# ZHIYONG JASON REN, Ph.D.

Acting Director & Associate Director for Research, Andlinger Center for Energy and the Environment
Professor, Department of Civil and Environmental Engineering, Princeton University
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**Research Areas:** environmental & chemical processes; energy & resource recovery; microbial & electrochemical technologies; electrocatalytic membranes and materials; carbon capture & utilization; water and wastewater treatment; water desalination; environmental remediation; process engineering

## EDUCATION

2008 Ph.D. in Environmental Engineering, The Pennsylvania State University, University Park, PA
2003 M.S. in Environmental Science & Engineering, Tianjin University, Tianjin, China
2000 B.S. in Environmental Engineering, Tianjin University of Urban Construction, Tianjin, China

## PROFESSIONAL APPOINTMENTS

**Professor** **2018 – present**
Department of Civil and Environmental Engineering & Andlinger Center for Energy and the Environment
**Acting Director (S2020); Associate Director for Research** **2019 – present**
**Visiting Professor,** US National Renewable Energy Laboratory **2009 – 2012, 2015-present**
**Director,** Water-Energy Nexus Interdisciplinary Research Theme (IRT) **2017 – 2018**
**Associate Professor** **2013 –2018**
Department of Civil, Environmental and Architectural Engineering, University of Colorado Boulder, CO
**Director,** Center for Sustainable Infrastructure Systems, **2012 – 2013**
**Assistant Professor** **2008– 2013**
Department of Civil and Environmental Engineering, University of Colorado Denver, CO

## INDUSTRIAL EXPERIENCE

**Chief Science Advisor,** Emergy LLC. **2016-2018**
**Chief Science Advisor,** Hysummit Corporation **2016-2018**
**Co-Founder and President,** BioElectric, Inc. **2013-2015**
**Environmental Engineer,** North China Municipal Eng. Design and Research Institute/Spring Environmental. **2003-2004**
**Engineering Intern, Veolia Environmental** **2001-2002**

## HONORS, AWARDS, DISTINCTIONS

2020 ASCE Walter L. Huber Civil Engineering Research Prize
2019 CAPEES Founder's Best Paper Award (w/ Lu Lu)
2019 Best Reviewer Award, *Environmental Science: Water Research Technology*
2019 Best Paper Award (co-author), *Environmental Science: Water Research Technology*
2018 Inaugural RIO Fellow, University of Colorado Boulder
2017 Nanova/CAPEES Frontier in Research Award
2017 The Michael Kavanaugh's Best Podium Award in AEESP2017
2017 Research Development Award, Department of Civil, Environmental, Architectural Engineering
2016- Steering committee for the National Testbed Network for Energy Positive Water Resource

Recovery (interagency program by DOE-EPA-NSF-USDA)

2016 Top 3 Faculty in Research (weighted combination of publications, expenditures, and graduate students) among >260 tenured/tenure-track faculty in the College of Engineering and Applied Science

2016 Top 10 Hottest Articles in *Environmental Science: Water Research Technology* in 2015

2015 New Inventor of the Year Award, University of Colorado Technology Transfer Office

2015 Research Development Award, Department of Civil, Environmental and Architectural Engineering

2012 Excellence in Review Award, *Environmental Science & Technology (ES&T)*

2012 University Award for Excellence in Research and Creative Work

2012 Outstanding Faculty in Research Award, College of Engineering and Applied Science

2012 Chang Junior Faculty Achievement Award, College of Engineering and Applied Science

## BOOK CHAPTER

Wang, H., Lu, L., Ren, ZJ., Chapter 23: Enhanced Bioremediation of Petroleum Hydrocarbons Using Microbial Electrochemical Technology, In: Tiquia-Arashiro S. and Pant, D., ***Microbial Electrochemical Technologies***, CRC Press, 2019, 343-359.

