**RESEARCH ON DETERMINATION OF PRACTICAL AND OPERATIONAL PARAMETERS OF PILOT SCALE SYSTEM TO RECYCLING SAWDUST TO BIO-CHACOAL**

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**ABSTRACT**

The research was conducted by a pilot scale system with the capacity was 100 kg/batch. The recovered efficiency of bio-charcoal was from 35-40%. The results showed that the optimum parameters of temperature and pyrolysis duration happened in carbonization room were 450oC and 120 minute, respectively. The typical characteristics of produced bio-charcoal such as carbon content, calorific value, ash content and sulphur were 86.83%, 7967 kcal/kg, 0.52%, 1.63% and 0.004%, respectively. The indication of practical and operational parameters of pilot scale system to recycling sawdust to bio-charcoal help to bring out a renewable energy which can replace fossil energy; and also contribute to increasing economic benefit in particular and environmental protection ingeneral.

*Keywords:* **sawdust, sawdust charcoal, bio-charcoal**