Yi Jiang

Assistant Professor

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Education

Ph.D., Energy, Environ. & Chemical Eng., Washington University in St. Louis, 2016
M.S., Environmental Sciences, Peking University, 2010
B.E., Environmental Engineering, Huazhong University of Science & Technology, 2007

Professional Experience

2017-present	Assistant Professor	Hong Kong Polytechnic University
	Other affiliations:	
		State Key Laboratory of Marine Pollution (SKLMP)
		Guangdong-Hong Kong-Macau Joint Laboratory for Environmental Pollution and Control
		Research Institute for Sustainable Urban Development (RISUD), PolyU
2017-2017	Postdoctoral Researcher	Harvard University
2016-2017	Postdoctoral Researcher	Washington University in St. Louis
2011-2016	Graduate Research Assistant	Washington University in St. Louis
2010-2011	Research Associate	Tsinghua University Innovation Inst.
2007-2010	Graduate Research Assistant	Peking University

Research Interests

Advanced water treatment, Environmental nanotechnology, Aerosol technology

Honors & Awards

- Outstanding Reviewer, *Environmental Science: Nano*, 2021
- Excellence in Review Award, *Environmental Science & Technology*, 2019
- Early Career Award, Hong Kong Research Grants Council, 2019
- Outstanding Doctoral Dissertation Award, CH2M/AEESP, 2017
- Graduate Student Award, American Chemical Society Environmental Chem. Division, 2016
- Doctoral Student Research Award, Washington University in St. Louis, 2015
- Travel Grant, Gordon Research Conference on Environmental Nanotechnology, 2015
- Charles & Marlene Buescher Graduate Fellowship Honoring Dr. D.W. Ryckman, 2011
- Graduate Academic Excellence Scholarship, Peking University, 2007-2010

- Selected Participant, Inspire Antarctica Expedition, 2009

Awards to Advisees

- Zhishang Wan (PhD student), Excellent Presentation Award, The 1st Greater Bay Area Symposium on Membranes and Membrane Processes (GBA-MMP), 2022
- Jin Zhang (UG student), Hong Kong PhD Fellowship (declined), 2022
- Delai Zhong (postdoc research fellow), the Hong Kong Polytechnic University Centrally Funded Postdoc Fellowship, 2021

Publications

Peer-reviewed Publications

(36, citations > 1900, H-index: 25 by *Google Scholar*; ***** denotes corresponding author)

1. Zhong, D.; Zhang, J.; Lv, L.; Lv, Y.*; **Jiang, Y.***, Magnetically ultrastabilized graphene oxide-based membrane filter for point-of-use water treatment. *ACS ES&T Engineering* 2022, 2, (5), 769-779. ***Supplementary Cover Feature***
2. Zeng, Q.; Wan, Z.; **Jiang, Y.**; Fortner, J., Enhanced polysulfone ultrafiltration membrane performance through fullerol addition: A study towards optimization. *Chemical Engineering Journal* 2022, 431, 134071.
3. Peng, B.; Liu, Z.; **Jiang, Y.***, Aggregation of DNA-grafted nanoparticles in water: the critical role of sequence-dependent conformation of DNA coating. *The Journal of Physical Chemistry B* 2022, 126, (4), 847-857. ***Supplementary Cover Feature***
4. Li, B.; Liao, P.; Liu, P.; Wang, D.; Ye, Z.; Wang, J.; Chen, J.; Ning, Z.; **Jiang, Y.**; Liu, C., Formation, aggregation, and transport of NOM–Cr(III) colloids in aquatic environments. *Environmental Science: Nano* 2022, 9, (3), 1133-1145.
5. Wan, Z.; **Jiang, Y.***, Synthesis-structure-performance relationships of nanocomposite polymeric ultrafiltration membranes: a comparative study of two carbon nanofillers. *Journal of Membrane Science* 2021, 620, 118847.
6. Zhong, D.; Zhao, Z.; **Jiang, Y.**; Yang, X.; Wang, L.; Chen, J.; Guan, C.-Y.; Zhang, Y.; Tsang, D. C.; Crittenden, J. C., Contrasting abiotic As (III) immobilization by undissolved and dissolved fractions of biochar in Ca^{2+}-rich groundwater under anoxic conditions. *Water Research* 2020, 183, 116106.
7. Zhong, D.; **Jiang, Y.**; Zhao, Z.; Wang, L.; Chen, J.; Ren, S.; Liu, Z.; Zhang, Y.; Tsang, D. C. W.; Crittenden, J. C., pH Dependence of arsenic oxidation by rice-husk-derived biochar: roles of redox-active moieties. *Environmental Science & Technology* 2019, 53, (15), 9034-9044.
8. Li, Q.; Xie, L.; **Jiang, Y.**; Fortner, J. D.; Yu, K.; Liao, P.; Liu, C., Formation and stability of NOM-Mn(III) colloids in aquatic environments. *Water Research* 2019, 149, 190-201.
9. **Jiang, Y.***; Zeng, Q.; Biswas, P.; Fortner, J. D.*, Graphene oxides as nanofillers in polysulfone ultrafiltration membranes: shape matters. *Journal of Membrane Science* 2019, 581, 453-461.

