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Curriculum Vitae

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EDUCATION

- 2014 M.S./Ph.D. in Environmental Engineering, Gwangju Institute of Science and Technology (GIST), South Korea.
- 2008 B.S. in Environmental Engineering (minor: Chemical Engineering, Bioengineering), Kyungpook National University, South Korea.

PROFESSIONAL EXPERIENCES

- Sep 2018-present Assistant Professor, Department of Environmental and Sustainable Engineering, University at Albany, State University of New York (SUNY).
- June 2014-2018 Post-doctoral Researcher, Department of Civil and Environmental Engineering, Pennsylvania State University, USA.
(Advisor: Prof. Bruce Logan)
- Mar 2014 Post-doctoral Researcher, SeaHERO, Center for Seawater Desalination Plant, South Korea.
(Advisor: Prof. In S. Kim)
- Jan 2012-
June 2012 Visiting Scholar, Department of Biological and Environmental Engineering, Cornell University, USA.
(Advisor: Prof. Lars Angenent)
- Jan 2008 Research Internship, School of Environmental Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang, South Korea.
(Advisor: Prof. Jong Moon Park)
- July 2007 Research Internship, School of Environmental Science and Engineering, Gwangju Institute of Science and Technology (GIST), South Korea.
(Advisor: Prof. In S. Kim)

PATENTS

1. Kim, I.S., E. Yang, M.-J. Choi, **K.-Y. Kim**, “Hydrogen production and seawater desalination in a microbial electro dialysis cell by installing the direct proton transfer pathway”, Korea Patent No. 10-1284554 (2013. 07. 04).
2. Kim, I.S., M.-J. Choi, E. Yang, **K.-Y. Kim**, A. Jang, “A process of desalination and hydrogen peroxide production by using microbial electrochemical cell”, Korea Patent No. 10-1282763 (2013. 07. 01).
3. Kim, I.S., K.-J. Chae, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi “A system for bioelectrochemical hydrogen production using sun light”, Korea Patent No. 10-1126190 (2012.3.6).
4. Kim, I.S., K.-J. Chae, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi “Bioelectrochemical hydrogen generating apparatus using a photovoltaic cell-storage battery assemble as an external voltage apparatus and method for operating the same”, Korea Patent No. 10-1123961 (2012. 2. 28).

PUBLICATIONS

Journal Publications (Total citations: **1493**, h-index=18, Google Scholar, 8/1/2018)

1. El-Dalatony, M.M., E. Salama, M.B. Kurade, **K.-Y. Kim**, S.P. Govindwar, J.R. Kim, E.E. Kwon, B. Min, M. Jang, S.-E. Oh, S.W. Chang and B.-H. Jeon (2018). Whole conversion of microalgal biomass into biofuels through successive high-throughput fermentation. *submitted*
2. Logan, B.E., E. Zikmund, W. Yang, R. Rossi, **K.-Y. Kim**, P. Saikaly and F. Zhang (2018). Regenerable nickel-functionalized activated carbon cathodes enhanced by metal adsorption to improve hydrogen production in microbial electrolysis cells. *Environmental Science & Technology*, *in press*
3. Zikmund, E., **K.-Y. Kim**, and B.E. Logan (2018). Hydrogen production rates with closely-spaced felt anodes and cathodes compared to brush anodes in two-chamber microbial electrolysis cells. *International Journal of Hydrogen Energy*, 43(20):9599-9606.
4. **Kim, K.-Y.**, W. Yang and B.E. Logan (2018). Regenerable nickel-functionalized activated carbon cathodes enhanced by metal adsorption to improve hydrogen production in microbial electrolysis cells. *Environmental Science & Technology*, 52(12):7131-7137.
5. Yang, W., R. Rossi, Y. Tian, **K.-Y. Kim**, E. Zikmund and B.E. Logan (2018). Mitigating external and internal cathode fouling using a polymer bonded separator in microbial fuel cells. *Bioresource Technology*. 249:1080-1084.
6. **Kim, K.-Y.**, E. Zikmund and B.E. Logan (2017). Impact of catholyte recirculation on different 3-dimensional stainless steel cathodes in microbial electrolysis cells. *International Journal of Hydrogen Energy*. 42:29708-29715.

