

**BIOSORPTION OF Pb(II) BY SULFURIC ACID TREATED SPENT  
GRATED COCONUT (*Cocos nucifera*)(SSGC) IN FIXED-BED COLUMN  
MODE**

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## ABSTRACT

### **BIOSORPTION OF Pb(II) ON CHEMICALLY MODIFIED SPENT GRATED (SGC) *COCOS NUCIFERA* COCONUT: COLUMN STUDY**

Spent grated coconut (*cocos nucifera*) from food industry waste was developed as a new and efficient biosorbent. In this study, the treated spent grated coconut was chosen to be investigated for removing Pb(II) from wastewater. The fixed-bed column study mode was employed under fixed parameters and column condition. The adsorption of adsorbent was investigated by using 1 g of biosorbent at pH 4, and the flow rate of 12 mL/min. The inlet concentrations of 80 mg/L of Pb(II) was used as initial concentration. The breakthrough curve was establish and two kinetic model were used; Thomas model and Yoon-Nelson model. Both model were fitted to this study with coefficient of correlation value ( $R^2$ ) of 0.871. The column capacity,  $q_b$  determined from breakthrough curve plot was 67.97 mg/g which was of higher adsorption capacity recorded among plant wastes.

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