Ren, ZJ., 2013. Chapter 19: The Principle and Applications of Bioelectrochemical Systems, In: Gupta V.K., ***Biofuel Technologies***, Springer, 2013, 501-527.

## PEER REVIEWED JOURNAL PUBLICATIONS

**Published:**
(Article = 146, H Index = 45, Citation = 7003, by April 15, 2020 via Google Scholar)

1. Chen, X., Lobo, FL., Bian, Y., Lu, L., Chen, X., Tucker, MP., Wang, Y., Ren, ZJ. Electrical decoupling of microbial electrochemical reactions enables spontaneous $H_2$ evolution, ***Energy & Environmental Science***, 2020,13, 495-502. **(Front Cover Article)**
2. Wang, H., Lu, L., Chen, H., McKenna, A.M., Liu, J., Jin, S., Zuo, Y., Rosario-Ortiz, F.L. and Ren, Z.J., Molecular Transformation of Crude Oil Contaminated Soil after Bioelectrochemical Degradation Revealed by FT-ICR Mass Spectrometry. ***Environmental Science & Technology***, 2020, 54, 4, 2500-2509.
3. Zhang, B., Jiang, Y., Zuo, K., He, C., Dai, Y., Ren, ZJ. Microbial vanadate and nitrate reductions coupled with anaerobic methane oxidation in groundwater. ***Journal of Hazardous Materials***, 2020, 382, 121228.
4. Wang, H., Cui, Y., Lu, L., Jin, S., Zuo, Y., Ge, Z. and Ren, Z.J., Moisture retention extended enhanced bioelectrochemical remediation of unsaturated soil. ***Science of The Total Environment***, 2020, 724, 138169.
5. Park, E., Jack, J., Hu, Y., Wan, S., Huang, S., Jin, Y., Maness, P., Yazdi, S., Ren, Z.J., Zhang, W., Covalent Organic Framework-Supported Platinum Nanoparticles as Efficient Electrocatalysts for Water Reduction. ***Nanoscale***, 2020, 12, 2596-2602.
6. Liang, P., Ren, ZJ., Huang, X. Capacitive deionization and electrosorption: from desalination to ion management. ***Environmental Science: Water Research & Technology***, 6 (2), 241-242.
7. Hou, D., Li, T., Chen, X., He, S., Dai, J., Mofid, S., Hou, D., Iddya, A., Jassby, D., Yang, R., Hu, L., Ren, ZJ. Hydrophobic Nanostructured Wood Membrane for Thermally Efficient Distillation, ***Science Advances***, 2019, 5(8), eaaw3203.