10. Zhong, D.; Zhang, Y.; Wang, L.; Chen, J.; **Jiang, Y.**; Tsang, D. C. W.; Zhao, Z.; Ren, S.; Liu, Z.; Crittenden, J. C., Mechanistic insights into adsorption and reduction of hexavalent chromium from water using magnetic biochar composite: key roles of Fe_3O_4 and persistent free radicals. *Environmental Pollution* 2018, 243, 1302-1309.

11. Xing, X.; Ni, J.; Zhu, X.; **Jiang, Y.**; Xia, J., Maximization of current efficiency for organic pollutants oxidation at BDD, Ti/SnO_2-Sb/PbO_2, and Ti/SnO_2-Sb anodes. *Chemosphere* 2018, 205, 361-368.

12. Vaze, N.#; **Jiang, Y.#**; Mena, L.; Zhang, Y.; Bello, D.; Leonard, S. S.; Morris, A. M.; Eleftheriadou, M.; Pyrgiotakis, G.; Demokritou, P., An integrated electrolysis – electrospray – ionization antimicrobial platform using Engineered Water Nanostructures (EWNS) for food safety applications. *Food Control* 2018, 85, 151-160. (# equal contribution)

13. Lu, L.; Hu, Y.; Jiang, H.; Wang, Y.; **Jiang, Y.**; Huang, S.; Niu, X.; Biswas, P.; Li, C., Multi-shelled $LiMn_{1.95}Co_{0.05}O_4$ cages with a tunable Mn oxidation state for ultra-high lithium storage. *New Journal of Chemistry* 2018, 42, (5), 3953-3960.

14. Li, W.; Liao, P.; Oldham, T.; **Jiang, Y.**; Pan, C.; Yuan, S.; Fortner, J. D., Real-time evaluation of natural organic matter deposition processes onto model environmental surfaces. *Water Research* 2018, 129, 231-239.

15. Li, W.; Hu, Y.; Jiang, H.; **Jiang, Y.**; Wang, Y.; Huang, S.; Biswas, P.; Li, C., Fluxing template-assisted synthesis of sponge-like Fe_2O_3 microspheres toward efficient catalysis for CO oxidation. *Applied Surface Science* 2018, 444, 763-771.

16. Li, H.; Xing, X.; Wang, K.; Zhu, X.; **Jiang, Y.**; Xia, J., Improved BDD anode system in electrochemical degradation of p-nitrophenol by corroding electrode of iron. *Electrochimica Acta* 2018, 291, 335-342.

17. Liao, P.; Li, W.; Wang, D.; **Jiang, Y.**; Pan, C.; Fortner, J. D.; Yuan, S., Effect of reduced humic acid on the transport of ferrihydrite nanoparticles under anoxic conditions. *Water Research* 2017, 109, 347-357.

18. Liao, P.; Li, W.; **Jiang, Y.**; Wu, J.; Yuan, S.; Fortner, J. D.; Giammar, D. E., Formation, aggregation, and deposition dynamics of NOM-iron colloids at anoxic–oxic interfaces. *Environmental Science & Technology* 2017, 51, (21), 12235-12245.

19. **Jiang, Y.***; Zhu, X.; Xing, X., Electrochemical oxidation of phenolic compounds at boron-doped diamond anodes: structure–reactivity relationships. *The Journal of Physical Chemistry A* 2017, 121, (22), 4326-4333.

