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Abstract Index

Bahtiar, Asep and Ningrum, Nining S. (R&D Centre for Mineral and Coal Technology)
Petrographic Characteristics and Depositional Environment of Coal Seams D (Merapi) and E (Keladi), Muara Enim Formation, South Sumatera Basin
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Coal seams D and E belong to the Muara Enim Formation in South Sumatra Basin, which includes to the Middle Miocene to Late Miocene. The research is located at the Air Laya coal mines, PTBA, Tanjung Enim, South Sumatra. The purpose of this study was to investigate the characteristics of coal and coal depositional environments of Seam D (Merapi) and Seam E (Keladi). Observations were done on samples of coal from exploration drilling results from the Air Laya mining pit. The analysis is carried out by a petrographic analysis, which is supported by the results of coal vitrinite reflectance.

Petrographic characteristics indicate that both of seams D and E dominant macerals are vitrinite, the most dominant sub-group of vitrinite is telovitrinite. Inertinite in both seams consists of semifusinite, sclerotinite and inertodetrinite. Pyrite, clay mineral and carbonate are the main mineral in the seams. Vitrinite reflectance (Rvmax,%) value shows similar rank of sub-bituminous to high volatile bituminous. Based on the results of coal depositional environment reconstruction using four parameters, which are the degree of preservation of plant tissue (TPI), the degree of Gelification (GI), the degree of ground water influence (GWI) and vegetation aspects (VI), it is interpreted that seams D (Merapi) and E (Keladi) were deposited in upper delta plain depositional environment with ombrotrophic peat type.

Keywords: coal, petrography, depositional environment, South Sumatra Basin

Ridwan (Centre for Technology of Nuclear Industry Materials, National Nuclear Energy Agency - BATAN)
The Effect of KCN on Gold Adsorption from HCl Solution by Synthesized Magnetic Activated Carbon Composite from Iron Sand
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The composites of magnetic activated carbon has been successfully synthesized by utilizing the available materials abundant in the country such as iron sand, and other chemicals which are easily procured in local markets at low prices. The phase identification using X-ray diffraction technique showed that the magnetic part is Fe_3O_4 with crystallite size about 30 nm. The effectiveness of gold absorption from chloride solution by activated carbon magnetic composites are close to 100% and showed very dependent on pH. An addition of KCN in to the gold chloride solution can reduce effectiveness of activated carbon to adsorb gold by up to 20%. These might be caused by the formation of $Au(CN)_2^-$, in the solution, which could change the mechanism of adsorption of gold by the activated carbon. Based on these experimental results, by using chloride it is possible to recover valuable minerals from the ore processing of mining, which are economically,as well as environment friendly and safe.

Keywords: gold adsorption, composite, magnetic, activated carbon, iron sand

Saleh, Nuryadi and Pramusanto (R&D Centre for Mineral and Coal Technology)
Separation of Waringin Heavy Mineral Sands from Central Kalimantan
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Central Kalimantan has grown rapidly as a heavy mineral producer. Zircon is the main mineral concentrate, but other valuable heavy minerals are present. With particular interest in the upgrading of zircon and its recovery, tekMIRA's laboratory has developed beneficiation steps of heavy minerals to produce marketable zircon concentrate. Using a series of concentration equipments that includes spiral concentrator, shaking table, magnetic separator and electrostatic separator; the content of zircon in the end concentrate reaches up to 65% ZrO_2.

Keywords: heavy minerals, zircon sand, beneficiation, zircon concentrate

Sumaryono (R&D Centre for Mineral and Coal Technology)
The Use of Sub-Bituminous Coal in Combination Firing for Tile, Brick and Limestone Burning
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Combination firing of firewood and bituminous coal was recommended to reduce firewood consumption

and to increase energy efficiency. However, bituminous coal deposit in Indonesia has been depleted, therefore the use of sub-bituminous coal for combination firing should be promoted.

In this work the use of sub-bituminous coal for combination firing was investigated in tile, brick and limestone burning. The calorific value of the sub-bituminous coal was only 4.6% lower than the value of bituminous coal. The increase in energy efficiencies using sub- bituminous coal were lower than that of using bituminous coal. Compared with the use of firewood alone the increase in energy efficiencies using combination firing of firewood and sub-bituminous coal in tile, brick and limestone burning were 45.7, 53.6 and 28.3% respectively. While, in the use of bituminous coal, the increase were 70.8, 75.1 and 91.9% respectively.

In the combination firing, the firewood substituted by coal using sub-bituminous coal were smaller than the use of bituminous coal, i.e. for tile, brick and limestone burning, using sub- bituminous coal the substituted firewood were 47.7, 44.6 and 45.0% respectively while using bituminous coal there were 54.5, 50.0 and 66.0% respectively.

It was revealed that the superiority of bituminous coal come from its higher content of high hydrocarbon volatiles which produced higher radiative flame resulting more efficient burning processes.

Keywords: sub-bituminous coal, co-firing, tile-brick-lime burning

Saleh, Ridwan (R&D Centre for Mineral and Coal Technology)

Domestic Market Oblogation (DMO) Policy and Its Implementation Strategies

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The increasing of coal consumption in various industries in Indonesia causes the increasing of coal domestic demand. On the other hand, the sharp increasing of coal production almost 16 times during 17 years is exported (75%) in majority.

By using the polynomial quadratic approach, in year 2025, coal production is projected as 741 million tons (176% to National Energy Policy target as 421 million tons), coal exports as 509.3 million tons (275% to National Energy Policy target as 185 million tons) and domestic demand as 236 million tons. This is in accordance with the National Energy Policy (KEN = Kebijakan Energi Nasional) target.

The presence of Government Regulation Number 34 year 2009 on the Domestic Market Obligation (DMO) is a breakthrough to solve the above problems. It is a challenge for the government as a regulatory board to implement this policy. Some strategic alternatives to implement this policy is by using the Budget Activities Plan (Rencana Kegiatan Anggaran Belanja = RKAB) instruments optimally, control system effectivity, and punishment applying consistency.

Keywords: coal supply, DMO, RKAB, control system