(9), 4739-4768.
32. Fan, Y., Han, S., Liu, H. **2012**. Improved performance of CEA microbial fuel cells with increased reactor size. *Energy Environ. Sci.*, 5 (8): 8273 - 8280.
33. Xu, S., Liu, H., Fan, Y., Schaller, S., Jiao, J., Chaplen, F.S., **2012**. Enhanced performance and mechanism study of microbial electrolysis cells using Fe nanoparticle-decorated anodes. *Appl Microbiol Biotechnol*. 93(2):871-880.
34. Xu, S., Liu, H. **2011**. New exoelectrogen *Citrobacter* sp. SX-1 isolated from a microbial fuel cell. *Journal of Applied Microbiology*. 111( 5):1108–1115.
35. Fan, Y., Xu, S., Schaller, S., Jiao, J., Chaplen, F.S., Liu, H. **2011**. Nanoparticle decorated anodes for enhanced current generation in microbial electrochemical cells. *Biosensors and Bioelectronics*. 26(5): 1908-1912.
36. Catal, T., Fan, Y., Li, K., Bermek, H., Liu, H. **2011**. Utilization of mixed monosaccharides for power generation in microbial fuel cells. *Journal of Chemical Technology and Biotechnology*. 86(4): 570-574.
37. Fan, Y., Xu, S., Schaller, R., Jiao, J., Chaplen, F., Liu, H. **2010**. Nanoparticle decorated anodes for enhanced current generation in microbial electrochemical cells. *Biosensors and Bioelectronics*. doi:10.1016/j.bios.2010.05.006.
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39. Liu, H., Hu, H., Chignell J., Fan, Y. **2010** Microbial Electrolysis: Novel Technology for Hydrogen Production from Biomass. *Biofuels*, 1(1):129-142.
40. Hu, H., Fan, Y., Liu H. **2009**. Hydrogen Production in Single-Chamber Tubular Microbial Electrolysis Cells Using Non-Precious-Metal Catalysts. *International Journal of Hydrogen Energy*. 34 (20), 8535-8542.
41. Catal, T., Bermek, H., Liu, H. **2009** Removal of selenite from wastewater using microbial fuel cells. *Biotechnology letters*, 31 (8):1211-1216.
42. Khanal S.K., Rasmussen, M. Shrestha, P., Van Leeuwen, H., Visvanathan, C., Liu, H. **2008**. Bioenergy and Biofuel Production from Wastes/Residues of Emerging Biofuel Industries. *Water Environment Research*, 80(10):1625-1647.
43. Fan, Y., Sharbrough, E., Liu, H. **2008** Quantification of the Internal Resistance Distribution of Microbial Fuel Cells. *Environmental Science and Technology* 42(21):8101-8107.
44. Catal, T., Xu, S., Li, K., Bermek, H., Liu, H. **2008** Electricity generation from polyalcohols in single-chamber microbial fuel cells. *Biosensors and Bioelectronics*, 24, 855-860.
45. Sukkasem, C., Xu, S., Park, S., Boonsawang, P., Liu, H. **2008** Effect of nitrate on the performance of single chamber air cathode microbial fuel cells. *Water Research*, 42(19): 4743-4750.

