

**STUDI ADSORPSI LOGAM Pb (II) MENGGUNAKAN ADSORBEN  
KULIT RAMBUTAN TERAKTIVASI HNO<sub>3</sub> DAN NaOH**

**INTISARI**

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Telah dilakukan penelitian tentang adsorpsi logam timbal (Pb) menggunakan adsorben kulit rambutan. Penelitian ini bertujuan untuk mengkaji karakter adsorben kulit rambutan dalam aktivitas adsorpsi logam Pb(II) dan interaksi adsorbat dengan adsorben. Dalam penelitian ini, adsorben kulit rambutan yang digunakan terbagi menjadi 2 (dua) yaitu adsorben non-aktivasi dengan adsorben teraktivasi asam nitrat (HNO<sub>3</sub>) dan natrium hidroksida (NaOH), kemudian dilakukan uji adsorpsi menggunakan variasi waktu 5, 10, 20, 30 menit. Biosorben dikarakterisasi menggunakan *Fourier Transform Infra Red* (FTIR), dan analisis larutan uji menggunakan *Atomic Absorption Spectrophotometry* (AAS). Hasil uji adsorpsi menunjukkan waktu optimum adsorpsi dicapai pada 5 menit untuk kedua adsorben. Hasil penelitian menunjukkan bahwa biosorben non-aktivasi dapat terjadi melalui interaksi isoterm Langmuir dan isoterm Freundlich, sedangkan biosorben teraktivasi hanya terjadi melalui interaksi fisisorpsi (Isoterm Freundlich).

***Kata kunci*** : *Adsorpsi, Biosorben, HNO<sub>3</sub>, Kulit Rambutan, NaOH, Pb(II), Selulosa.*

**STUDY OF ADSORPTION OF Pb (II) METALS USING RAMBUTAN'S  
PEEL ACTIVATED WITH HNO<sub>3</sub> AND NaOH**

**ABSTRACT**

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The adsorption of lead (Pb) metals using rambutan's peel adsorbent has been investigated. The research aimed to investigate the characteristic of rambutan's peel adsorbent in the adsorption activity and the interaction between adsorbate and adsorbent. In this study, the adsorbent of rambutan's peel divided into 2 (two) parts: non-activated adsorbent and activated adsorbent by using nitric acid (HNO<sub>3</sub>), sodium hydroxide (NaOH) and a variation of adsorption time of 5, 10, 20, 30 minutes. The biosorbents were characterized by *Fourier Transform Infra-Red* (FTIR) and the tested solutions were analyzed by *Atomic Absorption Spectrophotometry* (AAS). The adsorption result showed that the optimum time of adsorption was 5 minutes for both condition of adsorbents. The interaction between adsorbate and the non-activated biosorbent can occur through the interaction of Langmuir Isotherm and Freundlich Isotherm and the activated biosorbent only occur through the physisorption interaction (Freundlich Isotherm).

**Keywords:** *Adsorption, Biosorbent, HNO<sub>3</sub>, Rambutan's peel, NaOH, Pb(II), Cellulose*