

SPOTLIGHT

International Percolation Leaching Conference and Short Course

8–9 November 2011, Misty Hills, Muldersdrift, South Africa



The International Percolation Leaching Conference commenced with a one-day short course on heap leaching, dealing firstly with the geomechanics and hydrodynamics of crushed ore beds, criteria for satisfactory operation, and in-heap measurements, led by Amado Guzman, an internationally recognized authority in hydrology. The second theme for the day was reaction and mass transport and mathematical modelling, led by Jochen Petersen, associate professor at the University of Cape Town.

The main conference was held on 8 and 9 November, consisting of two keynote addresses and seventeen paper presentations. Ten of the authors were from outside South Africa, including Australia, Canada, Chile, Finland, Zimbabwe, and the USA. The conference was attended by 85 delegates, of whom 25 were from outside South Africa, including the DRC, France, Ghana, Iran, Mauritania, Namibia, and Zambia, in addition to the countries already mentioned.

Most papers drew lively discussion and participation from the audience, up to the final paper on the last day. The responses received from delegates who completed evaluation forms after the event indicate that all respondents considered the conference value for money and very well organized, and by far the majority felt that the conference had reached its objectives, provided sufficient coverage, and that presentations were made at the appropriate level.

The only area in which a notable number (5 out of 18) of respondents indicated room for improvement was a need for more practically orientated content that would be directly relevant to industrial operations. (Of the 19 presentations, including the keynotes, 11 could be considered to be of academic, laboratory, or fundamental nature, with the balance being either industrial case studies or a combination of practical and theoretical content).

To summarize the major technical messages emanating from the conference, the various forms of percolation leaching (encompassing all of heap, dump, vat, and in-situ leaching) remain processes of choice for materials of modest grade and/or volume, either for the entire material or in combination with agitated leaching of higher-grade fractions. An understanding of the compressive and hydraulic behaviour of ores, and avoidance of overly compacted regions of excessive saturation, should facilitate more reliable scale-up from column tests, and more predictable operation on an industrial scale.

Developments that can still further improve the economics of percolation leaching in future include sorting based on X-ray fluorescence, the use of high pressure grinding roll (HPGR) technology, and possibly the further optimization of blasting techniques.

The fundamental understanding of percolation leaching is likely to be advanced by ongoing improvements in in-heap instrumentation, radiographic studies of particulate beds, and mathematical modelling.

Much innovation continues to occur in percolation leaching, and heap leach designers and operators need to remain aware of the associated implications for intellectual property rights.

P.J. van Staden
Chairman

