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Commercial Announcements

MathCAD is a sophisticated, comprehensive software product that allows the technical professional to perform numerical analysis and document the results on IBM PC or compatible computers. Equations, text and graphics are entered and edited in a free-form arrangement via a simple word processor-style interface, all within a single document which may be stored and retrieved as a file. Equations appear on the screen just as they would be seen in a textbook, including fraction bars, subscripts, exponents, brackets, radicals, summation signs and more. Equations are automatically calculated and may be interactively edited on screen. When an equation is edited, any equations depending on the edited equation are automatically updated in a "spreadsheet-like" fashion. Variable names may be of any length, expressions may be arbitrarily complicated and include complex-numbers. Computational errors are flagged. A single keystroke can translate an expression into a graph which can then be placed anywhere with any size. Equations, plots and text may be cut and pasted. The final result may be printed for a finished copy in what you see is what you get fashion — printouts exactly represent on-screen arrangement of equations, graphs and text.

Math Soft, One Kendall Square, Cambridge, Massachusetts 02139 U.S.A. (800) MathCAD or 617-577-1017.

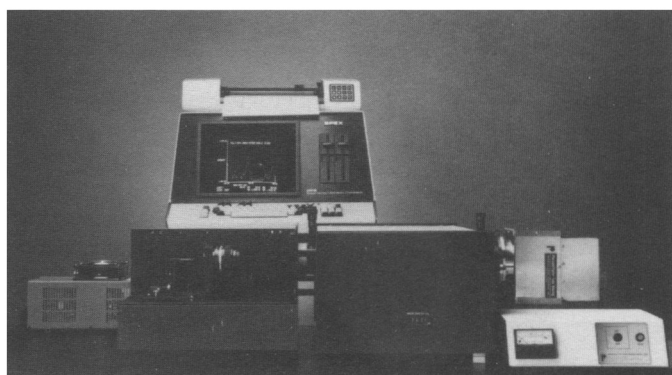
Low Cost Raman Systems

SPEX Industries, Inc., a worldwide leader in Raman spectroscopy, has introduced a new line of low-cost Raman systems. Designed for routine analytical and QC applications, the SPEX 1488 Analytical Raman System provides basic molecular and structural information about a variety of samples at less than half the cost of a conventional Raman research system. The 1488 is a complete laser Raman system that can be set up on a lab bench without special electrical or plumbing connections.

A specially designed sample compartment and an interactive software package make it easy to obtain reliable Raman spectra with the 1488 System. The operator only has to mount a solid sample, liquid cell, or capillary in the appropriate sample holder, slide the sample holder into position, type in the sample name, and select a FAST or SLOW scan. The 1488 System, under the control of the DMIB Spectroscopy Laboratory Coordinator will scan the spectrometer, collect and store the data, plot the spectrum on the CRT, and produce an annotated copy on the digital plotter.

The SPEX 1488 Analytical Raman System includes an argon ion laser, a sample compartment with interchangeable sample holders, high-efficiency collection optics, a double-dispersion scanning spectrometer, and a sensitive multialkali PMT. The dedicated DMIB Spectroscopy Laboratory Coordinator provides instrument control via keyboard or BASIC program. The system includes software routines for baseline correction, linear regression analysis, smoothing, peak area, and concentration calculation. A user-oriented instruction manual and a copy of "Laboratory Raman Spectroscopy" are also included.

SPEX Industries Inc., 3880 Park Ave., Edison, N. J. 08820, U.S.A. Contact Dr. Frank Purcell 1-800-438-7739



Versatile Four-Crystal Monochromator Aids Monocrystalline Studies

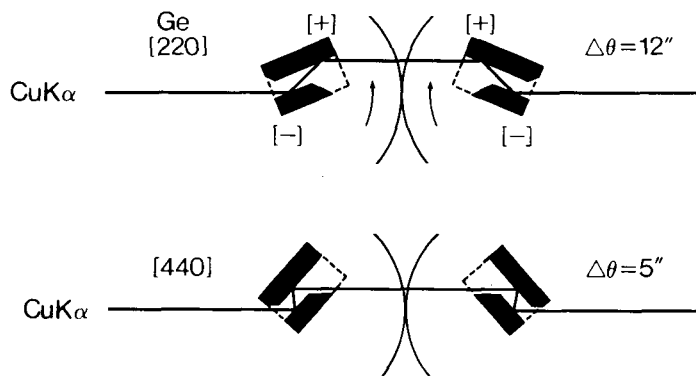
The PW 1754 high resolution four-crystal monochromator from Philips Analytical offers outstanding versatility for the analysis of monocrystalline materials in research, semiconductor manufacture and other industries.

