

FANG ZHANG

Assistant Professor,
707 Sino-Italian Environmental and Energy-efficient Building,
School of Environment, Tsinghua University
Office: 010-62789655 Email: fangzhang@tsinghua.edu.cn

EDUCATION

8/2012 **Ph.D. in Environmental Engineering**, Penn State University, University Park, PA, USA
5/2010 **M.S. in Environmental Engineering**, Penn State University, University Park, PA, USA
7/2008 **B.S. in Environmental Engineering**, Tsinghua University, Beijing, China
7/2008 **B.S. in Economics**, Tsinghua University, Beijing, China

EXPERIENCE

6/2015 – present **Assistant Professor**, School of Environment, Tsinghua University
1/2015 – 2015/6 **Visiting Scholar**, School of Environment, Tsinghua University
8/2012 – 11/2014 **Postdoctoral Researcher**, Kappe Environmental Lab, Penn State University
8/2008 - 8/2012 **Research Assistant**, Kappe Environmental Lab, Penn State University

RESEARCH INTERESTS

Groundwater remediation, electro-remediation technologies, Reclamation of naturally impaired groundwater, Microbial electrochemical technologies

HONORS and AWARDS

2016 **The Thousand Talents Plan for Young Professionals** (“the Recruitment Program of Global Experts”)
2015 **Young Scholars Grant Award**, China Association for Science and Technology
2015 *Environmental Science & Technology Letters* Excellence in Review Award
2015 *Journal of Power Sources* Outstanding Reviewer Status
2012 Penn State University Environmental Chemistry Student Symposium 2012:
 Best Oral Presentation Award in Environmental Sciences Section (2nd place)
2011 Chinese Government Award for Outstanding Self-financed Students Abroad
2011 Graduate Student Award, Division of Environmental Chemistry, American Chemical Society
2010 Certificate of Merit Award, Division of Environmental Chemistry, American Chemical Society
2008 Outstanding Graduate Award, Tsinghua University

ACTIVITIES

8/2016 **Program Committee Member**, 3rd Asia-Pacific ISMET conference,
 Pusan National University, Korea, August 31- September 2.
5/2014 **Organization Committee Member**, 2nd North American ISMET Conference,

3/2012 Penn State University, USA, May 13-15
Organization Committee Member, 15th Annual Environmental Chemistry Student Symposium
Penn State University, USA, March 30-31.

PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS) (since 2010)
Association of Environmental Engineering and Science Professors (AEESP) (since 2010)
International Society for Microbial Electrochemistry and Technology (ISMET) (since 2012)

