



## Treatment of landfill leachate by internal microelectrolysis and sequent Fenton process

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### ABSTRACT

The treatment of landfill leachate was carried out in a bench scale reactor using internal microelectrolysis followed by Fenton process. The effect of operating conditions, such as reaction times of internal microelectrolysis and Fenton process, initial pH, cast iron dosage, and hydrogen peroxide concentration on COD removal, was investigated. The results showed that organic pollutants in the leachate were degraded swiftly during the first stage of both processes, but the increase of COD removal became insignificant with the progress of treatment. The optimal conditions were determined to be 3 of initial pH and 75 g/L of cast iron dosage. Under the optimal conditions, over 60% COD removal efficiency was achieved after 90 min of internal microelectrolysis and then 105 min of Fenton process with the addition of 195.6 mM hydrogen peroxide.

*Keywords:* Cast iron; Fenton reaction; Internal microelectrolysis; Landfill leachate

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