This compact unit is based on two U-shaped single-crystal blocks of dislocation-free germanium supported on a counter-rotating tuning device. Successive diffractions of the X-ray beam result in a tailless intensity distribution in both angle and wavelength, while maintaining a very high transmission of X-ray photons. The monochromator together with a suitable goniometer accepting one or two detectors, forms a time-saving, flexible system.

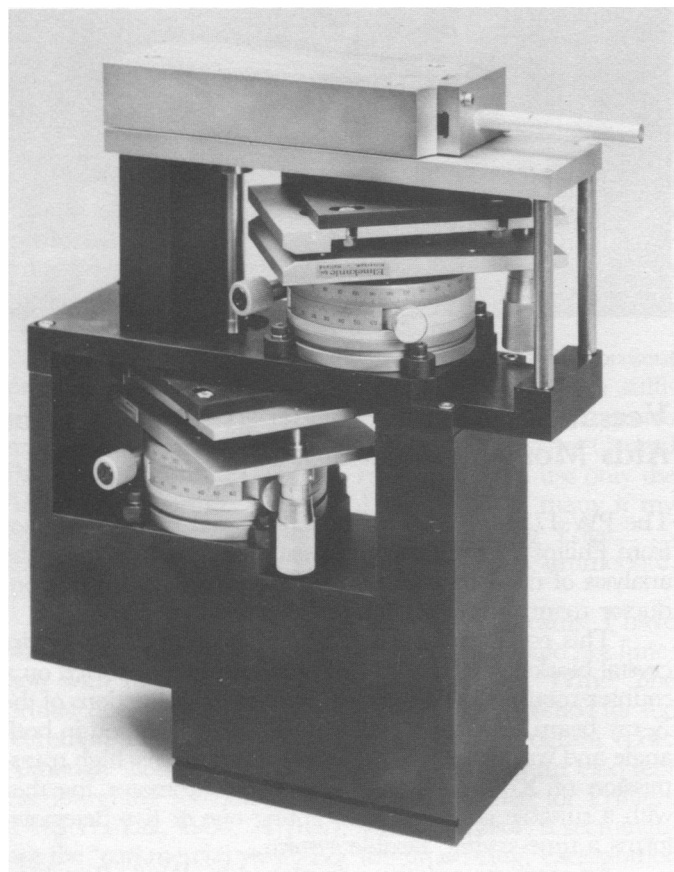
An innovative design, developed by W. J. Bartels in the Philips Research Laboratories, offers key advantages over existing dual-crystal systems. The PW 1754 enables

absolute lattice parameters to be measured without the need to change monochromators for different sample types. It can also be tuned to the various wavelengths of X-ray tubes with different anode materials.

The crystals can be used in two different positions. For highest resolution, diffraction at the (440) planes gives angular spread of only 5s of arc — at about 10 kcount/sec for a 1.5 kW tube. Alternatively, the 220 plane can be exploited to increase intensity by 30 times, at the expense of beam broadening to 12s of arc.



Rotation of the crystals enables the monochromator to be tuned to different X-ray tubes, and allows the system to be optimised for maximum intensity or maximum resolution.



The PW 1754 four-crystal high resolution monochromator offers outstanding versatility for the analysis of monocrystalline materials.

Designed to fit any Philips X-ray generator equipped with a horizontal tube shield, the PW 1754 offers a valuable means of supplementing conventional X-ray diffraction data. Studies of rocking curves, crystallite size, lattice constants, concentration depth profile and other parameters are easily achieved on a variety of natural and synthetic materials.

Further information from: A. S. Lodder, Press Officer, Philips Industrial & Electro-acoustic Systems Division, HKF, Eindhoven, The Netherlands. Tel.: 040 7 88620 or 7 82385.

Compact 125 kV Microfocus X-Ray Tube for QC

KeveX Corporation X-Ray Tube Division, has developed a compact microfocus X-ray tube useful in real-time quality control situations. The KM10005S X-Ray Tube produces a 10 micron spot capable of giving high resolution magnified images. Rated at 20-125kV, 0.5mA (10 watts maximum) continuous output, the hermetically sealed vacuum envelope is housed in a Nickel plated cylinder measuring 3.5 inches in diameter by 17 inches long. The tube is a side window, solid target design. Total weight of the shock-proof package is 19 pounds.

Applications include radiographic and real-time inspection of components such as semiconductors, ribbon cable, printed cable, printed circuit boards, switches, or anything requiring high resolution images.

For further information about the KM10005S X-Ray Tube and KeveX' complete line of X-ray equipment, please write KeveX Corporation, X-Ray Tube Division, 320 El Pueblo Road, Scotts Valley, CA 95066, or call (408) 438-5940. Contact: Dawn Revel

