

**TREATMENT OF LEACHATE WATER USING PHOTOCATALYST
(TiO₂) UNDER UV LIGHT**

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ABSTRACT

A trend of significant increase in the municipal solid waste generation has been recorded worldwide. This has been found due to over population growth rate, industrialization, urbanization and economic growth. Most of the countries have adopted sanitary landfilling as the best method for disposal of their Municipal Solid Waste (MSW). Municipal Solid Waste(MSW) is dumped at specified locations in a city. They are mostly open sources, generating foul smell. One such location is the Perungudi Garbage yard. The perungudi dump site is located towards the northern limit of a large topographic depression termed as the pallikaranai Depression covers an area of 228 acres. Daily waste disposed of in perungudi garbage yard is around 2400 tons to 2600 MT. With such huge amounts of waste being dumped, it also generates a huge amount of leachate, which requires treatment before being discharged to the environment. The landfill leachate polluter potential is 10 to 100 times greater than sewage. Leachate is generated as water percolates through a landfill and comes into contact with the waste. Physical (particulate), chemical, and microbial pollutants transfer into the water forming what is termed 'leachate'. This paper deals with the treatment of leachate using the photocatalytic process. In this study we used TiO₂ for the treatment of leachate from landfills. The result of this study seems promising and might be applied for futher treatment process of lanfills leachate and polluted water.

Keywords: Groundwater, Landfill, Photocatalytic

INTRODUCTION

Solid wastes are garbage, refuse, trash and different discarded solid materials that were generated from human activities, particularly from residential, industrial institutions (e.g., Restaurants, banks), establishment (e.g., hospitals, schools) and typically wastes area unit managed by municipal authorities. In developing countries, large quantities of municipal solid waste (MSW) are formed because of the growing urbanization and manufacturers. In India, it's calculated that concerning 115000 MT of municipal solid waste is generated daily within the country [1, 2]. This solid waste has the high volume and numerous qualities; moreover these compounds are persistent and extremely stable because of the formation of their organic matter [3].