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Profile

Dr. Yifeng Zhang obtained his Ph.D. degree from DTU in 2012, with the financial support of DTU scholarship. He is also serving as editor/associate editor in several prestigious journals in the field including Water Research, Science of the Total Environment, Frontiers in Microbiology, Sustainable Horizons, Water Cycles etc. His major research interests are microbial electrochemistry and biotechnology to support the 2nd, 6th, 7th, 12th, and 13th UN Sustainable Development Goals through sustainable water treatment, resource recovery, CO₂ capture and utilization, biosynthesis, and environmental bioremediation & monitoring. He is recognized as an international young leader in both (i) microbial electrochemistry as well as (ii) bioresource recovery from wastewaters. His accomplishments so far have been well documented in over 145 SCI publications in top journals in the field, 2 patents, 4 book chapters, and numerous conference contributions. According to Google Scholar, his works have been cited over 5600 times and with an H index of 40. He has been listed as World's Top 2% Scientists 2020 and 2021. In the same year, he was selected as top 50 among global competitions for The Elsevier Foundation-ISC3 Green & Sustainable Chemistry Challenge Award. In 2022, he received Honorable Mentions for the James J. Morgan Early Career Award given by the American Chemical Society. Since receiving his PhD, he has been successfully attracting over 35 M DKK funding from e.g., Horizon Europe, The Carlsberg Foundation, Independent Research Fund Denmark, the Villum Foundation, and the Novo Nordisk Foundation. In 2018, he received a Carlsberg Foundation Distinguished Fellowship which is given to talented young scientists to establish their research group.

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

Associate 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
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31 Aug 2022 → present

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Technical University of Denmark
11 Feb 2022 → present

Postdoc, Prof. Irini Angelidaki

1 Jan 2012 → 1 Jan 2017

Research outputs

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.

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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Du, B., Zhan, X., Lens, P. N. L., Zhang, Y. & Wu, G., 2024, In: Water Research. 249, 12 p., 120896.

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Li, B., Wang, S., Fessler, M., Zou, R., Su, Y. & Zhang, Y., 2024, In: Water Research. 249, 8 p., 120984.

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

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

Chen, L., Xiang, H., Zhou, L-T., Zhang, Y-Q., Ding, Y-C., Wu, D., Zhu, N-W., Zhang, Y-F. & Feng, H-J., 2024, In: Bioresource Technology. 401, 9 p., 130688.

Magnetic Co-doped 1D/2D structured γ -Fe₂O₃/MoS₂ effectively activated peroxyomonosulfate 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

Zhang, L., Adyari, B., Hou, L., Yang, X., Gad, M., Wang, Y., Ma, C., Sun, Q., Tang, Q., Zhang, Y., Yu, C-P. & Hu, A., 2024, In: Science of the Total Environment. 908, 13 p., 168193.

Massive components in renewable hydrothermal liquid trigger ultra-high differentially expressed genes and diverse pathways for pathogen control

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Metagenomic insights into phenanthrene biodegradation in electrical field governed biofilms for groundwater bioremediation

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

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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 Fe²⁺/Ca(ClO)₂

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Rapid oxidation and deep As(III) purification from water using gelatin-supported iron-based metal-organic framework aerogel coupled with H₂O₂: Preparation, performance and mechanism

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Rapid removal of decabromodiphenyl ether by mechanochemically prepared submicron zero-valent iron with FeC₂O₄·2 H₂O layers: Kinetics, Mechanisms and Pathways

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Simultaneous biogas upgrading and medium-chain fatty acids production using a dual membrane biofilm reactor

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

Wang, S., Yang, X., Jin, B., Zhou, S. & Zhang, Y., 2024, In: Chemical Engineering Journal. 481, 12 p., 148641.

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Sustainable bioelectric activation of periodate for highly efficient micropollutant abatement
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Enhancing biocathode denitrification performance with nano- Fe_3O_4 under polarity period reversal
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Innovative electrochemical biosensor with nitrifying biofilm and nitrite oxidation signal for comprehensive toxicity detection in Tuojiang River
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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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Recovery and upcycling of residual lactic acid and ammonium from biowaste into yeast single cell protein

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Recycling of acetate and ammonium from digestate for single cell protein production by a hybrid electrochemical-membrane fermentation process

Zeng, D., Jiang, Y., Schneider, C., Su, Y., Hélix-Nielsen, C. & Zhang, Y., 2023, In: Resources, Conservation and Recycling. 188, 11 p., 106705.

Remediation of marine dead zones by enhancing microbial sulfide oxidation using electrodes

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Renewable electrons-driven bioinorganic nitrogen fixation: a superior route toward green ammonia?

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Selective and nonselective removal of hydrophobic compounds by coupling engineered FeOCl in a cathode-anode synergistic electrochemical platform

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Simultaneous production and recovery of volatile fatty acids from fermentation process using an electrochemically assisted up-flow granular sludge bed reactor

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- Green electricity-driven simultaneous ammonia recovery and in-situ upcycling for microbial protein production**
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- Insights into the impact of polyethylene microplastics on methane recovery from wastewater via bioelectrochemical anaerobic digestion**
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- Microbial conversion of syngas to single cell protein: the role of carbon monoxide**
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- Microbial electrochemical approaches of carbon dioxide utilization for biogas upgrading**
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- Microbial electrolysis enhanced bioconversion of coal to methane compared with anaerobic digestion: Insights into differences in metabolic pathways**
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- Microbial Interactions in Electroactive Biofilms for Environmental Engineering Applications: A Role for Nonexoelectrogens**
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- Microwave-assisted iron oxide process for efficient removal of tetracycline**
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- Natural solar intermittent-powered electromethanogenesis towards green carbon reduction**
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