

Adsorption of copper from aqueous solution by *Elais guineensis* kernel activated carbon

ABSTRACT

In this study, a series of batch laboratory experiments were conducted in order to investigate the feasibility of *Elais Guineensis* kernel or known as palm kernel shell (PKS)-based activated carbon for the removal of copper from aqueous solution by the adsorption process. Investigation was carried out by studying the influence of initial solution pH, adsorbent dosage and initial concentration of copper. The particle size of PKS used was categorized as PKS₆₀M. All batch experiments were carried out at a constant temperature of 30°C ($\pm 2^\circ\text{C}$) using mechanical shaker that operated at 100 rpm. The single component equilibrium data was analyzed using Langmuir, Freundlich, Redlich-Peterson, Temkin and Toth adsorption isotherms.

Keyword: *Elais guineensis*; Copper removal; Adsorption; Isotherms