46. Hu, H., Fan, Y., Liu, H. **2008** Hydrogen Production Using Single-chamber Membrane-free Microbial Electrolysis Cells. *Water Research*, 42(15):4172-4178.
47. Fan, Y., Hu, H., Liu, H. **2008** Response to Comment on "Sustainable Power Generation in Microbial Fuel Cells Using Bicarbonate Buffer and Proton Transfer Mechanisms". *Environmental Science and Technology*, 42, 6306.
48. Catal, T., Fan, Y., Li, K., Bermek, H., Liu, H. **2008** Effects of furan derivatives and phenolic compounds on electricity generation in microbial fuel cells. *Journal of Power Sources*, 180, 162-166.
49. Catal, T., Liu, H., Bermek H. **2008**. Selenium Induces Manganese-dependent Peroxidase Production by the White-Rot Fungus *Bjerkandera adusta* (Willdenow) P. Karsten. *Biological Trace Element Research* 123:211–217.
50. Liu, H., Cheng; S., Huang, L., Logan, B.E. **2008**. Scale-up of Membrane-free Single-Chamber Microbial Fuel Cells. *Journal of Power sources*. 179: 274–279.
51. You, S., Zhao, Q., Zhang, J., Liu, H., Jiang, J., Zhao, S. **2008**. Increased Sustainable Electricity Generation in Upflow Air-cathode Microbial Fuel Cells. *Biosensors and Bioelectronics*. 23(7):1157-60.
52. Catal, T., Li, K., Bermek, H., Liu, H. **2008** Electricity Production from Twelve Monosaccharides Using Microbial Cells. *Journal of Power Sources*, 175, 196-200.
53. Fan, Y., Hu, H., Liu, H. **2007**. Sustainable Power Generation in Microbial Fuel Cells Using Bicarbonate Buffer and Proton Transfer Mechanisms. *Environmental Science and Technology*. 41(23)8154-8158.
54. Fan, Y., Hu, H., Liu, H. **2007**. Enhanced Coulombic efficiency and power density of air-cathode microbial fuel cells with an improved cell configuration *Journal of Power Sources*, 171 (2), pp. 348-354.
55. Ditzig, J., Liu, H., Logan, B.E. **2007**. Production of hydrogen from domestic wastewater using a bioelectrochemically assisted microbial reactor (BEAMR). *International Journal of Hydrogen Energy*, 32 (13) 2296-2304.
56. Cheng, S., Liu, H. and Logan, B.E. **2006**. Increased power generation in a continuous flow MFC with advective flow through the porous anode and reduced electrode spacing. *Environmental Science and Technology*, 40(7):2426-2432.
57. Cheng, S., Liu, H., Logan, B.E. **2006**. Power densities using different cathode catalysts (Pt and CoTMPP) and polymer binders (Nafion and PTFE) in single chamber microbial fuel cells. *Environmental Science and Technology*, 40 (1) 364-369.
58. Cheng, S., Liu, H., Logan, B.E. **2006**. Increased performance of single-chamber microbial fuel cells using an improved cathode structure. *Electrochemistry Communications*, 8 (3) 489-494.
59. Liu, H., Grot S. and Logan B.E. **2005**. Electrochemically Assisted Microbial Production of Hydrogen from a Fermentation End Product. *Environ. Sci Technol.* 39:4317-4320.
60. Liu, H., Cheng, S. and Logan, B.E. **2005** Power Generation in Fed-batch Microbial Fuel Cells as Functions of Ionic Strength, Temperature and Reactor Configuration. *Environ. Sci. Technol.* 39:5488-5493.
61. Liu, H., Cheng, S. and Logan, B.E. **2005**. Production of Electricity from Acetate or Butyrate Using a Single Chamber Microbial Fuel Cell. *Environ. Sci. Technol.*, 39:658-662.
62. Fang, H.H.P., Liu, H., Zhang, T. **2005** Phototrophic hydrogen production from acetate and butyrate in wastewater. *International Journal of Hydrogen Energy*, 30 (7) 785-793.
63. Liu, H., Ramnarayanan, R. and Logan B.E. **2004**. Production of Electricity during Wastewater Treatment Using a Single Chamber Microbial Fuel Cell. *Environ. Sci. Technol.*, 38:2281-2285.
64. Liu, H. and Logan, B.E. **2004**. Electricity Generation Using an Air-Cathode Single Chamber Microbial Fuel Cell in the Presence and Absence of a Proton Exchange Membrane. *Environ. Sci. Technol.*, 38:4040-4046.
65. Fang, H.H.P., Liu, H., Zhang, T. **2004**. Bio-hydrogen production from wastewater. *Water Science and Technology: Water Supply*, 4 (1) 77-85.
66. Zhang, T., Liu, H., Fang, H.H.P. **2003**. Biohydrogen production from starch in wastewater under thermophilic condition. *Journal of Environmental Management*, 69 (2) 149-156.
67. Liu, H., Zhang, T., Fang, H.H.P. **2003**. Thermophilic H<sub>2</sub> production from a cellulose-containing wastewater. *Biotechnology Letters*, 25 (4) 365-369.

