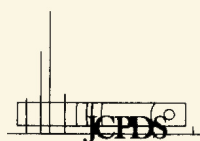


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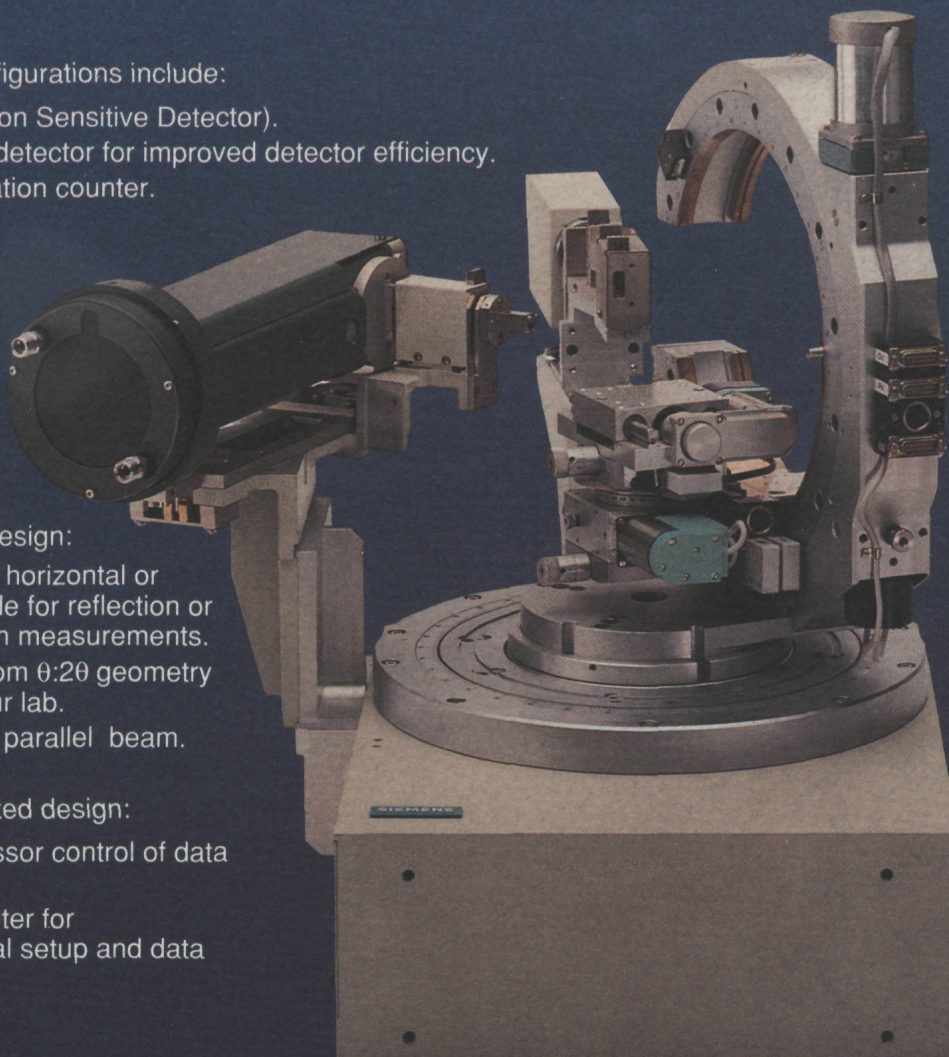
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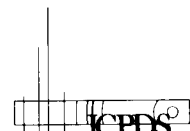
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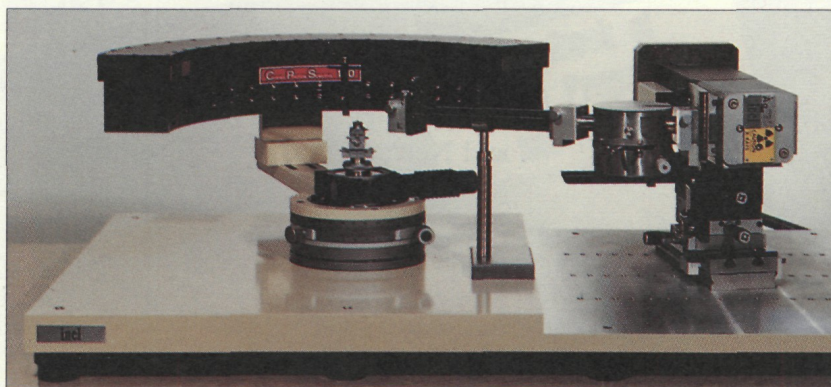
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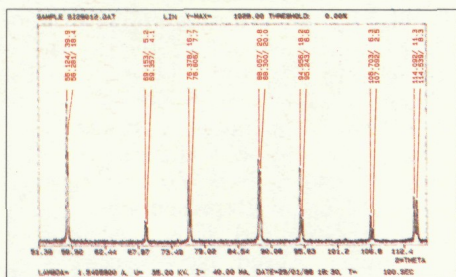
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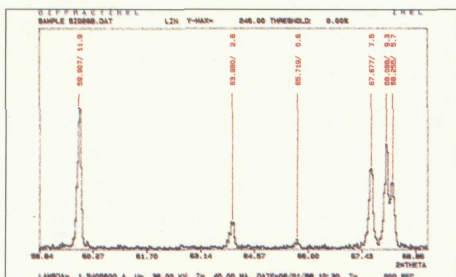