8. Hou, D., Jassby, D., Nerenberg, R., Ren, ZJ. Hydrophobic Gas Transfer Membranes for Wastewater Treatment and Resource Recovery, ***Environmental Science & Technology***, 2019, 53 (20), 11618-11635.
9. Lu, L., Vakki, W., Aguiar, JA., Xiao, C., Hurst, K., Fairchild, M., Chen, X., Yang, F., Gu, J., Ren, ZJ. Unbiased solar H2 production with current density up to 23 mA/cm2 by swiss-cheese black Si coupled with wastewater bioanode, ***Energy & Environmental Science***, 2019, 12, 1088-1099.
10. Wang, H., Lu, L., Chen, X., Bian, Y., Ren, ZJ. Geochemical and microbial characterizations of flowback and produced water in three shale oil and gas plays in the central and western United States, ***Water Research***, 2019, 164, 114942.
11. Chen, X., Katahira, R., Ge, Z., Lu, L., Hou, D., Peterson, D., Tucker, M., Chen, X., Ren, ZJ. Microbial electrochemical treatment of biorefinery black liquor and resource recovery. ***Green Chemistry***, 2019, 21, 1258-1266. **(Front Cover Article)**
12. Lu, L., Lobo, FL., Xing, D., Ren, ZJ. Active harvesting enhances energy recovery and function of electroactive microbiomes in microbial fuel cells, ***Applied Energy***, 2019, 247, 492-502.
13. He, S., Chen, C., Kuang, Y., Mi, R., Liu, Y., Pei, Y., Kong, W., Gan, W., Xie, H., Hitz, E. and Jia, C., Chen, X., Gong, A., Liao, J., Li, J., Ren, ZJ., Yang, B., Das, S., Hu, L. Nature-inspired salt resistant bimodal porous solar evaporator for efficient and stable water desalination. ***Energy & Environmental Science***, 2019, 12(5), 1558-1567.
14. Bian, Y., Chen, X., Lu, L., Liang, P., Ren, ZJ. Concurrent nitrogen and phosphorus recovery using flow-electrode capacitive deionization, ***ACS Sustainable Chemistry & Engineering***, 2019, 78, 7844-7850.
15. Bian, Y., Ge, Z., Albano, C., Lobo, F. L., & Ren, ZJ. Oily bilge water treatment using DC/AC powered electrocoagulation. ***Environmental Science: Water Research & Technology***, 5(10), 1654-1660.
16. Wang, H., Lu, L., Mao, D., Huang, Z., Cui, Y., Jin, S., Zuo, Y. and Ren, Z.J., Dominance of electroactive microbiomes in bioelectrochemical remediation of hydrocarbon-contaminated soils with different textures. ***Chemosphere***, 2019, 235, 776-784.
17. Mei, X., Wang, H., Hou, D., Lobo, F. L., Xing, D., Ren, Z. J. Shipboard bilge water treatment by electrocoagulation powered by microbial fuel cells. ***Frontiers of Environmental Science & Engineering***, 2019, 13(4), 53.
18. Jack, J., Huggins, TM., Huang, Y., Fang, Y., Ren, ZJ. Production of magnetic biochar from waste-derived fungal biomass for phosphorus removal and recovery, ***Journal of Cleaner Production***, 2019, 224, 100-106.
19. Jack, J., Lo, J., Maness, PC., Ren, ZJ. Directing Clostridium ljungdahlii fermentation products via hydrogen to carbon monoxide ratio in syngas. ***Biomass and Bioenergy***, 2019, 124, 95-101.
20. Ren, ZJ. Editorial Perspectives: the value proposition of resource recovery, ***Environmental Science: Water Research & Technology***, 2019, 5, 196-197.
21. Jiang, Y., May, D.H., Lu, L., Liang, P., Huang, X., Ren, ZJ. Carbon Dioxide and Organic Waste Valorization by Microbial Electrosynthesis and Electro-fermentation, ***Water Research***, 2019, 149, 42-55.
22. Pan, Y.R., Wang, X., Ren, Z.J., Hu, C., Liu, J. and Butler, D., Characterization of implementation limits and identification of optimization strategies for sustainable water resource recovery through life cycle impact analysis. ***Environment international***, 2019, 133, 105266.