20. **Jiang, Y.**; Raliya, R.; Liao, P.; Biswas, P.; Fortner, J., Graphene oxides in water: assessing stability as a function of material and natural organic matter properties. *Environmental Science: Nano* 2017, 4, (7), 1484-1493.

21. Hu, Y.; Jiang, H.; Li, Y.; Wang, B.; Zhang, L.; Li, C.; Wang, Y.; Cohen, T.; **Jiang, Y.**; Biswas, P., Engineering the outermost layers of TiO_2 nanoparticles using in situ Mg doping in a flame aerosol reactor. *AIChE Journal* 2017, 63, (3), 870-880.

22. Nie, Y.; Wang, W.-N.; **Jiang, Y**.; Fortner, J.; Biswas, P., Crumpled reduced graphene oxide-amine-titanium dioxide nanocomposites for simultaneous carbon dioxide adsorption and photoreduction. *Catalysis Science & Technology* 2016, 6, (16), 6187-6196.

23. **Jiang, Y.**; Raliya, R.; Fortner, J. D.; Biswas, P., Graphene oxides in water: correlating morphology and surface chemistry with aggregation behavior. *Environmental Science & Technology* 2016, 50, (13), 6964–6973.

24. **Jiang, Y.**; Liu, D.; Cho, M.; Lee, S. S.; Zhang, F.; Biswas, P.; Fortner, J. D., In situ photocatalytic synthesis of Ag nanoparticles (nAg) by crumpled graphene oxide composite membranes for filtration and disinfection applications. *Environmental Science & Technology* 2016, 50, (5), 2514–2521.

25. **Jiang, Y.**; Biswas, P.; Fortner, J. D., A review of recent developments in graphene-enabled membranes for water treatment. *Environmental Science: Water Research & Technology* 2016, 2, (6), 915-922.

26. **Jiang, Y.**; Wang, W.-N.; Liu, D.; Nie, Y.; Li, W.; Wu, J.; Zhang, F.; Biswas, P.; Fortner, J. D., Engineered crumpled graphene oxide nanocomposite membrane assemblies for advanced water treatment processes. *Environmental Science & Technology* 2015, 49, (11), 6846-6854.

27. Wang, W.-N.; **Jiang, Y.**; Fortner, J. D.; Biswas, P., Nanostructured graphene-titanium dioxide composites synthesized by a single-step aerosol process for photoreduction of carbon dioxide. *Environmental Engineering Science* 2014, 31, (7), 428-434.

28. **Jiang, Y.**; Wang, W.-N.; Biswas, P.; Fortner, J. D., Facile aerosol synthesis and characterization of ternary crumpled graphene–TiO_2–magnetite nanocomposites for advanced water treatment. *ACS Applied Materials & Interfaces* 2014, 6, (14), 11766-11774.

29. Wang, W.-N.; **Jiang, Y.**; Biswas, P., Evaporation-induced crumpling of graphene oxide nanosheets in aerosolized droplets: confinement force relationship. *The Journal of Physical Chemistry Letters* 2012, 3, (21), 3228-3233.

30. Zhu, X.; Ni, J.; Xing, X.; Li, H.; **Jiang, Y.**, Synergies between electrochemical oxidation and activated carbon adsorption in three-dimensional boron-doped diamond anode system. *Electrochimica Acta* 2011, 56, (3), 1270-1274.

31. Xing, X.; Zhu, X.; Li, H.; **Jiang, Y.**; Ni, J., Electrochemical oxidation of nitrogen-heterocyclic compounds at boron-doped diamond electrode. *Chemosphere* 2011, 86, (4), 368-375.

32. Zhu, X.; Ni, J.; Wei, J.; Xing, X.; Li, H.; **Jiang, Y.**, Scale-up of BDD anode system for electrochemical oxidation of phenol simulated wastewater in continuous mode. *Journal of Hazardous materials* 2010, 184, (1-3), 493-498.

33. Zhu, X.; Ni, J.; Li, H.; **Jiang, Y**.; Xing, X.; Borthwick, A. G., Effects of ultrasound on electrochemical oxidation mechanisms of p-substituted phenols at BDD and PbO_2 anodes. *Electrochimica Acta* 2010, 55, (20), 5569-5575.

