

**KINETIC AND ISOTHERM STUDIES OF COPPER(II)
ADSORPTION ON POTASSIUM HYDROXIDE TREATED KENAF
(*Hibiscus cannabinus L.*) FIBER**

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ABSTRACT

KINETIC AND ISOTHERM STUDIES OF COPPER(II) ADSORPTION ON POTASSIUM HYDROXIDE TREATED KENAF (*Hibiscus cannabinus L.*) FIBER

Kenaf fiber which is a by-product of agricultural is easily available and relatively low cost has been investigated as an adsorbent used to remove copper(II) from aqueous solution. The adsorption of copper(II) by potassium-hydroxide-treated *Hibiscus cannabinus L.* powder (KHCLP) was investigated under batch mode. The effects of parameters such as pH, adsorbent dosage, initial copper(II) concentration and contact time were studied. Copper(II) adsorption was considered fast because the time needed to reach equilibrium was only 60 min. The adsorption kinetic data followed pseudo-second-order and the adsorption isotherm fitted Langmuir model well. According to the Langmuir model, the calculated value of maximum adsorption capacity (q_{\max}) of copper(II) was 32.26 mg g⁻¹. The characteristic of KHCLP before and after adsorption of copper(II) were characterized by Fourier Transform Infrared (FTIR) spectrometer in order to understand the mechanism of adsorption. This study showed that KHCLP can be used as a good adsorbent for copper(II) removal from aqueous solution.