

Book news

1. Mining directory

● *The mining directory, 1990. Mines and mining equipment companies worldwide.* Don Nelson Publications Limited (P.O. Box 193, Barnet, Herts EN4 BLP, England).

This directory contains an alphabetical listing, by company, of the principal world mining and mining equipment companies giving, where possible, details of address, telephone/telex numbers, personnel, business activities, type of equipment or service available, capital, financial results, subsidiary and associated companies; companies listed again under the equipment, services, or products they supply—from abrasion-resistant castings to zircon; a listing of all the companies in the directory alphabetically by country; mining companies, and mining-equipment, service and consulting companies, listed alphabetically with the page number on which their full entry appears; and an advertising section for consultants, engineers, processors, mines, and mining-equipment companies worldwide.

2. Mintek reports

The following reports are available from Mintek, Private Bag X3015, Randburg, 2125 South Africa. They are available at R25 (plus R3,25 GST) per copy to South African addressees, and US\$25 per copy (including air-mail postage) to addressees elsewhere.

There is also an annual-subscription scheme for reports—R400 locally (plus R52 GST) and US\$400 (including airmail postage) abroad. The subscription covers all the unrestricted reports published between 1st April and 31st March of successive years, which usually amount to between 20 and 30.

● Report M392

Computer programs for optimization by the modified simplex method, by G.L. Moore. Sep. 1989. 25 pp. R25 + R3,25 GST in South Africa; US \$25 elsewhere.

A suite of versatile programs is described for the rapid and efficient simplex optimization of a process that involves up to 10 interdependent variable factors. The simplex method of optimization enables more than one factor to be altered at a time, and is a very efficient way of optimizing any situation that involves two or more interdependent variables.

These programs are written in Applesoft BASIC, and use the ProDOS operating system with an Apple IIe microcomputer that has been extended to a 128-kilobyte memory. These programs are based on the modified simplex method, and were designed for use in atomic emission spectrometry with inductively coupled plasma and a pneumatic nebulizer. However, they can also be used for the optimization of other instruments, processes, or situations that involve between 2 and 10 variables, e.g. the yield of a synthesis, the output of a production plant, or the separation factor for two compounds in chromatographic separation.

The programs themselves are listed in an appendix.

● Report M393

The preparation and certification of fourteen South African silicate rocks for use as reference materials, by E.J. Ring. Sep. 1989. 21 pp. R25 + R3,25 GST in South Africa; US \$25 elsewhere.

This report describes the preparation, analysis, and certification of South African Reference Materials (SARMs) 39 to 52.

These materials, which comprise a suite of rock materials originally named SAROCs, were collected from many locations within the Republic of South Africa.

Nineteen laboratories in five countries used a variety of analytical techniques to provide the analytical results.

The certified and tentative values that have been assigned to a number of constituents are presented in tabular form in the appendices.

● Report M395

The separation of trace elements in high-purity rhodium and iridium materials, by R.V.D. Robért and S.M. Graham. Nov. 1989. 10 pp. R25 + R3,25 GST in South Africa; US \$25 elsewhere.

In the determination of trace levels in high-purity rhodium and iridium materials by atomic-absorption spectrophotometry, significant interference is encountered from the high concentration level of the major element, despite the use of releasing agents. This report describes the experimental work carried out, firstly, on the extent of the interference and, secondly, on methods of separation that will permit interference-free measurement of the impurities.

Chromatographic separation of the major element from the other noble metals is achieved by use of cellulose powder as the stationary phase and a mixture of tributyl phosphate and toluene as the mobile phase. Base-metal impurities are separated by means of the cation exchanger Dowex 50W-X8. Although the determination of rhodium, iridium, and ruthenium as impurities is not as good as that of platinum and palladium, the method does afford a means of analysing the ammonium chloride salts of rhodium and iridium at the 99,99 per cent purity level.

With furnace atomization, the lower limits of determination range from 0,5 µg/g for palladium to 5,0 µg/g for iridium, with precisions varying between 3 and 23 per cent.

3. Publications from Trans Tech

The publications listed in this section are available at the prices given from Trans Tech Publications, P.O. Box 1254, D-3392 Clausthal-Zellerfeld, West Germany.

● *Handling of bulk solids. Theory and practice*, by P.A. Shamlou. 1988. 200 pp., US\$ 59.50.

This book deals with bulk solids flow and handling properties, pressure profiles in bulk storage vessels, design of storage vessels for particulate solids, gravity flow of particulate solids, pneumatic conveying of bulk solids, hydraulic transport of particulate solids, mechanical conveyors; and safety in the handling of bulk solids.