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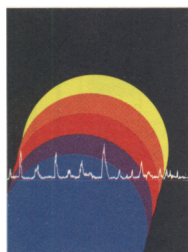
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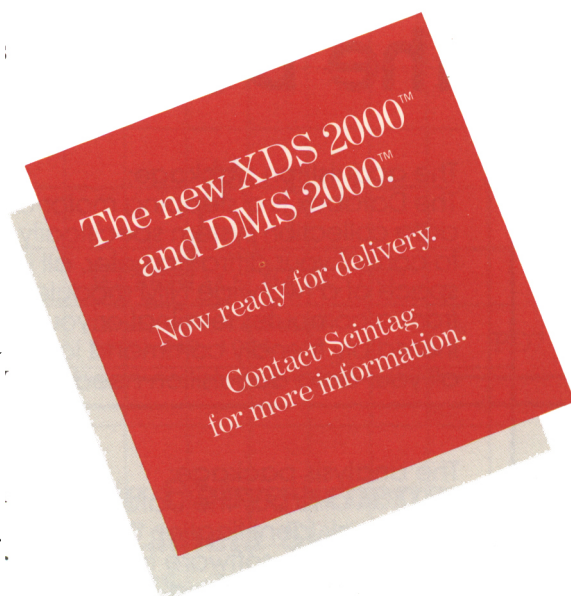
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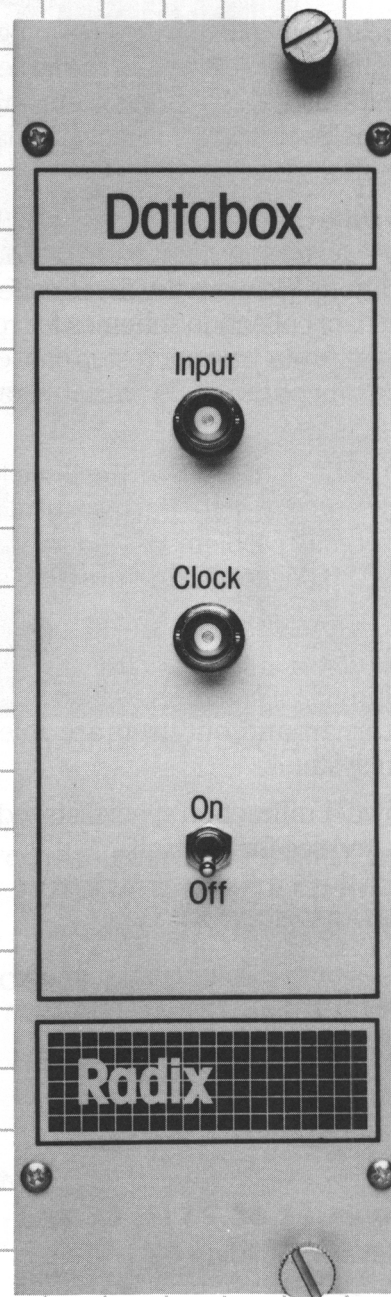
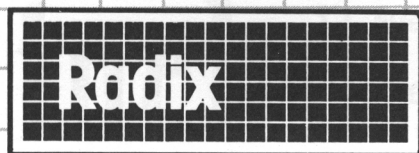
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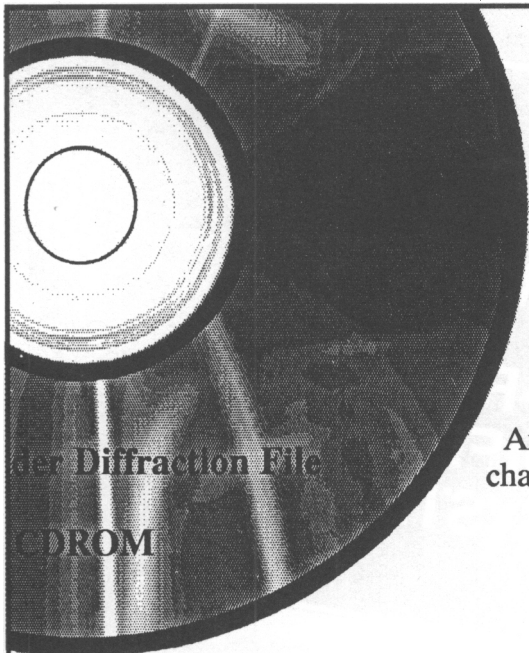
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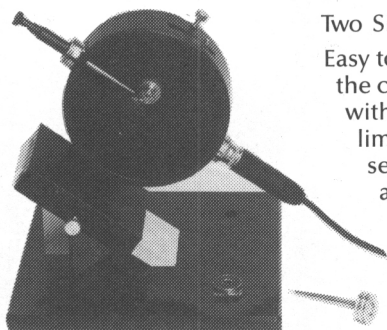


