World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:9, No:10, 2015

Optimization of Fenton Process for the Treatment of Young Municipal Leachate

Authors : Bouchra Wassate, Younes Karhat, Khadija El Falaki

Abstract : Leachate is a source of surface water and groundwater contamination if it has not been pretreated. Indeed, due to its complex structure and its pollution load make its treatment extremely difficult to achieve the standard limits required. The objective of this work is to show the interest of advanced oxidation processes on leachate treatment of urban waste containing high concentrations of organic pollutants. The efficiency of Fenton (Fe^{2+} + H_2O_2 + H^+) reagent for young leachate recovered from collection trucks household waste in the city of Casablanca, Morocco, was evaluated with the objectives of chemical oxygen demand (COD) and discoloration reductions. The optimization of certain physicochemical parameters (initial pH value, reaction time, and $[Fe^{2+}]$, $[H_2O_2]/[Fe^{2+}]$ ratio) has yielded good results in terms of reduction of COD and discoloration of the leachate.

Keywords : COD removal, color removal, Fenton process, oxidation process, leachate
Conference Title : ICECE 2015 : International Conference on Environmental and Chemical Engineering
Conference Location : Paris, France
Conference Dates : October 29-30, 2015

Open Science Index, Chemical and Materials Engineering Vol:9, No:10, 2015 publications.waset.org/abstracts/33168.pdf