7. Yilmazel, Y.D., X. Zhu, **K.-Y. Kim**, D.E. Holmes and B.E. Logan (2017). Electrical current generation in microbial electrolysis cells by hyperthermophilic archaea *Ferroglobus placidus* and *Geoglobus ahangari*. *Bioelectrochemistry*, 119:142-149.
8. Yang, W., **K.-Y. Kim**, P.E. Saikaly and B.E. Logan (2017). The impact of new cathode materials relative to baseline performance of microbial fuel cells all with the same architecture and solution chemistry. *Energy & Environmental Science*, 10:1025-1033.
9. McAnulty, M.J., V.G. Poosarla, **K.-Y. Kim**, R. Jasso-Chavez, B.E. Logan and T.K. Wood (2017). Electricity from methane by reversing methanogenesis. *Nature Communications*, 8:15419.
10. **Kim, K.-Y.**, W. Yang, P.J. Evans and B.E. Logan (2016). Continuous treatment of high strength wastewaters using air-cathode microbial fuel cells. *Bioresource Technology*, 221:96-101.
11. LaBarge, N., Y. Ye, **K.-Y. Kim**, Y.D. Yilmazel, P. Saikaly, P. Hong and B.E. Logan (2016). Impact of acclimation methods on microbial communities and performance of anaerobic fluidized bed membrane bioreactors. *Environmental Science: Water Research & Technology*, 2:1041-1048.
12. Ye, Y., N. LaBarge, H. Kashima, **K.-Y. Kim**, P. Hong, P.E. Saikaly, and B.E. Logan (2016). An aerated and fluidized bed membrane bioreactor for effective wastewater treatment with low membrane fouling. *Environmental Science: Water Research & Technology*, 2:994-1003.
13. He, W., M.J. Wallack, **K.-Y. Kim**, X. Zhang, W. Yang, X. Zhu, Y. Feng and B.E. Logan (2016). The effect of flow modes and electrode combinations on the performance of a multiple module microbial fuel cell installed at wastewater treatment plant. *Water Research*, 105:351-360.
14. **Kim, K.-Y.**, W. Yang, Y. Ye, N. LaBarge and B.E. Logan (2016). Performance of anaerobic fluidized membrane bioreactors using effluents of microbial fuel cells treating domestic wastewater. *Bioresource Technology*, 208:58-63.
15. Yang, W., **K.-Y. Kim** and B.E. Logan (2015). Development of carbon free diffusion layer for activated carbon air cathode of microbial fuel cell. *Bioresource Technology*, 197:318-322.
16. Logan, B.E., M.J. Wallack, **K.-Y. Kim**, W. He, Y. Feng and P.E. Saikaly (2015). Assessment of microbial fuel cell configurations and power densities. *Environmental Science & Technology Letters*, 2:206-214.
17. **Kim, K.-Y.**, W. Yang and B.E. Logan (2015). Impact of electrode configurations on retention time and domestic wastewater treatment efficiency using microbial fuel cells. *Water Research*, 80:41-46.
18. Yang, E., **K.-Y. Kim**, K.-J. Chae, M.-Y. Lee and I.S. Kim (2015). Evaluation of energy and water recovery in forward osmosis–bioelectrochemical hybrid system with cellulose

- triacetate and polyamide asymmetric membrane in different orientations. *Desalination & Water Treatment*, 1-8.
19. Lee, M.-Y., **K.-Y. Kim**, E. Yang and I.S. Kim (2015). Evaluation of hydrogen production and internal resistance in forward osmosis membrane integrated microbial electrolysis cells. *Bioresource Technology*, 187:106-112.
 20. **Kim, K.-Y.**, K.-J. Chae, E. Yang, M.-Y. Lee and I.S. Kim (2015). Influence of pressurized anode chamber on ion transports and power generation of UF membrane microbial fuel cells (UF-MFCs). *Journal of Power Sources*, 279:731-736.
 21. Yang, E., M.-J. Choi, **K.-Y. Kim**, K.-J. Chae and I.S. Kim (2015). Effect of initial salt concentrations on cell performance and distribution of internal resistance in microbial desalination cells. *Environmental Technology*, 36:852-860.
 22. Chae, K.-J., **K.-Y. Kim**, M.-J. Choi, E. Yang, I.S. Kim, X. Ren and M. Lee (2014). Sulfonated polyether ether ketone (SPEEK)-based composite proton exchange membrane reinforced with nanofibers for microbial electrolysis cells” *Chemical Engineering Journal*, 254:393-398.
 23. Yang, E., M.-J. Choi, **K.-Y. Kim** and I.S. Kim (2014). Microbial desalination cell for concurrent hydrogen peroxide production and desalination. *Journal of Environmental Engineering & Science*, 9:197-206.
 24. **Kim, K.-Y.**, E. Yang, M.-Y. Lee, K.-J. Chae, C.-M. Kim and I.S. Kim (2014). Polydopamine coating effects on ultrafiltration membrane to enhance power density and mitigate biofouling of ultrafiltration microbial fuel cells (UF-MFCs). *Water Research*, 54:62-68.
 25. **Kim, K.-Y.**, E. Yang, M.-Y. Lee, K.-J. Chae, S.-J. Kim and I.S. Kim (2014). Anode direct contact for enhancing power generation and biofouling reduction in ultrafiltration microbial fuel cells. *Journal of Chemical Technology & Biotechnology*, 89:1767-1771.
 26. Yang, E., M.-J. Choi, **K.-Y. Kim** and I.S. Kim (2013). Improvement of biohydrogen generation and seawater desalination in a microbial electro dialysis cell by installing the direct proton transfer pathway between the anode and cathode chambers. *Desalination & Water Treatment*, 51:6362-6369.
 27. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, E. Yang, M. H. Hwang and I.S. Kim (2013). High-quality Effluent and Electricity Production from non-CEM based Flow-through Type Microbial Fuel Cell. *Chemical Engineering Journal*, 218:19-23.
 28. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, F.F. Ajayi, C.-W. Kim and I.S. Kim (2011). Enhanced Coulombic efficiency in glucose-fed microbial fuel cells by reducing metabolite electron losses using dual-anode electrodes. *Bioresource Technology*, 102:4144-4149.

