Jinyue (Jerry) JIANG

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ACADEMIC APPOINTMENTS

Assistant Professor, Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University	Starting Jan 2027
Postdoctoral Fellow, Arizona State University	2025–2026
Graduate Research Assistant, Princeton University	2020–2025

EDUCATION

Ph.D. in Civil and Environmental Engineering, Princeton University, Princeton, NJ	May 2025
M.A. in Civil and Environmental Engineering, Princeton University, Princeton, NJ	May 2022
M.S. in Civil and Environmental Engineering, Stanford University, Stanford, CA	June 2020
B.Eng. in Environmental Engineering, Tsinghua University, Beijing, China	July 2019

RESEARCH AREAS

Water-Energy-Digital Nexus, Artificial Intelligence and Geospatial Modeling in Environmental Application, Sustainable AI, Resource Recovery, Water Treatment and Decarbonization, Microbial Electrochemistry

PUBLICATIONS

*22 publications, published or accepted · 1018 citations (Google Scholar, Nov 2026). *Corresponding author.*

22. **Jiang, J.***, Tian, Y., Tong, T., & Westerhoff, P. (2026). Patterns and Mitigation of Large Language Models' Hallucinations on Environmental Regulatory Facts. *Environmental Science & Technology*. doi.org/10.1021/acs.est.6c06286
21. **Jiang, J.**, Zhu, J. J.*, & Ren, Z. J. (2026). Putting Large Language Models into Environmental Context. *Environmental Science & Technology*, *60*(42), 29791–29801. doi.org/10.1021/acs.est.6c06045
20. **Jiang, J.**, Nguyen, T., Acero, J., Islam, M., & Westerhoff, P.* (2026). Nationwide assessment of de facto wastewater reuse reveals vulnerable drinking water systems and infrastructure gaps. *Environmental Science & Technology*, *60*(44), 32179–32191. doi.org/10.1021/acs.est.6c09442 **(Cover Article)**
19. Si, B., Wang, Z., Watson, J., Summers, S., Li, Y., Yu, S., Yang, H., Yang, Z., Heyne, J. S., **Jiang, J.**, Ren, Z. J., Ma, H., Wang, C., Wang, P., & Zhang, Y.* (2026). A circular hydrothermal refinery for sustainable aviation fuel from food waste. *Nature Sustainability*, *9*(8), 1232–1242. doi.org/10.1038/s41893-026-01848-1
18. Khan, N. N., **Jiang, J.**, Islam, M., Quon, H., Muenich, R. L., Rudko, N., Kamanmalek, S., Rice-Boayue, J., Garner, E., Westerhoff, P., Pruden, A., & Hamilton, K. A.* (2026). Mapping biological and chemical dimensions of antimicrobial resistance pollution and exposures due to treated wastewater discharges into US surface waters at the national scale. *Environmental Pollution*, *405*, Article 128588. doi.org/10.1016/j.envpol.2026.128588
17. **Jiang, J.**, Du, L., Li, X., Chen, C., & Ren, Z. J.* (2026). Spatially resolved national assessment of renewable natural gas potential from water resource recovery facilities through biomethanation. *Applied Energy*, *417*, Article 128025. doi.org/10.1016/j.apenergy.2026.128025
16. **Jiang, J.**, Du, L., Si, B., Kawale, H. D., Wang, Z., Summers, S., Lopez-Ruiz, J. A., Li, S., Zhang, Y., & Ren, Z. J.* (2025). Pilot microbial electrolysis cell closes the hydrogen loop for hydrothermal wet waste conversion to jet fuel. *Water Research*, *268*(Pt A), Article 122644. doi.org/10.1016/j.watres.2024.122644
15. Du, L., **Jiang, J.**, Zhou, G., Yan, Y., Kingsbury, R. S., Ku, A. Y., & Ren, Z. J.* (2025). Electrolytic hydrogen production from acidified wastewater effluent. *Water Research*, *288*(Pt B), Article 124672. doi.org/10.1016/j.watres.2025.124672