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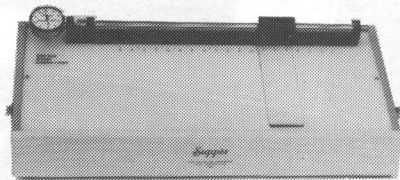
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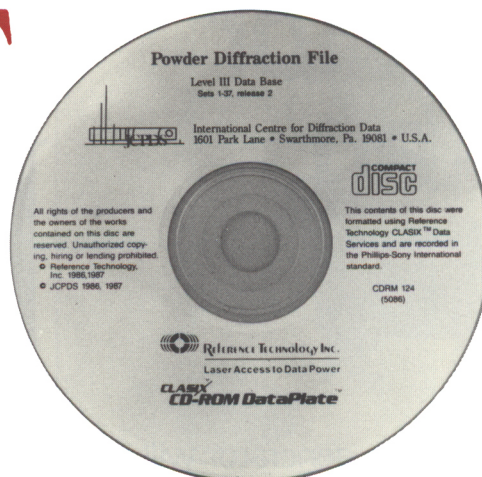
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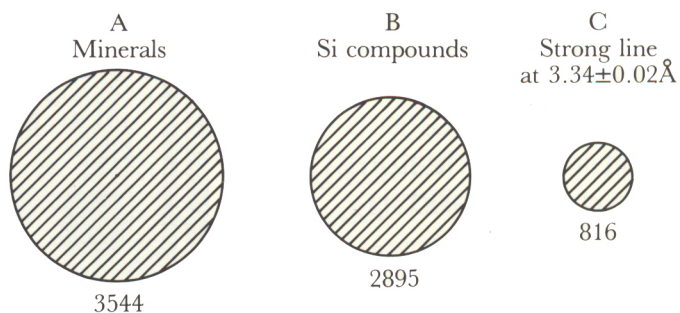
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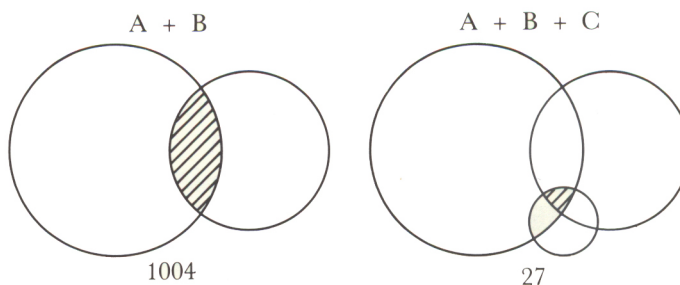
