



**T**he sustainability of the South African mining industry – and the global mining industry for that matter – is highly dependent on the pipeline of new mining engineers and metallurgists entering the industry. However, the training and development of mining engineers and metallurgists already in the industry is just as critical.

Not too long ago any mining engineer or metallurgist entering the mining industry underwent a graduate training programme. The content and duration of the programme varied between mining companies, but fundamentally the objectives were the same. At the end of the training period the individual concerned was supposed to be ready to take on increasing responsibility within a production environment. However, today there are many graduates who do not start their career with a well-structured training programme. In fact, many simply start with a job and are expected to learn or train on the job. This is clearly not a satisfactory situation.

While training and development is critical for mining companies in terms of satisfying their in-house requirements, there is another aspect that relates to statutory requirements. For mining engineers in South Africa the Government Certificate of Competency (GCC) is an essential requirement for those holding positions of responsibility within mining operations. The Engineering Council of South Africa (ECSA) is in the process of making ECSA registration compulsory for anyone practising within the nine engineering disciplines under the auspices of ECSA – these include mining engineering and metallurgical engineering. The main impact of this will be on metallurgists wanting to fill positions of responsibility in metallurgical operations. While current practice requires metallurgists to accept responsibility from a safety, health, and environment (SHE) point of view, the new ECSA requirement will extend the responsibility to the engineering aspects of metallurgical operations – this would relate to the operational side and not the maintenance side, which is covered by other engineering disciplines.

Even after mining engineers and metallurgists have completed their training programmes, obtained a GCC where required, and obtained ECSA registration, that is actually only the beginning. A further aspect of mining industry sustainability is broadening the knowledge and experience of mining engineers and metallurgists. The objective here is to increase their professional flexibility. This can be approached in terms of commodity experience, technical branches, and projects. In South Africa the main commodities would be gold, platinum, coal, iron ore, diamonds, ferroalloys, base metals, and mineral sands. From a mining perspective some examples of technical branches would be underground mining, surface mining, rock engineering, and ventilation; and from a metallurgy perspective, mineral processing, hydrometallurgy, smelting, iron and steel production, and alloying. In terms of projects, this refers to involvement in the design, construction, and commissioning of mining operations.

The SAIMM, through a number of initiatives, supports mining industry undergraduates, recent graduates, and those seeking to increase their professional flexibility. Undergraduates are supported academically through the annual student colloquium, which has started to incorporate participation from mining and metallurgy academic institutions from our southern African branches. Recent graduates are now supported through the Young Professionals conference. The first such event was held in March 2014, and given its success it will now be staged on an annual basis. The SAIMM has also encouraged the involvement of Young Professionals in the conference organizing committee for the future, so that the conferences become even more relevant. This will include participation from our southern African branches. Those individuals from South Africa and southern Africa seeking increased professional flexibility receive support from the SAIMM in the form of conferences, workshops, technical visits, and schools. I trust this will highlight how the SAIMM's activities contribute to the sustainability of the South African mining, as well as the Southern African, mining industry.

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