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Profile

Having obtained his PhD from DTU in 2012, Yifeng Zhang has dedicated himself over the years to researching advanced electrochemistry in environmental and resource engineering. His research has consistently driven innovation in various domains, including wastewater treatment, resource recovery, advanced electrocatalysis and catalysis materials, environmental sensors, and sustainable carbon capture and utilization. These contributions have been recognized through over 200 scientific publications, 3 patents, and media communications, underscoring their impact and potential for future development. Notably, he has successfully secured about 60 million DKK in international and national research funding, including prestigious grants such as the Carlsberg Foundation Distinguished Fellowship. His accomplishments have been recognized through several awards, notably the James J. Morgan Environmental Science & Technology Early Career Award (Honorable Mentions) by the American Chemical Society and Winer of Food & Bio Cluster Denmark's Idea Competition 2024. Additionally, he has been acknowledged as one of the World's Top 2% Scientists.

Qualifications

Ph.D., Technical University of Denmark
2009 → 2012

Ph.D., Technical University of Denmark
2009 → 2012

M.Sc., Dalian University of Technology
2005 → 2009

Ph.D.

Ph.D.

Employment

Professor

Department of Environmental and Resource Engineering
Technical University of Denmark
Kgs. Lyngby, Denmark
13 Aug 2009 → present

Water Technology & Processes

Technical University of Denmark
Kgs. Lyngby, Denmark
31 Aug 2022 → present

DTU Microbes Initiative

Technical University of Denmark
11 Feb 2022 → present

Research outputs

Leveraging 3D printing in microbial electrochemistry research: current progress and future opportunities

Xu, M., Fernandez-Avila Cobo, M., Zeng, D. & Zhang, Y., 2025, (Accepted/In press) In: *Frontiers of Environmental Science & Engineering*.

Activation of peracetic acid by electrodes using biogenic electrons: A novel energy- and catalyst-free process to eliminate pharmaceuticals

Zou, R., Yang, W., Rezaei, B., Tang, K., Guo, K., Zhang, P., Keller, S. S., Andersen, H. R. & Zhang, Y., 2024, In: Water Research. 261, 14 p., 122065.

Additive manufacturing-derived free-standing 3D pyrolytic carbon electrodes for sustainable microbial electrochemical production of H₂O₂

Zou, R., Rezaei, B., Keller, S. S. & Zhang, Y., 2024, In: Journal of Hazardous Materials. 467, 11 p., 133681.

Autotrophic degradation of sulfamethoxazole using sulfate-reducing biocathode in microbial photo-electrolysis system

Bai, J., Liu, G., Zhang, Y. & Luo, H., 2024, In: Science of the Total Environment. 916, 7 p., 170332.

Biochemical Properties and Biotechnological Potential of Mango Biowastes for Economical Valorization in Burkina Faso

Sanou, M., Kanté-Traoré, H., Haro, K., Somda, S., Offei, F., Zhang, Y., Parkouda, C. & Dicko, M. H., 2024, (Accepted/In press) In: Waste and Biomass Valorization.

Biogas upgrading by biotrickling filter: Effects of temperature and packing materials

Huang, J.-H., Fan, X.-L., Li, R., Sun, M.-T., Zou, H., Zhang, Y.-F., Guo, R.-B. & Fu, S.-F., 2024, In: Chemical Engineering Journal. 481, 10 p., 148367.

Co-enhancing effects of zero valent iron and magnetite on anaerobic methanogenesis of food waste at transition temperature (45 °C) and various organic loading rates

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Distribution characteristics and transformation mechanism of *per*- and polyfluoroalkyl substances in drinking water sources: A review

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Dual role of pyrogenic carbon in mediating electron transfer from clay minerals to chromium in aqueous and solid media

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Effects of salinity in food waste on the growth of black soldier fly larvae and global warming potential analysis

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Electricity-driven synergistic sulfur recovery and sulfate elimination in seawater

Ye, Y., Chen, X., Xin, H., Liao, Y., Qian, L., Zhang, Y., Luo, H., Tang, C. Y. & Liu, G., 2024, In: Separation and Purification Technology. 354, 12 p., 128804.

Electroactivity of the magnetotactic bacteria *Magnetospirillum magneticum* AMB-1 and *Magnetospirillum gryphiswaldense* MSR-1

Fessler, M., Su, Q., Jensen, M. M. & Zhang, Y., 2024, In: Frontiers of Environmental Science and Engineering. 18, 4, 8 p., 48.