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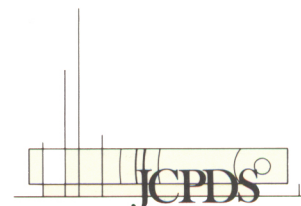
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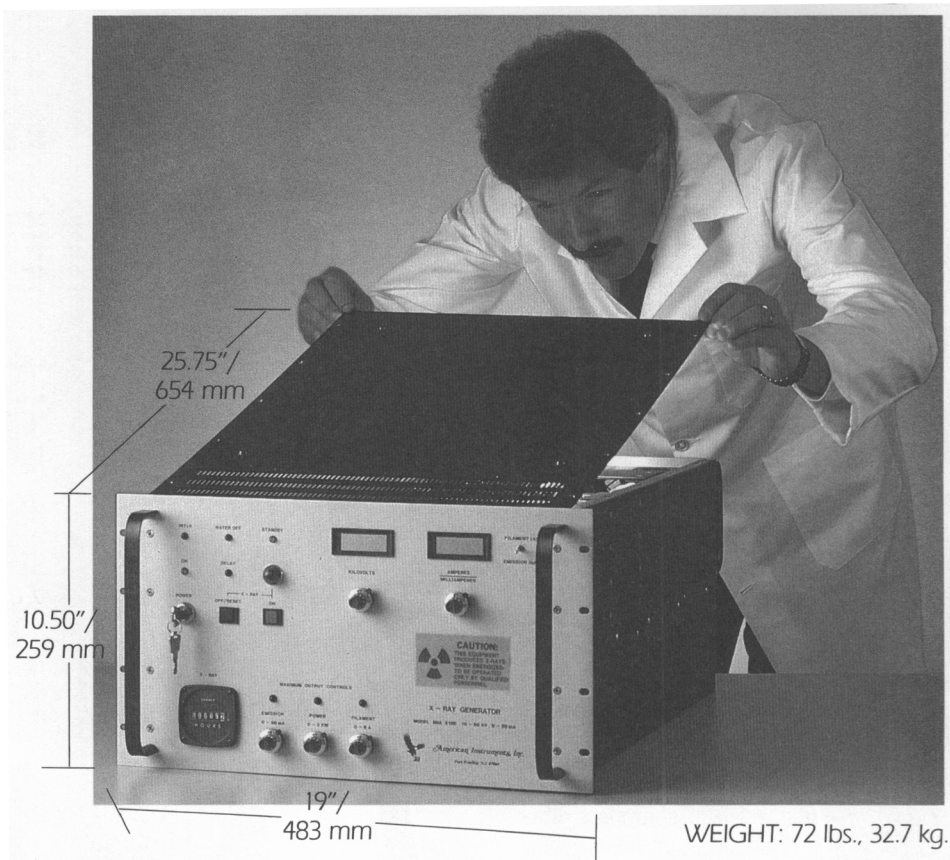
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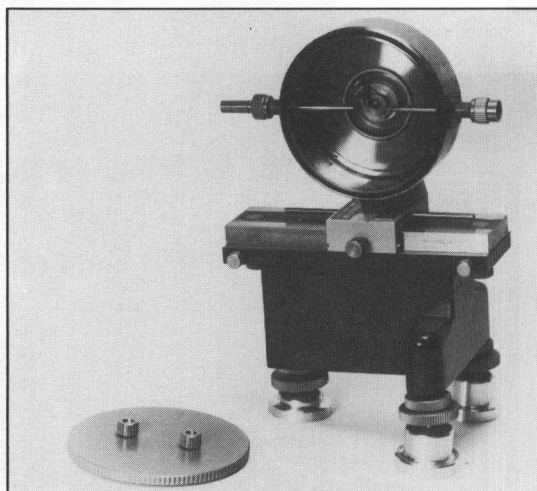
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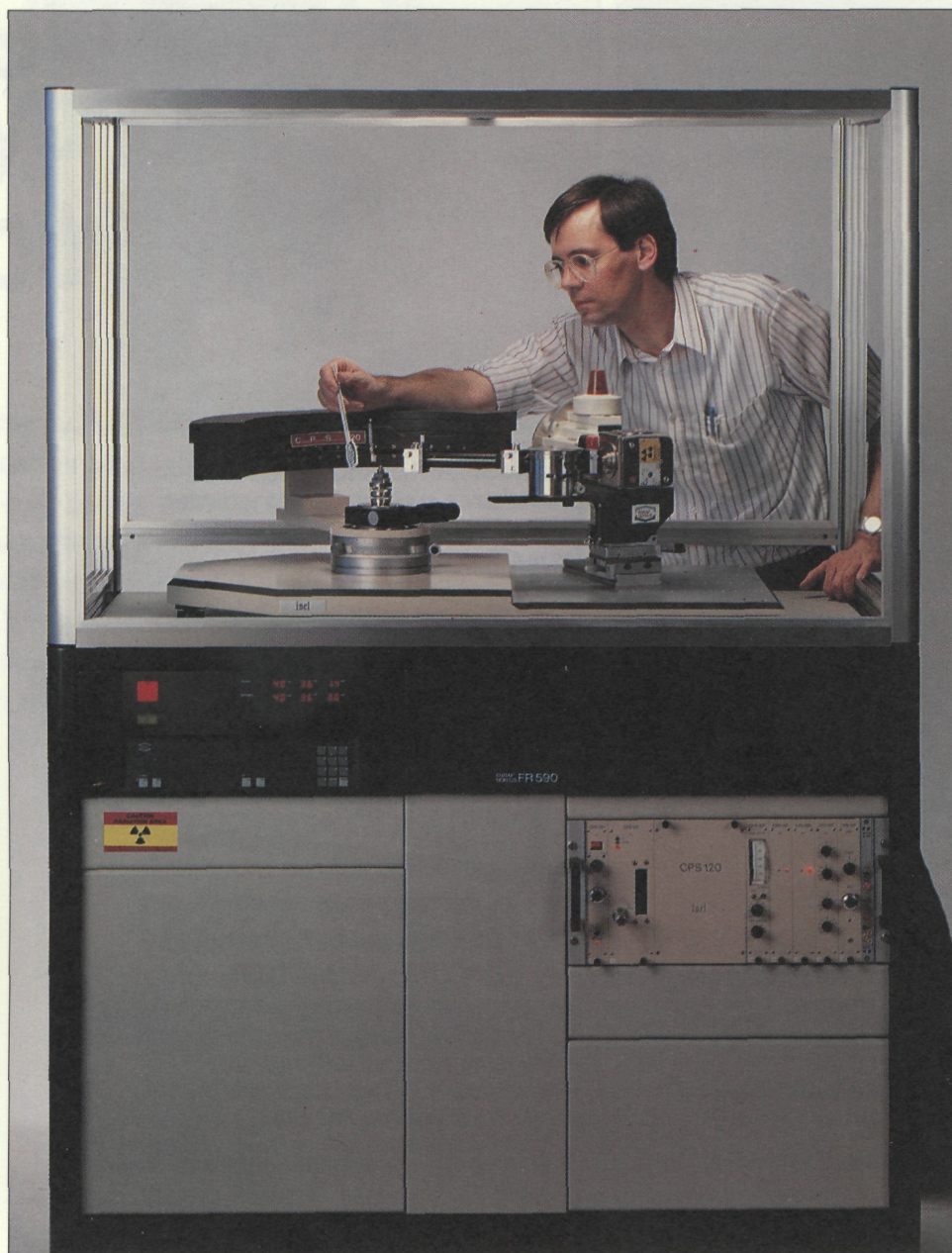
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PD-12