29. Choi, M.-J., K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, H.-W. Yu, C.-W. Kim and I.S. Kim (2011). Effects of biofouling on ion transport through cation exchange membranes and microbial fuel cell performance. *Bioresource Technology*, 102:298-303.
30. Choi, M.-J., K.-J. Chae, H.-W. Yu, **K.-Y. Kim**, A. Jang and I.S. Kim (2011). Development of Visible Light Responsive Nitrogen Doped Photocatalysts (TiO₂, Nb₂O₅) for hydrogen Evolution. *Journal of Korean Society of Environmental Engineering*, 33:907-912.
31. Chae, K.-J., M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, W.-S. Park, C.-W. Kim and I.S. Kim (2010). Methanogenesis control by employing various environmental stress conditions in two-chambered microbial fuel cells. *Bioresource Technology*, 14:5350-5357.
32. Ajayi, F.F., **K.-Y. Kim**, K.-J. Chae, M.-J. Choi and I.S. Kim (2010). Effect of hydrodynamic force and prolonged oxygen exposure on the performance of anodic biofilm in microbial electrolysis cells. *International Journal of Hydrogen Energy*, 35:3206-3213.
33. Ajayi, F.F., **K.-Y. Kim**, K.-J. Chae, M.-J. Choi, I.-S. Chang and I.S. Kim (2010). Optimization studies of bio-hydrogen production in a coupled microbial electrolysis-dye sensitized solar cell system. *Photochemical & Photobiological Sciences*, 9:349-356.
34. Chae, K.-J., M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, I.-S. Chang and I.S. Kim (2010). Selective inhibition of methanogens for the improvement of biohydrogen production in microbial electrolysis cells. *International Journal of Hydrogen Energy*, 35:3379-3386.
35. Chae, K.-J., M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, I.-S. Chang and I.S. Kim (2009). A Solar-powered microbial electrolysis cell with a platinum catalyst-free cathode to produce hydrogen. *Environmental Science & Technology*, 43:9525-9530.
36. Ajayi, F.F., **K.-Y. Kim**, K.-J. Chae, M.-J. Choi, S.-Y. Kim, I.-S. Chang and I.S. Kim (2009). Study of hydrogen production in light assisted microbial electrolysis cell operated with dye sensitized solar cell. *International Journal of Hydrogen Energy*, 34:9297-9304.
37. Ajayi, F.F., K.-J. Chae, **K.-Y. Kim**, M.-J. Choi and I.S. Kim (2009). Photocurrent and photoelectrochemical hydrogen production with tin porphyrin and platinum nanowires immobilized with nafion on glassy carbon electrode. *International Journal of Hydrogen Energy*, 34:110-114.
38. Chae, K.-J., M.-J. Choi, J.-W. Lee, **K.-Y. Kim** and I.S. Kim (2009). Effect of different substrates on the performance, bacterial diversity, and bacterial viability in microbial fuel cells. *Bioresource Technology*, 100:3518-3525.

Book Chapters

1. Kim, I.S., L.H. Kim, S.-J. Kim, **K.-Y. Kim**, (2015). Biofouling in Osmotic Membrane Bioreactor (Chapter 12, pp. 241-275). In: *Forward Osmosis: Fundamentals and Applications*. Eds.: Shon, H.K., Phuntsho, S., Zhang, T. C., Surampalli, R.Y., American Society of Civil Engineers, USA.

Technical Reports

1. Logan, B.E., **K.-Y. Kim**, P.J. Evans (2017). Energy Sustainable Wastewater Treatment Systems for Forward Operating Bases Based on Microbial Fuel Cells. Strategic Environmental Research and Development Program (SERDP) final report (Project number: 12 ER01-032).

PRESENTATIONS

Invited Seminars

Novel microbial fuel cell technology combined with membrane filtration for effective wastewater treatment. Invited talk at the Environmental Protection Agency (EPA), Cincinnati, OH, March 24, 2017

Novel microbial fuel cell technologies for wastewater treatment and energy recovery. Invited presentation at the Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea, April 7, 2014

Selected Presentations

UF and FO membrane integrated microbial fuel cells to produce high-quality water electricity. Special session presentation at Korean Society on Water Quality- Korean Society of Water and Wastewater Spring Conference, South Korea, March 21, 2014

Development of UF membrane based flow-through type MFC for efficient wastewater treatment and energy recovery. Presentation at Networking Event for Bioelectrochemical System at IWA2012, South Korea, September 19, 2012.

