

Every year the Southern African Institute of Mining and Metallurgy holds a student colloquium. This provides the opportunity for selected undergraduate students to present a paper before an audience of their peers and senior members of the Institute. Presenters are drawn from those universities in the region where courses are offered in mining engineering, metallurgy, and minerals processing. This edition of the Journal is devoted to the nine papers prepared subsequently by the presenters, sometimes in conjunction with their academic or industrial mentors.

Our Institute is the professional home of people with widely diverse backgrounds, interests, and careers associated with the mining and extraction of minerals. This diversity is again reflected in the range of topics chosen by the students for their project work – from material science to mining methods. The more scientific approach of the metallurgists is well balanced by the pragmatic way in which the mining engineering students have undertaken their projects. I've chosen four of the nine papers to illustrate how academic study, combined with even limited practical experience, allows quality projects to be undertaken. This choice in no way reflects on the quality of the other five papers.

The material science paper by Khan looks at the addition of rare earth metals to both mild and stainless steel to improve corrosion and oxidation resistance and also its hardness. A battery of laboratory tests were undertaken to prove the initial hypothesis. This paper shows that the classical scientific approach to solving a problem and generating new knowledge is still being instilled in our current students.

Cromarty and Dawson in their paper present an economic model of a ferrochrome electric arc furnace. Following an excellent literature review, the model is developed and shows great sensitivity to the issues of today. The question of efficient use of electricity, at a time when energy-intensive industries are being asked to cease or at least cut back their production and sell back their unused electricity, makes this topic particularly relevant. The balance of economic growth, increased employment, expenditure on the infrastructure necessary for increasing electricity generating capacity, and the need for an energy mix that reduces environmental impact is particularly pertinent. This paper highlights the fact that today's graduates entering the mining and minerals industry, in addition to being technically competent, must be well versed in the safety and health, ecological, social, and financial consequences of decisions they will take during their careers.

Two of the papers deal with the constant quest for improvements in safety, efficiency, and productivity in the underground mining of platinum. Rampedi has looked at the need to review the underground transport of personnel to their place of work in order to increase productive time and minimize fatigue, and Ferreira has compared two mining methods using a number of performance criteria, each of which was given its own weighting. The two studies both make use of a literature study, underground observations, and consultation / interviews with mine personnel. From this one can learn some very important lessons that should guide young

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graduates entering the industry. Never be too proud to ask for information and advice, learn from the experience of others, observe what is relevant to your task, and draw your own conclusions.

Much of the data presented in these papers was collected during periods of vacation work or experiential learning, usually spent in industry. While some within our industry, already carrying high workloads, may feel the mentoring of students is an imposition, the vast majority of companies and individuals are pleased to assist with defining projects and supervising students. Those individuals who spend many hours ensuring students have a positive experience while with them deserve the thanks of our profession, and the SAIMM, by organizing the student colloquium and devoting an entire edition of the Journal to student papers, recognizes the important role that project work and industrial experience both play in the development of young graduates.

The authors of all nine papers should be congratulated on the quality of their work. One of the things one must guard against as you grow older is the tendency to think your generation had it harder, young people these days are not so hard-working as you were, standards are slipping, etc. While there are many things in the schooling system that require urgent attention, the old saying that cream will always rise to the top is still valid today and the proof of that is what you see in this edition of the Journal.

The nineteenth century American jurist Oliver Wendell Holmes said 'The great thing in this world is not so much where you stand, as in what direction you are moving'. Those of us standing at the end of our careers can look to the future of our industry with some confidence as we see the quality of those beginning theirs.