# Introducing the world's fastest, high resolution powder diffractometry system ...



## the PDS 120, from Enraf-Nonius

### Worldwide user support

Enraf-Nonius is a world-leader in the field of X-ray diffraction. It can offer the user a complete range of instruments and accessories including; X-ray generators, diffraction cameras, low- and high-temperature attachments and control equipment, and complete structure determination diffractometer systems.

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The new PDS120 is a complete, integrated system that provides superior results quickly and easily. It is the product of close cooperation between Enraf-Nonius, the world-leader in single-crystal X-ray diffractometry, and Inel, the manufacturer of a unique curved position sensitive detector.

### Unique, patented anode offers superior results

The anode wire of traditional linear detectors has been replaced by a patented blade anode. Its mechanical stability guarantees improved resolution and a better signal-to-noise ratio, allowing fast simultaneous data acquisition over a large angular range. The standard system comprises:

### The advanced CPS 120 detector

- ★ excellent resolution, count rate and efficiency
- ★ wide, 120° aperture
- ★ ideal for many applications: rapid phase analysis, thin film, kinetic and phase transition studies, etc.

### The field-proven FR590 X-ray generator

- ★ reliable, compact and versatile
- ★ advanced HF inverter technology
- ★ processor controlled
- ★ 3 kW, highly stabilized
- ★ comprehensive safety features.

### A simplified goniometer

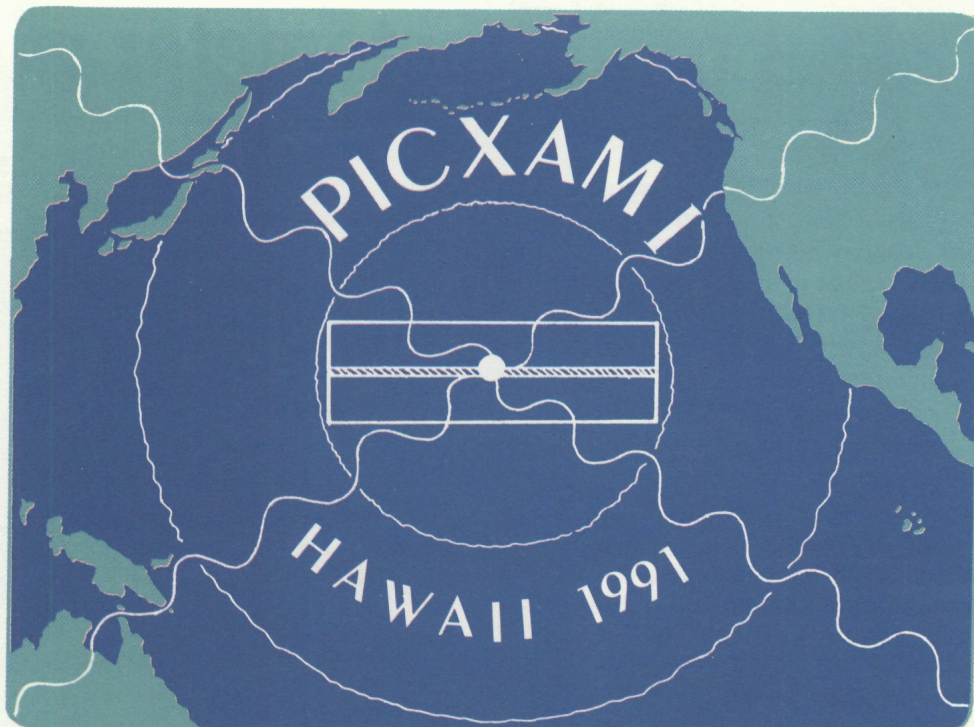
- ★ horizontal or vertical version
- ★ expanded application possibilities
- ★ optional high- and low-temperature attachments
- ★ optional sample changer.

