

Municipal Leachate Treatment by Using Polyaluminium Chloride as a Coagulant

Authors : Syeda Azeem Unnisa

Abstract : The present study was undertaken at Jawaharnagar Solid Waste Municipal Dumpsite, Greater Hyderabad Municipal Corporation, Telangana State, India in 2017 which generates 90,000 litres of leachate per day. The main objective of the leachate treatment was to remove organic compounds like color, suspended solids, ammonia and COD by coagulation-flocculation using polyaluminum chloride (PAC) as coagulant which has higher coagulant efficiency and relative low cost compared to the conventional coagulants. Jar test apparatus was used to conduct experiments for pH 7, rapid mixing speed 150 rpm for 3 minute, slow mixing speed 30 rpm for 20 minute and the settling time of 30 minute for different dosage of PAC (0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5 and 5.0 g/L). The highest percentage of removal of suspended solids, color, COD and ammonical nitrogen are 97%, 96%, 60% and 37% with PAC optimum dose of 2.0 g/l. The results indicate that the PAC was effective in leachate treatment which is very much suitable for high toxicity of waste and economically feasible for Indian conditions. The treated water can be utilized for other purpose apart from drinking.

Keywords : coagulant, leachate, polyaluminium chloride, treatment

Conference Title : ICSW 2018 : International Conference on Solid Waste

Conference Location : Sydney, Australia

Conference Dates : March 29-30, 2018