

Supporting information (SI)

Electrode microbial communities associated with electron do-nor source types in a bioelectrochemical system treating azo-dye wastewater

Ze-Chong Guo ^{a, b}, Lu Zhang ^a, Min-Hua Cui ^{b, c, *}, Ai-Jie Wang ^{b, d, *}

^a School of Environmental and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang 212100, P.R. China

^b State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin 150090, P.R. China

^c School of Environmental and Civil Engineering, Jiangnan University, Wuxi 214122, P.R. China

^d Key Laboratory of Environmental Biotechnology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, P.R. China

* Corresponding author

School of Environmental and Civil Engineering, Jiangnan University, Wuxi 214122, PR China (Min-Hua Cui, cuiminhua@jiangnan.edu.cn)

Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, PR China. (Ai-Jie Wang, waj0578@hit.edu.cn)

Table and Figure Chapter

Table S1 Comparison of dominant genera fed with various electron donor sources

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Operational mode	Performance	Electron donor	Dominant genera	References
MFC	212.4±29.2 mW/m ² @ carbon brush electrode	Starch	<i>Paenibacillus lautus</i> EB1	[42]
Potentiostat	0.55mA/cm ² with a Coulombic efficiency of 71.4%	Brewery wastewater	<i>Geobacter</i> spp.	[43]
MEC	Decolorization efficiency of 94.62 ± 0.63% and COD removal efficiency of 89.12 ± 0.32%	Glucose	<i>Raoultella</i> , <i>Shinella</i> , <i>Comamonas</i> , and <i>Pseudomonas</i>	[44]
MEC	Phenol removal rate and COD removal efficiency increased by 2.6 and 2.1-fold	Phenol	<i>Geobacter</i> , <i>Pseudomonas</i> and <i>Comamonadaceae_</i>	[45]
MEC	Azo dye AO7 decolorization efficiency over 98%	Domestic wastewater Glucose Acetate	<i>Desulfovibrio</i> <i>Acinetobacter</i> <i>Klebsiella</i>	This study

References

42. Yu, Y.-Y.; Zhen, S.-H.; Chao, S.-L.; Wu, J.; Cheng, L.; Li, S.-W.; Xiao, X.; Zhou, X. Electrochemistry of newly isolated Gram-positive bacteria *Paenibacillus lautus* with starch as sole carbon source. *Electrochim. Acta* **2022**, *411*, 140068. <https://doi.org/10.1016/j.electacta.2022.140068>.
43. Mai, Q.; Yang, G.; Cao, J.; Zhang, X.; Zhuang, L. Stratified microbial structure and activity within anode biofilm during electrochemically assisted brewery wastewater treatment. *Biotechnol. Bioeng.* **2020**, *117*, 2023–2031. <https://doi.org/10.1002/bit.27342>.
44. Wang Y, Pan Y, Zhu T, Wang A, Lu Y, Lv L, Zhang K, Li Z. Enhanced performance and microbial community analysis of bioelectrochemical system integrated with bio-contact oxidation reactor for treatment of wastewater containing azo dye. *Sci. Total Environ.* **2018**, *634*, 616–627. <https://doi.org/10.1016/j.scitotenv.2018.03.346>.
45. Yang LH, Cheng HY, Ding YC, Su SG, Wang B, Zeng R, Sharif HMA, Wang AJ. Enhanced treatment of coal gasification wastewater in a membraneless sleeve-type bioelectrochemical system. *Bioelectrochemistry* **2019**, *129*, 154–161. <https://doi.org/10.1016/j.bioelechem.2019.05.013>.