### User-friendly software

- ★ for data transfer, calibration, peak search and analysis
- ★ additional packages for a wide range of applications.

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U.S.A.  
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PD-13



## Second Announcement...

The first international congress on X-ray Analytical Methods for Materials Analysis will be held in Honolulu, August 12-16, 1991, at the Hilton Hawaiian Village.

## Congress Theme...

The major thrust of this meeting will be related to the practical aspects involved in X-ray methods for materials analysis. This will be in keeping with the tradition of the Australian X-Ray Analytical Association (AXAA), the Denver X-Ray Conference and the X-Ray Chemical Analysis Group of the Japan Society of Analytical Chemistry.

To be discussed will be the use of X-ray methods based on Powder Diffraction, Fluorescence, Surface Analysis, Absorptiometry, Column Electron Diffraction and Thin Film Characterization by X-ray Diffraction, and Trace Analysis and Thin Film Characterization by X-Ray Fluorescence.

A two day pre-congress workshop program will be held at the University of Hawaii at Hilo, on August 8 and 9.

### **PICXAM is organized by:**

The Australian X-ray Analytical Association  
The Denver X-ray Conference  
X-ray Chemical Analysis Group/  
Japan Society for Analytical Chemistry

### **PICXAM is cosponsored by:**

The International Centre for Diffraction Data  
The University of Denver  
The University of Hawaii

