XING XIE, Ph.D.

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Education

2014	Ph.D., Civil and Environmental Engineering, Stanford University, CA, USA
2012	M.S., Materials Science and Engineering, Stanford University, CA, USA
2008	M.S., Environmental Science and Engineering, Tsinghua University, Beijing, China
2006	B.S., Environmental Science and Engineering, Tsinghua University, Beijing, China

Experience

2017-present	Assistant Professor and Carlton S. Wilder Junior Professor, Georgia Tech
2014-2017	Post-Doctoral Scholar, Caltech
2011-2014	Henry Fan Research Fellow, Stanford
2009-2011	David and Lucile Packard Foundation Research Fellow, Stanford
2008-2009	Larry C. K. Yung Research Fellow, Stanford
2003-2008	Research Assistant, Tsinghua

Awards & Honors

Received by Xie

2020	Emerging Investigator, Sustainable Nanotechnology Organization (SNO)
2020	Emerging Investigator, Journal of Material Chemistry A
2019	Faculty Early Career Development (CAREER) Award, National Science Foundation
2019	Emerging Investigator, Environmental Science: Nano
2019	Paul A. Duke GIFT Action Plan Achievement Mentor Award, Georgia Tech
2019	Bill Schutz Junior Faculty Teaching Award, Georgia Tech
2018	Class of 1969 Teaching Fellow, Georgia Tech
2014	Best Student Research Award, S. Calif. Chin. Amer. Environ. Protec. Assoc. (SCCAEPA)
2013	Student Award, Sustainable Nanotechnology Organization (SNO)
2012	Chinese Government Award for Outstanding Self-Financed Students Abroad
2012	Graduate Student Award in Environmental Chemistry, American Chemical Society (ACS)
2011-2014	Stanford Interdisciplinary Graduate Fellowship (SIGF)
2009-2011	Stanford Graduate Fellowship (SGF)
2008-2009	Stanford Engr. School / Civil & Environ. Engr. Fellowship
2008	Excellent Graduate, Tsinghua Univ.
2008	Excellent Master Thesis, Tsinghua Univ.

Received by Xie Group members

2021	Jianfeng Zhou; Graduate Student Award in Environmental Chemistry, ACS
2021	Mourin Jarin; NanoPitch First Place, Sustainable Nanotechnology Organization (SNO)
2021	Mourin Jarin, Nissim Gore-Datar, Jianfeng Zhou; First Entrepreneurial Impact Competition Winner ($5,000), CEE@Georgia Tech

2020	Zeou Dou; The Second Pan-American Nanotechnology Conference Travel Award
2020	Mourin Jarin, Nissim Gore-Datar, Jianfeng Zhou; The Water Council's Tech Challenge - Finalist
2019	Jianfeng Zhou; SNO Student Award, Sustainable Nanotechnology Organization (SNO)
2019	Jianfeng Zhou; Outstanding Graduate Student, CEE@Georgia Tech
2018-2020	Jianfeng Zhou; NWRI-BioLargo Graduate Fellowship, National Water Research Institute

Publications

(* Resulted from work done at Georgia Tech; Student co-authors in the Xie group at GT are in boldface)

Journal publications

Total peer-reviewed articles: 65; Citation: >6500; H-index: 25

[1] **Jianfeng Zhou**, **Ting Wang**, Xing Xie. Locally enhanced electric field treatment (LEEFT) promotes the performance of ozonation for bacterial inactivation by disrupting cell membrane. *Environmental Science & Technology*, 2020, 54(21): 14017-14025.*

[2] **Wensi Chen**, **Ting Wang**, **Zeou Dou**, Xing Xie. Self-driven "microfiltration" enabled by porous superabsorbent polymer (PSAP) beads for biofluid specimen processing and storage. *ACS Materials Letters*, 2020, 2: 1545-1554.*

[3] **Jianfeng Zhou**, Fang Yang, Yuxiong Huang, Wenbo Ding, Xing Xie. Smartphone-powered efficient water disinfection at the point of use. *npj Clean Water*, 2020, 3, 40.*

[4] Tianqi Zhang, **Ting Wang**, Benjamin Mejia-Tickner, Jessica Kissel, Xing Xie, Ching-Hua Huang. Inactivation of bacteria by peracetic acid combined with ultraviolet irradiation: mechanism and optimization. *Environmental Science & Technology*, 2020, 54(15): 9652-9661.*

[5] Kristian Dubrawski, Sung-Geun Woo, Wei Chen, Xing Xie, Yi Cui, Craig Criddle. In-vivo polymerization ("hard-wiring") of bioanodes enables rapid start-up and order-of-magnitude higher power density in a microbial battery. *Environmental Science & Technology*, 2020, 54(22):14732-14739.