JOURNAL PUBLICATIONS

Total SCI publications: 32, average IF: > 6.1, total citation: 639

1. Si, Y.; Li, G.*; **Zhang, F.***, Energy-Efficient Oxidation and Removal of Arsenite from Groundwater Using Air-Cathode Iron Electrocoagulation. *Environ. Sci. Technol. Lett.* 2017, 4, (2), 71-75.
2. Rahimi, M.; Schoener, Z.; Zhu, X.; **Zhang, F.**; Gorski, C. A.; Logan, B. E., Removal of copper from water using a thermally regenerative electrodeposition battery. *J. Hazard. Mater.* 2017, 322, 551-556.
3. Sun, D.; Cheng, S.; **Zhang, F.**; Logan, B. E., Current density reversibly alters metabolic spatial structure of exoelectrogenic anode biofilms. *J. Power Sources.* 2017 in press.
4. Jiang, J.; Li, G.; Li, Z.; Zhang, X.; **Zhang, F.***, An Fe–Mn binary oxide (FMBO) modified electrode for effective electrochemical advanced oxidation at neutral pH. *Electrochimica Acta* 2016, 194, 104-109. (IF 4.803)
5. Coulon, F.; Jones, K.; Li, H.; Hu, Q.; Gao, J.; Li, F.; Chen, M.; Zhu, Y.-G.; Liu, R.; Liu, M.; Canning, K.; Harries, N.; Bardos, P.; Nathanail, P.; Sweeney, R.; Middleton, D.; Charnley, M.; Randall, J.; Richell, M.; Howard, T.; Martin, I.; Spooner, S.; Weeks, J.; Cave, M.; Yu, F.; **Zhang, F.**; Jiang, Y.; Longhurst, P.; Prpich, G.; Bewley, R.; Abra, J.; Pollard, S., China's soil and groundwater management challenges: Lessons from the UK's experience and opportunities for China. *Environment International* 2016, 91, 196-200. (IF 5.929)
6. **Zhang, F.**; Liu, J.; Yang, W.; Logan, B.E., A thermally regenerative ammonia-based battery for efficient harvesting of low-grade thermal energy as electrical power. *Energy & Environmental Science* 2015, 8, 343-3249. (IF 25.427)
7. **Zhang, F.**; Labarge, N.; Yang, W.; Liu, J.; Logan, B.E., Enhancing the performance of low-grade thermal energy recovery in a thermally regenerative ammonia-based battery (TRAB) using elevated temperatures. *ChemSusChem* 2015, 8, 1043-1048. (IF 7.116)
8. **Zhang, F.**; Liu, J.; Ivanov, I.; Hatzell, M.C.; Yang, W.; Ahn, Y.; Logan, B.E., Reference and counter electrode positions affect electrochemical characterization of bioanodes in microbial electrochemical systems. *Biotechnology and Bioengineering* 2014, 111, 1931-1939. (IF 4.243)
9. **Zhang, F.**; Ahn, Y.; Logan, B.E., Treating refinery wastewaters in microbial fuel cells using separator electrode assembly or spaced electrode configurations. *Bioresource Technology* 2014, 152, 46-52. (IF 4.917)
10. Liu, J.; **Zhang, F.**; He, W.; Yang, W.; Feng, Y.; Logan, B.E., A microbial fluidized electrode electrolysis cell for enhanced hydrogen production. *Journal of Power Sources* 2014, 271, 530-533. (IF 6.333)
11. Luo, X.; **Zhang, F.**; Liu, J.; Zhang, X.; Huang, X.; Logan, B.E., Methane production in microbial reverse-electrodialysis methanogenesis cells (MRMC) using thermolytic solutions. *Environmental Science &*

Technology 2014, 48, 8911-8918. (IF 5.393)