23. Shang, H., Zhu, X., Shen, M., Luo, J., Zhou, S., Li, L., Shi, Q., Zhou, D., Zhang, S., Chen, J. and Ren, Z.J., Decarbonylation reaction of saturated and oxidized tar from pyrolysis of low aromaticity biomass boost reduction of hexavalent chromium. ***Chemical Engineering Journal***, 2019, 360, 1042-1050.
24. Hutfles, J., Lumley, C., Chen, X., Ren, Z.J. Pellegrino, J., Graphene-integrated polymeric membrane as a flexible, multifunctional electrode. ***Chemical Engineering Science***, 2019, 209, 115221.
25. Lu, L., Gu, J. and Ren, Z.J., Comment on "Unbiased solar H2 production with current density up to 23 mA cm− 2 by Swiss-cheese black Si coupled with wastewater bioanode" ***Energy & Environmental Science***, 2019, 12(11), 3412-3414.
26. Dudley, H. J., Lu, L., Ren, Z. J., Bortz, D. M. Sensitivity and Bifurcation Analysis of a Differential-Algebraic Equation Model for a Microbial Electrolysis Cell. ***SIAM Journal on Applied Dynamical Systems***, 2019, 18(2), 709-728.
27. Dudley, HJ., Ren, ZJ., Bortz, DM. Competitive Exclusion in a DAE Model for Microbial Electrolysis Cells, 2019, ***arXiv***:1906.02086.
28. Ren, Z.J. The Rewards and Challenges of Interdisciplinary Collaborations, ***iScience***, 2019, 20, 575–578.
29. Lu, L., Guest, J., Peters, CA., Zhu, X., Rau, G.H., Ren, ZJ. Wastewater treatment for carbon capture and utilization, ***Nature Sustainability***, 2018, 1, 750-758.
30. Rau, GH., Willauer, H., Ren, ZJ. The global potential for converting renewable electricity to negative-CO2-emissions hydrogen, ***Nature Climate Change,*** 2018, 8, 621–625.
31. Li, T., Wang, X., Zhou, QX., Liao, C., Zhou, L., Wan, L., An, J., Du, Q., Li, N., Ren, ZY. Swift Acid Rain Sensing By Synergistic Rhizospheric Bioelectrochemical Responses. ***ACS Sensors***, 2018, 3 (7), 1424-1430. (***ACS Editor's Choice Article***)
32. Hou, D., Iddya, A., Chen, X., Wang, M., Zhang, W., Ding, Y., Jassby, D., Ren ZJ. Nickel Based Membrane Electrodes Enable High Rate Electrochemical Ammonia Recovery, ***Environmental Science & Technology***, 2018, 52 (15), 8930-8938.
33. Zhang, B., Qiu, R., Lu, L., Chen, X., He, C., Lu, J., Ren, ZJ. Autotrophic Vanadium (V) Bio-reduction in Groundwater by Elemental Sulfur and Zerovalent Iron. ***Environmental Science & Technology***, 2018, 52 (13), 7434-7442.
34. Hao, S., Zhu, X., Liu, Y., Qian, F., Fang, Z., Shi, Q., Zhang, S., Chen, J., Ren, ZJ. Production Temperature Effects on the Structure of Hydrochar-derived Dissolved Organic Matter and Associated Toxicity. ***Environmental Science & Technology***, 2018, 52 (13), 7486–7495.
35. Fang, Y., Zhou, W., Tang, C., Huang, Y., Johnson, DM., Ren, ZJ., Ma, W. Brönsted Catalyzed Hydrolysis of Microcystin-LR by Siderite. ***Environmental Science & Technology***, 2018, 52 (11), 6426–6437.
36. Qian F., Zhu X., Liu Y., Shi Q., Wu L., Zhang S., Chen J., Ren ZJ. Influences of Temperature and Metal on Subcritical Hydrothermal Liquefaction of Hyperaccumulator: Implications for the Recycling of Hazardous Hyperaccumulators. ***Environmental Science & Technology***, 2018, 52 (4), 2225–2234.
37. Jiang, Y., Lu, Lu., Wang, H., Shen, R., Ge, Z., Hou, D., Chen, X., Liang, P., Huang, X., Ren, ZJ. Electrochemical control of redox potential arrests methanogenesis and regulates products in mixed culture electro-fermentation, ***ACS Sustainable Chemistry & Engineering***, 2018, 6 (7), 8650–8658.
38. Liu, Y., Zhu, X., Wei, X., Zhang, S., Chen, J., Ren, ZJ. $CO_2$ activation promotes available carbonate and phosphorus of antibiotic mycelial fermentation residue-derived biochar support for increased lead immobilization, ***Chemical Engineering Journal***, 2018, 334, 1101-1107.