[6] **Jianfeng Zhou**[#], **Cecilia Yu**[#], **Ting Wang**, Xing Xie. Development of nanowire-modified electrodes applied in the locally enhanced electric field treatment (LEEFT) for water disinfection. *Journal of Materials Chemistry A*, 2020, 8, 12262-12277.*

[7] **Zeou Dou**, **Ting Wang**, **Wensi Chen**, **Beichen Lin**, Hai Dong, Wei Sun, Xing Xie. Self-driven membrane filtration by core-shell polymer composites. *Journal of Materials Chemistry A*, 2020, 8, 15942-15950.*

[8] **Jianfeng Zhou**, **Ting Wang**, **Wensi Chen**, **Beichen Lin**, Xing Xie. Emerging investigator series: Locally enhanced electric field treatment (LEEFT) with nanowire modified electrodes for water disinfection in pipes. *Environmental Science: Nano*, 2020, 7: 397-403.*

[9] **Peirui Liu**, **Jianfeng Zhou**, **Ting Wang**, **Cecilia Yu**, Yu Hong[$], Xing Xie[$]. Efficient microalgae inactivation and growth control by locally enhanced electric field treatment (LEEFT). *Environmental Science: Nano*, 2020, 7: 2021-2031.*

[10] **Peirui Liu**, **Jianfeng Zhou**, Yu Hong[$], Xing Xie[$]. Electric-field enhanced microalgae inactivation using a flow-through copper ionization cell. *Journal of Hazardous Materials*, 2020, 123320.*

[11] **Jianfeng Zhou**, **Ting Wang**, **Cecilia Yu**, Xing Xie. Locally enhanced electric field treatment (LEEFT) for water disinfection. *Frontier of Environmental Science & Engineering*, 2020, 14: 78.*

[12] **Beichen Lin**, Jin Xu, **Cecilia Yu**, Luodan Chen, Miao Lu[$], Xing Xie[$]. A multi-parameter in-situ water quality analyzer based on a portable document scanner and 3D printed self-sampling cells. *Analytica Chimica Acta*, 2020, 1101: 176-183.*

[13] Chunyan Xu, **Wensi Chen**, Haiping Gao, Xing Xie, Yongsheng Chen. Cellulose nanocrystal/silver (CNC/Ag) thin-film nanocomposite nanofiltration membranes with multifunctional properties. *Environmental Science: Nano*, 2020, 7: 803-816.*

[14] Can Wang, Lu Song, Zhiwei Zhang, Yizhu Wang, Xing Xie. Microwave-induced release and degradation of airborne antibiotic resistance genes (ARGs) from *Escherichia coli* bioaerosol based on microwave absorbing material. *Journal of Hazardous Materials*, 2020, 394: 122535.

[15] **Peirui Liu**, Ting Wang, Ziyu Yang, Yu Hong, Xing Xie, Yanglong Hou. Effects of Fe_3O_4 nanoparticle fabrication and surface modification on *Chlorella* sp. harvesting efficiency. *Science of The Total Environment*, 2020, 704: 135286.