Conference Presentations (*Presenter for podium presentation)

1. Logan, B.E.*, **K.-Y. Kim**, “Coupling microbial fuel cells and anaerobic fluidized bed membrane bioreactors for effective and energy efficient wastewater treatment”, Abstract Proceedings of the 15th IWA World Conference on Anaerobic Digestion, Beijing, China, Oct 17-20 (2017). *invited talk
2. **Kim, K.-Y.***, W. Yang, P.J. Evans and B.E. Logan, “Continuous treatment of high strength wastewaters using air-cathode microbial fuel cells”, Abstract Proceedings of the 3rd North-America Meeting on Microbial Electrochemistry and Technologies (NA-ISMET2016), Stanford University, Palo Alto, Oct 5-7 (2016).
3. **Kim, K.-Y.***, W. Yang and B.E. Logan, “Power Generation and Domestic Wastewater Treatment Efficiency using Microbial Fuel Cell and Anaerobic Fluidized Membrane Bioreactor (MFC-AFMBR) System under Different Hydraulic Retention Times”, Abstract Proceedings of the 5th International Meeting on Microbial Electrochemistry and Technologies (ISMET2015), Arizona State University, Tempe, Oct 1-4 (2015).

4. **Kim, K.-Y.***, W. Yang and B.E. Logan, “Impact of brush anode configuration on HRT and domestic wastewater treatment efficiency using microbial fuel cells”, Abstract Proceedings of 2015 Association of Environmental Engineering and Science Professors (AEESP) Conference, Yale university, New Haven, June 13-16 (2015).
5. Lee, M.-Y.*, **K.-Y. Kim**, E. Yang and I.S. Kim, “Hydrogen production using forward osmosis membrane integrated microbial electrolysis cell”, Proceedings of the 4th International Microbial Fuel Cell Conference, Sep 1-4, Cairns, Australia (2013).
6. **Kim, K.-Y.***, L.T. Angenent and I.S. Kim, “Biofuel Production through Kolbe Electrolysis with Mixtures of n-butyric Acid and n-caproic Acid”, Abstract Proceedings of 2012 KSEE Conference, Changwon Exhibition Convention Center, Changwon, Aug 22-24 (2012).
7. Yang, E.*, M.-J. Choi, **K.-Y. Kim** and I.S. Kim, “Evaluation of internal resistance and performance in microbial desalination cell for electricity generation”, Abstract Proceedings of 2012 KSEE Conference, Changwon Exhibition Convention Center, Changwon, Aug 22-24 (2012).
8. Yang, E.*, M.-J. Choi, **K.-Y. Kim** and I.S. Kim, “Improvement of biohydrogen generation and seawater desalination in a microbial electro dialysis cell by the direct proton transfer pathway between the anode and cathode”, Proceedings of the 2011 Asian Bio-Hydrogen and Biorefinery Symposium, Oct 13-15, Bogor, Indonesia (2011).
9. **Kim, K.-Y.***, M.-J. Choi, E. Yang and I.S. Kim, “Evaluation biofouling and electricity production in anode electrode assembly membrane microbial fuel cells (MMFCs)”, Abstract Proceedings of Korean Society on Water Quality- Korean Society of Water and Wastewater Fall Conference, Daejeon Convention Center, Daejeon, Nov 2-3 (2011).
10. Choi, M.-J.*, **K.-Y. Kim**, E. Yang and I.S. Kim, “Biohydrogen production with a copper cathode catalyst in a microbial electrolysis cell”, Abstract Proceedings of Korean Society on Water Quality- Korean Society of Water and Wastewater Fall Conference, Daejeon Convention Center, Daejeon, Nov 2-3 (2011).
11. **Kim, K.-Y.***, M.-J. Choi, E. Yang, K.-J. Chae, A. Jang and I.S. Kim, “Biofouling reduction in membrane microbial fuel cells (MMFCs) by anode immobilization onto the ultrafiltration membrane”, Proceedings of the 4th IWA-ASPIRE Conference & Exhibition, Oct 2-6, Tokyo International Forum, Japan (2011).
12. **Kim, K.-Y.***, M.-J. Choi, K.-J. Chae, E. Yang and I.S. Kim, “Simultaneous power generation and water treatment using microbial fuel cell equipped with ultrafiltration membrane”, Proceedings of the 1st International Conference on Green Environmental Technology 2011, Aug 21-24, BEXCO, Korea (2011).
13. Yang, E.*, M.-J. Choi, **K.-Y. Kim**, A. Jang and I.S. Kim, “Impact of cathode solution and electrode type on H₂O₂ production and salt removal efficiency in microbial desalination cell (MDC)”, Abstract Proceedings of 2011 KSEE Conference, BEXCO, Busan, Aug 21-