- *Acoustic emission/microseismic activity in geologic structures and materials*, by H.R. Hardy and F.W. Leighton. Vol. I: 1977, 490 pp., US\$ 45.00. Vol. II: 1980, 500 pp., US\$ 45.00. Vol. III: 1983, 680 pp., US\$ 60.00. Vol. IV: 1989, 720 pp., US\$ 75.00.

These four volumes comprise 141 papers on over 2500 pages and represent the largest collection of information on this subject worldwide.

- *Open pit mine design models. An introduction with FORTRAN/77 programs*, by E. Alaphia Wright. Early 1990, approx. 200 pp., US\$ 75.00.

A fundamental aspect in the development of any open-pit mining project is the determination of the mineable reserves, obtained with the design of the ultimate pit limits. This book considers open-pit design methodologies using the moving cone method and both 2-D and 3-D Dynamic Programming Approaches.

- *Bucket wheel excavator*, by W. Durst and W. Vogt. 1988, 450 pp., US\$ 118.00.

This book is intended for mining, mechanical, electrical, and civil engineers, consultants, and students interested in surface mining and large construction projects, as well as for all companies operating BWEs and continuous surface-mining systems.

- *Continuous surface mining*, by T.S. Golosinski and F.G. Boehm (eds.). 1987, 720 pp., US\$ 128.00.

The organization, presentation, and editorial presence of the volume make it suitable for mining libraries, with crisp, clear photographs and line drawings. Standardization of units to the SI system in SME-recommended form, consistent style, format, and type, and the use of standard North American mining terminology contribute to its usefulness.

- *Mining—science and technology*. 1987, 1430 pages, US\$ 118.00.

This book, the proceedings of an international symposium organized by the China Institute of Mining and Technology in September 1985, give a state-of-the-art worldwide overview of the R&D activities of the mineral industry, with special emphasis on coal mining.

- *Practical handbook for underground rock mechanics*, by T.R. Stacey and C.H. Page. 1986, 150 pp., US\$ 38.00.

This handbook sets out to identify the procedures and methods that are appropriate to feasibility evaluations with very limited data. It is intended for use as an everyday tool—as a user manual—rather than as a summary text book.

- *Professional users handbook for rock bolting*, by B. Stillborg. 1986, 150 pp., US\$ 38.00.

This is a practical handbook in rock bolting, written with the professional miner, civil engineer, or contractor in mind. This handbook gives useful information on the application of rockbolts to rock reinforcement problems.

- *The lighting of underground mines*, by D.A. Trotter. 1982, 220 pp., US\$ 48.00.

Of all the aspects of the environment, there is evidence that lighting is the most important to miners which makes this book a useful volume for the mining industry.

- *Elements of hydraulic coal mine design*, by M.L. Jeremic. 1982, 160 pp., US\$ 38.00.

The first comprehensive volume on a promising new technology for the mining of coal, this will be of interest to many mining engineers.

- *Continuum theory of rock mechanics*, by Cs. Assonyi and R. Richter. 1979, 365 pp., US\$ 58.00.

This is a valuable study on continuum theory by two prominent experts.

- *Shear and bond in reinforced concrete*, by G. Florin. 1980, 86 pp., US\$ 24.00.

- *Theory and design of surface structures: slabs and plates*, by G. Florin. 1980, 222 pp., US\$ 24.00.

- *Mineral processing laboratory manual*, by A.-Z. Abouzeid. January 1990, approx. 200 pp., US\$ 48.00.

This manual is an attempt to organize and simplify mineral-processing laboratory tests for mineral and mining engineers, as well as any other related professionals, and should also be of interest to students in mineral processing.

- *Weighing and proportioning of bulk solids*, by Hendrik Colijn. 2nd ed. 1983, 400 pp., US\$ 60.00.

This book is an up-to-date source of understanding, planning, designing, and engineering weighing and batching installations for dry bulk materials. It is a guide to the operating or plant engineer in selecting the type of weighing system required and in developing meaningful specifications when purchasing equipment.

- *Solid-liquid flow. Slurry pipeline transportation*, by E.J. Wasp *et al.* 1977, 240 pp. US\$ 58.00.

This is a handbook on the design of slurry pipelines, written by one of the world's leading experts.

- *Optimum pipe size selection*, by C.B. Nolte. 1978, 304 pp., US\$ 60.00.

This is a unique system for optimum pipe size.

- *Field instrumentation in geotechnical engineering*, by T.H. Hanna. 1985, 854 pp., US\$ 98.00.

This book provides an up-to-date review of the theory and practice of instrumentation in geomechanics, and will be of interest to the contractor, professional engineer, and geologist involved in all areas of the engineering of the ground.

- *The 1990 yearbook and directory. Powder and bulk solids handling and processing*. 1989/90, approx. 300 pp., US\$ 124.00.

The new standard reference source for all industries that store, handle, ship, transport, and process powder, granulates, and bulk solids.