34. Li, H.; Zhu, X.; **Jiang, Y.**; Ni, J., Comparative electrochemical degradation of phthalic acid esters using boron-doped diamond and Pt anodes. *Chemosphere* 2010, 80, (8), 845-851.

35. **Jiang, Y.**; Zhu, X.; Li, H.; Ni, J., Effect of nitro substituent on electrochemical oxidation of phenols at boron-doped diamond anodes. *Chemosphere* 2010, 78, (9), 1093-1099.
36. Yuan, S.; Xi, Z.; **Jiang, Y.**; Wan, J.; Wu, C.; Zheng, Z.; Lu, X., Desorption of copper and cadmium from soils enhanced by organic acids. *Chemosphere* 2007, 68, (7), 1289-1297.

Manuscripts under review or in preparation

37. Peng, B.; Liao, P.; **Jiang, Y**.*, Preferential interactions of engineered single stranded DNA with highly aromatic natural organic matter: mechanistic insights and implications for optimizing practical aquatic applications, *In revision.*
38. Wan, Z.; Zhao, Z.; Deng, B.; **Jiang, Y.***, A critical review on nanofiller-enhanced polymeric ultrafiltration membranes: mechanistic understanding, performance meta-analysis, and future opportunities. *Under review*
39. Lan, J.; Wen, F.; Ren, Y.; Liu, G.; **Jiang**, **Y.;** Wang, Z.; Zhu, X.*, Bioelectrokinetic and bioelectrochemical remediation of petroleum-contaminated soils enhanced by electric fields. *Under review*
40. Jiang, K.; Li, H.; Liu, W.; **Jiang**, **Y.;** Zhang, Z.; Ju, F.; Song, T.; Li, B.; Wang, X.; Zhu, C., Multiple antibiotic-resistant bacteria resisted to electrochemical disinfection with variation of key antibiotic resistance genes. *Under review*
41. Zhong, D.; Wu, Y.; Lv, L.; Yang, X.; Lv, Y.; **Jiang, Y.***, A magnetic membrane chemical reactor for sustainable and efficient removal of multiple pollutants in water. *In preparation*
42. Cui, J.; Yang, J.; Li, Z.; Weber, M.; Li, R.; Yan, J.; Zhao, Y.; Guo, P.; Chan, T.; **Jiang, Y.**; Xiao, T.; Li, X.; Li, X., Effect of calcium and acetate on phosphate interactions with an iron-titanium oxide composite: Implications for phosphorus removal and recovery in wastewater treatment. *In preparation*
43. **Jiang, Y.***; Wang, W.*; Wang, P.; Zhu, X., Accerlarating nanotechnlogy applications in water treatment: the enabling role of aerosol engineering. *In prepartion*
44. Wan, Z.; Wang, W.; **Jiang, Y.***, One-step engineering membrane surfaces via electrospray-assisted deposition and polymeric solvent bonding-induced integration of functional nanomaterials. *In prepration*

Non-peer-reviewed Publications

1. **Jiang, Y.**; Quan, X.; Jiang, G.; Li, X., Current Prospective on Environmental Nanotechnology Research in China. *Environmental Science & Technology* 2019, 53, (8), 4001-4002.

Book Chapters

1. Zhong, D.; Gan, L.; **Jiang**, **Y.** *, Engineered graphene oxide as advanced separation material for water treatment. In: Matthew Tirrell; Chen Junhong (eds) *The World Scientific Reference of Water Science Volume 2: Nanotechnology for Water Treatment and Water Interfaces*. World Scientific Publishing Company, 2022. (https://doi.org/10.1142/12514-vol2)

2. **Jiang, Y.***; Peng, B.; Wan, Z.; Kim, C.; Li, W.; Fortner, J.*, Nanotechnology as a key enabler for effective environmental remediation technologies, In: Guibin Jiang; Xiangdong Li (eds) *A New Paradigm for Environmental Chemistry and Toxicology: From Concepts to Insights*. Springer, 2020, pp. 197-207.
3. Contributing author. Transformation: case studies of innovation cities, 2011, Tsinghua University Press: Beijing, China. (In Chinese)
4. Contributing author. From strategy to action: an overview of sustainable development in the European Union, 2008, Social Sciences Academic Press: Beijing, China. (In Chinese)

