

## **ADSORPTION STUDIES OF PHENOL USING ACTIVATED CARBONS PREPARED FROM BIOMASS**

### **ABSTRACT**

In this study, the adsorption of phenol onto two kinds of activated carbon prepared from Bamboo and Rattan were studied in batch system under varying experimental conditions; initial concentrations of phenol (25-200 mg/L), temperature (30, 38 and 48°C), and pH of solution (2-12). The experimental data of phenol adsorption on both activated carbons were analyzed using Langmuir and Freundlich isotherm equations and found that the data described well by the Langmuir isotherm equation. The highest adsorption capacity of bamboo-based activated carbon was 175.440 mg/L at 30°C while for rattan-based activated carbon was 185.185 mg/L and at 38°C. Adsorption data were modeled using pseudo-first and second order kinetic equations, and found that the pseudo-second order kinetic equation could describe the adsorption kinetics.