

## *From the Editor*

At the beginning of the year 2016, so far Indonesia's strategic issues on mineral and coal mining sector are still available to discuss for the stakeholders, especially in implementing its added value of those commodities. As emphasized by the Directorate General of Mineral and Coal, a ministerial regulation on the added value should perfectly be completed in order conductively to create the mining business in this country. For this reason, several dedicated researchers have seriously contributed their innovation in conducting technological processes for improving the value added of mineral and coal. Concretely, they have contribute to write articles for this journal as follows:

A characteristic study on raw materials for popay zircon sand used for ceramics, refractory and foundry is aimed at investigating the performance of zircon sand when separated by applying physical method. Mineralogical analysis using optical microscope has detected six minerals within the zircon sand. This suggests the these characteristics are appropriate for the making of refractory, ceramics and foundry.

Utilization of coal gasification producer gas for power generation has been completed. Coal gasification is a process of converting coal into gas to ease its use more environmentally friendly. This study discusses an apparatus design and utilization for power generation using internal combustion engine. The results of laboratory analysis show the calorific value of producer gas, tar content, particulate content and the temperature. According to these characteristics, it is suitable for a power of 4.8 KW that is 53% of maximum power of fuel.

An implementation of mathematical equation for calculating alumina extraction from bauxite tailing digestion has been conducted. It uses pressurized batch reactor at a certain feed capacity. There are four equations that are used for obtaining the alumina extraction. The calculation results show that by increasing lime added into the slurry, percent yield of alumina extraction tend to decrease in a certain amount of lime. By implementing those equations for evaluating the data, it does not need to weigh the slurry in the reactor.

Zirconia has been made through smelting zircon sand with NaOH as a flux. The zircon sand as the smelter feed was obtained from Palangkaraya-Central Kalimantan. Major content of this sand is  $ZrO_2$  and  $SiO_2$  with several minor oxides of  $HfO_2$ ,  $Fe_2O_3$ ,  $TiO_2$ ,  $Al_2O_3$ , and very minor alkali, alkaline earth and rare earth elements. In order to economize the process, zircon sand upgrading was conducted prior to zirconia production. The upgrading process was conducted using several comprehensive equipments, consist of shaking table, magnetic separator and high tension separator. The results show that the zirconia content is 97.27% of  $ZrO_2+HfO_2$  with 65.13% recovery.

Analysis on terms of trade of nickel is made because the trade of this commodity was always in a less prestigious position. It is due to the entire production of nickel is exported in raw materials, while nickel is continued to be imported to meet the industrial needs of stainless steel, nickel alloys, batteries and nickel metal alloys in the country. This study aims to analyze the advantages and disadvantages of export and import of nickel with a terms of trade analysis. The analysis overview of nickel gives an indication that international trade (export-import) of nickel has not provided an optimal impact on the national and regional economy.

In order to cope with the all above issues, the role of R&D centre is really expected to formulate regulations, and for this case is how to improve the added value of mineral and coal. The role comprises, among others, 1). Policy assessment for the making of academic paper, 2). Guidance in monitoring the construction of smelters, and 3). Research on environmental impacts of mining activity, post-mining and sustainable development.

After reading and assessing all the mining issues, it is absolutely expected that the certain new law on mineral and coal mining business, particularly the various regional regulations, will accommodate the

golden bridge between R&D centre (supply aspect) and industries (demand aspect), which can synergize of the supply-demand on the mineral and coal commodities in accordance with the specific and characteristic products.

The Editor