Presentations

Invited Talks

1. The 1st Greater Bay Area Symposium on Membranes and Membrane Processes (GBA-MMP), Guangzhou/Hong Kong, China, April 2022
   Emerging membranes via aerosol-assisted printing
2. Hong Kong Polytechnic University (RISUD), Hong Kong, China, July 2021
   New paradigm of separation membranes
3. Hong Kong Polytechnic University (CEE), Hong Kong, China, April 2021
   Scalable application of functional engineered nanomaterials in water treatment membranes: a tale of two strategies
4. City University of Hong Kong (SEE), Hong Kong, China, March 2021
   Scalable application of functional engineered nanomaterials in water treatment membranes: a tale of two strategies
5. Chinese Academy of Agricultural Sciences, Beijing, China, October 2019
   Assessing stability of engineered nanomaterials in aquatic systems: the knowns and unknowns
6. Huazhong University of Science & Technology, Wuhan, China, December 2016
   Crumpled graphene oxide: aerosol synthesis and environmental applications
7. China University of Geosciences, Wuhan, China, June 2016
   Crumpled graphene oxide: aerosol synthesis and environmental applications
8. Washington University in St. Louis, St. Louis, MO, United States, March 2016
   Crumpled graphene oxide: aerosol synthesis and environmental applications

Conference Presentations

1. The 2nd International Symposium on Water Sustainability: Circular Resource Technology, Yonsei University, Seoul, South Korea, January 2020
   Engineered Nanomaterials in Water: Assessing Stability as a Function of Material and Natural Organic Matter Properties [Oral]
2. The 2nd International Conference on All Material Fluxes in River Eco-Systems, Peking University, Beijing, China, October 2019

Engineered Nanomaterials in Water: Assessing Stability as a Function of Material and Natural Organic Matter Properties [Oral]

3. The NSFC-RGC Young Scholars Forum: Frontiers in Ecology & Environmental Science and Green Development, Guangxi University, Nanning, China, September 2019
   Aqueous stability of engineered Au-DNA nanoparticles: effects of DNA characteristics and water chemistry [Oral]
4. The 10th National Conference on Environmental Chemistry, Nankai University, Tianjin, China. August 2019
   Aqueous stability of engineered Au-DNA nanoparticles: effects of DNA characteristics and water chemistry [Oral]
5. Gordon Research Conference on Environmental Nanotechnology, Newry, ME, United States. June 2019
   Aqueous stability of engineered Au-DNA nanoparticles: effects of DNA characteristics and water chemistry [Poster]
6. The 6th Cross-strait Forum on Sustainable Urban Development, Tongji University, Shanghai, China. May 2019
   Graphene oxide-enabled water treatment membranes [Oral]
7. The 3rd National Conference on Water Treatment and Reuse, Guangzhou, China. March 2019
   Graphene oxides as nanofillers in polysulfone ultrafiltration membranes: shape matters [Oral]
8. The HKPU-HIT Joint Workshop on Sustainable Urban Water Environment, Yi Xing, Jiang Su, China. November 2017
   Aerosol technology enabling advanced water treatment and food disinfection [Oral]
9. The 9th National Conference on Environmental Chemistry, Hangzhou, Zhejiang, China. October 2017
   Graphene oxide-enabled water treatment membranes [Oral]
10. Gordon Research Conference on Environmental Nanotechnology, Mount Snow Resort, VT, United States. June 2015
    Aqueous stability of reduced graphene oxide: effects of surface chemistry, morphology, and humic acids [Poster]
    Engineered crumpled graphene oxide nanocomposite membrane assemblies for advanced water treatment processes [Poster]
11. AEESP Research and Education Conference, New Haven, CT, United States. June 2015
    Aqueous stability of reduced graphene oxide: effects of surface chemistry, morphology, and humic acids [Poster]
12. Mid-America Environmental Engineering Conference, Missouri S&T, Rolla, MO, United States. November 2014
    Engineered crumpled graphene oxide nanocomposite membrane assemblies for advanced water treatment processes [Oral]
13. 248th ACS National Meeting, San Francisco, CA, United States. August 2014.