[16] **Wensi Chen**, **Jinyue Jiang**, Wenlong Zhang, **Jianfeng Zhou**, **Ting Wang**, Ching-Hua Huang, Xing Xie. Silver nanowire-modified filter with controllable silver ion release for point-of-use disinfection. *Environmental Science & Technology*, 2019, 53 (13), 7504-7512.*

[17] Wenbo Ding[#], **Jianfeng Zhou**[#], Jia Cheng[#], Zhaozheng Wang, Hengyu Guo, Changsheng Wu, Sixing Xu, Zhiyi Wu, Xing Xie[$], Zhong Lin Wang[$]. TriboPump: A low-cost, hand-powered water disinfection system. *Advanced Energy Materials*, 2019, 1901320.*

[18] **Jianfeng Zhou**, **Ting Wang**, Xing Xie. Rationally designed tubular coaxial-electrode copper ionization cells (CECICs) harnessing non-uniform electric field for efficient water disinfection. *Environment international*, 2019, 128: 30-36.*

[19] **Ting Wang**, Hang Chen, **Cecilia Yu**, Xing Xie. Rapid determination of the electroporation threshold for bacteria inactivation using a lab-on-a-chip platform. *Environment International*, 2019, 132: 105040.*

[20] **Zhengyang Huo**, Hai Liu, Wenlong Wang, Yunhong Wang, Yinhu Wu, Xing Xie[$], Hongying Hu[$]. Low-voltage alternating current powered polydopamine-protected copper phosphide nanowire for electroporation-disinfection in water. *Journal of Materials Chemistry A*, 2019, 7(13): 7347-7354.*

[21] **Zhengyang Huo**, Hai Liu, **Cecilia Yu**, Yinhu Wu, Hongying Hu[$], Xing Xie[$]. Elevating the stability of nanowire electrodes by thin polydopamine coating for low-voltage electroporation-disinfection of pathogens in water. *Chemical Engineering Journal*, 2019, 369: 1005-1013.*

[22] Meng Ye, Mauro Pasta, Xing Xie, Kristian L. Dubrawski, Jianqiao Xu, Chong Liu, Yi Cui, Craig S. Criddle. Charge-free mixing entropy battery enabled by low-cost electrode materials. *ACS Omega*, 2019, 4(7): 11785-11790.

[23] Xingyu Lin, Xiao Huang, Katharina Urmann, Xing Xie, Michael R. Hoffmann. Digital LAMP on a Commercial Membrane. *ACS Sensors*, 2019, 4(1): 242-249.

[24] Bingjun Han, Shuai Liang, Bo Wang, Jianzhong Zheng, Xing Xie, Kang Xiao, Xiaomao Wang, Xia Huang. Simultaneous determination of surface energy and roughness of dense membranes by a modified contact angle method. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2019, 562: 370-376.

[25] **Zhengyang Huo**, **Jianfeng Zhou**, Yutong Wu, Yinhu Wu, Hai Liu, Nian Liu, Hongying Hu[$], Xing Xie[$]. Cu_3P nanowire enabling high-efficiency, reliable, and energy-efficient low-voltage electroporation-inactivation of pathogens in water. *Journal of Materials Chemistry A*, 2018, 6, 18813-18820.*

[26] **Zhengyang Huo**, Guoqiang Li, Tong Yu, Chao Feng, Yun Lu, Yinhu Wu, **Cecilia Yu**, Xing Xie[$], Hongying Hu[$]. Cell transport prompts the performance of low-voltage electroporation for cell inactivation, *Scientific Reports*, 2018, 8(1), 15832.*

[27] **Zhengyang Huo**, Guoqiang Li, Tong Yu, Yun Lu, Hao Sun, Yinhu Wu, **Cecilia Yu**, Xing Xie[$], Hongying Hu[$]. Impact of water quality parameters on bacteria inactivation by low-voltage electroporation: mechanism and control. *Environmental Science: Water Research & Technology*, 2018, 4(6), 872-881.*

[28] Xingyu Lin, Xiao Huang, Yanzhe Zhu, Katharina Urmann, Xing Xie, Michael R. Hoffmann. Asymmetric membrane for digital detection of single bacteria in milliliters of complex water samples. *ACS Nano*, 2018, 12(10), 10281-10290.