68. Liu, H., Fang, H.H.P. **2003**. Hydrogen production from wastewater by acidogenic granular sludge. *Water Science and Technology*, 47 (1) 153-158.
69. Fang, H.H.P., Liu, H. and Zhang, T. **2002**. Characterization of a Hydrogen-Producing Granular sludge. *Biotech. Bioeng.*, 78(1):44-52.
70. Liu, H. and Fang, H.H.P.. **2002**. Characterization of Electrostatic Binding Sites of Extracellular Polymers by Linear Programming Analysis of Titration Data. *Biotech. Bioeng.*, 80(7):806-811.
71. Zhang, T., Liu, H., Fang, H.H.P. **2002**. Microbial analysis of a phototrophic sludge producing hydrogen from acidified wastewater. *Biotechnology Letters*, 24 (21) 1833-1837.
72. Liu, H., Fang, H.H.P. **2002**. Extraction of extracellular polymeric substances (EPS) of sludges. *Journal of Biotechnology*, 95 (3) 249-256.
73. Fang, H.H.P., Liu, H. **2002**. Effect of pH on hydrogen production from glucose by a mixed culture. *Bioresource Technology*, 82 (1) 87-93.
74. Fang, H.H.P., Zhang, T., Liu, H. **2002**. Microbial diversity of a mesophilic hydrogen-producing sludge. *Applied Microbiology and Biotechnology*, 58 (1) 112-118.
75. Fan, Y. Wang, B. and Liu, H. **2001**. Ideal Adsorption of Trace Organics onto Activated Carbon in Bisolute System. *Acta Scientiae Circumstantiae*, 21(4):385-389.
76. Cai, W., Liu, H. and Sun, X. **1998**. Analysis of Oligosaccharides in a Sucrose Fermentation Solution Using Gas Chromatography. *Chinese Journal of Chromatography*, 18(1):88-90.

### **Patents**

1. Microbial fuel cell methods and uses. Liu H, Fan. Y. Patent application number 61/790 195, 2013. PCT/US2014/029228, US14650251, Grant 2017-11-21 US9825309B2
2. A bioelectrochemically assisted microbial reactor (BEAMR) that generates hydrogen gas. Logan, B.E., Grot, S., Mallouk, T., Liu, H. U.S. Patent number 7,491,453, Grant 2/17/2009 US7491453B2

### **Other publications and presentations**

#### **Conference Papers**

1. Hong Liu, Microbial Electrochemical System for Hydrogen Generation from Biomass and Waste Streams. 22nd World Hydrogen Energy Conference June 17 – 22, 2018, Rio, Brazil.
2. Hong Liu, Cheng Li, Keaton Lesnik. Conductivity of Exoelectrogenic and Methanogenic Biofilms. Proceeding of Asian Pacific ISMET Meeting, Aug. 31-Sept. 2. **2016**. Pusan, Korea.
3. Ningshengjie, Keaton Lesnik, Cheng Li, Luguang Wang, Hong Liu. Rigging the Game: Can Exoelectrogens Outcompete Non-exoelectrogens in Microbial Fuel Cells. Proceeding of 5th International Microbial Fuel Cell Conference, Oct. 1-4, **2015**, Tempe Arizona.
4. Cheng Li, Keaton Lesnik, Yanzhen Fan, Hong Liu. Investigating Conductivities of Various Anaerobic Biofilms. Proceeding of 5th International Microbial Fuel Cell Conference, Oct. 1-4, **2015**, Tempe Arizona.
5. Wang, L., Xie, B., Liu, H. Urea Removal Coupled with Enhanced Electricity Generation in Single-chambered Microbial Fuel Cells. Proceeding of 5th International Microbial Fuel Cell Conference, Oct. 1-4, **2015**, Tempe Arizona.
6. Anthony Janicek, Yanzhen Fan, and Hong Liu. High power generation and pressure tolerance of activated carbon/carbon cloth cathodes for use in microbial fuel cells. Proceeding of North American ISMET meeting at Penn State, May 13-16, **2014**
7. Cheng Li, Keaton Lesnik, Yanzhen Fan, Hong Liu. Examination of spatial characteristics and gap-bridging ability of conductive mixed species biofilms. Proceeding of North American ISMET meeting at Penn State, May 13-16, **2014**
8. Yanzhen Fan, Anthony Janicek, and Hong Liu. Stable and high voltage and power output of microbial fuel cells internally connected in series. Proceeding of North American ISMET meeting at Penn State, May 13-16, **2014**
9. Keaton Lesnik, Hong Liu. Establishing a Core Microbiome in Microbial Fuel Cells. Proceeding of North American ISMET meeting at Penn State, May 13-16, **2014**

