Summaries

BUDZYŃ STANISŁAW, JAKÓBIEC JANUSZ, TORA BARBARA, ŻMUDA WIESŁAW A.

Laboratory Analysis of Rubber Wastes in Order to their Utilization in Energy Sector • AGH Journal of Mining and Geoengineering • vol. 37, No. 2, 2013

This paper presents the results of the pyrolysis process of waste rubber — tire granulate. The process was carried out over four temperatures: 450, 500, 550 and 600°C. The yield of post pyrolysis products (carbonizate, oil and gas) was specified. Physicochemical properties of char, oil and gas, chemical composition of ash after burning was also determined. The possibilities of the carbonizate werealso shown.

Keywords: *rubber wastes, energy, pyrolysis, calorific value*

CIĘŻKOWSKI PAWEŁ, BĄK SEBASTIAN, KUŚMIERCZYK JAROSŁAW

Load Distribution of a Fixed Jaw for Sandstone "Mucharz" Crushing • AGH Journal of Mining and Geoengineering • vol. 37, No. 2, 2013

This paper presents various jaw crusher tests carried out with different working surface of crushing plates. The following combinations of crushing plates were presented in the paper: 1) Two smooth jaws, 2) Two grooved jaws. (The investigated jaws with grooves had a triangular cross-section). Two modes of notch configuration at fixed and moving jaw also were analyzed: coaxial and offset by half of a teeth pitch. Research included the crushing of sandstone in an electrically powered jaw crusher. The aim of the research was to establish the benefits which might be achieved by using profiled plates to crush the raw material. The results of this theoretical analysis indicated that changing the shape of the working surfaces could significantly increase the efficiency of the process.

Keywords: *crushing plates, limit loads, crushing forces, jaw crusher*

GAWENDA TOMASZ, FOSZCZ DARIUSZ, GŁUC KONRAD

Comparison of Energetic Efficiency of Stationary and Mobile Systems on the Example of Mineral Aggregates Production in Kieleckie Kopalnie Surowców Mineralnych S.A. • AGH Journal of Mining and Geoengineering • vol. 37, No. 2, 2013

This paper is an evaluation of the energy efficiency of stationary and mobile technological systems located at Kieleckie Kopalnie Surowców Mineralnych S.A. /Jaźwica and Laskowa. The main factors influencing energy efficiency evaluation were defined and then accepted for the purpose of making comparisons, due to the fact that any detailed comparisons of mobile and stationary systems in practice is very difficult. Conducting such comparisons requires an accurate collection of detailed data over a long period of time. The main issues are production output, energy consumption, oil consumption and other criteria connected with costs. On the basis of these factors, an efficiency evaluation of compared systems and devices was carried out and discussed. The results and conclusions obtained will prove useful when selecting devices and designing systems aimed at minimizing costs by applying efficient technological solutions.

Keywords: *stationary processing systems, mobile processing systems, mineral aggregates, energy consumption*

MICHAŁOWSKI MACIEJ, GĘGOTEK GRZEGORZ, TORA BARBARA

An Evaluation of the Impact the Kraków-Szarów A4 Motorway Section Has Had on the Environment · AGH Journal of Mining and Geoengineering · vol. 37, No. 2, 2013

The subject of this article is an assessment of the impact the A4 motorway between Kraków and Tarnów has had on the local environment — between the Wielicki and Szarów interchanges. Information related to the characteristics of the motorway are provided as well as solutions which minimize environmental impact such as: acoustic protection, drainage, vibration protection as well as the use of specific types of trees and bushes. The results of the studies on the environmental impact of the motorway are also presented. Atmospheric air was selected as the main factor for the analysis. Four point's best reflecting air pollution were selected and a series of tests were carried out. On the motorway's intersection traffic assessments were carried out, and from these two classes were distinguished: heavy and light and speed achieved. This information was then used to measure concentrations of air pollutants, such as nitrogen monoxide, nitrogen dioxide, sulfur dioxide, particulate matter PM10. A computational method was used to determine to what extent pollution from the motorway was affecting the condition of the air in the neighboring areas. This method was divided into two parts. The first involved the calculation of emissions (model and computer program COPERT III), and then by using metrological data from the area was used to calculate the propagation of these pollutants and determine the levels of emissions at each point on the computational grid (OPERAT 2000). The second factor taken into consideration was soil condition. Soil contamination and limit values, as well as measurements taken were also presented.

Keywords: *motorway, natural environment, air pollution, soil pollution*

PIECHACZEK BARTOSZ, GRUSZKA GRZEGORZ, PYC ANDRZEJ, IERO EMANUELE

Utilisation of Pressure Filtration Using Filter Presses for the Dewatering of the Finest Particles of Mineral Concentrates · AGH Journal of Mining and Geoengineering · vol. 37, No. 2, 2013

This paper presents the utilisation of pressure filtration using horizontal filter presses for the dewatering of the finest particles of mineral concentrates. This paper also presents the results of a successful application of a filter press to dewater the finest grains (sediment) of coal at Jas-Mos coal mine in Jastrzębie Zdrój, Poland.

Keywords: *pressure filtration, dewatering, fine particles, filter presses*

WIENIEWSKI ANDRZEJ, SKORUPSKA BOŻENA, SZCZERBA EDWARD, WOCH MICHAŁ, MAŃKA ADAM

Updating of Classifications in Non-Ferrous Metal Ore Processing Plants · AGH Journal of Mining and Geoengineering · vol. 37, No. 2, 2013

This work presents the state of the modernisation of classification circuits in Polish non-ferrous metal ore enrichment plants. It outlines new solutions offered by world manufacturers, and a type HC500/12° hydrocyclone designed at IMN (Institute of Non-Ferrous Metals) and manufactured by ZAM Kety. The authors describe the automatic control system employed in hydrocyclones, which ensures the stabilisation of the main parameters of hydrocyclone cluster operation. Attention is brought to applying new, anti-abrasive silicon carbide-based linings in hydrocyclones. The paper discusses the results of the technological tests performed on a cluster equipped with new hydrocyclones at Pomorzany Concentrator classification of Zn-Pb ore, and at Lubin Concentrator — classification of copper ore. The authors highlight the good classification results obtained for a type HC500/12° hydrocyclone compared to those for Cavex type hydrocyclones.

Keywords: *non-ferrous metals, mineral processing, copper, hydrocyclone, modeling*