39. Singer, S., Magnusson, L., Hou, D., Lo, J., Maness, P.C. and Ren, Z.J., Anaerobic membrane gas extraction facilitates thermophilic hydrogen production from Clostridium thermocellum. ***Environmental Science: Water Research & Technology***, 2018. 4(11), 1771-1782. (***Front Cover Article***)
40. Ge, Z., Chen, X., Huang, X., Ren, ZJ. Capacitive deionization for nutrient recovery from wastewater with disinfection capability, ***Environmental Science: Water Research & Technology***, 2018, 4 (1), 33-39.
41. Shen, R., Jiang, Y., Ge, Z., Lu, J., Zhang, Y., Liu, Z., Ren, ZJ. Microbial electrolysis treatment of post-hydrothermal liquefaction wastewater with hydrogen generation, ***Applied Energy***, 2018, 212, 509-515.
42. Jiang, Y., Liang, P., Huang, X., Ren, ZJ. A novel microbial fuel cell sensor with a gas diffusion biocathode sensing element for water and air quality monitoring, ***Chemosphere***, 2018, 203, 21-25.
43. Zhu, X., Liu, Y., Qian, F., Shang, H., Wei, X., Zhang, S., Chen, JM., Ren, ZJ. Carbon Transmission of $CO_2$ Activated Nano-MgO Carbon Composites Enhances Phosphate Immobilization, ***Journal of Materials Chemistry A***, 2018, 6 (8), 3705-3713.
44. Sun, D., Gao, Y., Hou, D., Zuo, K., Chen, X., Liang, P., Zhang, X., Ren, ZJ., Huang, X. Energy-neutral sustainable nutrient recovery incorporated with the wastewater purification process in an enlarged microbial nutrient recovery cell, ***Journal of Power Sources***, 2018, 384, 160-164.
45. Shrestha, N., Chilkoor, G., Wilder, J., Ren, ZJ., Gadhamshetty, V.Comparative performances of microbial capacitive deionization cell and microbial fuel cell fed with produced water from the Bakken shale, ***Bioelectrochemistry***, 2018, 121, 56-64.
46. Gao, Y., Sun, D., Wang, H., Lu, L., Ma, H., Wang, L., Ren, Z.J., Liang, P., Zhang, X., Chen, X. and Huang, X., 2018. Urine-powered synergy of nutrient recovery and urine purification in a microbial electrochemical system. ***Environmental Science: Water Research & Technology***, 2018, 4(10), 1427-1438.
47. Fang, Y., Zhou, A., Yang, W., Araya, T., Huang, Y., Zhao, P., Johnson, D., Wang, J., Ren, ZJ. Complex Formation via Hydrogen bonding between Rhodamine B and Montmorillonite in Aqueous Solution, ***Scientific reports***, 2018, 8 (1), 229.
48. Dudley, HJ., Lu, L., Ren, ZJ., Bortz, DM. Sensitivity and Bifurcation Analysis of a DAE Model for a Microbial Electrolysis Cell, 2018, ***arXiv:***1802.06326.
49. Ren, ZJ. Microbial Fuel Cells: Running on Gas, ***Nature Energy***, 2017, 2, 17093.
50. Mihelcic, JR., Ren, ZJ., Cornejo, PK., Fisher A., Simon, AJ., Snyder, SW., Zhang, Q., Rosso, D., Huggins, TM., Cooper, W., Moeller, J., Rose, B., Schottel, BL., Turgeon, J. et al. Accelerating Innovation that Enhances Resource Recovery in the Wastewater Sector: Advancing a National Testbed Network, ***Environmental Science & Technology,*** 2017, 51 (14), 7749–7758. [***Invited Feature Article; Most Read Articles in ES&T***]
51. Lu, L., Williams, N., Turner, JA., Maness, PC., Gu, J., Ren, ZJ. Microbial Photoelectrosynthesis for Self-sustaining Hydrogen Generation, ***Environmental Science & Technology,*** 2017, 51 (22), 13494–13501.
52. Chen, X., Gao, X., Hou, D., Ma, H., Lu, L., Sun, D., Zhang, X., Liang, P., Huang, X., Ren, ZJ. Microbial Electrochemical Acceleration of Ureolysis for Nutrient Recovery from Source-separated Urine and Wastewater Treatment, ***Environmental Science & Technology Letters,*** 2017, 4 (7), 305–310 [***Most Read Articles in ES&TL***]

