

Physical characteristics of activated carbon derived from durian shell.

Abstract

Durian shells are easily available agricultural by-products and its large quantities of generation make it a potential source for production of low cost activated carbon. This study was performed to determine the characteristics of activated carbon prepared from durian shell. Ultimate and proximate analysis for raw material was determined. The durian shell activated carbon was prepared from impregnating the sample in 5, 10, 20 and 30 % (v/v) concentration of phosphoric acid for 24 h, followed by carbonization at different temperatures in nitrogen atmosphere. The results showed that various treatment conditions affect the percentage of yield, surface area and pore structure. The highest BET surface area 1404 m²/g was obtained at 30 % of acid concentration, 500 °C and 20 min of heating.

Keyword: Durian shell; Activated carbon; Phosphoric acid; BET surface area.