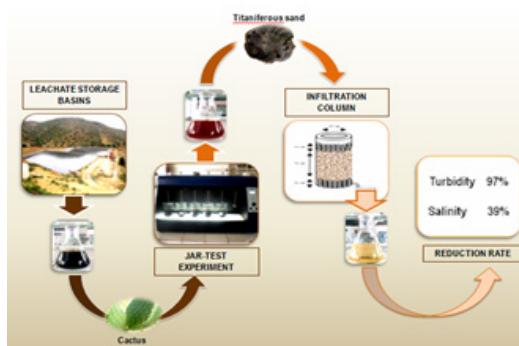


A combined treatment of municipal solid waste landfill leachate using cactus as coagulant and titaniferous sand as filter material

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In Morocco, the increasing production of municipal solid waste (MSW) and its by-products, in particular leachate, is a major concern. MSW leachate is a very complex effluent, loaded with organic and inorganic pollutants; it poses a serious threat to human health and the environment. In Agadir city, the leachate generated is stored in seven tanks in the Tamellast land-fill. The daily flow of this effluent accelerates the saturation of the storage tanks. Overflowing leachate presents a potential environmental hazard, and proper treatment of the leachate has inevitably become a requirement. Therefore, this study aims to find a simple, inexpensive and efficient leachate treatment system. Two techniques using local natural materials have been combined to achieve significant results: coagulation and infiltration-percolation. Cactus powder and cactus mucilage have been selected to treat leachate by coagulation and titaniferous sand as a filter material for the infiltration-percolation process. Laboratory scale experiments show very interesting results. Due to its effectiveness at a dose of 20 mg / l at pH 11, the effluent treated with cactus mucilage was chosen to undergo secondary treatment (86.54% for turbidity and 14.60% for electrical conductivity). The elimination of turbidity and electrical conductivity achieved after infiltration-percolation is, respectively, 97% and 39%.



Biography

NOUJ Nisrine and the lab team used their expertise to solve a big problem in the region of Agadir, Morocco. Treat environmentally harmful leachate using a simple and inexpensive method. A combination of an abundant biocoagulant and infiltration-percolation on sand shows promising results in terms of reducing pollutants. This approach could easily be used and save the environment.