12. Yang, W.; **Zhang, F.**; He, W.; Liu, J.; Hickner, M.A.; Logan, B.E., Poly(vinylidene fluoride-co-hexafluoropropylene) phase inversion coating as a diffusion layer to enhance the cathode performance in microbial fuel cells. *Journal of Power Sources* 2014, 269, 379-384. (IF 6.333)
13. Liu, J.; **Zhang, F.**; He, W.; Zhang, X.; Feng, Y.; Logan, B.E., Intermittent contact of fluidized anode particles containing exoelectrogenic biofilms for continuous power generation in microbial fuel cells. *Journal of Power Sources* 2014, 261, 278-284. (IF 6.333)
14. Ahn, Y.; **Zhang, F.**; Logan, B.E., Air humidity and water pressure effects on the performance of air-cathode microbial fuel cell cathodes. *Journal of Power Sources* 2014, 247, 655-659. (IF 6.333)
15. Yang, W.; He, W.; **Zhang, F.**; Hickner, M.A.; Logan, B.E., Single-step fabrication using a phase inversion method of poly(vinylidene fluoride) (PVDF) activated carbon air cathodes for microbial fuel cells. *Environmental Science & Technology Letters* 2014, 1, 416-420. (IF 4.839)
16. Zhang, X.; Pant, D.; **Zhang, F.**; Liu, J.; Logan, B.E., Long-term performance of chemically and physically modified activated carbons in microbial fuel cell air-cathodes. *ChemElectroChem* 2014, 1 (11), 1859-1866. (IF 3.506)
17. Ahn, Y.; Hatzell, M.C.; **Zhang, F.**; Logan, B.E., Different electrode configurations to optimize performance of multi-electrode microbial fuel cells for generating power or treating domestic wastewater. *Journal of Power Sources* 2014, 249, 440-445. (IF 6.333)
18. Ren, L.; Ahn, Y.; Hou, H.; **Zhang, F.**; Logan, B.E., Electrochemical study of multi-electrode microbial fuel cells under fed-batch and continuous flow conditions. *Journal of Power Sources* 2014, 257, 454-460. (IF 6.333)
19. Liu, J.; Geise, G.M.; Luo, X.; Hou, H.; **Zhang, F.**; Feng, Y.; Hickner, M.A.; Logan, B.E., Patterned ion exchange membranes for improved power production in microbial reverse-electrodialysis cells. *Journal of Power Sources* 2014, 271, 437-443. (IF 6.333)
20. **Zhang, F.**, Xia, X., Luo, Y., Sun, D.; Call, D., Logan, B.E., Improving startup performance with carbon mesh anodes in separator electrode assembly microbial fuel cells. *Bioresource Technology* 2013, 133, 74-81. (IF 4.917)
21. Xia, X.; **Zhang, F.**; Zhang, X.; Liang, P.; Huang, X.; Logan, B.E., Use of pyrolyzed iron ethylenediaminetetraacetic acid modified activated carbon as air-cathode catalyst in microbial fuel cells. *ACS Applied Materials & Interfaces* 2013, 5, 7862-7866. (IF 7.145)
22. Chen, G.; **Zhang, F.**; Logan, B.E.; Hickner, M.A., Poly(vinyl alcohol) separators improve the coulombic efficiency of activated carbon cathodes in microbial fuel cells. *Electrochemistry Communications* 2013, 34, 150-152. (IF 4.569)
23. Luo, Y.; **Zhang, F.**; Wei, B.; Liu, G.; Zhang, R.; Logan, B.E., The use of cloth fabric diffusion layers for scalable microbial fuel cells. *Biochemical Engineering Journal* 2013, 73, 49-52. (IF 2.463)
