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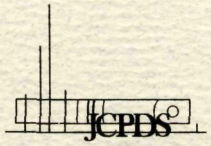

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Powder Diffraction An international journal of materials characterization

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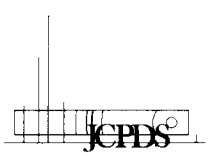

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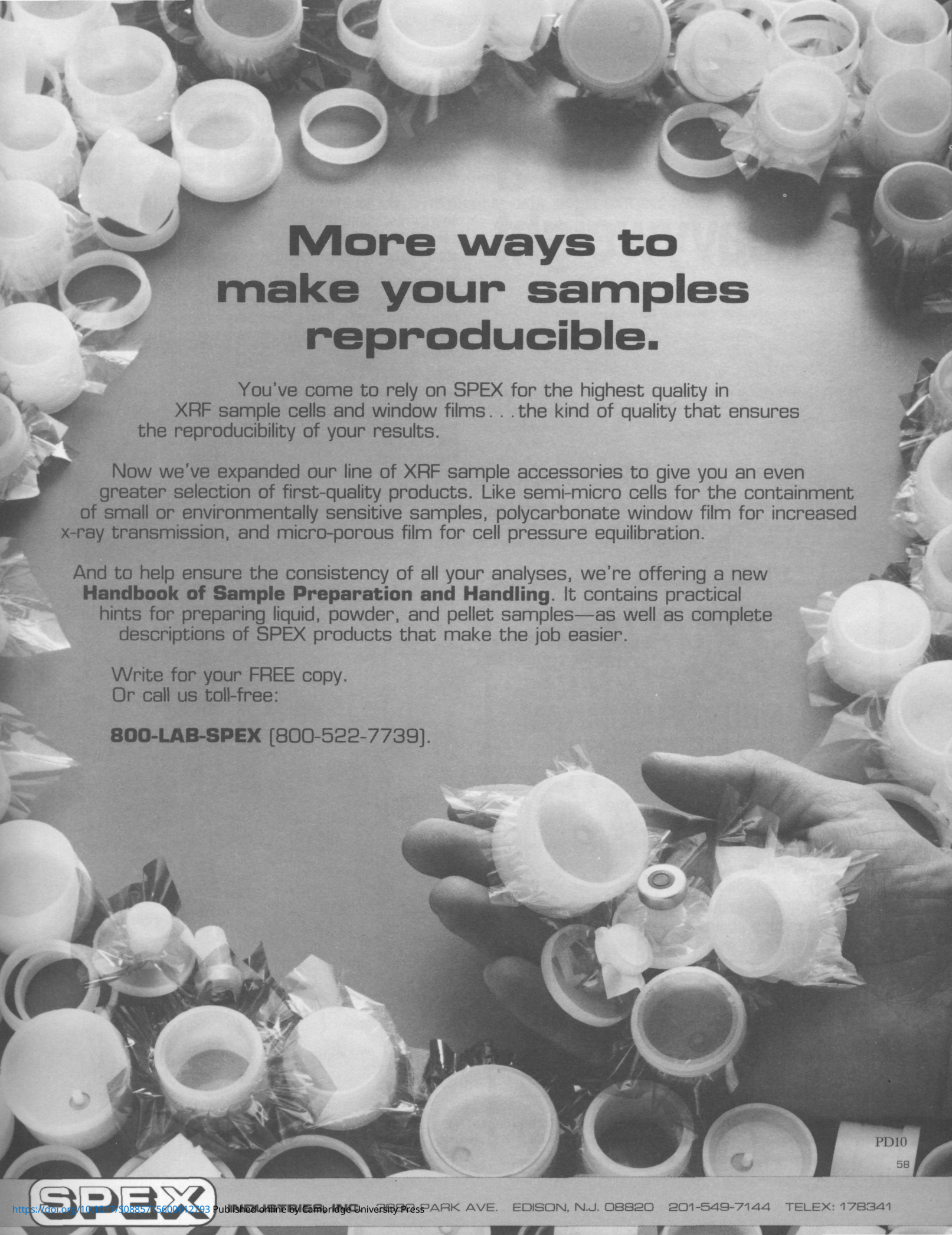