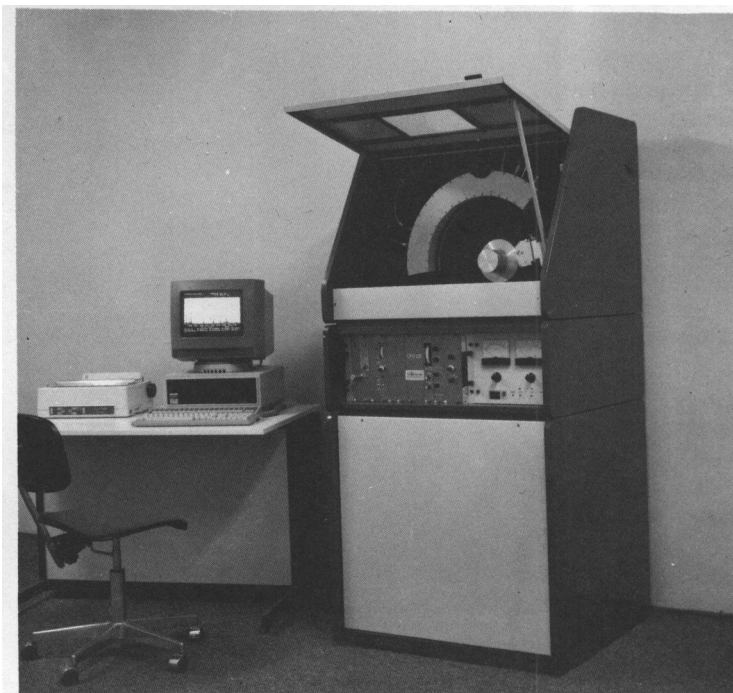
# PICXAM

## Pacific-International Congress on X-Ray Analytical Methods

PD-14

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PD-15

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PD-16



# SIETRONICS

## SieRay 112

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- Fit a stepping motor to a manual powder diffraction goniometer, with standardised kits available for most models. Alternatively an existing stepping motor can be utilized.
- Use your existing counting electronics, or purchase the SieRay 112 with built-in counting electronics (as pictured above), AND a new detector if necessary.
- Speed up your data reduction with automatic background stripping, peak finding and on-screen editing. There's even a manual peak finder for difficult cases.
- Experience the power of having the JCPDS® data base on-line, via Fein-Marquart Associates "uPDSM"® or using "SIROQUANT"® pattern synthesis/stripping quantitative software.
- Extend your automation by controlling auto sample loaders or driving multiple goniometers from the one interface. Versions of 112 software are also available for other XRD microprocessors.
- Consider the SieRay 113 automation for x-ray spectrometers — just as flexible and versatile as the SieRay 112 and just as cost-effective.
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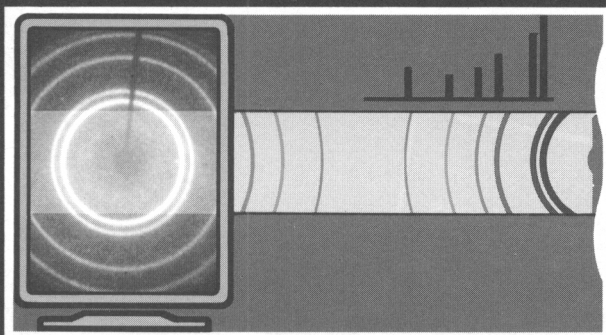
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PD-17

## X-RAY DIFFRACTION SERVICES



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- Polymorphism
- Hydrated/Solvated Forms

- Method Development
- QC/QA Testing
- JCPDS Search
- Quantitative Studies

### Support Services

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PD-18

## X-ray Diffraction Reference Standards and Zero-background Sample Plates Custom Designed and Built for any Application

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PD-19

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## Editorial

I am pleased to announce that Jan W. Visser has accepted the position of Editor for the European area beginning immediately. He will be replacing J. (Hans) L. de Vries who has been the Editor for the last two years.

Jan Visser recently retired as the Head of the X-ray Department at the Technisch Physische Dienst TNO-TH, a position he held for many years. He has produced many papers on the characterization of crystalline compounds, but he is best known for his computer program for indexing powder patterns of new crystalline compounds. This program was an outgrowth of his association with P.M. de Wolff in the 1960's, and it has seen twelve revisions in the last 25 years.