Engineered crumpled graphene nanocomposites for photocatalytic environmental reduction applications [Oral]

Crumpled graphene oxide nanocomposites for multifunctional water treatment membrane structures [Oral]

14. 247th ACS National Meeting, Dallas, TX, United States. March 2014.

High performance crumpled graphene-TiO_2 photocatalysts for water treatment technologies [Oral]

Conference Presentations by Advisees (presenter underlined)

1. ACS National Meeting, Chicago, IL, United States. August 2022.

Zhishang Wan, ***Yi Jiang.*** *One-step scalable surface nanoengineering of filtration membranes via polymeric solvent bonding-assisted incorporation of biocidal nanomaterials* [Oral-Virtual]

2. ACS National Meeting, Chicago, IL, United States. August 2022.

*Lihong Gan, Jin Zhang, Zhishang Wan, **Yi Jiang**. Aerosol-assisted printing of polyelectrolyte multilayer nanofiltration membranes for advanced water treatment* [Oral-Virtual]

3. The 1st Greater Bay Area Symposium on Membranes and Membrane Processes (GBA-MMP), Guangzhou/Hong Kong, China, April 2022

Zhishang Wan, ***Yi Jiang.*** *Scalable application of functional engineered nanomaterials in water treatment membranes.* [Oral-Virtual]

4. ACS National Meeting, Atlanta, GA, United States. August 2021.

*Delai Zhong, **Yi Jiang**. Achieving an ultrastble graphene oxide-based membrane in a magnetic field* [Oral-Virtual]

5. ACS National Meeting, Atlanta, GA, United States. August 2021.

*Bo Peng, **Yi Jiang**. Aggregation of DNA-grafted nanoparticles in water: roles of cations and natural organic matter* [Oral-Virtual]

Research Projects

External Research Grants

1. Polyelectrolyte Nanofiltration Membranes via Aerosol-assisted Printing: Establishing Fabrication-Structure-Performance Relationships towards Scalable Manufacturing and Applications in Advanced Water and Wastewater Treatment (PI, *Funded by Hong Kong Research Grants Council General Research Fund Scheme, HK$ 1,115,452, 2023-2025)*

2. Development and Application of Nanocomposite Membranes via 3D Printing for Water Treatment (PI, *Funded by Shenzhen Science and Technology Innovation Commission, RMB 1,000,000, 2022-2024*)

3. Advanced Nanocomposite Membranes Synthesized by An Aerosol-assisted Fabrication Approach for Water and Wastewater Treatment (PI, *Funded by Hong Kong Research Grants Council Early Career Scheme, HK$ 613,988, 2020-2022*)

4. Carbon Nanomaterials-Polysulfone Nanocomposite Ultrafiltration Membranes: Revealing Synthesis-Structure-Performance Relationships (PI, *Funded by National Natural Science Foundation of China, RMB 260,000, 2020-2022*)
5. Enhanced Separation and Sludge Refinery for Wastewater Treatment-Solving the Nexus of Pollution Control and Resource Recovery in Mega Cities (Co-PI, *PI: Prof. Xiaoyan Li (HKU); Funded by Hong Kong Research Grants Council Theme-based Research Scheme, HK$ 600,000 to Jiang Lab, 2020-2022*)

Internal Research Grants

1. Potable Water Reuse in Hong Kong: Development of Viable Treatment Strategy and Risk Assessment Framework (PI, *Funded by Guangdong-Hong Kong-Macau Joint Laboratory for Environmental Pollution and Control Seed Fund Scheme, HK$ 250,000, 2021-2022*)
2. Scalable Surface Nanoengineering of Hollow Fiber Membrane via Electrospray-assisted Deposition and Incorporation of Biocidal Nanomaterials (PI, *Funded by The Hong Kong Polytechnic University Undergraduate Research and Innovation Scheme (URIS), HK$ 30,000, 2021-2023*)
3. New Paradigm of Water Separation Membranes (PI, *Funded by Research Institute of Sustainable Urban Development Emerging Frontier Area Scheme, The Hong Kong Polytechnic University, HK$ 1,108,000, 2019-2022*)
4. Development of Advanced Nano-enabled Ultrafiltration Membranes by Aerosol-assisted Approaches (PI, *Funded by The Hong Kong Polytechnic University, HK$ 200,000, 2019-2020*)