[29] Yanzhe Zhu, Xiao Huang, Xing Xie, Janina Bahnemann, Xingyu Lin, Xunyi Wu, Siwen Wang, Su Young Ryu, Michael R. Hoffmann. Propidium monoazide pretreatment on a 3D-printed microfluidic device for efficient PCR Determination of 'live versus dead' microbial cells. *Environmental Science: Water Research & Technology*, 2018, 4(7), 956-963.
[30] Xiao Huang, Xingyu Lin, Katharina Urmann, Lijie Li, Xing Xie, Sunny Jiang, Michael R. Hoffmann. A smartphone based in-gel loop mediated isothermal amplification (gLAMP) system enables rapid coliphage MS_2 quantification in environmental waters. *Environmental science & technology*, 2018, 52(11), 6399-6407.
[31] Zhengyang Huo, Yufeng Luo, Xing Xie, Chao Feng, Kaili Jiang, Jiaping Wang, Hongying Hu. Carbon-nanotube sponges enabling high-efficiency and reliable cell inactivation by low-voltage electroporation. *Environmental Science: Nano*, 2017, 4: 2010-2017.
[32] Desheng Kong[#], Xing Xie[#], Zhiyi Lu, Meng Ye, Zhenda Lu, Jie Zhao, Craig S. Criddle, Yi Cui. Use of an intermediate solid-state electrode to enable efficient hydrogen production from dilute organic matter. *Nano Energy*, 2017, 39: 499-505.
[33] Zhengyang Huo, Xing Xie[$], Tong Yu, Yun Lu, Chao Feng, Hongying Hu[$]. Nanowire-modified 3D electrode enabling low-voltage electroporation for water disinfection. *Environmental Science & Technology*, 2016, 50(14): 7641-7649.
[34] Xing Xie, Janina Bahnemann, Siwen Wang, Yang Yang, Michael R. Hoffmann. "Nanofiltration" enabled by super-absorbent polymer beads for concentrating microorganisms in water samples. *Scientific Reports*, 2016, 6: 20516.
[35] Xing Xie, Siwen Wang, Janina Bahnemann, Sunny C. Jiang, Michael R. Hoffmann. Sunlight-activated propidium monoazide (PMA) pretreatment for differentiation of viable and dead bacteria by quantitative real-time PCR. *Environmental Science & Technology Letters*, 2016, 3(2): 57-61.
[36] Xing Xie, Craig S. Criddle, Yi Cui. Design and fabrication of bioelectrodes for microbial bioelectrochemical systems. *Energy & Environmental Science*, 2015, 8(12): 3418-3441. (Invited review)
[37] Xing Xie[#], Meng Ye[#], Chong Liu, Po-Chun Hsu, Craig S. Criddle, Yi Cui. Use of low cost and easily regenerated Prussian Blue cathodes for efficient electrical energy recovery in a microbial battery. *Energy & Environmental Science*, 2015, 8(2): 546-551.
[38] Po-Chun Hsu, Xiaoge Liu, Chong Liu, Xing Xie, Hye Ryoung Lee, Alex J. Welch, Tom Zhao, Yi Cui. Personal thermal management by metallic nanowire-coated textile. *Nano Letters*, 2015, 15(1): 365-371.
[39] Xing Xie[#], Wenting Zhao[#], Hye Ryoung Lee, Chong Liu, Meng Ye, Wenjun Xie, Bianxiao Cui, Craig S. Criddle, Yi Cui. Enhancing the nanomaterial bio-interface by addition of mesoscale secondary features: crinkling of carbon nanotube films to create subcellular ridges. *ACS Nano*, 2014, 8(12): 11958-11965.
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[41] Meng Ye, Mauro Pasta, Xing Xie, Yi Cui, Craig S. Criddle. Performance of a mixing entropy battery alternately flushed with wastewater effluent and seawater for recovery of salinity-gradient energy. *Energy & Environmental Science*, 2014, 7(7): 2295-2300.
[42] Xing Xie, Meng Ye, Po-Chun Hsu, Nian Liu, Craig S. Criddle, Yi Cui. Microbial battery for efficient energy recovery. *PNAS*, 2013, 110(40): 15925-15930.
[43] Mingliang Zhang[#], Xing Xie[#], Mary Tang, Craig S. Criddle, Yi Cui, Shan X. Wang. Magnetically ultra-responsive nanoscavengers for next-generation water purification systems. *Nature Communications*, 2013, 4: 1866.
[44] Chong Liu, Xing Xie, Wenting Zhao, Nian Liu, Peter A. Maraccini, Lauren M. Sassoubre, Alexandria B. Boehm, Yi Cui. Conducting nanosponge electroporation for affordable and high-efficiency disinfection of bacteria and viruses in water. *Nano Letters*, 2013, 13(9): 4288-4293.