My introduction to the value of this program came in 1981 when we were doing a JCPDS test of peak-finding algorithms. I created several sets of simulated diffractometer traces which contained peaks from two hypothetical crystalline materials with added background and statistical noise. Using the Delft peak finding routine and the indexing routine, Visser solved three of the four test sets and found the unit cell for both components. The fourth set was so noisy, that it was hard to even locate the peaks. No one else ever solved one of the test sets. I was impressed.

Visser has directed the "Delft Associateship" for around 15 years. This project was one of the pattern-producing Grants-in-Aid sponsored by the JCPDS-International Centre for Diffraction Data. An average of 20 patterns were produced each year which are some of the highest quality patterns in the Powder Diffraction File. His experience makes him eminently suitable to be an Editor of *Powder Diffraction*.

Hans de Vries studied under Professor C.H. MacGillivray at the University of Amsterdam and did graduate

work at the Pennsylvania State University. He played a vital role in the powder diffraction method in Europe in the 1950's. In addition to directing the X-ray Diffraction Laboratory for N. V. Philips in Eindhoven, The Netherlands, he lectured all over the world on X-ray methods for materials analysis. He officially retired in 1985.

Hans de Vries has initiated the editorial activities in Europe over the last two years and has helped establish *Powder Diffraction* as the primary journal in its field. He reluctantly agreed to accept this responsibility while the journal staff was being formulated and will now relinquish these duties to retire fully. The whole staff of *Powder Diffraction* would like to express its thanks for his assistance during this period and wish him a long and well earned retirement.

There is another change that will be initiated in this issue of *Powder Diffraction*. The title of the "Departments" section has been changed to "International Report" to reflect the goals of this section. Helein Hitchcock will continue as the Editor of this section with regional correspondents Jaroslav Fiala and Tony Raftery covering Eastern Europe and Australia respectively. I should indicate that these two "appointments" are not really new. They have been contributing items for some time. We are now structured to recognize these contributions and encourage others with information on meetings, courses, and other activities of interest to crystallographers and diffractionists to supply the information to Helein Hitchcock.

Deane K. Smith  
Editor-in-Chief