

Landfill Leachate Wastewater Treatment by Fenton Process

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Abstract : The leachate wastewater is high contaminant water; hence it needs to be treated. The objective of this research was to determine the Chemical Oxygen Demand (COD) concentration, Phosphate (PO_4^{3-}), Ammonia (NH_3) and color in leachate wastewater in the landfill area. The experiments were carried out in the optimum condition by pH, the Fenton reagent dosage (concentration of dosing Fe^{2+} and H_2O_2). The optimum pH is 3, the optimum $[\text{Fe}^{2+}]/[\text{COD}]$ and $[\text{H}_2\text{O}_2]/[\text{COD}_0] = 0.03$ and 0.03 , respectively. The Biochemical Oxygen Demand (BOD_5)/Chemical Oxygen Demand (COD) ratio can be adjusted to 1 for landfill leachate wastewater ($\text{BOD}_5/\text{COD} = 0.11$). From the results, the Fenton process shall be investigated further to achieve the removal of phosphates in addition to COD and color.

Keywords : landfill leachate treatment, open dumpsite, Fenton process, wastewater treatment

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