10. Catal, T., Abourached, C., Xu, S., Bermek, H., Liu, H., Effect of Heavy Metals from Wastewater on Electricity Generation in Microbial Fuel Cells, Proceeding of ISE Bioelectrochemistry Conference, March 17-19, **2013** Bochum, Germany,
11. Hong Liu, Microbial Fuel Cells for Wastewater Treatment and Energy Generation: Challenges and Opportunities. Proceeding of China and Taiwan Bioenergy Symposium, Dec. 13-14, **2012**
12. Hong Liu, Development and Evaluation of Electrode and Separator Materials for Microbial Fuel cells. Proceeding of North American Meeting of the International Society for Microbial Electrochemistry and Technology, October 9-10, **2012**, Cornell University
13. Hong Liu, Yanzhen Fan, Benjamin Foley. A Low-Cost Membrane Separator for Improved Performance of Single-Chamber Microbial Fuel Cells. Proceeding of 3<sup>rd</sup> International Microbial Fuel Cell Conference, June 6-8, **2011**, Leeuwarden, Netherlands.
14. Keaton Lesnik and Hong Liu. Identification of Critical Factors Affecting Cathode Performance in Microbial Fuel Cells. Proceeding of 3<sup>rd</sup> International Microbial Fuel Cell Conference, June 6-8, **2011**, Leeuwarden, Netherlands.
15. Jeremy Chignell and Hong Liu. Biohydrogen production from glycerol in microbial electrolysis cells and prospects for energy recovery from biodiesel wastes. Proceeding of International Manufacturing Science and Engineering Conference, Oregon State University, June 12-17, **2011**, Corvallis, OR, USA
16. Hong Liu. Direct Power Generation from Waste Biomass Using Microbial Fuel Cell Technology. **2011**. Proc. 2nd International Congress on Sustainability Science and Engineering. Tucson, Arizona. Jan 9-13.
17. Chenlin Li, Hongqiang Hu, Hong Liu, Kenneth P Vogel, Blake Simmons, Seema Singh. Ionic liquid pretreatment of lignocellulosic materials for enhanced sustainable biogas and electricity generation. **2010**. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
18. Jeremy Chignell, Hong Liu. Glycerol utilization and performance of microbial fuel cells. **2010**. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
19. Tunc Catal, Paul Kavanagh, Hong Liu, Krishna Katuri, Vincent O'Flaherty, Dónal Leech. Electricity production in single-chamber microbial fuel cells using carbon source mixtures and evaluation of anodic biofilms. **2010**. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
20. Hongqiang Hu, Yanzhen Fan, Hong Liu. Development of non-platinum based cathodes for hydrogen production in microbial electrolysis cells. **2010**. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
21. Shoutao Xu, Hong Liu. Effects of cultivation media on bacterial communities and performance of microbial fuel cells. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
22. F. W. R. Chaplen, Xu, S., Fan, Y., Schaller, R., Fern, A., Jiao, J., and Liu, H. Microarray studies to elucidate the mechanisms of power transfer at the nanobiological interface in microbial electrochemical cells. **2010**. Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25.
23. Javad Azimi, Xiaoli Fern, Alan Fern, Elizabeth Burrows, Frank Chaplen, Yanzhen Fan, Hong Liu, Jun Jiao, Rebecca Schaller. (2010) Myopic Policies for Budgeted Optimization with Constrained Experiments. *AAAI Conference on Artificial Intelligence (AAAI-10)*.
24. Sukkasem, C., Liu, H. The influence of sulfate and nitrate on electricity generation in single-chamber microbial fuel cells. **2009**. Proc of 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, Gwangju Institute of Science and Technology(GIST), Republic of Korea.
25. Xu, S., Schaller, R., Fan, Y., Chaplen F. W. R., Jiao, J., and Liu, H. Enhanced performance of microbial electrolysis cells using nanostructure decorated electrodes. **2009**. Proc of 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, Gwangju Institute of Science and Technology(GIST), Republic of Korea.
26. Hongqiang Hu, Yanzhen Fan, Hong Liu. Hydrogen production in microbial electrolysis cells using precious-metal-free cathode catalysts (NiMo, NiW). **2009**. Proc of 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, Gwangju Institute of Science and Technology(GIST), Republic of Korea.
27. Tunc Catal, Denise Cysneriros, Vincent O'Flaherty, Dónal Leech. **2009**. Proc of 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, Gwangju Institute of Science and Technology(GIST), Republic of Korea.
28. Hong Liu. Strategies for enhancing power generation in microbial fuel cells. **2009**. Proc of 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, Gwangju Institute of Science and Technology(GIST), Republic of Korea.