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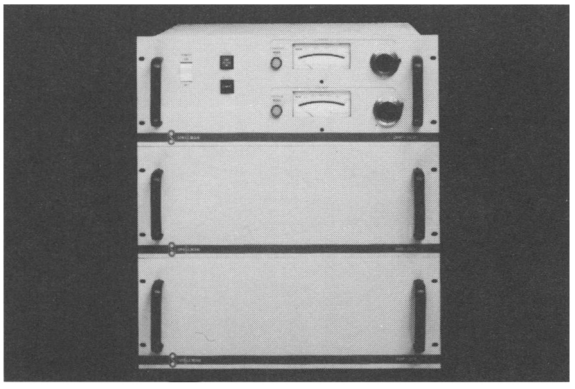

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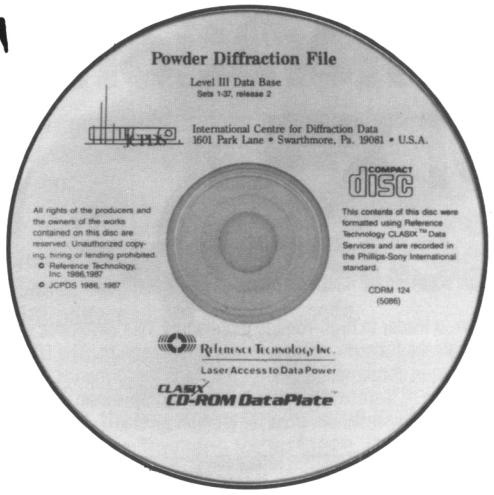

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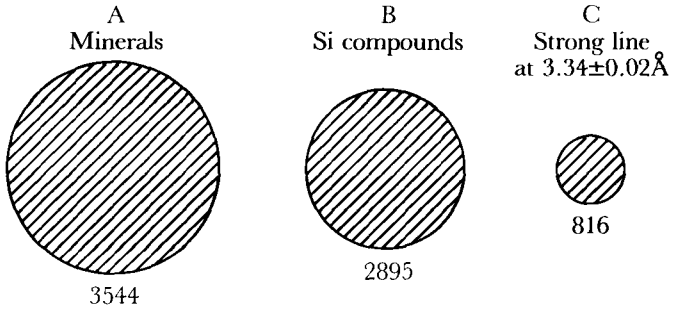
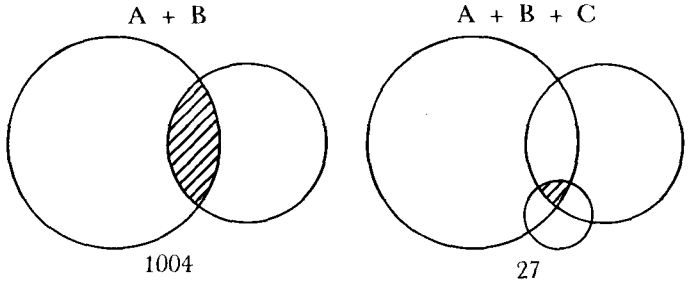


Search on combinations of fields.