53. Zhu, X., Liu, Y., Qian, F., Lei, Z., Zhang, Z., Zhang, S., Chen, J., Ren, ZJ. Demethanation Trend of Hydrochar Induced by Organic Solvent Washing and its Influence on Hydrochar Activation ***Environmental Science & Technology,*** 2017, 51 (18), 10756–10764.
54. Hou, D., Lu, L., Sun, D., Ge, Z., Huang, X., Cath, TY., Ren, ZJ. Microbial Electrochemical Nutrient Recovery in Anaerobic Osmotic Membrane Bioreactors, ***Water Research***, 2017, 114, 181-188.
55. Chen, X., Zhou, H., Zuo, K., Zhou, Y., Wang, Q., Sun, D., Gao, Y., Liang, P., Zhang, X., Ren, Z.J., Huang, X. Self-sustaining advanced wastewater purification and simultaneous in situ nutrient recovery in a novel bioelectrochemical system. ***Chemical Engineering Journal***, 2017, 330, 692-697.
56. Huang, Z., Gong, A., Hou, D., Hu, L., Ren, ZJ. Conductive Wood Membrane Anode Improves Effluent Quality of Microbial Fuel Cells, ***Environmental Science: Water Research & Technology,*** 2017, 3, 940-946.
57. Huang, Z., Lu, L., Jiang, D., Xing, D., Ren, ZJ. Electrochemical Hythane Production for Renewable Energy Storage and Biogas Upgrading, ***Applied Energy***, 2017, 187, 595–600.
58. Alaraj, M., Roane, T., Ren, ZJ., Park, J. Dynamic Modeling of a Microbial Fuel Cell Considering Anodic Electron Flow and Electrical Charge Storage, ***Applied Energy***, 2017, 193, 507-514.
59. Zhou, H., Liu, B., Wang, Q., Sun, J., Xie, G., Ren, N., Ren, Z.J., and Xing, D., Pulse electromagnetic fields enhance extracellular electron transfer in magnetic bioelectrochemical systems. ***Biotechnology for Biofuels***, 2017, 10, 238.
60. Lobo, F., Wang, X., Ren, ZJ. Energy harvesting influences electrochemical performance of microbial fuel cells, ***Journal of Power Sources***, 2017, 356, 356-364.
61. Li, N., Jiang, J., Wang, X., Ren, ZJ. Resin-enhanced Rolling Activated Carbon Electrode for Efficient Capacitive Deionization, ***Desalination***, 2017, 419, 20-28.
62. Zhou, H., Liu, B., Wang, Q., Sun, J., Xie, G., Ren, N., Ren, ZJ, Xing, D. Pulse electromagnetic fields enhance extracellular electron transfer in magnetic bioelectrochemical systems, ***Biotechnology for Biofuels***, 2017, 10:238.
63. Zhao, Q., Li, R., Ji, M., Ren, ZJ. Long-term Performance of Sediment Microbial Fuel Cells with Multiple Anodes. ***Bioresource Technology***, 2017, 237, 178-185.
64. Zhang, J., Zhu, G., Lv, N., Pan, X., Li, L., Ren, ZJ. The Establishment and Characteristics of Dominant Syntrophic Propionate Oxidation Bacteria and Sulfate-Reducing Bacteria in a Mixed Culture, ***Chemical Engineering Communications***, 2017, Doi: 10.1080/00986445.2017.1328410.
65. Wang, X., Zhou, L., Lu, L., Lobo, F., Li, N., Wang, H., Park, J., Ren, ZJ. Alternating Current Influences Anaerobic Electroactive Biofilm Activity. ***Environmental Science & Technology***, 2016, 50 (17), 9169-9176.
66. Lu, L., Hou, D., Wang, X., Jassby, D., Ren, ZJ. Active $H_2$ Harvesting Prevents Methanogenesis in Microbial Electrolysis Cells, ***Environmental Science & Technology Letters***, 2016, 3 (8), 286-290 [Most Read Articles in *ES&TL*]
67. Mao, D., Lu, L., Revil, A., Zuo, Y., Hinton, J., Ren, ZJ. Geophysical Monitoring of Hydrocarbon-Contaminated Soils Remediated with a Bioelectrochemical System, ***Environmental Science & Technology***, 2016, 50 (15), 8205-8213
68. Ren, ZJ., Umble, AK. Water Treatment: Recover Wastewater Resources Locally. ***Nature***, 2016, 529, 25.
69. Hou, D., Lu, L., Ren, ZJ. Microbial Fuel Cells and Osmotic Membrane Bioreactors Have Mutual Benefits for Wastewater Treatment and Energy Production, ***Water Research***, 2016, 98, 183-189.

