

culated structural parameters, and generates a linear regression equation linking structure with activity. More elaborate data analysis techniques may be employed via interfaces to standard statistics packages.

ChemStat also provides a set of graphical tools which allow the user to search for correlations interactively. Selected data may be displayed in the form of scatter plots.

By automating the search for the key structural factors influencing activity, ChemStat accelerates the drug discovery process, and can suggest the structure of new drugs or chemicals expected to show enhanced activity.

ChemStat is fully integrated into Chemical Design's Chem-X family of molecular modelling software modules, and is intended to be used as part of the Chem-X system.

Chem-X runs on DEC VAX computers under VMS.

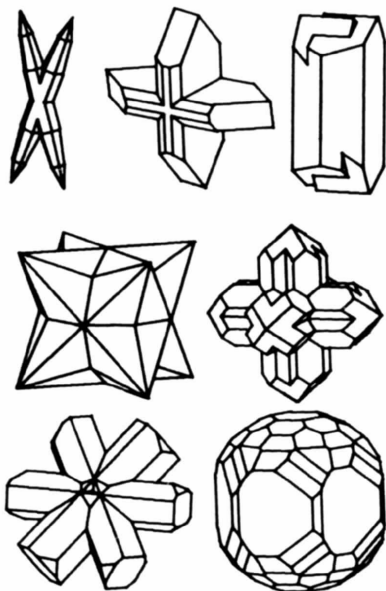
Chemical Design Ltd, Unit 12, 7 West Way, Oxford OX2 0JB, England.

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Shape Software for Drawing Crystals on Personal Computers

For IBM PC/XT/AT (320K), Apple II family (64K) and Apple Macintosh Plus (512K) personal computers.

From a simple interactive keyboard input, the program will draw any crystal on the screen, in most cases within seconds. The image can be rotated and rescaled at will.



Crystals drawn by SHAPE software

Hard copy can be made using most dot-matrix printers or pen plotters.

Almost any conceivable type of contact or interpenetration twin can be drawn. All intertwin edges are drawn in and all superfluous lines are removed. Drawings shown in the figure are unretouched.

A stereonet can be displayed with the crystal, and IBM and Macintosh versions can also draw epitaxial crystals.

The IBM PC/XT/AT version can use IBM Color Graphics Adapter, Enhanced Graphics Adapter or Hercules monochrome adapter.

Fortran source code is supplied with IBM and Macintosh versions; the program is designed for easy adaptation to other computers.

Price for any version is US\$95, postpaid; updates are US\$20.

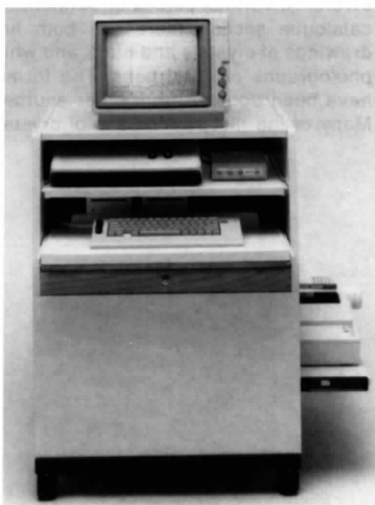
SHAPE, 196 Beechwood Ave, Bogota, NJ 07603, USA.

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X-ray Automation Systems

Dapple Systems, Inc. has introduced automation packages for X-ray diffractometers (XRD) and X-ray spectrometers (XRF).

ThetaPlus provides fast accurate compound phase identification. Unknowns are scanned by the computer-controlled diffractometer, the peaks located automatically, and a search performed against



Dapple X-ray automation system

the standards. **DataPlus** incorporates least squares and empirical correction models for quantitative elemental composition. Applications of various regression analysis techniques are discussed.

Dapple Systems, Inc., 355 West Olive, Suite 100, Sunnyvale, CA 94086, USA

Book Reviews

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Works intended for notice in this column should be sent direct to the Book-Review Editor (R. O. Gould, Department of Chemistry, University of Edinburgh, West Mains Road, Edinburgh EH9 3JJ, Scotland). As far as practicable books will be reviewed in a country different from that of publication.

Highly anisotropic crystals. By *E. I. Givargizov*. Pp. xi + 394. Dordrecht: D. Reidel, 1987. Price Dfl230.00, US\$98.00, £69.00.