- 24 (2011).
14. Chae, K.-J.*, Y.H. Kim, S.J. Kim, G.T. Kim, M.-J. Choi, **K.-Y. Kim**, E. Yang, I.S. Kim and M.S. Lee, “Sulfonated polyether ether ketone (SPEEK)-based composite proton exchange membrane for microbial electrolysis cells”, Abstract Proceedings of 2011 KSEE Conference, BEXCO, Busan, Aug 21-24 (2011).
 15. Choi, M.-J.*, K.-J. Chae, **K.-Y. Kim** and I.S. Kim, “Effect of catholyte pH on microbial Electrolysis cell performance”, Abstract Proceedings of 2010 KSEE Spring Conference, Jeju International Convention Center, Jeju, May 6-7 (2010).
 16. **Kim, K.-Y.***, M.-J. Choi, K.-J. Chae, F.F. Ajayi, S. Han and I.S. Kim, “Biohydrogen production using dye-sensitized solar cell and photofermentative bacteria in single chamber microbial electrolysis cell.”, Abstract Proceedings of 2010 KSEE Spring Conference, Jeju International Convention Center, Jeju, May 6-7 (2010).
 17. Chae, K.-J.*, S.-K. Yim, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, W. Park, C.-W. Kim and I.S. Kim, “Methanogenesis Inhibition by Employing various environmental stress conditions in MFCs inoculated with anaerobic digester sludge.”, Abstract Proceedings of 2010 KSEE Spring Conference, Jeju International Convention Center, Jeju, May 6-7 (2010).
 18. **Kim, K.-Y.***, K.-J. Chae, M.-J. Choi, G. Xie and I.S. Kim, “Biohydrogen production from organic compounds by combining a solar-powered microbial electrolysis cell with photofermentation”, Proceedings of the Asian Biohydrogen Symposium, Feng Chia university, Taichung, Nov 15-20 (2010).
 19. **Kim, K.-Y.***, K.-J. Chae, M.-J. Choi, F.F. Ajayi and I.S. Kim, “Evaluation of new hybrid electrode microbial fuel cell for enhancing conversion efficiency of glucose”, Abstract Proceedings of 2009 KSEE Fall Conference, Kim Dae-Joong Center, Gwangju, Nov 5-7 (2009).
 20. Chae, K.-J.*, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi and I.S. Kim, “Selective Inhibition of Methanogens for the Improvement of Biohydrogen Production in Bioelectrochemical cells”, Abstract Proceedings of 2009 KSEE Fall Conference, Kim Dae-Joong Center, Gwangju, Nov 5-7 (2009).
 21. Choi, M.-J.*, K.-J. Chae, F.F. Ajayi, **K.-Y. Kim** and I.S. Kim, “Phototrophic Microbial Fuel Cells using an Enriched Phototrophic and Heterotrophic Consortium”, Abstract Proceedings of 2009 KSEE Fall Conference, Kim Dae-Joong Center, Gwangju, Nov 5-7 (2009).
 22. **Kim, K.-Y.***, K.-J. Chae, M.-J. Choi, F.F. Ajayi, S.Y. Kim, I.S. Chang and I.S. Kim, “Suppression of methanogenesis in microbial fuel cells using bicarbonate buffer solution”, Abstract Proceedings of 2009 KSEE spring Conference, Changwon Exhibition Convention Center, Changwon, Apr 30-May 1 (2009).
 23. Chae, K.-J.*, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, I.S. Chang and I.S. Kim, “Selective Inhibition of Methanogens for the Improvement of Biohydrogen Production in