29. R. Schaller, Y. Fan, S. Xu, A. Fern, F. Chaplen, H. Liu, and J. Jiao. **2009** “Vertically Aligned Multi-walled Carbon Nanotube Decorated Anodes for Microbial Fuel Cells.” in *Nanotubes and Related Nanostructures* —, edited by Y.K. Yap, K. Hata, A. Loiseau (Mater. Res. Soc. Symp. Proc. Volume 1204, Warrendale, PA, 2010), 1204-K14-42.
30. R. Schaller, Y. Fan, S. Xu, A. Fern, F. Chaplen, H. Liu, and J. Jiao. **2009** “Fabrication of Nanomodified Anodes for Power Density Enhancement of Microbial Fuel Cells” in *Materials for Renewable Energy at the Society and Technology Nexus* —, edited by Reuben T. Collins (Mater. Res. Soc. Symp. Proc. Volume 1170E, Warrendale, PA, 2009), #1170-R05-13.
31. R. Schaller, Y. Fan, S. Xu, A. Fern, F. Chaplen, H. Liu, and J. Jiao. **2009** “Nanomodification of Anodes for Power Density Enhancement of Microbial Fuel Cells” Proc Symposium Pacific Northwest Chapter of the American Vacuum Society Science & Technology Society.
32. Liu, H. Fan, Y., Sharbrough, E. **2008**. Identifying the Limiting Factors in MFCs. Proc. First Microbial Fuel Cell Forum in China. Harbin, China, November 2-3.
33. Fan, Y., Hu, H. Sharbrough, E., Liu, H. **2008**. Quantification of the Internal Resistance Distribution of Microbial Fuel Cells and Proton Transfer Mechanisms. Proc. Microbial Fuel Cell First International Symposium. University Park, Pennsylvania, PA, May 27-28
34. Hu, H. Fan, Y. Liu, H. **2008**. Microbial electrohydrogenesis using single chamber membrane-free cells. Proc. Microbial Fuel Cell First International Symposium. University Park, Pennsylvania, PA, May 27-28.
35. Catal, T., Xu, S, Li, K., Bermek, H., Fan, Y., Liu, H. **2008**. Generation of Electricity from Lignocellulosic Biomass Using Microbial Fuel Cells. Proc. Microbial Fuel Cell First International Symposium. University Park, Pennsylvania, PA, May 27-28
36. Liu, H. **2007**. Enhanced power generation of air cathode microbial fuel cells with cloth electrode assembly. Proc. 234<sup>th</sup> ACS National Meeting, Boston, MA. Aug. 19-23
37. Liu, H. **2006**. Hydrogen production from organic matter using electrochemically assisted microbial reactors. Prof. ASABE annual international conference, Portland, OR, July 9-12.
38. Logan, B.E., Liu, H. Oh, Sang-Eun and Min. B. **2004**. Electricity production from domestic wastewater can be harvested in microbial fuel cells. Proc. WEFTEC Annual Meeting. CD ROM.
39. Logan, B.E., Van Ginkel, S., Oh, S., Liu, H. and Min, B.E. **2004**. Proc. 10<sup>th</sup> Congress on Anaerobic Digestion (AD10) on Anaerobic Bioconversion—Answer for Sustainability, Montreal, Canada, pp. 1276-1278.
40. Liu, H. and Logan, B.E. **2004**. Electricity generation using an air-cathode single chamber microbial fuel cell (MFC) in the absence of a proton exchange membrane. 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, Vol. 44, No. I, pp.1485-1488.
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42. Oh, S., Min, B., Kim, J., Liu, H., and Logan, B.E. **2004**. Characterization of design factors affecting power output in a microbial fuel cell. 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, Vol. 44, No. I, pp.1492-1494.
43. Logan, B.E., Van Ginkel, S., Oh, S., Liu H. and Min B. **2004**. Biohydrogen production can be made more economical by linking it with methane production or direct electricity generation in microbial fuel cells. Proc. National Hydrogen Association Annual Meeting.
44. Min, B., Oh, S., Liu, H., Cheng, S., and Logan, B.E. **2004**. Electricity generation from animal wastewater using a microbial fuel cell. Proc. Hydrogen Day at Penn State, Penn State, University Park, PA, October 25.
45. Fang, H.H.P. and Liu, H. **2004**. Biohydrogen production from wastewater by granular sludge. *Proceedings of the First International Symposium on Green Energy Revolution*, January 20-21, Nagaoka, Japan, pp.31-36.
46. Fang, HHP. and Liu, H. **2002**. Hydrogen production from wastewater, *Proceedings of Creative Water and Wastewater Treatment Technologies for Densely Populated Urban Area*, September 18-20, Hong Kong. pp.95-104.

