

A Study of Treatment for High-Ash Content Coal

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This study introduces the application of several methods sequentially to treat the residual coal which has high-ash content and sufficiently high-carbon content. Ash contained in coal can increase the burning time and decrease the combustion efficiency. Therefore, flotation was introduced to reduce the ash content of sample which has similarities in property with residual coal. Indonesia sub-bituminous coal with high-ash content was chosen and used especially to make comparison easier when determine the effect of using different chemical agents in flotation process. 4-methyl-2-pentanol was used as frother, while kerosene, waste lubrication oil, and cash nut sell liquid (CNSL) were used as collector. The result shows that increasing amount of collector effects on less coal recovery. It also shows that the collector addition affects the coal recovery flotage, ash content of sediment, and the amount of suspended solid which lost after flotation. Then, filter press was performed to filter out the liquid component from the slurry using filter by pressure and retain cakes as a solid component. The next step was to shape the solid component into pellet form using molding extruder. After extrusion, drying was applied to evaporate partial moisture content. Another coal pellet was made after mixed with 4wt% of asphalt as a binder. The compressive strength and friability of coal pellet with and without binder were tested and compared.