

## ABSTRACT

As human populations and economies grow, global freshwater demand has been increasing rapidly. Coffee Effluent contains melanoidins which causes water pollution, as it has a high chemical oxygen demand (COD) and a low biochemical oxygen demand (BOD), colour of the coffee effluent can reduce the amount of sunlight that penetrates the water body which leads to eutrophication and also it contains turbidity and solids which is harmful for environment, hence coffee pulp wastewater should be treated before discharging. Water recycling, conventional treatment, photo-fenton method, uv catalytic method, electro-oxidation and adsorption process are different methods of treating coffee pulp wastewater. As adsorption is very effective, low cost and economical method in treatment of wastewater, adsorption process is adopted as the treatment method in the project. Zeolite and Titanium dioxide are used as an adsorbent. After collecting of coffee effluents, the initial concentration of the turbidity, biochemical oxygen demand and solids is determined and by batch study the optimum pH varying from 4 to 9 is determined and it showed that the optimum pH condition for the treatment of coffee pulp wastewater is 7. The break through curve is determined with optimum pH by varying the bed height of 4, 8, 12, 16, 20, 24 cm and flow rate of 5, 10, 15, 20, 25 ml/min, for the removal of turbidity, biochemical oxygen demand and solids from the coffee pulp effluent. The conclusion suggest that the efficiency of titanium dioxide is greater when compare to zeolite as an adsorbent. Even though the efficiency of titanium dioxide is more the operation problem is high than the zeolite, as there is clogging of the bed.