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**Elimination of pyraclostrobin by simultaneous microbial degradation coupled with the Fenton process in microbial fuel cells and the microbial community**

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**Abstract:** The elimination of pyraclostrobin by simultaneous microbial degradation and Fenton oxidation was achieved in a microbial fuel cell (MFC) system. After 12 h of incubation, the removal rate of pyraclostrobin was 1.4 mg/L/h at the anode and 1.7 mg/L/h at the cathode. The pyraclostrobin concentration was less than the detection limit (0.1 mg/L) after 72 h at the anode and 24 h at the cathode. The air flow rate, temperature, and pH of the catholyte had significant effects on the generation of H<sub>2</sub>O<sub>2</sub>. The maximum production of H<sub>2</sub>O<sub>2</sub> was 1.2 mg/L after reaction for 20 h during the Fenton process. Microbial community analysis indicated that functional bacteria in the genera *Chryseobacterium*, *Stenotrophomonas*, *Arcobacter*, and *Comamonas* were predominant in the anodic biofilm. In conclusion, the MFC-Fenton system provides an effective approach for treating environmental contaminants.

**Keywords:** Microbial fuel cell; Microbial degradation; Fenton process;

Pyraclostrobin; Microbial community

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