[45] Guihua Yu, Xing Xie, Lijia Pan, Zhenan Bao, Yi Cui. Hybrid nanostructured materials for high-performance electrochemical capacitors. *Nano Energy*, 2013, 2(2): 213-234. (Invited review)
[46] Xing Xie, Guihua Yu, Nian Liu, Zhenan Bao, Craig S. Criddle, Yi Cui. Graphene-sponges as high-performance low-cost anodes for microbial fuel cells. *Energy & Environmental Science*, 2012, 5(5): 6862-6866.
[47] Xing Xie, Meng Ye, Liangbing Hu, Nian Liu, James R. McDonough, Wei Chen, Husam. N. Alshareef, Craig S. Criddle, Yi Cui. Carbon nanotube-coated macroporous sponge for microbial fuel cell electrodes. *Energy & Environmental Science*, 2012, 5(1): 5265-5270.
[48] Xing Xie, Liangbing Hu, Mauro Pasta, George F. Wells, Desheng Kong, Craig S. Criddle, Yi Cui. Three-dimensional carbon nanotube-textile anode for high-performance microbial fuel cells. *Nano Letters*, 2011, 11(1): 291-296.
[49] Xing Xie, Mauro Pasta, Liangbing Hu, Yuan Yang, James R. McDonough, Judy Cha, Craig S. Criddle, Yi Cui. Nano-structured textiles as high-performance aqueous cathodes for microbial fuel cells. *Energy & Environmental Science*, 2011, 4(4): 1293-1297.
[50] Liangbing Hu, Wei Chen, Xing Xie, Nian Liu, Yuan Yang, Hui Wu, Yan Yao, Mauro Pasta, Husam N. Alshareef, Yi Cui. Symmetrical MnO_2-carbon nanotube-textile nanostructures for wearable pseudocapacitors with high mass loading. *ACS Nano*, 2011, 5(11): 8904-8913.
[51] Wei Chen, R. B. Rakhi, Liangbing Hu, Xing Xie, Yi Cui, Husam N. Alshareef. High-performance nanostructured supercapacitors on a sponge. *Nano Letters*, 2011, 11(12): 5165-5172.
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[53] Guangyuan Zheng, Liangbing Hu, Hui Wu, Xing Xie, Yi Cui. Paper supercapacitors by a solvent-free drawing method. *Energy & Environmental Science*, 2011, 4(9): 3368-3373.
[54] Guihua Yu, Liangbing Hu, Michael Vosgueritchian, Huiliang Wang, Xing Xie, James R. McDonough, Xu Cui, Yi Cui, Zhenan Bao. Solution-processed graphene/MnO_2 nanostructured textiles for high-performance electrochemical capacitors. *Nano Letters*, 2011, 11(7): 2905-2911.
[55] Liangbing Hu, Hui Wu, Yifang Gao, Anyuan Cao, Hongbian Li, James R. McDough, Xing Xie, Min Zhou, Yi Cui. Silicon-carbon nanotube coaxial sponge as Li-ion anodes with high areal capacity. *Advanced Energy Materials*, 2011, 1(4): 523-527.
[56] Chaoyang Fu, Xing Xie, Jingjing Huang, Tong Zhang, Qianyuan Wu, Jining Chen, Hongying Hu. Monitoring and evaluation of removal of pathogens at municipal wastewater treatment plants. *Water Science & Technology*, 2010, 61(6): 1589-1599.
[57] Xin Zhao, Hongying Hu, Xing Xie, Qianyuan Wu, Jing-Jing Huang. Method of establishing biological standards for reclaimed water based on health risk assessment. *Water & Wastewater Engineering*, 2010, 36(5): 43-48. (In Chinese)
[58] Xing Xie, Hongying Hu, Meiting Guo, Qianyuan Wu. Assessment method of the pathogenic microbial exposure caused by aerosolization of reclaimed water. *Environmental Science*, 2009, 30(1): 65-69. (In Chinese)
[59] Yu Hong, Hongying Hu, Xing Xie, Akiyoshi Sakoda, Masaki Sagehashi, Fengmin Li. Gramine-induced growth inhibition, oxidative damage and antioxidant responses in freshwater cyanobacterium *Microcystis aeruginosa*. *Aquatic Toxicology*, 2009, 91(3): 262-269.
[60] Xing Xie, Tong Zhang, Hongying Hu, Zusheng Zong. Correlation between pathogenic protozoan and fecal coliform in sewage reclamation treatment system. *China Water & Wastewater*, 2008, 24(13): 34-36. (In Chinese)
[61] Tong Zhang, Xing Xie, Hongying Hu, Yudong Song, Qianyuan Wu, Zusheng Zong. Improvement of detection method of *Cryptosporidium* and *Giardia* in reclaimed water. *Frontiers of Environmental Science & Engineering*, 2008, 2(3): 380-384.
[62] Yu Hong, Hongying Hu, Xing Xie. Responses of enzymatic antioxidants and non-enzymatic antioxidants in the cyanobacterium *Microcystis aeruginosa* to allelochemical ethyl 2-methyl

