

From the Editor

The law no. 4/2009 about mineral and coal mining reflects a new paradigm in the mining sector, in which the mining must be conducted in accordance with benefit, justice and balance; national interest; participation, transparency and accountability; as well as sustainable development and friendly environment. In other words, this can be stated that this country faces a new challenge and opportunity in exploiting mineral resources that have a huge reserve with a certain regulation. Unfortunately, the governmental regulation of exploiting those resources is not available yet, because it is still being finished by the related ministries such as: the Ministry of Energy and Mineral Resources, the Ministry of Forest, the Ministry of Internal Affairs, the Agency for National Development Planning, the Agency for National Land and so forth. However, coping with this issue, a lot of R&D Centre have carried out improvement in value added for mineral and coal commodities. This proves that researchers are always doing any innovation of improving a better quality for mineral and coal products. When the governmental regulation is available in the short time, probably in the early 2010, these innovation and improvement could be directly applied in the mining sector.

In this current issue, six papers are really expected to be able to cope with the above statements, especially in anticipating and resulting in competitive mineral and coal. These papers focus on processing technology, exploration and environmental issues.

Processing technology of altering ferrous sulphate to synthetic goethite indicates that goethite can absolutely be produced from impure commercial grade of ferrous sulphate. This research is necessary to be continued by measuring oxidation rate in order to optimize the oxygen consumption. *Study on upgraded low rank coals properties* illustrates that the upgraded brown coal process can reduce the moisture content of the coals and automatically can increase the calorific value of the coals. The carbon content of the coals significantly increases with increasing fixed carbon. The removal of water from the coal causes the decrease of hydrogen and oxygen contents in the coals; whilst the total sulphur and nitrogen content slightly change. *Geologic factors controlling mineral content in the Southern Kalimantan coals* have a main role in the distribution of mineral matter in association with maceral composition in the coals. Those factors include geologic history and depositional environment of the coals. Clay minerals dominated by kaolinite were deposited in a fresh water environment during peat formation. Most of the minerals are syngenetic in origin; and some are considered to be epigenetic. The minor minerals in the coals consist of quartz, pyrite and calcite. *The land rehabilitation of mine out area of sand quarry* shows that the soil characteristics in the area were poor due to lack of nutrient and high porosity. The area can potentially be developed as tourism resort because of a beautiful view of Mount Ciremai. *Aspergillus niger* can convert glucose into oxalic acid more efficiently and rapidly compared with sucrose. The best performance of this experiment was achieved in medium glucose. In such condition, the *Aspergillus niger* has higher values of maximum specific growth rate, overall biomass and product yield, maximum specific substrate uptake and oxalic acid production rate. *The effect of magnetization on the leached limonitic ore* indicates the magnetization can speed up the nickel dissolution and obstruct the iron dissolution. The dissolution rate of nickel was very high in the initial period of less than 5 minutes, which reached almost half of the total recoverable nickel 95% for magnetized sample compared with the untreated one that remains 5.5%. The nickel dissolution would be higher by adding the leaching time. So, the magnetization of the ore can control the non-metallic dissolution in the leaching process such as iron oxide.

All the ideas of the above papers are really expected in accordance with the new regulation in the mineral and coal mining that focuses on the value added aspect. They are also expected to be able to anticipate self sufficiency of the commodities, which are imported from China. Of course, this opportunity should be developed and this is a big challenge for researchers and engineers to prove their capabilities for the better future of this country.

The Editor