14. Begildayeva, T., **Jiang, J.**, Ren, Z. J., & Lopez-Ruiz, J. A.* (2025). Progress, gaps, and opportunities in electrocatalytic oxidation of wastewater: A review. *Water Research*, *292*, Article 125164. doi.org/10.1016/j.watres.2025.125164
13. **Jiang, J.*** (2025). Microbial electrochemical technologies for wastewater treatment and resource recovery. *Nature Reviews Clean Technology*, *1*(3), 182. doi.org/10.1038/s44359-025-00035-3
12. Granacher, J.*, Franzoi, R. E., **Jiang, J.**, Summers, S., Li, S., Lopez-Ruiz, J. A., Zhang, Y., Ren, Z. J., & Maravelias, C. T. (2025). Drop-in fuel production from food waste: system level optimization and analysis. *Journal of Cleaner Production*, *520*, Article 145994. doi.org/10.1016/j.jclepro.2025.145994
11. **Jiang, J.**, Du, L., Zhu, J. J., Ku, A. Y., & Ren, Z. J.* (2024). Water resource recovery facilities empower the electrolytic hydrogen economy. *Environmental Science & Technology*, *58*(50), 22124–22134. doi.org/10.1021/acs.est.4c08054
10. Wang, Y., Jiang, L., Ali, M. M., **Jiang, J.**, Xu, Y.*, & Liu, Z.* (2024). Aquatic life criteria of hydrothermal liquefaction wastewater via ecotoxicity test and modeling. *Journal of Hazardous Materials*, *471*, Article 134289. doi.org/10.1016/j.jhazmat.2024.134289
9. Leininger, A., Lu, S., **Jiang, J.**, Bian, Y., May, H. D., & Ren, Z. J.* (2024). The convergence of lactic acid microbiomes and metabolites in long-term electrofermentation. *Environmental Science and Ecotechnology*, *22*, Article 100459. doi.org/10.1016/j.ese.2024.100459
8. Yan, Y., Zhu, J. J., May, H. D., Song, C., **Jiang, J.**, Du, L., & Ren, Z. J.* (2024). Methanogenic potential of sewer microbiomes and its implications for methane emission. *Environmental Science & Technology*, *58*(45), 19990–19998. doi.org/10.1021/acs.est.4c04005 **(Front Cover Article)**
7. Zhu, J. J., Yang, M., **Jiang, J.**, Bai, Y., Chen, D., & Ren, Z. J.* (2024). Enabling GPTs for expert-level environmental engineering question answering. *Environmental Science & Technology Letters*, *11*(12), 1327–1333. doi.org/10.1021/acs.estlett.4c00665
6. Zhu, J. J., **Jiang, J.**, Yang, M., & Ren, Z. J.* (2023). ChatGPT and environmental research. *Environmental Science & Technology*, *57*(46), 17667–17670. doi.org/10.1021/acs.est.3c01818
5. **Jiang, J.**, Lopez-Ruiz, J. A., Leininger, A., Du, L., Yan, Y., May, H. D., & Ren, Z. J.* (2023). Molecular transformation and metabolic insights of microbial electrolysis treatment and valorization of post-hydrothermal liquefaction wastewater. *Green Chemistry*, *25*(22), 9115–9125. doi.org/10.1039/d3gc02252h **(Front Cover Article & Hot Article Collection; first successful implementation of solution-state ^{15}N NMR in wastewater)**
4. **Jiang, J.**, Lopez-Ruiz, J. A., Bian, Y., Sun, D., Yan, Y., Chen, X., Zhu, J., May, H. D., & Ren, Z. J.* (2023). Scale-up and techno-economic analysis of microbial electrolysis cells for hydrogen production from wastewater. *Water Research*, *241*, Article 120139. doi.org/10.1016/j.watres.2023.120139
3. **Jiang, J.**, Chen, X., Chen, X., & Ren, Z. J.* (2022). Energy-efficient microbial electrochemical lignin and alkaline hydroxide recovery from DMR black liquor. *Resources, Conservation and Recycling*, *186*, Article 106529. doi.org/10.1016/j.resconrec.2022.106529
2. Chen, X., He, S., Falinski, M. M., Wang, Y., Li, T., Zheng, S., Sun, D., Dai, J., Bian, Y., Zhu, X., **Jiang, J.**, Hu, L.*, & Ren, Z. J.* (2021). Sustainable off-grid desalination of hypersaline waters using Janus wood evaporators. *Energy & Environmental Science*, *14*(10), 5347–5357. doi.org/10.1039/d1ee01505b **(Front Cover Article)**
1. Chen, W., **Jiang, J.**, Zhang, W., Wang, T., Zhou, J., Huang, C. H., & Xie, X.* (2019). Silver nanowire-modified filter with controllable silver ion release for point-of-use disinfection. *Environmental Science & Technology*, *53*(13), 7504–7512. doi.org/10.1021/acs.est.9b01678

MANUSCRIPTS UNDER REVIEW

Knowledge-Infused Language Models for the Water and Sustainability Domain 2025
Zhu, J. J., **Jiang, J.**, Yang, M., Du, L., Song, C., Illavelan, V., & Ren, Z. J. In review.