70. Huggins, TM., Haeger, A., Biffinger, JC., Ren, ZJ. Granular biochar compared with activated carbon for wastewater treatment and resource recovery ***Water Research***, 2016, 94, 225-232.
71. Liu, Q., Ren, ZJ., Huang, C., Liu, B., Ren, N., Xing, D. Multiple syntrophic interactions drive biohythane production from waste sludge in microbial electrolysis cells, ***Biotechnology for Biofuels,*** 2016, 9, 162.
72. Lu, L., Ren, ZJ. Microbial Electrolysis Cells for Waste Biorefinery: A State of the Art Review. ***Bioresource Technology***, 2016, 215, 254-264. [Invited Review]
73. Huggins, TM., Whiteley, J., Love, C., Lee, K., Lee, S., Ren, ZJ., Biffinger, J. Controlled Growth of Nanostructured Biotemplates with Cobalt and Nitrogen Co-Doping as a Binderless Lithium-Ion Battery Anode. ***ACS Applied Materials & Interfaces***, 2016, 8, 26868–26877. [Featured in Forbes, Foxnews, Huffington Posts, CU News, etc.]
74. Qian, F., Zhu, X., Liu, Y., Hao, S., Ren, ZJ., Gao, B., Zong, R., Zhang S., Chen, JM. Synthesis, characterization and adsorption capacity of magnetic carbon composites activated by $CO_2$: implication to the catalytic mechanisms of iron salts. ***Journal of Materials Chemistry A***, 2016, 4, 18942-18951.
75. Lu, L., Fang, Y., Huang, Y., Ren, ZJ. Self-sustaining carbon capture and mineralization via electrolytic carbonation of coal fly ash, ***Chemical Engineering Journal***, 2016, 306, 330-335.
76. Huang, Z., Jiang, DJ., Lu, L., Ren, ZJ. Ambient CO2 capture and storage in bioelectrochemically mediated wastewater treatment. ***Bioresource Technology***, 2016, 215, 380-385.
77. Lu, G., Zhu, Y., Lu, L., Xu, K., Wang, H., Jin, Y., Ren, ZJ., Liu, Z., Zhang, W. Iron-rich Nanoparticle Encapsulated, Nitrogen Doped Porous Carbon Materials as Efficient Cathode Electrocatalyst for Microbial Fuel Cells. ***Journal of Power Sources***, 2016, 315, 302-307.
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79. Forrestal, C., Haeger, A., Dankovich, L., Cath, TY., and Ren, ZJ. A Liter-scale Microbial Capacitive Deionization System for the Treatment of Shale Gas Wastewater. ***Environmental Science: Water Research & Technology***, 2016, 2, 353-361.
80. Huang, Z., Lu, L., Cai, Z., Ren, ZJ Individual and Competitive Removal of Heavy Metals Using Capacitive Deionization. ***Journal of Hazardous Materials***, 2016, 302, 323-331.
81. Huggins, T., Latorea, A., Biffinger, J., Ren, ZJ. Biochar as an Electrode Material for Enhanced Wastewater Treatment and Nutrient Recovery in a Microbial Fuel Cell, ***Sustainability***, 2016, 8 (2), 169.
82. Stoll, Z., Dolfing, J., Ren, ZJ., and Xu, P. Interplay of anode, cathode and current in microbial fuel cells: implications for wastewater treatment. ***Energy Technology***, 2016, 4, 583.
83. Lu, L., Hou, D., Fang, Y., Huang, L., Ren, ZJ. Nickel based catalysts for highly efficient H2 evolution from wastewater in microbial electrolysis cells, ***Electrochimica Acta,*** 2016, 206, 381-387.
84. Zhao, Q., Li, R., Ji, M., Ren, ZJ. Organic Content Influences Sediment Microbial Fuel Cell Performance and Community Structure, ***Bioresource Technology***, 2016, 220, 549–556.
85. Huang, K., Tang, H., Liu, D., Zhu, S., Ren, ZJ. A Review of Capacitive Deionization Technology: Part 3. Impact Factors. ***Environmental Engineering***, 2016, S1, 101-106. (In Chinese)
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88. Lu, L., Huang, Z., Rau, G., Ren, ZJ Microbial Electrolytic Carbon Capture for Carbon Negative and Energy Positive Wastewater Treatment. ***Environmental Science & Technology***, 2015, 49, 8193-8201. [Featured in NSF News, Chemistry World, WE&T News, Water Online, Science Daily, CCTV, etc.]

