**Abstract**

 Heavy metal contaminations through effluent discharges create a major problem in global ecosystem. Presence of Pb(II) ions in water streams used for various activities affect living beings in its own way depending on its concentrations. The adsorption efficiencies of acid treated Goat Teeth (TGT) and *Prosopis juliflora* Bark (TPJB) being ecofriendly, efficient/no cost sorbents in the removal of Pb(II) ions from aqueous solutions has been investigated using batch experiments, accounting for the dependence of both the systems on particle size, dosage, contact time, initial concentration and pH of the medium. The sorptive behavior of Pb(II) has been tested for Langmuir, Freundlich and Tempkin equations. The results of isothermal studies indicate that the Langmuir model fits better in the present case. The optimized cor11.iitions for Pb(Il)-TGT and Pb(Il)- TP JB systems are 0.18mm particle size, 200 mg dosage, IO minutes contact time, 5.5 pH and 0.18mm particle size, 1000 mg dosage, 30 minutes contact time, 5.5 pH respectively with the maximum Pb(II) efficiency of 100% in the case of TGT in comparison with 89.9% for TPJB. Overall. the present findings suggest both TGT and TP JB are found to be superior in the removal of Pb(II) ions against varied activated carbons as well as treated materials as reported by researchers earlier.