acetoacetate (EMA) isolated from reed (*Phragmites communis*). *Journal of Plant Physiology*, 2008, 165(12):1264-1273.

[63] Tong Zhang, Hongying Hu, Xing Xie, Zusheng Zong. Removal characteristic and mechanism of *Cryptosporidium* and *Giardia* from secondary effluent in flocculation process. *Environmental Science*, 2008, 29(8): 212-215. (In Chinese)

[64] Tong Zhang, Hongying Hu, Zusheng Zong, Xing Xie. Removal characteristic of pathogenic protozoan in wastewater treatment and reclamation process. *Environmental Science*, 2008, 29(7): 207-212. (In Chinese)

[65] Xing Xie, Hongying Hu. Formation and influence of organic chloramines during wastewater chlorination. *China Water & Wastewater*, 2007, 23(24): 20-23. (In Chinese)

([#] Equal contribution; [$] Co-corresponding author)

Book chapters

[1] **Ting Wang**, **Cecilia Yu**, Xing Xie. Microfluidics for environmental applications. In: *Advances in Biochemical Engineering/Biotechnology*. Springer, 2020.*

[2] Chong Liu, Xing Xie, Yi Cui. Antimicrobial nanomaterials for water disinfection. In: *Nano-Antimicrobials - Progress and Prospects*. Springer, 2012.

Patents

Issued

[1] Meng Ye, Yi Cui, Mauro Pasta, Xing Xie, Craig S. Criddle, Vaishnav V. Davey. Charge-free mixing entropy battery. US Patent 10003110.

[2] Xing Xie, Craig S. Criddle, Yi Cui, Meng Ye. Microbial batteries with re-oxidizable solid-state electrodes for conversion of chemical potential energy into electrical energy. US Patent 9509028.

[3] Brian J. Cantwell, Craig S. Criddle, Kevin Lohner, Yaniv D. Scherson, George F. Wells, Koshlan Mayer-Blackwell, Xing Xie. Microbial production of nitrous oxide coupled with chemical reaction of gaseous nitrous oxide. US Patent 8932848.

Application

[1] Jianfeng Zhou, Xing Xie, Ting Wang. Systems and methods for disinfecting fluids. International Patent Application PCT/US2019/046461.

[2] Jianfeng Zhou, Xing Xie. Systems and methods for disinfecting fluids. US Patent Application 16782430.

[3] Zeou Dou, Xing Xie. Self-powered 3D filtration. US Patent Application 17095152.

[4] Wensi Chen, Xing Xie. Super-absorbent polymer (SAP) beads for collection of biofluid samples. US Provisional Patent Application 63017185.

[5] Wensi Chen, Xing Xie. Smart porous hydrogels for biological and pharmaceutical liquid storage. US Provisional Patent Application 63155379.

