characteristics of most of the mine hoist cables employed in the Republic. Future research efforts channelled in this direction should consequently benefit the mining community by contributing to the development of preventative measures against damage and failure due to vibration fatigue.

LIST OF SYMBOLS

A_n Transverse amplitude n^{th} mode (m)
C_1 Damping capacity
C_2 Curvature characteristic (m^{-1})
E Young's modulus ($N \cdot m^{-2}$)
F_n Frequency of n^{th} mode (Hz)
I Second moment of inertia, neutral axis (m^4)
k Quadratic coefficient (m^{-1})
L Span length (m)
M Bending moment (N-m)
n Mode number of harmonic vibration
P Power ($N\text{-}m \cdot s^{-1}$)
R Radius of curvature (m)
S Sag (amplitude) (m)
t Time (s)
x,y Cartesian coordinates (m)
σ Flexural stress ($N \cdot m^{-2}$)
τ Wave length (m)

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SPOTLIGHT

on Leaching Colloquium

by A.K. HAINES*

Hydrometallurgy, particularly leaching, is a highly topical subject and always generates great interest in the mineral industry. This was evident right from the start of the organization of the SAIMM Colloquium on Leaching, which was held at Mintek on the 8th and 9th November, 1988. The response to the call for papers was so good that the Colloquium was extended to two days, instead of the usual one day.

First Day

The President, Mr Gene Fivaz, welcomed the 176 delegates and opened the Colloquium by emphasizing the importance of the mineral industry to the South African economy, and the impact of improved leaching efficiency on the contribution of gold to the Gross National Product.

Plenary lectures were given by world authorities Dr Robert Weir of Sheritt Gordon, Canada, and Dr James Oldshue of Mixco, USA. In this address, Dr Weir outlined the parameters that influence the chemistry of leaching, and discussed the role of pressure in improving leaching kinetics. Dr Oldshue, in his talk, presented some of the latest developments in mixer design, particularly improved designs for gas–slurry contacting—a subject of significance to the bacterial oxidation of refractory gold ores.

The rest of the morning of day one was devoted to new processes. Of particular interest was the Kamyr process for the extraction of gold. This process, which has a lower capital cost than the carbon-in-pulp process, can be expected to form the basis of a new generation of gold plants.

The afternoon sessions were devoted to the more academic papers, and a very comprehensive paper on the process chemistry of the copper–nickel leaching plant of

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Rustenburg Refineries was given. This paper attracted much interest: because of the general secrecy in the platinum industry, such work is not often published.

Second Day

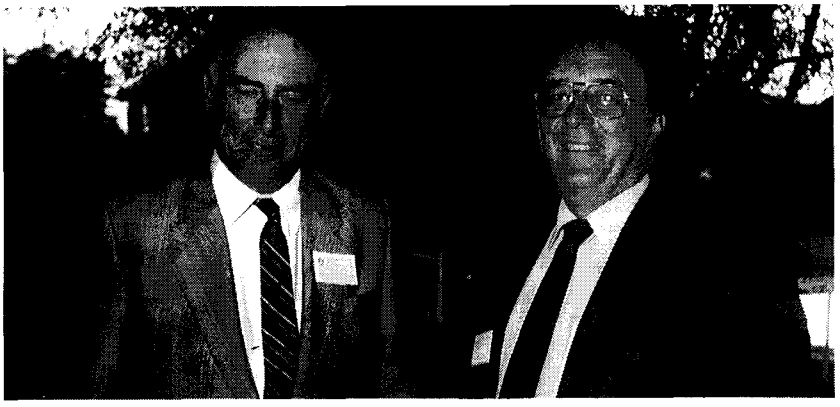
The first session of the second day concerned the recovery of gold from slimes dams. Reclamation plays an important part in South African gold production, and the paper by Dr Ellen Lawson on the use of bacteria to enhance the recovery from slimes dams generated much discussion.

The last session of the Colloquium covered plant improvements, and the paper on the economic optimization of leaching conditions at Rössing Uranium provided much food for thought for the gold metallurgists. With an expected decrease in the real price of gold and two-digit inflation in working costs, a similar philosophy is likely to be needed in the gold industry.

Acknowledgements

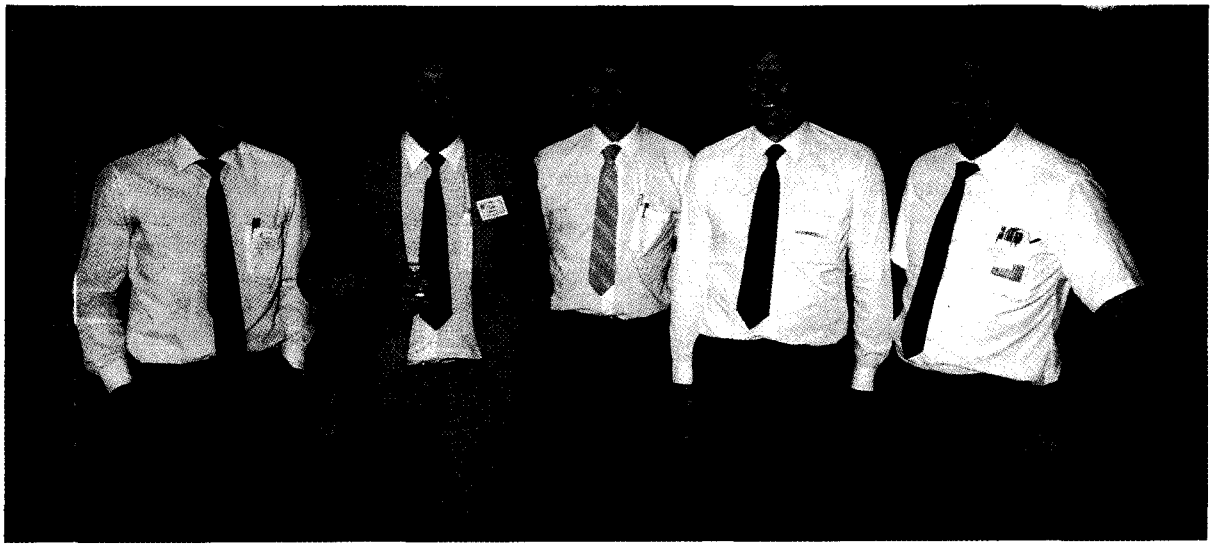
The Colloquium was not without its social side and, as usual, the barbecue at the end of the first day was most welcome and enjoyed by all the delegates. The SAIMM acknowledges the sponsors of the various exhibition stands, particularly Kamyr Inc., who sponsored the barbecue.

Gene Fivaz (President, SAIMM), James Oldshue (Mixco, USA), and Alan Haines (Gencor)



Latham Russ and Bob Weir (Sherritt Gordon, Canada)

Ron Macaulay (Aeromix) and Richard Beck (Vice President, SAIMM)



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