Equipment Projects

1. Surface Zeta Potential Cell (PI, *The Hong Kong Polytechnic University Department of Civil and Environmental Engineering Large Equipment Fund, HK$110,000, 2022-2023*)
2. An Advanced Research Platform for One Sustainable Health in Shenzhen Research Institute (Co-PI, *PI: Xiangdong Li; The Hong Kong Polytechnic University Large Equipment Fund for Shenzhen Research Institute (SZRI), HK$4,198,293, 2022-2023*).
3. The mIRange Optical Photothermal Infrared (O-PTIR) Microscope (Co-I, *PI: Dr. Kar Hei Fang; The Hong Kong Polytechnic University Large Equipment Fund, HK$3,948,000, 2021-2022)*
4. Emriver Em4 Geomodel (Em4) (Co-I, *PI: Dr. Huanfeng Duan; The Hong Kong Polytechnic University Large Equipment Fund, HK$900,000, 2021-2022*)
5. Integrated Continuous Flow Reactor with Upgraded Liquid Chromatography for Environmental Engineering Education (Co-I, *PI: Dr. Shao Yuan Leu; The Hong Kong Polytechnic University Large Equipment Fund, HK$1,325,140, 2021-2022*)

Teaching Projects

1. 港澳與內地高等學校師生交流計劃項目: 2021 年復旦-港澳長三角地區環境和可持續發展社會實踐（PI, funded by Ministry of Education of China）

2. 港澳與內地高等學校師生交流計劃項目: 2022 年華中科技大學-香港理工大學綠色零碳社區聯合創新實踐 （Co-PI, funded by Ministry of Education of China）

Patents

1. Fortner, J.; Biswas, P.; **Jiang, Y.**; Wang, W., Composite nanostructures having a crumpled graphene oxide shell. US Patent US10874992 (PCT/US2015/021084)
2. **Jiang, Y.**; Wan, Z., 过滤膜的表面改性方法及复合过滤膜. Chinese Patent Application (No. 202110272172.4)
3. **Jiang**, **Y.**; Zhong, D., A magnetic confinement method enabling efficient (re)loading and sustainable reactivity of magnetic catalyst in a membrane chemical reactor, US Provisional Patent Application (No. 63/367,650)

Teaching and Advising

Faculty – The Hong Kong Polytechnic University (2017-present, total 4 subjects)

1. Environmental Management Systems and Audit (CSE539, GR)
   Environmental Management Systems (CSE467/40467, UG)
2. Water and Wastewater Treatment Techniques for EESD (CSE 30461/40461, UG)
   Water and Wastewater Treatment (CSE 518, GR)
3. Environmental Impact Assessment - Theory and Practice (CSE40462, UG)
4. Water and Waste Management (CSE30337, UG)

Teaching Assistant – Washington University in St. Louis (2012-2014, total 3 subjects)

1. Environmental Organic Chemistry (EECE 448/548, Fall 2014)
2. Environmental Engineering Laboratory (E63 408A/508A, Spring 2013)
3. Chemical Engineering Thermodynamics (ChE 320, Fall 2012)

Teaching Development Activities – The Hong Kong Polytechnic University (2017-present)

1. Certificate in Conducting Peer Review of Teaching Practice, 2022
2. Certificate in Introduction to Academic Advising, 2021
3. Certificate in Introduction to University Teaching, 2017

Postdoc, PhD & MSc Advising – The Hong Kong Polytechnic University (2017-present)

Current:

1. Dr. Delai Zhong (Postdoctoral Research Fellow, 2019-present)
2. Dr. Zhenyu Zhao (Postdoctoral Research Fellow, 2022-present)
3. Dr. Yangtao Wu (Postdoctoral Research Fellow, to join August 2022)
4. Zhishang Wan (PhD student, 2018-present; anticipated graduation Dec., 2022)
5. Bo Peng (PhD student, 2018-present; anticipated graduation Dec., 2022)
6. Lihong Gan (PhD student, 2020-present)
7. Yuchen Wu (PhD student, 2021-present)
8. Beizhao Chen (PolyU-SUSTech Joint PhD student, to join August 2022)

Graduated:

