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Abstract Index

Permana, Darsa (R&D Centre for Mineral and Coal Technology)
Policy on Industrial Mineral Resource Management in Framework of Eliminating Dependence on Import
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Indonesia is one of the countries in the world that has abundant industrial mineral resource. Known as an exporter, Indonesia in fact also becomes an importer of various industrial minerals in a big and increasing amount from year to year. This is an apprehensive condition considering the negative impact given to the economy due to the absorption of the country's foreign exchange. It also causes higher dependence on imported material and decreasing job opportunity for the people. Actually, industrial mineral mining does not need high technology and big investment; it is also of low risk.

The problem is that the import rate is stagnantly high and it is caused especially by factors of unwise policy and conflict of interest from decision makers. The problem solution has to be derived around the issue. The issuance of Law No. 4 Year 2009 on Mineral and Coal Mining is expected to become the critical moment for reforming the policy and related regulations.

Keywords: industrial mineral, import, policy, Law No.4 Year 2009

Amalia, Dessy, Aziz, Muchtar and Cahyono, Stefanus S. (R&D Centre for Mineral and Coal Technology)
Alternative Method of the Activation Process for Bentonite Mineral
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P. 101 - 107

Biodiesel manufacture usually applies liquid catalyst (homogenic catalyst) that deals with some obstacles, such as difficulty in catalyst product separation as they are in the same liquid phase, corrosive characters, excessive catalyst cannot be reused, and complicated to be handled. An alternative for a better process is solid catalyst as a heterogeneous system between raw material and product. Bentonite has layer structures and a potential to be used as solid catalyst by activation process. Three methods of activation process had been conducted,namely 60°C-heating; 60°C-heating followed by 1 week settling and 2 weeks settlement. Each method was performed in sulphuric acid and the chemical content of Al_2O_3 and SiO_2 was observed. An activated bentonite has a molar ratio of SiO_2 and Al_2O_3 between 6 - 9. All methods resulted in expected molar ratio, but the 2 weeks settlement process without heating provided more significant result which means it performed energy saving compared to other methods.

Keywords: activation, bentonite, molar ratio, settlement

Anugrah, Rezky I. and Rasjad, Syafei S. (R&D Centre for Mineral and Coal Technology)
Pretreatment of Kaolin into Metakaolin
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Most of metakaolin is used in portland cement industries as an additive to improve the compressive strength of the cement. Using Cicalengka and Bangka kaolin as metakaolin raw material, R & D Center for Mineral and Coal Technology found that Bangka kaolin was more suitable in metakaolin preparation because its initial Al_2O_3 content (32.80%) rises up to 37.50% after decantation, meanwhile Cicalengka one can not fulfill the requirements. The non-decanted Bangka kaolin (37.50% Al_2O_3) exceeds the Al_2O_3 content of metakaolin that has been produced commercially by Asian Ceratec Corporation.

Calcination processing follows the decantation one. The decanted Bangka kaolin was then pelletized to have calcining burnt did well. The pellet was burnt in 1 x 0.5 m static laboratory furnace at some temperatures and holding times. Burning temperature of 900^0 C and 20 minutes holding time showed common calcined kaolin characteristic; sheet-like structure, but at some parts it has developed into unregularly thicker sheet structure due to amorfous (non-reactive phase) formation. This phenomenon signs that recrystallization temperature has been achieved and many hydroxil ions has been lost.

Keywords: metakaolin, decantation, calcination

Daulay, Bukin, et. al. (R&D Centre for Mineral and Coal Technology)
Strategy to Maximize Use of Coal and Associated Gaseous Fuels in South Sumatera Basin
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South Sumatera Basin has been known as one of the most promising sedimentary basins in Indonesia. This basin has large coal resources, and is currently also believed to have an enormous amount of coalbed methane (CBM) resources. The coal seam in the basin is considerably thick and continuous, low ash and sulphur contents and could be found at favourable depth for CBM development. Coal seams can be exploited by traditional mining methods, which are open cut and underground minings. When the coal seam is not economic to exploit using traditional method, underground coal gasification (UCG) technology could be implemented to optimize the use of coal and associated gaseous fuels in the basin. However, CBM operation has to be conducted before UCG operation.

South Sumatera coal could be utilized for direct combustion in mine site in order to reduce transport cost; could be upgraded to obtain high calorific value coal or converted to gas, liquid and coke fuels through gasification, liquefaction and carbonization technologies.

Keywords: South Sumatera, Coal, CBM, UCG

Santoso, Binarko and Ningrum, Nining S. (R&D Centre for Mineral and Coal Technology)
Characteristics of Selected Mangkalihat Coals According to Petrographic and Proximate Analyses
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P. 128 - 134

A carbonate complex in the Mangkalihat area, East Kalimantan, has been selected for this study, because this area has some coal deposits associated with dominant limestone intercalated by thin claystone and sandstone. Commonly, most Indonesian coals were formed in fluvial and deltaic depositional environment. Accordingly, this study is interesting due to the depositional environment of the coals in association with a marine condition. This environment mostly results in relatively high mineral matter and sulphur contents, particularly pyrite in this study; brighter lithotype and dominant vitrinite content over liptinite and inertinite. The geologic factors have clearly proven a good correlation among the results of megascopic, microscopic and proximate analyses. The coals with brighter lithotype, high vitrinite and moisture contents were formed under a wetter marsh environment. On the other hand, the duller lithotypes with the presence of inertinite and mineral matter were deposited in a dryer marsh environment. The presence of high pyrite and sulphur contents strongly indicates a marine incursion during the coal forming in this area.

Keywords: type, rank, coal characteristic, depositional environment