

Spotlight

Minerals & Materials '96

by F.W. Petersen*

The Conference Minerals & Materials '96 was held in Somerset West, South Africa, from 31st July to 2nd August, 1996. It was organized by the Universities of Stellenbosch and Cape Town, the Cape Technikon, and the Western Cape Branch of The South African Institute of Mining and Metallurgy (SAIMM). The three-day Conference was attended by 180 delegates, representing countries such as Australia, South Africa, United Kingdom, Finland, Sweden, Germany, Poland, Zambia, and Zimbabwe. The programme and associated exhibition were well organized, and each of the delegates received two volumes of proceedings containing the 77 papers presented at the Conference.

Annual Dinner

The Annual Dinner of the Western Cape Branch was held at the same venue on the second evening of the Conference. The 10th Annual General Meeting of the Branch preceded the dinner, and the office bearers for the 1996/97 term were elected, with C.T. O'Connor as Chairman, C. Aldrich as Vice-Chairman, and M. Harris as Secretary. The President of the SAIMM, Mr D.A.J. Ross-Watt, awarded student prizes to the best final-year students in mineral processing at the Universities of Stellenbosch and Cape Town and at the Cape Technikon, as well as to the best materials-engineering student at the University of Cape Town.

Conference Programme

Keynote addresses were presented by Professor Eric Forssberg (Sweden), Professor Janusch Laskowski (Canada), Professor W. Woodburn (UK), and Dr Olaf Engler (Germany), and featured the development and application of magnetic-separation techniques in the processing of Swedish minerals, sphalerite activation with some flotation studies, and the use

of visual imaging in the control of flotation froths. The technical programme covered a fairly broad field, including topics such as pyrometallurgy, coal processing, milling, gravity and magnetic separation, process modelling, flotation, hydrometallurgy, environmental aspects, and materials engineering. A great deal of interest was generated by papers on current coal preparation at the Julius Kruttschnitt Mineral Research Centre, surface wear in autogeneous milling, and J.-P. Franzidis' presentation on bubble surface-area flux, a new criterion in the evaluation of flotation-cell performance. Presentations on the immobilization of toxic compounds and the removal of heavy metals were well received at a time when environmental legislation is becoming more stringent and the dumping of wastes more costly.

The Conference was characterized by the particularly high quality of the papers presented, and what was especially valuable was the excellent opportunity for discussions with the key speakers. The Conference also included excellent social events, which contributed significantly towards bringing together all the delegates.

Sincere thanks go to all authors, presenters, organizers, and delegates who contributed to a most successful technical programme at Minerals & Materials '96. The Proceedings of the Conference, which have been published in two volumes, are available from Mrs Meg Winter, Conference Secretary, Department of Chemical Engineering, University of Cape Town, Rondebosch, 7700. ♦

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Cost-effective dispersed barrier system*

The CSIR: Mining Technology has developed a new method of building stone-dust barriers in a cost-effective manner, following research into the reduction of methane and coal-dust explosion hazards.

This new method makes use of a previous concept of containing stone dust in a bag, but incorporates a new method of rupturing the bag. This involves adaptation of the closing mechanism and balancing of the stone-dust content with space left in the bag, whereby a new rupturing mechanism was developed. This is the first time the principle of containing stone dust in a bag has been applied effectively, despite numerous attempts by groups worldwide.

In the development phase, the bags were tested extensively in the 200 m gallery at the Kloppersbos Research Facility. During these tests, it became evident that the bags could be made to rupture and spread stone dust when subjected to smaller forces than those required for the

barrier most commonly used in the mining industry at present. The testwork at the Kloppersbos Research Facility also showed that coal-dust explosions can be effectively arrested for a range of created explosion strengths.

To confirm this, as well as to gain international acceptance for these barriers, tests were conducted in the German experimental mine at Tremonia. The bagged stone-dust barrier proved to be as effective in the large cross-sectional gallery at Tremonia as in the 200 m gallery at the Kloppersbos Research Facility.

The Kloppersbos Research Facility is one of the most sophisticated coal-dust explosion stations in the world. The Facility is situated just outside Pretoria, and allows the testing of materials and equipment in a simulated underground configuration under controlled conditions. Data generated during explosions are interpreted and processed to optimize strategies for the prevention of explosions. ♦

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