Emerging Trends and Advances in Microbial Electrochemical Technologies: Hypothesis, Design, Operation, and Applications

Yadav, A. K. (Editor), Srivastava, P. (Editor), Noori, M. T. (Editor) & Zhang, Y. (Editor), 2024, Elsevier Editora. 853 p.

Influence of sulphate on autotrophic bioelectrochemical denitrification at low temperatures

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Integrated biogas upgrading and medium-chain fatty acids production for more efficient resource recovery

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Low-voltage stimulated denitrification performance of high-salinity wastewater using halotolerant microorganisms

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Magnetic Co-doped 1D/2D structured $\gamma\text{-Fe}_2\text{O}_3/\text{MoS}_2$ effectively activated peroxymonosulfate for efficient abatement of bisphenol A via both radical and non-radical pathways

Xu, J., Wang, D., Hu, D., Zhang, Z., Chen, J., Wang, Y. & Zhang, Y., 2024, In: Frontiers of Environmental Science & Engineering. 18, 3, 17 p., 37.

Mass-immigration shapes the antibiotic resistome of wastewater treatment plants

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Novel strategy for efficient energy recovery and pollutant control from sewage sludge and food waste treatment

Li, C., Wang, R., Yuan, Z., Xie, S., Wang, Y. & Zhang, Y., 2024, In: Water Research. 261, 11 p., 122050.

On the mechanism and selectivity of a novel iodine/peracetic acid process for the efficient and rapid elimination of micropollutants

Zou, R., Yang, W., Rezaei, B., Bendtsen, E. B., Guo, K., Tang, K., Andersen, H. R., Keller, S. S. & Zhang, Y., 2024, In: Chemical Engineering Journal. 479, 10 p., 147815.

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Pivotal Role of Intracellular Oxidation by HOCl in Simultaneously Removing Antibiotic Resistance Genes and Enhancing Dewaterability during Conditioning of Sewage Sludge Using $\text{Fe}^{2+}/\text{Ca}(\text{ClO})_2$

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Succession of bacterial community during electroactive methanogenic biofilm development under microplastic manipulation

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Sulfite activation of Fe-Mn bimetallic oxides for rapid oxidative removal of As(III) in water: Involvement of active Mn(III)

Cai, G., Tian, Y., Li, L., Zhang, W., Huang, R., Zhang, J., Wang, Q., Xu, H. & Zhang, Y., 2024, In: Chemical Engineering Journal. 479, 10 p., 147539.

Sustainable bioelectric activation of periodate for highly efficient micropollutant abatement

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Synergy in Nano- Fe_3O_4 and MOF-808 composites enriches their applications in sludge anaerobic fermentation

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When polyethylene terephthalate microplastics meet Perfluorooctane sulfonate in thermophilic biogas upgrading system: Their effect on methanogenesis

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A hybrid subnano cluster electrocatalysis process for recalcitrant wastewater treatment

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Conjugative plasmids inhibit extracellular electron transfer in *Geobacter sulfurreducens*

Fessler, M., Madsen, J. S. & Zhang, Y., 2023, In: Frontiers in Microbiology. 14, 12 p., 1150091.

Deciphering different effects of ZVI and NaOH on metabolic characteristics in the process of methanogenesis recovery from VFA suppression

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Liu, Y., Li, X., Zhou, W., He, R., Zhang, Y. & Zhao, N., 2023, In: Separation and Purification Technology. 309, 10 p., 123019.

Electricity-Driven Microbial Metabolism of Carbon and Nitrogen: A Waste-to-Resource Solution

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Electroactive microorganism-assisted remediation of groundwater contamination: Advances and challenges

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Enhancing Freshwater Production via Customizable and Highly Efficient Solar-Driven Seawater Desalination

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Improved Fe(II) regeneration from actual ferric sludge using a biocathode with granular sludge

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Insights into Chain Elongation Mechanisms of Weak Electric-Field-Stimulated Continuous Caproate Biosynthesis: Key Enzymes, Specific Species Functions, and Microbial Collaboration

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Insights into the impact of polyethylene microplastics on methane recovery from wastewater via bioelectrochemical anaerobic digestion

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Cometabolic biodegradation system employed subculturing photosynthetic bacteria: A new degradation pathway of 4-chlorophenol in hypersaline wastewater

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From renewable energy to sustainable protein sources: Advancement, challenges, and future roadmaps

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