

## *From the Editor*

In this current issue, five papers are published focusing on mining technology, mineral processing and environmental issues.

In mining technology, generation of vibrations in the ground from mining industry's blasting operations have been found to be a major source of considerable damage to surrounding buildings, vegetation, and people. Therefore, it is essential to keep monitor the uncertain vibration levels, predict them accurately, and take the necessary action to lessen their possibly negative effects. The aim of this study is establishing a relationship between the peak particle velocity and the several factors influencing. In order to evaluate and predict the unpredictable ground vibrations, this study used the artificial neural network approach.

In mining technology part also talks about operating cost of mining: surface miner compared to drill and blast. Nowadays, a few mining companies in Indonesia who have operations close to residential areas employ surface miners as an alternative to breaking rock. Economic factors, particularly running costs, are taken into account while selecting the approach. In this study case, the size of material that can continue on the next process is  $\leq 400$  mm; material from surface miner production is at the target; on blasting results, the fragmentation above the target is reduced using a hydraulic breaker; the initiating systems use an electronic detonator (HEBS II) and a non-electric detonator. The purpose of this study is to compare the operating costs of drill and blast versus surface mining.

Effect of thermal upgrading with various reductant on saprolitic nickel ore (a preliminary study) is presented in mineral processing part. Saprolitic nickel ore from Halmahera, Maluku, Indonesia, was used in this investigation. However, because of its complicated mineral composition, which has a considerable impact on the roasting process, saprolite research needs to be improved. Thus, it is crucial to have an accurate understanding of the characteristics of laterite ores, especially with regard to laterite pre-reduction operations. This research aims to improve the qualities of saprolite by employing a thermal upgrading technique at lower temperatures with reductants such as anthracite and palm kernel charcoal. These discoveries provide important understanding on the mineralogical composition and behavior of saprolite, which may lead to advancements in a range of industrial operations and uses.

In mineral processing part also discusses about recovery of iron mineral from Indonesian bauxite residue. Bauxite residue is a hazardous solid waste that is released during the extraction of alumina. Even though it contains rich materials including titanium, silica, rare earth elements, and a high iron content (20–60%), its disposal causes a major environmental problem. By employing three techniques—direct magnetic separation, roasting followed by magnetic separation, and reduction followed by magnetic separation—this work seeks to enhance the recovery of iron content within the bauxite residue. The reduction process employed sodium carbonate and sodium sulfite as fluxes and coal as a reductant.

Finally, in environmental issue presents mini review of adsorption method using conventional materials for acid mine drainage treatment (AMD). One extremely hazardous type of water contamination brought on by coal mining operations is AMD. Low pH levels and a high concentration of heavy metals are characteristics of AMD that have been connected to a number of illnesses, such as poisoning, cancer, and skin disease. The material about AMD and other inexpensive treatment options is well reviewed in this publication. Adsorption is one such technique, which is an economical and environmentally beneficial way to treat AMD. In order to give a thorough picture of AMD origins and issues globally, this review consults 99 published publications. This study investigates the possibilities for treating AMD using common materials like biochar, activated carbon, and others. There is thorough discussion in the particular section on conventional materials.

Enjoy read.