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Abstract Index

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Coal Geochemistry of the Unconventional Muaraenim Coalbed Reservoir, South Sumatera Basin: A Case Study from the Rambutan Field

Geokimia Reservoar Non-Konvensional Batubara Muaraenim, Cekungan Sumatera Selatan: Studi Kasus dari Lapangan Rambutan

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Muaraenim coalbeds in Rambutan Field have typically high vitrinitic coal geochemical features that indicates the main target for CBM development. The presence of vitrinite coals in South Sumatra Basin is indicated by high huminite concentration (up to 83 vol.%). The coalbeds are of sub-bituminous rank (Ro < 0.5%). They are geochemically characterized by high moisture content (up to 21%) and less than 80 wt.% (daf) carbon content. Minerals are found only in small amounts (< 5 vol.%), mostly iron sulfide. Cleat fillings are dominated by kaolinite. This behavior can either be related to the increase coal moisture content to the depth or significant variation in vitrinite content within the deeper seams.

Keywords: geochemistry, CBM, South Sumatra Basin, Muaraenim coal, low rank, unconventional reservoir, Rambutan Field

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Study of Compressional and Shear Wave Velocity Tests in the Laboratory and Field Applied to Sedimentary Rocks of Rantau Nangka District, South Kalimantan

Studi Pengukuran Kecepatan Rambat Gelombang dan Geser di Laboratorium dan Lapangan pada Batuan Sedimen Daerah Rantau Nangka, Kalimantan Selatan

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Compressional (Vp) and shear (Vs) wave velocities within rocks are often investigated by testing in the laboratory because it is easier and cheaper. However, it is more confidence with investigation results derived from the field due to the actual situation and conditions. In the laboratory, the wave velocities are commonly measured using ultrasonic pulse velocities test. But in the field, the velocities are commonly measured directly by several methods such as cross-hole seismic, down-hole seismic, suspension logging, seismic reflection, seismic refraction and spectral analysis of the surface wave. In the present study of field insitu tests, it has used down-hole seismic method. The field insitu test is more expensive than the laboratory test. Hence, this study would evaluate and compare data derived from both of laboratory and field insitu tests. Based on the measurements correlation, it is found that regression equation for each parameter are $V_{pL} = 0.0058e_{sF}^{0.0062V_{pF}}$ for compressional wave velocities, $V_{sL} = 0.0002V_{sF}^{2.1123}$ for shear wave velocities, $G_L = 0.2739G_F - 28718$ for shear modulus, $E_L = 0.3764E_F - 1 \times 10^6$ for modulus of elasticity, $K_L = 1 \times 10^{-6}K_F^2 - 9.1889K_F + 2 \times 10^7$ for bulk modulus and $\lambda_L = 8 \times 10^{-7}\lambda_F^2 - 2.232\lambda_F + 4 \times 10^6$ for Lame constants. This equation can be applied to correct the laboratory test data in order to get close results between the laboratory and field insitu tests.

Keywords: compressional wave, shear wave, velocities, down-hole seismic test, ultrasonic pulse velocity test

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Reduction of Goethitic Iron Ore Using Thermogravimetric Method

Reduksi Bijih Besi Gutit dengan Metode Termogravimetri

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Compared to main iron ore minerals, either hematite or magnetite, Indonesian goethite is relatively abundant. However, this is not common to be used as feed material in iron making industries. Limitation in Indonesian high quality iron ore resources, the iron making industries have to seek another iron source such as the low grade iron ore of goethitic ore. Evaluation using thermogravimetric method was employed for analyzing behavior of goethitic composite pellet during reduction. The data show that reduction of goethitic iron ore is started by transforming goethite to hematite and then followed by iron reduction. The reduction was started by Fe_3O_4 formation at 442 °C and Fe at 910 °C. At those temperatures the composite pellet lost its weight. Identifying the FeO is hardly difficult due to the short range of phase existence.

Keywords: goethitic iron ore, iron reduction, thermogravimetric analysis

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A Literature Study of Benefiting K-Bearing Silicate Rocks as Raw Materials for Potasium Fertilizer

Studi Literatur Pemanfaatan Batuan Silikat Pembawa Kalium Sebagai Bahan Pupuk Kalium

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As an agricultural country Indonesia requires NPK fertilizer up to 2.6 million tons per year. However, such a number is mostly fulfilled by imports, particularly potassium (K) fertilizer. Almost a 100% of K-fertilizer comes from Canada and Russia in the form of KCl (sylvite) salt. Indonesia does not have sylvite mineral, but retains some K-bearing minerals such as K-feldspar and leucite. Both are different in characteristics from sylvite. K-feldspar and leucite are the alumino-silicate minerals. They require special treatment to process them into K-fertilizer. Several techniques can be applied to process both minerals, such as by mechano-chemistry, leaching, alkali fusion and bioleaching. Research on the utilization of K-source minerals as a raw material for K fertilizer is relatively rare. The opportunity to conduct such a research is widely open, as currently conducted by the Research and Development Centre for Mineral and Coal Technology.

Keywords: feldspar, leucite, utilization, import, potassium fertilizer

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Impact of Corporate Social Responsibility (CSR) in Indonesia: A Case study of General Mining Industries

Dampak Tanggung Jawab Sosial Perusahaan (CSR) di Indonesia: Studi Kasus Industri Pertambangan Umum

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Mining companies as the stakeholder of the community should implement community development (CD) as a translation of corporate social responsibility (CSR). In other words, they should involve business activities for developing humankind. The application of CSR in the general mining in Indonesia is expected to encourage mining company to allocate its profit for developing the local people who live around mining area. The quantitative models for evaluating the CD impact include net social gains (NSG) and net gain coefficient (NGC). The NGC shows that the value between 1 to 23% of the companies' revenue has satisfied the local people. The values could be increased in the future to make beneficial for the regional sustainable development.

Keywords: CSR, general mining industries, local people