

**THE ENHANCEMENT OF ELECTROFLOTATION PROCESS
USING ARABIC BEANS (*Cicer arietinum*)
AS A BIOOAGULANTS ON THE LEACHATE TREATMENT**

ABSTRACT

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In this study Electro-Bio was used for treating the leachate liquid. The Electro-Bio is the enhancement of electroflotation process using natural coagulant on the treatment of leachate liquid. Arabic beans was used as natural coagulant in this study with varying dose of 0.025; 0.05; 0.1; 0.15; 0.2 and 0.25 g/500 mL. The electroflotation process was performed using stainless steel as cathode and Titanium as anode at a constant DC voltage of 40 V in 30 minutes process. The effectiveness of the process was evaluated by measuring the decreasing in the Total Dissolved Solid (TDS), Electrical Conductivity (EC), turbidity, concentration of heavy metal Pb and the increasing of Dissolved Oxygen (DO). The initial concentration of the 20 times diluted sample showed that the concentration of TDS, EC, turbidity, DO and heavy metal of Pb and Cr respectively as much as for 719 mg/L; 1 mS/cm; 2.99 NTU; 2.3 mg/L and 0.6665 mg/L. The result of the study showed that Electro-Bio process was able to decrease those parameters respectively 599 mg/L (16.69%) ; 0.84 ms/cm (15.67%), 0.06 NTU (97,98%) and 3.60 mg/L (56.52%) at biocoagulant dose of 0,025 g/500 mL. However the best result for decreasing concentration of Pb 0.4769 mg/L (28.45%) at the biocoagulant dose of 0.05 g/500 mL. The Electro-Bio method has the effect of heavy metal concentrating Cr on the results of leachate wastewater treatment. Based on the result showed that Electro-Bio can affect the contaminant content available in the leachate wastewater.

Keyword : *Arabic beans, Electroflotation, Leachate, Natural coagulant,*