This book describes crystals with a highly anisotropic macromorphology. The main body of the book is devoted to the theory and experimental results of whisker growth from the vapour phase. After the introductory chapter 1 where the structure of several anisotropic minerals is summarized from a mineralogical point of view, anisotropic crystal growth is discussed in great detail in chapter 2 and whisker growth is demonstrated by marvellous pictures. The difference between the diffusion–dislocation model of Sears and Dittmar and Neumann and the vapour–liquid–solid model of Wagner and Ellis is considered from both theoretical and experimental points of view. This part of the book appears to be of great value for scientists engaged experimentally and theoretically in the field. The next two chapters (3 and 4) are devoted to whisker growth from the liquid phase and from the solid phase. These chapters are less detailed, which to some extent seems to be due to a less detailed understanding of the problems involved. Chapter 5 describes the growth of platelets and hollow crystals. Here again very impressive pictures are used to illustrate experimental results, and the intrinsic structural anisotropy of the material becomes important. In chapter 6 results of highly anisotropic crystal growth in a matrix are discussed – a matter of considerable technical importance. Finally, chapters 7 and 8 deal with physical properties and the possibilities of technical application in a rather summary way.

In general the book is impressive in the quality of its presentation and readability. Chapter 2 in particular affords a valuable summary of experimental results and theoretical models for whisker growth, and demonstrates indeed that the field is developing from an art to a science.

The title of the book appears somewhat misleading in the sense that only morphological anisotropy – not the intrinsic or structural anisotropy of crystals and its consequences for physical and chemical properties – is included in the content. Here, the many quasi-one-dimensional and quasi-two-dimensional

systems like charge-transfer complexes, crystalline polymers or crystals with layered structure would be expected. The technologically very important subjects of chapter 4 on crystal growth in thin film coatings, and chapter 6 on anisotropic precipitants, are somewhat under-represented. The chapters on properties and applications are unfortunately very short. Thus the book is restricted to scientists dealing with basic or applied research in the field of whisker growth mainly from the gas phase. For this community and particularly for newcomers in the field it represents an important summary of the present state of the art and can be expected to become a standard reference on the subject.

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Minerals of Mexico. By *William D. Panczer*. Pp. xiii + 459. New York: Van Nostrand Reinhold Co. Inc., 1987. Price US\$44.95, £38.65.

Mexico is well known to mineral collectors worldwide as it has over the years produced a considerable variety and wealth of specimens of great beauty. Fine crystalline examples, particularly of silver minerals, lead, zinc and copper

minerals as well as silicates, carbonates and halides, are to be found in all major collections. Mexico has also supplied, on a commercial basis, much of the world's silver and continues to do so with considerable potential for the discovery of further reserves in the future.

It is thus fitting that for a nation so well endowed with mineral resources, a comprehensive list of minerals and their locations should be produced. This book is basically a catalogue of the known mineral occurrences of Mexico.

The book is divided into six sections, of which the catalogue occupies by far the greater bulk. This is a listing of all the occurrences of minerals both rare and common which the author has been able to locate, arranged alphabetically by species. For each species there follows a list divided by Mexican states and further subdivided according to counties (*municipios*) in which the various locations are to be found. Each locality is then dealt with by providing an idea of the rarity of the species as well as specific notes on the mines or occurrence which the author knows from his own extensive experience. These notes are most interesting and provide a great deal of locality and general information and are essential reading for mineral collectors and curators.

The whole catalogue section is type-written rather than type set, in contrast to the remainder of the book, and as such does contain a number of typographical errors. At various places throughout the catalogue section there are both line drawings of crystals and black and white photographs of specimens. The former have been adopted from other sources. Many of the illustrations are of crystals

with a definite elongation (usually along the *c* axis) but have been printed rotated through 90° so that the *c* axis is horizontal. Drawings of scheelite and scorodite appear to have been transposed. The black and white specimen photos are not entirely successful; however, there are two sets of four colour plates which allow for a much better appreciation of the specimens.

The catalogue is preceded by some 40 pages of the history and brief geological details of the most important mining districts. Here again there is a great deal of interesting information. Black and white locality photos and maps are used to illustrate the section. The maps are very useful, although the small detail is at times hard to read.

Between the catalogue and historical sections is a four-page listing of the major discoveries and developments in Mexico and this is followed by a 20-page bibliography, which includes a section on less accessible Mexican sources.

The book concludes with some 50 pages of an appendix of Mexican states, counties and county seats, information not readily available elsewhere. Finally there is an index of mineral names.

A comprehensive book of mineral specimen information covering Mexico, one of the major mineral areas of the world, has long been awaited. As such, this book will be of considerable value to the mineral collector and curator alike.

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