- Bioelectrochemical cells”, Abstract Proceedings of 2009 KSEE spring Conference, Changwon Exhibition Convention Center, Changwon, Apr 30-May 1 (2009).
24. Choi, M.-J.*, K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, I.S. Chang and I.S. Kim, “Visible Light Responsive Photocatalysts for Biohydrogen Evolution”, Abstract Proceedings of 2009 KSEE spring Conference, Changwon Exhibition Convention Center, Changwon, Apr 30-May 1 (2009).
 25. Ajayi, F.F.*, M.-J. Choi, K.-J. Chae, **K.-Y. Kim**, S.-Y. Kim, I.-S. Chang and I.S. Kim, “Photo-assisted microbial electrolysis with dye sensitized solar cell” Proceedings of the 2nd Microbial Fuel Cell Conference June 10-12, GIST, Gwangju, Korea (2009).
 26. Chae, K.-J.*, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, I.-S. Chang and I.S. Kim, “Hydrogen production using a solar-powered microbial electrolysis cell with Platinum catalyst-free cathode” Proceedings of the 2nd Microbial Fuel Cell Conference June 10-12, GIST, Gwangju, Korea (2009).
 27. Chae, K.-J.*, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, I.-S. Chang and I.S. Kim, “Strategy for selective Inhibition of Methanogens for the Improvement of Biohydrogen Production in bioelectrochemical cells” Proceedings of the 2008 Asian Bio-Hydrogen Symposium, December 26-28, Harbin, China (2008).
 28. **Kim, K.-Y.***, K.-J. Chae, M.-J. Choi, F.F. Ajayi, S.-Y. Kim, I.-S. Chang and I.S. Kim, “Metabolites identification and electron balances in microbial electrohydrogenesis cells (MECs) utilizing glucose as electron donor” Proceedings of the 2008 Asian Bio-Hydrogen Symposium, December 26-28, Harbin, China (2008).
 29. Choi, M.-J.*, K.-J. Chae, F.F. Ajayi, **K.-Y. Kim** and I.S. Kim “Biohydrogen Production from Glucose using Visible Light-harvesting Function of Mg Chlorophyll-a as Photosensitizer” Proceedings of the 1st IWA Asia-Pacific Young Water Professionals Conference, December 08-10, GIST, Gwangju, Korea (2008).
 30. **Kim, K.-Y.***, K.-J. Chae, M.-J. Choi, F.F. Ajayi, M.H. Hwang, W.-S. Park and I.S. Kim “Comprehension about Microbial Metabolites Generated by Electricigens in MFCs” Proceedings of the 1st IWA Asia-Pacific Young Water Professionals Conference, December 08-10, GIST, Gwangju, Korea (2008).
 31. Ajayi, F.F.*, M.-J. Choi, K.-J. Chae, **K.-Y. Kim** and I.S. Kim, “Microbial Fuel Cell Operation with triiodide Ions as Cathodic Electron Acceptor” Proceedings of the 1st IWA Asia-Pacific Young Water Professionals Conference, December 08-10, GIST, Gwangju, Korea (2008).
 32. Choi, M.-J.*, K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, and I.S. Kim, “Catholyte pH effect on the performances of microbial fuel cells and biohydrogen-producing bioelectrochemical cells”, Proceedings of the Microbial Fuel Cells International Symposium, Penn state university, USA, May 27 (2008).
 33. Chae, K.-J.*, M.-J. Choi, **K.-Y. Kim**, F.F. Ajayi, M.S. Kang, H.D. Park and I.S. Kim,

“Factors Affecting on the performances of Two-chambered Microbial Fuel Cell”, Proceedings of the KSEE spring conference, University of Ulsan, May 1-2 (2008).

Posters at Conferences

1. **Kim, K.-Y.** and B.E. Logan, “Dynamic flow and the use of inexpensive nickel-added activated carbon cathodes to achieve cost-effective hydrogen production in microbial electrolysis cells”, Abstract Proceedings of the 6th International Meeting of International Society for Microbial Electrochemistry and Technology (ISMET6), Universidade NOVA de Lisboa, Lisbon, Portugal, Oct. 3-6 (2017).
2. **Kim, K.-Y.** and B.E. Logan, “Evaluation of alternative cathode materials for hydrogen production in Microbial electrolysis cells (MECs)”, Abstract Proceedings of the Association of Environmental Engineering and Science Professors (AEESP) 2017 Conference, University of Michigan, Ann Arber, June 20-22 (2017).
3. **Kim, K.-Y.** and I.S. Kim, “Tubular ultrafiltration microbial fuel cells (UF-MFCs) for high-quality effluent and electricity production”, Proceedings of the 4th International Microbial Fuel Cell Conference, Sep 1-4, Cairns, Australia (2013).
4. **Kim, K.-Y.**, E. Yang, M.-Y. Lee and I.S. Kim, “Effect of Polydopamine-coated UF Membrane on Biofouling and Power generation in UF-MFC”, Proceedings of the 2013 International Environmental Engineering Conference and Annual Meeting of the Korean Society of Environmental Engineers, June 11-13, COEX, Seoul, Korea (2013).
5. Lee, M.-Y., **K.-Y. Kim**, E. Yang and I.S. Kim, “Evaluation of Hydrogen Production in Osmotic Membrane integrated Microbial Electrolysis Cell”, Proceedings of the 2013 International Environmental Engineering Conference and Annual Meeting of the Korean Society of Environmental Engineers, Jun. 11-13, COEX, Seoul, Korea (2013).
6. **Kim, K.-Y.**, E. Yang, K.-J. Chae, M.-J. Choi and I.S. Kim, “Enhanced power generation and wastewater treatment using single-chamber membrane microbial fuel cells”, Proceedings of the IWA World Water Congress & Exhibition, Sep 16-21, Busan, Korea (2012).
7. **Kim, K.-Y.**, E. Yang, M.-Y. Lee and I.S. Kim, “Ion transports and power generation in flow-through type ultrafiltration microbial fuel cell with different permeate flux”, Proceedings of the 5th International Desalination Workshop, Oct 28-31, Jeju, Korea (2012).
8. Yang, E., **K.-Y. Kim**, M.-Y. Lee and I.S. Kim, “The Effect of Direct Proton Transfer Pathway between the Anode and Cathode in Microbial Electrodialysis Cells on Biohydrogen Generation and Seawater Desalination”, Proceedings of the 5th International Desalination Workshop, Oct 28-31, Jeju, Korea (2012).
9. Yang, E., M.-J. Choi, **K.-Y. Kim** and I.S. Kim, “The effect of pH and concentration of catholyte on hydrogen peroxide production and salt removal in microbial desalination