Presentations

Invited Conference and Workshop Presentations

[1] Locally enhanced electric field treatment (LEEFT) for sustainable water disinfection. The 9th Sustainable Nanotechnology Organization Conference, Nov. 2020, Virtual. (Plenary talk)

[2] LEEFT and its application for water disinfection. The 4th National Conference on Water Treatment and Reuse of China, August. 2020, Virtual. (Plenary talk)
[3] Nano-enhanced LEEFT for next-generation water disinfection. The 6th Chinese Environmental Scholars Forum, May. 2019, Houston, TX, USA. (Invited talk)
[4] Nanowire-enabled low-voltage electroporation for microbial inactivation in water. The 235th Electrochemical Society Meeting, May. 2019, Dallas, TX, USA. (Invited talk)
[5] Electrode development for nano-enabled low-voltage electroporation disinfection. KAUST Research Conference - Nano-Enabled Water Technologies: Opportunities & Challenges, Jan. 2019, Jeddah, Saudi Arabia. (Invited talk)
[6] Rational design of electrodes in electrochemical energy devices. The 4th Sustainable Nanotechnology Organization Conference, Nov. 2015, Portland, OR, USA. (Invited talk)
[7] Microbial batteries for energy recovery from wastewater. Southern California Chinese American Environmental Protection Association (SCCAEPA) - Los Angeles Environmental Forum, Aug. 2014, Los Angeles, CA, USA. (Invited talk)

Conference and Workshop Presentations

[1] Locally enhanced electric field treatment (LEEFT) for water disinfection. *American Water Works Association (AWWA) Virtual Summit*, Feb. 2021, Virtual. (Oral)
[2] LEEFT: A nano-enabled technology for water disinfection. *The 8th Sustainable Nanotechnology Organization Conference*, Nov. 2019, Los Angeles, CA, USA. (Oral)
[3] Developing nanowire-modified electrodes for LEEFT disinfection. *Gordon Research Conference: Environmental Nanotechnology*, Jun. 2019, Newry, ME, USA. (Poster)
[4] Locally enhanced electric field treatment (LEEFT) for next-generation water disinfection. *Association of Environmental Engineering and Science Professors Research and Education Conference*, May. 2019, Phoenix, AZ, USA. (Poster)
[5] Electrode development for electroporation disinfection cells. *The 257th American Chemical Society National Meeting*, Mar. 2019, Orlando, FL, USA. (Oral)
[6] Water-safety education & training for high school, undergraduate, & graduate students (WE-HUG). *Georgia Science Teachers Association Annual Conference*, Feb. 2019, Columbus, GA, USA. (Oral)
[7] Cu_3P nanowires enabling low-voltage electroporation-inactivation of pathogens in water. *The 7th Sustainable Nanotechnology Organization Conference*, Nov. 2018, Washington DC, USA. (Poster)
[8] Advancing healthy communities through environmental engineering and science. *Association of Environmental Engineering and Science Professors Research and Education Conference*, June. 2017, Ann Arbor, MI, USA. (Poster)
[9] Concentrating microorganisms in water samples by super-absorbent polymer (SAP) beads for microbial detection. *The 251st American Chemical Society National Meeting*, Mar. 2016, San Diego, CA, USA. (Oral)
[10] SAP-enabled "nanofiltration" for concentrating microorganisms in water samples. *The 4th Sustainable Nanotechnology Organization Conference*, Nov. 2015, Portland, OR, USA. (Poster)
[11] Microbial electrochemical cells for energy recovery: from electrode development to configuration design. *Materials Research Society Spring Meeting*, Apr. 2014, San Francisco, CA, USA. (Oral)
[12] Nano-enhanced microbial electrochemical cells. *The 2nd Sustainable Nanotechnology Organization Conference*, Nov. 2013, Santa Barbara, CA, USA. (Oral)
[13] Environmental nanotechnology: from microbial fuel cells to water disinfection. *International Conference on Sustainability and Environmental Protection*, Oct. 2013, San Francisco, CA, USA. (Oral)
[14] Waste to energy by microbial batteries. *Association of Environmental Engineering and Science Professors 50th Anniversary Conference*, Jul. 2013, Denver, CO, USA. (Poster)
[15] Environmental nanotechnology: from microbial fuel cells to water disinfection. *Gordon Research Conference: Environmental Nanotechnology*, Jun. 2013, Stowe, VT, USA. (Poster)