TEACHING

Graduate Teaching Assistant, Princeton University 2021–2022
ENE 321-L01 Resource Recovery for a Circular Economy

GRANTS & PROPOSALS

Fund for Energy Research with Corporate Partners, Andlinger Center, Princeton University

INVITED TALKS & PRESENTATIONS

Invited Talks

CEE501 Guest Lecture, University of Michigan 2025
"Electrified Microorganisms for Wastewater Treatment and Resource Recovery"

Chemical & Environmental Engineering Department Seminar, University of Arizona 2025
"Electrified Microbial Processes for Wastewater Treatment, Resource Recovery and Carbon Management"

ACS Fall, San Francisco 2023
"Microbial Electrolysis Cell (MEC) Treatment and Valorization of Post-Hydrothermal Liquefaction Wastewater (PHW): Molecular Insights to Engineering Scale-Up"

Conference & Seminar Presentations

SSEBE Environmental Engineering Seminar, ASU 2026
"Seeking Alternative Water Sources for an Ever-Thirstier World"

AEESP Biennial Research & Education Conference, Durham, NC 2025
"Electrification Transforms Wastewater Treatment, Decarbonization, and Resource Recovery"

ACS Spring, San Diego 2025
"Electrification-Enabled Wastewater Process Intensification"

Civil & Environmental Engineering Seminar, Princeton University 2024
"Electrifying the Wastewater Sector for Efficient Treatment, Resource Recovery and Carbon Management"

ACS Spring, New Orleans 2024
"Electrification-Enabled Wastewater Process Intensification"

Andlinger Center for Energy and the Environment Annual Meeting (Best Poster) 2023
"Wastewater Treatment Plants Empower the Clean Hydrogen Economy"

AEESP Biennial Research & Education Conference, Boston 2023
"Infrastructural Symbiosis between Wastewater Treatment Plants and Green H_2 Producers for a Sustainable Green H_2 Economy"

AEESP Biennial Research & Education Conference, St. Louis (Best Poster 8/300+) 2022
"Molecular Transformation and Metabolic Insights during MEC Treatment of Post-Hydrothermal Liquefaction Wastewater (PHW)"

HONORS, AWARDS & DISTINCTIONS

ACS Environmental Chemistry Graduate Award 2025

Esri ArcGIS StoryMaps Competition Finalist 2024

Maeder Graduate Fellowship in Energy and the Environment, Princeton University (1–2 awarded university-wide each year) 2024

Andlinger Center for Energy and the Environment Annual Meeting Graduate Presentation Award 2023

Peter B. Lewis Fund for Innovation in Energy and the Environment, Princeton University 2023

Best Poster Award, Association of Environmental Engineering and Science Professors (AEESP) Biennial Research & Education Conference 2022

Siyuan Fellow, Tsinghua University (1–2 selected per department per cohort) 2016–2019

Outstanding Undergraduate Thesis Award, Tsinghua University 2019

Tsinghua University Outstanding Graduate, equivalent to Dean's List 2019

PROFESSIONAL SERVICE

Founding Editor, Official Account of the Chinese-American Professors in Environmental Engineering and Science (CAPEES) 2020–2024
Established the platform to promote research and share Ph.D. and postdoctoral opportunities for Chinese-American scholars in environmental engineering and science.

Journal Reviewer
Environmental Science & Technology; *Environmental Science & Technology Letters*; *ES&T Engineering*; *Chemical Science*; *Chemical Communications*; *Physical Chemistry Chemical Physics*; *Environmental Monitoring and Assessment*; *Eco-Environment & Health*

Professional Memberships
American Chemical Society; Association of Environmental Engineering and Science Professors; American Water Works Association; International Society for Microbial Electrochemistry and Technology; Chinese-American Professors in Environmental Engineering and Science

STUDENT LEADERSHIP

Tsinghua University Student Art Troupe, Deputy President 2018–2019
Tsinghua University Symphonic Band, President; led its first overseas tour in 102 years 2017–2018