47. Liu, H. and Fang, H.H.P. **2001**. Hydrogen production from wastewater by acidogenic granular sludge, *Proceedings of IWA Asia Environmental Technology*, 472-477, October 30-November 1, Singapore.
48. Fang, H.H.P. and Liu, H. **2001**. Granulation of Acidogenic Sludge in a Complete-Mix Reactor. *Proceeding of the 9<sup>th</sup> World Congress on Anaerobic Digestion*, September 2-6, Antwerpen, Belgium, pp.527-532

### **Professional Meetings, Symposia, and Conferences**

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1. Invited talk. Towards Practical Application of Microbial Fuel Cell Technology: Reactor Scaling up and Cathode Materials. North American ISMET meeting, Oct 5-7. 2016 Stanford University, California
2. Invited talk. Conductivity of Exoelectrogenic and Methanogenic Biofilms. Asian Pacific ISMET meeting, Aug. 31-Sept. 2. 2016. Pusan, Korea.
3. Invited talk. Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass. DOE Annual Review Meeting. June 7, 2016 Washington DC.
4. Invited talk. Oxygen Regeneration from CO<sub>2</sub> Using Microbial Electrolysis Cells. NASA Workshop on CO<sub>2</sub>-Based Manufacturing. June 28-29, 2014, California
5. Invited talk, Development and Evaluation of Electrode and Separator Materials for Microbial Fuel Cells. NA-ISMET, Oct. 9-12, 2012, Cornell University
6. Invited talk, National Chung Kung University, Dec. 20, 2012, Tainan City, Taiwan
7. Invited talk, Kemira Water Corporation, September, 2012, Helsinki, Finland
8. Invited talk, Nitto Denko Technical Corporation, August, 2012, Oceanside, CA.
9. Invited talk, Shenzhen Graduate School, Harbin Institute Technology, June, 2012, Shenzhen, China
10. Invited talk, GanNan Normal University, May, 2012, Ganzhou, China
11. Invited talk, Institute of Biotechnology and Pharmaceutical Engineering, Nanjing University of Technology, May 2012, Hangzhou, China
12. Invited talk, Department of Energy Engineering, Zhejiang University, May 2012, Hangzhou, China
13. Invited talk, Guangdong Institute of Eco-environmental and Soil Sciences, December, 2011, Guangzhou, China
14. Invited talk, Institute of Urban Environment, Chinese Academy of Sciences, November, 2011, Xiamen, China
15. Invited talk, Bioelectrochemical Systems Workshop: Standardized Analyses, Design Benchmarks, and Reporting, Penn State University, September, 2011, University park, PA,
16. Invited talk. "Microbial Electrochemical Cells: A novel Technology for Renewable Energy Generation from Biomass". Presentation at Biomass to Fuels Summit, Oct 12, 2010, Vancouver, Washington
17. Invited talk. "Development of non-platinum based cathodes for hydrogen production in microbial electrolysis cells". Proc. 239<sup>th</sup> ACS National Meeting, San Francisco, CA. March 21-25, 2010. (couldn't make it to the conference and presented by my Ph.D student Hongiang Hu)
18. Invited talk "Strategies for enhancing power generation in microbial fuel cells". 2<sup>nd</sup> International Microbial Fuel Cell Conference, June 10-12, 2009 Gwangju, Republic of Korea.
19. Invited talk "Identifying the Limiting Factors in MFCs". First Microbial Fuel Cell Forum in China. Harbin, China, November 2-3, 2008
20. Invited talk "Hydrogen Production Using Microbial Electrolysis Cells", BIO Pacific Rim Summit on Industrial Biotechnology and Bioenergy, Vancouver, Canada, September, 2008
21. Invited talk "Bioenergy Generation from Wastewater Using Microbial Electrochemical Systems", National Society of Professional Engineers (NSPE) annual meeting, Portland, OR, July 2008
22. Invited talk "Quantification of the Internal Resistance Distribution of Microbial Fuel Cells and Proton Transfer Mechanisms". Microbial Fuel Cell First International Symposium. University Park, Pennsylvania, PA, May, 2008



