MAKING OF BIOBRIKET FROM FILTER CAKE AS AN ALTERNATIVE FUEL

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Abstract

Biobriket is the solid fuel and made from the remnants of organic material that has undergone compression process with a specific press power.

Making of biobriket from filter cake, conducted the first phase is to prepare the filter cake obtained from PG Candi as the raw material, then dried and mashed it with crusher. The fine filter cake is screened to obtain a mesh size of 80, 100, and 120. At the next stage, the filter cake is weighed as much as 20 grams and is mixed with KMnO$_4$ at variables of 3.75 grams, 2.5 grams, and 1.25 grams, and the starch solution at variables of 0.55 grams, 1.25 grams, and 1.95 grams. The mixture is molded and pressed to get the biobriket. The biobriket is dried to remove water content by oven at 110$^\circ$C.

In this experiment, biobriket highest calorific value of 329.448201 cal/gram is obtained on the composition of the addition of 3.75 grams of KMnO$_4$ and 0.55 grams of starch. The fastest flash point of biobriket of 14.08 second is obtained from the addition of 0.55 gram of starch and 3.75 grams of KMnO$_4$. The highest rate of combustion biobriket of 0.02923698 grams/second is obtained from the addition of 3.75 grams of KMnO$_4$ and 0.55 grams of starch.

Keyword : biobriket, filter cake, starch, KMnO$_4$, heating value, flash point, and rate of combustion