- cell”, Abstract Proceedings of Korean Society on Water Quality- Korean Society of Water and Wastewater Fall Conference, Daejeon Convention Center, Daejeon, Nov 2-3 (2011).
10. **Kim, K.-Y.**, M.-J. Choi, E. Yang, K.-J. Chae, A. Jang and I.S. Kim, “Sustainable water treatment and energy production using membrane microbial fuel cells (MMFCs)”, Proceedings of the 3rd International Microbial Fuel Cell Conference, June 6-8, Leeuwarden, Netherland (2011).
 11. Choi, M.-J., **K.-Y. Kim**, E. Yang, A. Jang, K.-J. Chae and I.S. Kim, “Continuous Biohydrogen production with a platinum catalyst-free cathode in a solar-powered single chamber microbial electrolysis cell”, Proceedings of the 3rd International Microbial Fuel Cell Conference, June 6-8, Leeuwarden, Netherland (2011).
 12. Yang, E., M.-J. Choi, **K.-Y. Kim**, A. Jang and I.S. Kim, “Simultaneous production of hydrogen peroxide and water desalination using microbial desalination cell”, Proceedings of the 3rd International Microbial Fuel Cell Conference, June 6-8, Leeuwarden, Netherland (2011).
 13. Choi, M.-J., E. Yang, **K.-Y. Kim**, L. Kim, A. Jang, K.-J. Chae, S. Han and I.S. Kim, “Effect of inoculum types on performance of microbial fuel cell”, Abstract Proceedings of 2010 KSEE Fall Conference, Song-Do Convensia, In-Cheon, Dec 2-3 (2010).
 14. Choi, M.-J., **K.-Y. Kim**, E. Yang, A. Jang, K.-J. Chae, S. Han and I.S. Kim, “Biohydrogen production in single-chambered microbial electrolysis cell with membrane electrode assembly”, Abstract Proceedings of 2010 KSEE Fall Conference, Song-Do Convensia, In-Cheon, Dec 2-3 (2010).
 15. Choi, M.-J., K.-J. Chae, **K.-Y. Kim**, F.F. Ajayi and I.S. Kim, “Biohydrogen Evolution in Bioelectrochemical Cell with Assistance of Phototrophs and Heterotrophs”, 7th IWA Leading-Edge Conference on Water and Wastewater Technologies, Phoenix, USA, June 2-4 (2010).
 16. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, F.F. Ajayi, I.-S. Chang and I.S. Kim, “Application of solar-powered microbial electrolysis cell to domestic wastewater treatment”, Proceedings of the IWA World Water Congress & Exhibition, Montreal, Sep 19-24 (2010).
 17. Choi, M.-J., Kyu-Jung Chae, **K.-Y. Kim**, F.F. Ajayi, I.-S. Chang and I.S. Kim, “Photo-induced biohydrogen production based on the cooperation of phototrophics and heterotrophics”, Proceedings of the IWA World Water Congress & Exhibition, Montreal Sep 19-24 (2010).
 18. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, F.F. Ajayi, S.-Y. Kim, I.-S. Chang and I.S. Kim, “Hybridization of glucose enriched and propionate enriched anodes to reduce electron losses in glucose-fed microbial fuel cells (MFCs)” Proceedings of the 2nd Microbial Fuel Cell Conference June 10-12, GIST, Gwangju, Korea (2009).
 19. Choi, M.-J., K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, I.-S. Chang and I.S. Kim, “Influence of membrane biofouling on performances of microbial fuel cells” Proceedings of the 2nd

Microbial Fuel Cell Conference June 10-12, GIST, Gwangju, Korea (2009).

20. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, F.F. Ajayi, S.Y. Kim and I.S. Kim, “Comprehension about pathway of microbial metabolites generated by electricigens based on substrate and external resistance”, Environmental Engineers, Proceedings of Fall Conference, University of Seoul, Nov 6-7 (2008).
21. Choi, M.-J., K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, I.-S. Chang and I.S. Kim, “Visible Light Induced Biohydrogen Production from Glucose Using Mg Chlorophyll-a”, Korean Society of Environmental Engineers, Proceedings of Fall Conference, University of Seoul, Nov 6-7, (2008).
22. Choi, M.-J., K.-J. Chae, **K.-Y. Kim**, J.-Y. Lee and I.S. Kim, “Effect of catholyte pH and type of cation exchange membrane on the performance of microbial fuel cell”, Proceedings of the KSEE spring conference, University of Ulsan, May 1-2, (2008).
23. Choi, M.-J., K.-J. Chae, F.F. Ajayi, **K.-Y. Kim**, J. Lee and I.S. Kim, “Effects of catholyte pH and membrane type on the performances of microbial fuel cells”, Proceedings of the 59th Annual Meeting of the International Society of Electrochemistry, Sep 7-12, Seville, Spain (2008).
24. Chae, K.-J., M.-J. Choi, F.F. Ajayi, **K.-Y. Kim** and I.S. Kim, “Comparisons of the anodic bacterial community structures and metabolic viabilities between electricity-generating microbial fuel cells and biohydrogen producing bioelectrochemical cells”, Proceedings of the Microbial Fuel Cells International Symposium, Penn state university, USA, May 27 (2008).
25. **Kim, K.-Y.**, K.-J. Chae, M.-J. Choi, F.F. Ajayi and I.S. Kim, “Cation exchange membrane-less microbial fuel cell via convective proton transfer”, Proceedings of the Microbial Fuel Cells International Symposium, Penn state university, USA, May 27 (2008).
26. Ajayi, F.F., M.-J. Choi, K.-J. Chae, **K.-Y. Kim** and I.S. Kim, “Electrically assisted Biohydrogen production in dual chamber acetate fed reactor with and without cation exchange membrane” Proceedings of the 2008 Asian Bio-Hydrogen Symposium, December 26-28, Harbin, China (2008).

Other Presentations

Poster presentation at Purdue Prospective Faculty Workshop, Feb 29-Mar 1, 2016, “Power Generation and Domestic Wastewater Treatment using Microbial Fuel Cell and Anaerobic Fluidized Membrane Bioreactor (MFC-AFMBR) System under Different Hydraulic Retention Times and COD Loading Rates”.

AWARDS AND HONORS

Participate (Travel grant by Purdue University) Purdue Prospective Faculty Workshop, Feb

29-Mar 1, 2016.

Excellent Oral Presentation Award, “Simultaneous power generation and water treatment using microbial fuel cell equipped with ultrafiltration membrane”, Korean Society of Environmental Engineers, June 2012.

The Minister of Environment Award (First place), 7th International Olympiad for Environmental Scientists and Engineers, held by Ministry of Environment Republic of Korea, November 2007.

TEACHING ACTIVITIES

Guest Lecturer (2016 Spring Semester) at Penn State University

Water and Wastewater Treatment (CE371)

Guest Lecturer (2016 Fall Semester) at Penn State University

Environmental Transport Processes (CE576)

Guest Lecturer (2017 Spring Semester) at Penn State University

Water and Wastewater Treatment (CE371)

Guest Lecturer (2017 Fall Semester) at Penn State University

Environmental Microbiology for Engineers (CE479)

PROFESSIONAL SERVICES

Conferences and Workshop

Paper review and evaluation, College of Engineering Research Symposium (CERS) 2016, Penn State University, USA, April 5, 2016

Paper review and evaluation, College of Engineering Research Symposium (CERS) 2017, Penn State University, USA, April 4, 2017

Paper review and evaluation, The 2nd International Conference on Energy Engineering and Environmental Protection (EEEP 2017), Sanya, China, November 20-22, 2017

Research Proposal Review

National Science Foundation (NSF) Proposal Review Panel (CBET), 2016

National Science Foundation (NSF) Ad Hoc Reviewer (SBIR Phase I), 2016

National Science Foundation (NSF) Ad Hoc Reviewer (SBIR Phase II), 2016

National Science Foundation (NSF) Proposal Review Panel (CBET), 2017

Professional Memberships

American Association for the Advancement of Science (AAAS) (since 2017)

Association of Environmental Engineering and Science Professors (AEESP) (since 2015)
International Society for Microbial Electrochemistry and Technology (ISMET) (since 2013)
International Water Association (IWA) (since 2011)
Korean Society of Environmental Engineers (KSEE) (since 2008)

Journal Reviewer

ACS Omega
ACS Sustainable Chemistry & Engineering
Advanced Materials
Angewandte Chemie
Aquacultural Engineering
Aquaculture
Bioresource Technology
Desalination and Water Treatment
Electrochimica Acta
Energies
Energy & Environmental Science
Energy Science & Engineering
Environmental Engineering Science
Environmental Science & Technology Letters
Environmental Science: Water Research & Technology
Fuel Cells
International Journal of Hydrogen Energy
Journal of Chemical Technology and Biotechnology
Journal of Cleaner Production
Journal of Electroanalytical Chemistry
Journal of Environmental Management
Journal of Low Power Electronics
Journal of Membrane Science
Journal of Water and Health
Journal of Water Reuse and Desalination
Science of the Total Environment
Scientific Reports
Separation and Purification Technology
Small
Sustainable Energy & Fuels
Water Environment Research
Water Research