23. Invited talk “Electricity Generation Using Microbial Fuel Cells.” Seminar presentation for the Department of Environmental Engineering, Beihang University, Beijing, China, November, 2008
24. Invited talk “Electricity Generation from Wastewater Using Microbial Fuel Cells.” Seminar presentation for the Department of Molecular Biology and Genetics, Faculty of Sciences and Letters, Istanbul Technical University, Istanbul, Turkey, August, 2008.
25. Invited talk “Energy Generation from Wastewater Using Microbial Fuel Cells” Seminar presentation for the Department of Civil and Environmental Engineering Department. University of Hong Kong, Hong Kong, China, August, 2007
26. Invited talk “Microbial fuel cell for bioenergy generation and wastewater treatment.” Seminar presentation for the Department of Chemical Engineering, Chinese Science and Technology University, Hefei, China, September, 2007
27. Keaton Lesnik, Hong Liu. Sustainable Wastewater Treatment System for Food and Beverage Industry Presentation at NSF SBIR/STTR phase II grandee meeting at Baltimore, May 13-15.
28. Contributed talk. “Enhanced power generation of air cathode microbial fuel cells with cloth electrode assembly”. Proc. 234<sup>th</sup> ACS National Meeting, Boston, MA. Aug. 19-23, 2007.
29. Contributed talk “Hydrogen production from organic matter using electrochemically assisted microbial reactors”. Prof. ASABE annual international conference, Portland, OR, July 9-12. 2006.
30. Contributed talk. “Electricity generation using an air-cathode single chamber microbial fuel cell (MFC) in the absence of a proton exchange membrane”. 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, 2004.

### Professional Honors

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1. Highly Cited Researcher (2016): In recognition of ranking among the top 1% of researchers for most cited documents in the field of Environment/Ecology.
2. On the list of The World’s Most Influential Scientific Minds (2016) by Thomson Reuters
3. Highly Cited Researcher (2015): In recognition of ranking among the top 1% of researchers for most cited documents in the field of Environment/Ecology.
4. On the list of The World’s Most Influential Scientific Minds (2015) by Thomson Reuters
5. Highly Cited Researcher (2014): In recognition of ranking among the top 1% of researchers for most cited documents in field of Environment/Ecology.
6. On the list of The World’s Most Influential Scientific Minds (2014) by Thomson Reuters
7. NSF I-Corp Best Team Award (2012)
8. NSF CAREER Award (2010)
9. Excellence in Review Award for “Environmental Science and Technology” (2010)
10. Popular Mechanics Breakthrough Award (2005)
11. Top 10 Cited Papers in Journal of Power Sources in 2007.
12. Top 10 Cited Papers in Bioresource Technology.
13. Most-Accessed Articles for Environmental Science and Technology. 2004 (No.7), 2005 (No. 9) and 2006 (No. 13)

### Synergistic Activities

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1. **Conference Organizer:** Conference organizing committee member for the first and second International Society of Microbial Electrochemical Technologies (ISMET); organizing committee member the first and second North American ISMET regional conference.
2. **Editorial board:** *Biofuel*; *Frontiers in Energy Research*
3. **Manuscript Reviews:** Nature Communications; Trend in Biotechnology; Environmental Science and Technology; Applied Environ. Microbiology; Energy and Environ. Science; Biotechnology & Bioengineering; Water Research; International Journal of Hydrogen Energy; Applied Microbiology and Biotechnology; Bioresource Technology; Chemosphere. Biological Engineering, Journal of Power Sources; Electrochemistry Communications; Biosensors and Bioelectronics; Journal of Membrane Science

4. **Proposals Reviews:** National Science Foundation (NSF); Department of Energy (DOE); Department of Defense (DOD); Northeast Sun Grant; National Research Council Canada (NRC); The Indo-US Science and Technology Forum (IUSSTF);
5. **Professional Memberships:** American Chemical Society (ACS); Association of Environmental Engineering and Science Professors (AEESP); American Society of Agricultural and Biological Engineers (ASABE); International Society of Microbial Electrochemistry and Technology (ISMET)