

## Journal Comment

From time to time the SAIMM dedicates an edition of its *Journal* to a special event. The two volumes, of which the November 2016 Edition is Volume I, are dedicated to the Wits School of Mining Engineering (Wits Mining) in celebrating its 120 years of existence, and to providing a platform for the School to showcase its research efforts. The papers could not fit into a single volume, hence the double edition – ample testimony to the amount of research work that Wits Mining undertakes! A perusal of the papers shows the relevance of the research to both the local and international mining industries.

The papers discuss issues in and present new perspectives on mining. A fresh look at the technicalities of mining enables a better understanding of how we can undertake our mining activities more safely, more economically, and more productively. This is particularly important in current times, when the mining industry is still experiencing depressed commodity prices that it has suffered from since the global financial crisis of mid-2008.

The papers can be categorized into the broad areas of rock engineering and mineral economics, for which Wits Mining is world-renowned; mineral resource management (MRM), in which Wits Mining has a specialization in the Masters degree programme; and lastly, mine planning and optimization, an area of specialization introduced into the Masters degree programme in 2014. Most of the papers are by multiple authors, reflecting the School's collaborative approach to research.

The rock engineering papers address topics such as slope stability, pillar design, and rockburst challenges. Some useful proposals are made. For example, relating a pillar life index (PLI) to the time-dependent factor of safety of pillars and probability of failure; a strain-based criterion for evaluating stope stability; and the use of sacrificial support as a potential additional method to prevent rockburst damage. The optimization and MRM-related papers present

approaches to cut-off grade optimization, multi-criteria decision-making (MCDM), a mineral asset management (MAM) framework for maximum value extraction for mineral resources, and reef-waste characterization in sampling for improved separation of ore from waste during evaluation and extraction. Ultimately, application of these approaches should assist the mining industry in realizing more value from mineral resources.

I believe that readers will find the papers in these two volumes insightful as they contribute towards the innovative ideas that are required to take our mining industry forward. The papers are a foretaste of what one can expect by engaging Wits Mining to address respective research needs. It is my hope that we will see similar issues of the *Journal* in future, with contributions from other mining and metallurgy schools in the country so that we can showcase our research capabilities to our international and local readership.

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