[16] Three-dimensional electrodes for bioelectrochemical systems. *The 243rd American Chemical Society National Meeting*, Mar. 2012, San Diego, CA, USA. (Oral)
[17] Highly conductive textile electrodes for microbial fuel cells. *The 239th American Chemical Society National Meeting*, Mar. 2010, San Francisco, CA, USA. (Poster)

Invited Seminar Presentations

[1] Water disinfection by LEEFT. *Clemson University*, Sept. 2020, Clemson, SC, USA.
[2] Water disinfection using locally enhanced electric field treatment (LEEFT). *University of California, Riverside*, Nov. 2019, Riverside, CA, USA.
[3] Water disinfection using locally enhanced electric field treatment (LEEFT). *University of California, Los Angeles*, Nov. 2019, Los Angeles, CA, USA.
[4] Electrode development for low-voltage electroporation disinfection. *Dalian University of Technology*, May. 2018, Dalian, China.
[5] Novel materials and devices for sustainable and reliable water and energy. *University of California, Irvine*, May. 2016, Irvine, CA, USA.
[6] Novel materials and devices for sustainable and reliable water and energy. *Massachusetts Institute of Technology*, Mar. 2016, Boston, MA, USA.
[7] Novel materials and devices for sustainable and reliable water and energy. *University of Utah*, Mar. 2016, Salt Lake City, UT, USA.
[8] Novel materials and devices for sustainable and reliable water and energy. *University of Houston*, Mar. 2016, Houston, TX, USA.
[9] Novel materials and devices for sustainable and reliable water and energy. *Georgia Tech*, Feb. 2016, Atlanta, GA, USA.
[10] Novel materials and devices for sustainable and reliable water and energy. *Louisiana State University*, Feb. 2016, Baton Rouge, LA, USA.
[11] Novel materials and devices for sustainable and reliable water and energy. *Northwestern University*, Feb. 2016, Evanston, IL, USA.
[12] Novel materials and devices for sustainable and reliable water and energy. *Washington University in St. Louis*, Feb. 2016, St. Louis, MO, USA.
[13] Novel materials for harnessing microorganisms: cultivation, inactivation, and detection. *Georgia Tech*, Nov. 2015, Atlanta, GA, USA.
[14] Advanced materials and nanotechnology for energy, water, and environmental applications. *Joint BioEnergy Institute*, May. 2014, Emeryville, CA, USA.
[15] Advanced materials and nanotechnology for energy, water, and environmental applications. *Harvard University*, Apr. 2014, Boston, MA, USA.
[16] Advanced materials and nanotechnology for environmental applications. *Rice University*, Feb. 2014, Houston, TX, USA.
[17] Advanced materials and nanotechnology for environmental applications. *University of Southern California*, Feb. 2014, Los Angeles, CA, USA.
[18] Environmental nanotechnology: from microbial electrochemical cells to water purification. *University of California, Berkeley*, Jun. 2013, Berkeley, CA, USA.

Professional Activities

Conference service

08/2021 The 262nd ACS National Meeting & Exposition (Session organizer)
06/2021 The 95th ACS Colloid and Surface Science Symposium (Session organizer)
05/2021 The 5th International Conference on Capacitive Deionization & Electrosorption (Organizer)
05/2019 The 6th Chinese Environmental Scholars Forum (Section moderator)

03/2019 The 257th ACS National Meeting & Exposition (Session organizer)
08/2018 The 256th ACS National Meeting & Exposition (Session organizer)
06/2017 The 2017 AEESP Research and Education Conference (Section moderator)

Editorial service

2020-present Chemical Engineering Journal Advances (Editorial Board Member)
2019-2020 Environmental International (Guest Editor)
Special issue: Advanced functional materials for environmental applications
2019-2020 Water Environment Research (Guest Editor)
Special issue: Electrochemical water treatment

Journal reviewer

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Proposal panels and reviews

National Science Foundation. 2020, 2021
AEESP SSC Academic Job Application Review. 2020
Water Research Foundation. 2018, 2020
Canada Foundation for Innovation. 2019
Singapore National Research Foundation. 2019
ACS Petroleum Research Fund. 2017

Memberships

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