24. Cusick, R.D.; Hatzell, M.C.; **Zhang, F.**; Logan, B.E., Minimal RED cell pairs markedly improve electrode kinetics and power production in microbial reverse electrodialysis cells. *Environmental Science & Technology* 2013, 47, 14518-14524. (IF 5.393)
25. Xia, X.; Tokash, J.C.; **Zhang, F.**; Liang, P.; Huang, X.; Logan, B.E., Oxygen-reducing biocathodes operating with passive oxygen transfer in microbial fuel cells. *Environmental Science & Technology* 2013, 47, 2085-2091.

(IF 5.393)

26. Wei, B.; Tokash, J.C.; **Zhang, F.**; Kim, Y.; Logan, B.E., Electrochemical analysis of separators used in single-chamber, air-cathode microbial fuel cells. *Electrochimica Acta* 2013, 89, 45-51. (IF 4.803)
27. Luo, X.; Nam, J.-Y.; **Zhang, F.**; Zhang, X.; Liang, P.; Huang, X.; Logan, B.E., Optimization of membrane stack configuration for efficient hydrogen production in microbial reverse-electrodialysis electrolysis cells coupled with thermolytic solutions. *Bioresource Technology* 2013, 140, 399-405. (IF 4.917)
28. **Zhang, F.**; Chen, G.; Hickner, M.A.; Logan, B.E., Novel anti-flooding poly(dimethylsiloxane) (PDMS) catalyst binder for microbial fuel cell cathodes. *Journal of Power Sources* 2012, 218, 100-105. (IF 6.333)
29. **Zhang, F.**; Pant, D.; Logan, B.E., Long-term performance of activated carbon air cathodes with different diffusion layer porosities in microbial fuel cells. *Biosensors and Bioelectronics* 2011, 30, 49-55. (IF 7.476)
30. **Zhang, F.**; Merrill, M.D.; Tokash, J.C.; Saito, T.; Cheng, S.; Hickner, M.A.; Logan, B.E., Mesh optimization for microbial fuel cell cathodes constructed around stainless steel mesh current collectors. *Journal of Power Sources* 2011, 196, 1097-1102. (IF 6.333)
31. Hays, S.; **Zhang, F.**; Logan, B.E., Performance of two different types of anodes in membrane electrode assembly microbial fuel cells for power generation from domestic wastewater. *Journal of Power Sources* 2011, 196, 8293-8300. (IF 6.333)
32. Luo, Y.; **Zhang, F.**; Wei, B.; Liu, G.; Zhang, R.; Logan, B.E., Power generation using carbon mesh cathodes with different diffusion layers in microbial fuel cells. *Journal of Power Sources* 2011, 196, 9317-9321. (IF 6.333)
33. **Zhang, F.**; Saito, T.; Cheng, S.; Hickner, M.A.; Logan, B.E., Microbial fuel cell cathodes with poly(dimethylsiloxane) diffusion layers constructed around stainless steel mesh current collectors. *Environmental Science & Technology* 2010, 44, 1490-1495. (IF 5.393)
34. **Zhang, F.**; Cheng, S.; Pant, D.; Bogaert, G.V.; Logan, B.E., Power generation using an activated carbon and metal mesh cathode in a microbial fuel cell. *Electrochemistry Communications* 2009, 11, 2177-2179. (IF 4.569)
35. Cao, X.; **Zhang, F.**; Fan, M.; Liang, P.; Huang, X., Effect of a pairing microbe to *Geobacter sulfurreducens* start up in microbial fuel cells. *Journal of Biotechnology* 2008, 136S, S676-S677. (IF 2.667)
36. 柯杭, **张芳**, 李广贺, 张旭; 铁源对碳热合成磁性碳质吸附剂的影响, 环境工程学报

