

LOW COST ELECTROCHEMICAL TREATMENT OF LANDFILL LEACHATE

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Abstract

Electrochemical methods can offer an elegant contribution towards environmental control as electrons provide a means of removing pollutants by redox reactions. Electrochemical methods are based on anodic and cathodic reduction of impurities present in waste water. In the process of electrochemical oxidation the main aim has been to convert oxidisable species into carbon dioxide which can be left off safely into the municipal solid waste are disposed of or dumped, is complex waste water that could exert high environmental impact. This study aims to treat the landfill Leachate in order to render the Leachate suitable for inland disposal. The removal of pollutants was studied with different anode materials in electrochemical process. The treatment of landfill Leachate by electrochemical oxidation was carried out in a batch electrolytic parallel plate reactor. The electrochemical process was carried out separately with stainless steel as cathode and anode materials aluminum and titanium/platinum / graphite /silver electrodes. The effects of the operating factors such as current density, reaction time, chloride ion concentration, additional electrolyte such as sulfuric acid (H₂SO₄) that influence the removal of pollutant from landfill Leachate electrochemically were studied.

Keywords: Leachate, Neutralization, Oxidisation, Electrode.