9. Chengyao Peng (MSc student, graduated August 2021)
10. Jiting Wang (MSc student, graduated August 2021)
11. Theo Yu Chung Lam (MPhil Student, graduated June 2020, co-advised by Prof. Henry Po-Heng Lee, Imperial College London)
12. Yu Zhu (MSc student, graduated August 2020)
13. Zhiying Deng (MSc student, graduated August 2019)
14. Xiaoxuan Huang (MSc student, graduated August 2019)

Undergraduate Advising – The Hong Kong Polytechnic University (2017-present)

1. UG research advising
   Jin Zhang (2020-2022), Yanni Weng (2020-present)
2. UG academic advising
   16 students (2017-2018), 18 students (2018-2019), 22 students (2020-2021), 21 students (2021-2022)
3. Final year project (FYP) advising
   Pak Hei Lui, Zhong Guang Wu, Siu Hin Lo, Yanni Weng, Ching Fung Cheng (total 5, 2022-2023); Jin Zhang, Guldana Akhmet (total 2, 2021-2022); Wing Lun Ng, Chun Ko, Ho Yu Yung, Melvin Chau (total 4, 2020-2021); Yau Sing Cheng, Hiu Ching Cheung, Man Wai Hoo, Tina Kan, Hei Man Kwok, Yuet Hang Lam, King Hei Tang (total 7, 2019-2020); Yu-an Lu, Shuang Ao Lim, Haoyu Dong, Lance Mak, Benny Fan, Andy Leung (total 6, 2018-2019)
4. International exchange students advising
   Tomas Kroupa (Summer 2018, UCT Prague, Czech)

Research Mentor – Harvard University and Washington University in St. Louis (2013-2017)

Lucas Pepe Mena (Spring 2017, Harvard University/University of Sao Paulo), Qingqing Zeng (Fall 2015, WUStL EECE PhD), Sung Yoon Jung (Fall 2015, WUStL EECE PhD), Isaac Fuhrman (Summer 2015, University of Nebraska-Lincoln, NSF REU), Daniel Plants (Summer 2014, Rice University), Yao Nie (Fall 2013, WUStL EECE PhD), Siyuan An (Fall 2013, WUStL EECE PhD), Christine Le (Summer 2013, Brown University, NSF REU)

Services and Outreach

University and Departmental Services

1. Departmental Summer Placement Officer (EESD) (2021-present)
2. Deputy Program Leader, MSc in Environmental Management and Engineering (2020-present)
3. Member, Departmental Learning & Teaching Committee (2019-present)
4. Member, Departmental Health & Safety Committee (2017-2019, 2021-present)
5. Member, Departmental Management Committee (2020-2021)
6. Deputy Program Leader, BEng (Honors) in Environmental Engineering and Sustainable Development (EESD) (2019-2020)
7. Departmental Examination Officer (2019-2021)
8. Departmental Green Officer (2018-2020)

Conference and Workshop Organization

1. Co-organizer, the PolyU (Hong Kong) -Yonsei University (South Korea) Joint Workshop on Water Sustainability. 7th January 2019, Hong Kong.

Journal Peer-Review and Editorial Service

ACS Environmental Au; Chemical Communications; Chemosphere; Environmental Engineering Science; Environmental Science & Technology; Environmental Science: Nano; Industrial & Engineering Chemistry Research; Journal of Aerosol Science; Journal of Hazardous Materials; Journal of Membrane Science; Nature Communications; National Science Review; Water Research.

Editorial Board Member, *Chemical Engineering Journal Advances*, 2020-present

Editorial Advisory Board Member, *ACS Environmental Au*, 2021-present

Grant Proposal Review

Hong Kong Research Institute of Textiles and Apparel (HKRITA)
National Science Center Poland
University of Macau Multi-Year Research Grant

Outreach Activities

Clean Water Competition - a Half-day Special Program for Secondary School Students in Hong Kong, Hong Kong Polytechnic University, Hong Kong, November 9th, 2019
STEM Lecture *Sustainable Nanotechnology*, Hong Kong Polytechnic University, Hong Kong, December 18th, 2018
STEM Lecture *Sustainable Nanotechnology for a Better Future*, Wong Shiu Chi Secondary School, Hong Kong, March 16th, 2018

Professional Affiliation

Assoication of Environmental Engineering & Science Professors (AEESP)
Chinese-American Professors in Environmental Engineering and Science (CAPEES)
American Chemical Society (ACS)
International Water Association (IWA)