89. Wang, H., Park, J., Ren, ZJ.., Practical Energy Harvesting from Microbial Fuel Cells: A review. ***Environmental Science & Technology***, 2015, 49, 3267-3277. [Featured on *ES&T* Front Page as Highlight Article]

90. Forrestal, C., Stoll, Z., Xu, P., and Ren, ZJ. Microbial Capacitive Desalination for Integrated Organic and Salt Removal and Energy Production from Unconventional Natural Gas Produced Water. ***Environmental Science: Water Research & Technology***, 2015, 1, 47-55. [Featured Journal Cover Article, featured in Chemistry World, CCTV, CBS, Science Daily, etc].

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93. Lu, L., Zeng C., Wang, L., Yin, X., Jin S., Lu, A., Ren, ZJ Graphene Oxide and H2 Production from Bioelectrochemical Graphite Oxidation. ***Scientific Reports***, 2015, 5, 16242.

94. Wang, H., Luo, H., Fallgren, P., Jin, S., Ren, ZJ. Bioelectrochemical Platform for Sustainable Environmental Remediation and Energy Generation. ***Biotechnology Advances,*** 2015, 33, 317-334.

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98. Ma, D., Forrestal, C., Ji, M., Li, R., Ma, H., Ren, ZJ. Membrane configuration influences microbial capacitive desalination performance. ***Environmental Science: Water Research & Technology***, 2015, 1 (3), 348-354.

99. Stoll, Z., Forrestal, C., Ren, ZJ, Xu, P., Shale Gas Produced Water Treatment Using Innovative Microbial Capacitive Desalination Cell. ***Journal of Hazardous Materials***, 2015, 283, 847-855.

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101. Li, X., Wang, X., Ren, ZJ., Zhang, X., Li, N., Zhou, Q. Sand Amendment Enhances Bioelectrochemical Remediation of Petroleum Hydrocarbon Contaminated Soil. ***Chemosphere***, 2015, 141, 62-70.

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NSF News: 4 Awesome Discoveries You Probably Didn't Hear About This Week

Princeton: Sunlight pulls hydrogen from wastewater

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