PATENTS

1. Huang, X.; Wang, L.; Liang, P.; Wei, J.; Xia, X.; **Zhang, F.**; Logan, B.E., A nitrogen-doped carbon catalysts for microbial fuel cells and its preparation method. Chinese patent, issued, ZL201110021367.8
2. **Zhang, F.**; Liu, J.; Yang, W.; Logan, B.E., Ammonia-based Thermoelectrochemical Systems and Methods, Provisional US Patent Application 50,434, filed October 10, 2014.

CONFERENCE PRESENTATIONS

1. **Zhang, F.** 2015. Harvesting energy from waste streams using (bio)electrochemical systems. **Keynote presentation** at 10th IWA International Conference on Water Reclamation and Reuse, Harbin, China, July 5-9.
2. **Zhang, F.**; Logan, B.E.; LaBarge, N., Yang, W., Liu, J. 2015. Electricity production from low-grade thermal energy. Presentation at the Association of Environmental Engineering & Science Professors (AEESP) Conference, Yale University, USA, June 13-16.

3. **Zhang, F.**; Liu, J.; Ivanov, I.; Hatzell, M.C.; Yang, W.; Ahn, Y.; Logan, B.E. 2014. Reference and counter electrode positions affect electrochemical characterization of bioanodes in microbial electrochemical systems. **Invited workshop presentation** at North American Meeting of the International Society for Microbial Electrochemistry and Technology (NA-ISMET), Penn State University, USA, May 13-15.
4. Cusick, R.D.; **Zhang, F.**; Hatzell, M.C.; Logan, B.E. 2014. Quantifying specific resistances at multiple interphases in microbial reverse electrodialysis cells using multichannel electrochemical impedance. Invited workshop presentation at North American Meeting of the International Society for Microbial Electrochemistry and Technology (NA-ISMET), Penn State University, USA, May 13-15.
5. Zhang, X.; Pant, D.; **Zhang, F.**; Liu, J.; Logan, B.E. 2014. Long-term performance of chemically and physically modified activated carbons in microbial fuel cell air-cathodes. Poster presented at North American Meeting of the International Society for Microbial Electrochemistry and Technology (NA-ISMET), Penn State University, USA, May 13-15. [[Received Best Poster Presentation Award, second place](#)].
6. **Zhang, F.**; Chen, G.; Hickner, M.A.; Logan, B.E. 2013. Anti-flooding poly(dimethylsiloxane) (PDMS) catalyst binder for air cathode microbial fuel cells. Presentation at 1st Asia-Pacific International Society for Microbial Electrochemical Technologies Meeting (AP-ISMET), Harbin Institute of Technology, China, January 13-15.
7. Xia, X.; **Zhang, F.**; Zhang, X.; Liang, P.; Huang, X.; Logan, B.E. 2013. Use of pyrolyzed iron ethylenediaminetetraacetic acid modified activated carbon as air-cathode catalyst in microbial fuel cells. Presentation at 4th International Microbial Fuel Cell Symposium, Cairns, Australia, September 1-4.
8. Xia, X., Tokash, J.C.; **Zhang, F.**, Liang, P.; Huang, X.; Logan, B.E. 2013. Oxygen-reducing biocathodes operating with passive oxygen transfer in microbial fuel cells. Presentation at 1st Asia-Pacific International Society for Microbial Electrochemical Technologies Meeting (AP-ISMET), Harbin Institute of Technology, China, January 13-15.
9. Ren, L.; Siegert, M.; Ivanov, I.; **Zhang, F.**; Logan, B.E. 2013. Treatability studies on refinery wastewaters using microbial electrolysis cells (MECs) toward power production in microbial fuel cells (MFCs). Presentation at 2nd International Symposium on Bioremediation and Sustainable Environmental Technologies, Jacksonville, FL, USA, June 10-13.
10. Logan, B.E.; Cusick, R.D.; Ivanov, I.; Hatzell, M.C.; **Zhang, F.** 2013. Capturing salinity gradient energy using thermolytic solutions in reverse electrodialysis stacks and catholyte solutions. Presentation at 10th IWA Leading Edge Conference on Water and Waste Water Technologies, Bordeaux, France, June 2-6.
11. **Zhang, F.**; Chen, G.; Hickner, M.A.; Logan, B.E. 2012. Novel anti-flooding cathodes constructed using poly(dimethylsiloxane) (PDMS) binder for microbial fuel cells. Presentation at 15th Annual Environmental Chemistry Student Symposium, Penn State University, USA, March 30-31. [[Received Best Oral Presentation Award, second place](#)].
12. **Zhang, F.**, Xia, X., Luo, Y., Sun, D.; Call, D., Logan, B.E. 2012. Improving startup performance with carbon mesh anodes in separator electrode assembly microbial fuel cells. Poster presented at North American Meeting of the International Society for Microbial Electrochemistry and Technology (NA-ISMET), Cornell University, USA, October 9-10.
13. Wei, B.; Tokash, J.C.; **Zhang, F.**; Kim, Y.; Logan, B.E. 2012. Electrochemical analysis of separators used in single-chamber, air-cathode microbial fuel cells. Poster presented at 15th Annual Environmental Chemistry

Student Symposium, Penn State University, USA, March 30-31.

14. **Zhang, F.**; Pant, D.; Logan, B.E. 2011. Long-term performance of activated carbon air cathodes with different diffusion layer porosities in microbial fuel cells. Presentation at 3rd International Microbial Fuel Cell Symposium, Leeuwarden, the Netherlands, June 5-8.
15. **Zhang, F.**; Saito, T.; Cheng, S.; Hickner, M.A.; Logan, B.E. 2010. Microbial fuel cell cathodes with poly(dimethylsiloxane) diffusion layers constructed around stainless steel mesh current collectors. Presentation at 239th American Chemical Society Meeting, San Francisco, CA, USA, March 21-25. [[Received Certificate of Merit Award](#)].
16. Cao, X., **Zhang, F.**, Liang, P., Huang, X. 2008. Electricity generation and biofilm formation by *Geobacter sulfurreducens* stimulated by a pairing microorganism in a microbial fuel cell. Presentation at 1st International Microbial Fuel Cell Symposium, Penn State University, USA, May 27-29.

JOURNAL REVIEWER

Environmental Science & Technology

Energy & Environmental Science,

Electrochemistry Communications

Electrochimica Acta

Bioresource Technology

Journal of Power Sources

ACS Sustainable Chemistry & Engineering

International Journal of Hydrogen Energy

Water Research

Nature Energy

Angewandte Chemie

ES&T Letters

Biodegradation

Bioelectrochemistry

Water Environmental Research

Frontiers of Environmental Science & Engineering

RSC Advances