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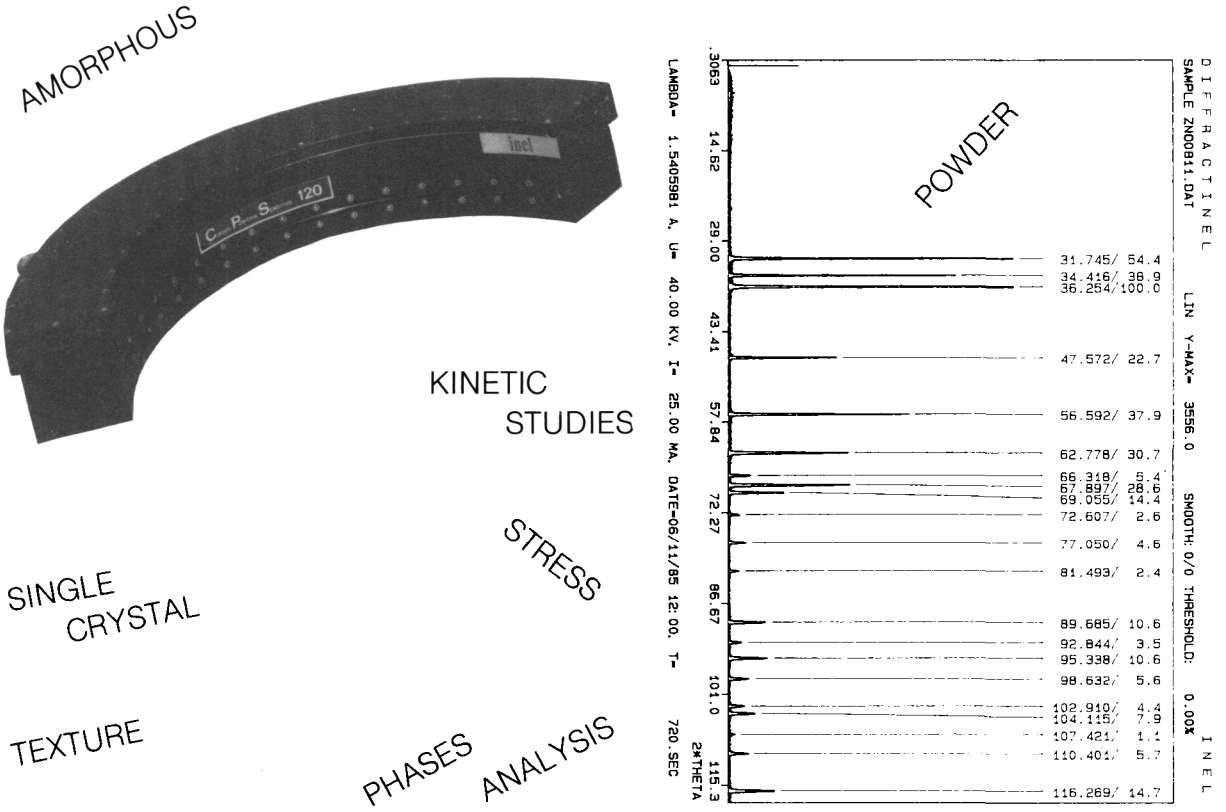

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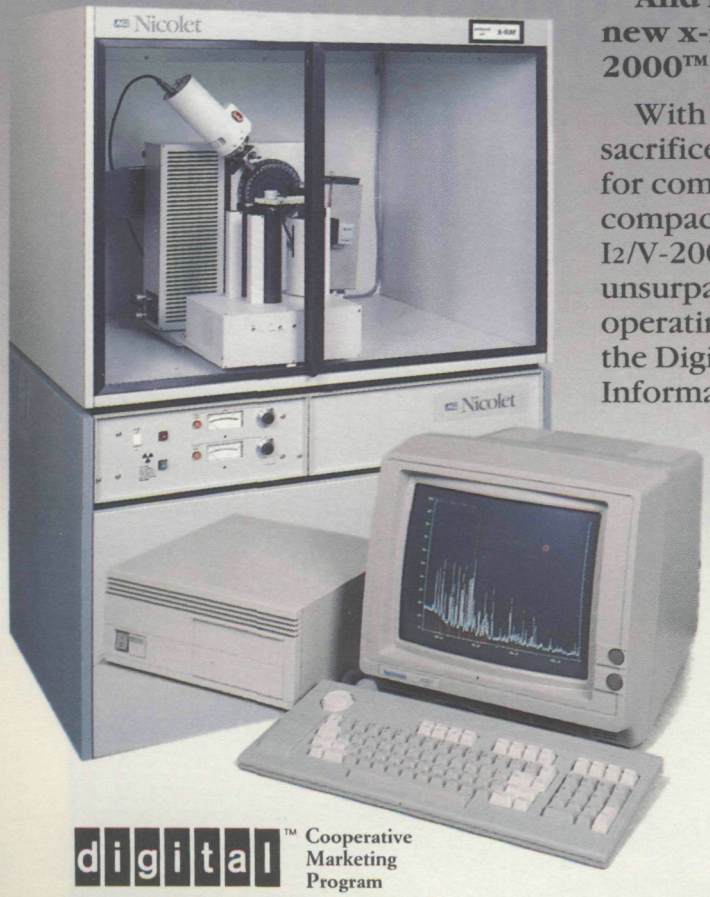

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Editorial

Powder Diffraction and the International Union of Crystallography

The XIV Congress of the International Union of Crystallography was convened in Perth, Western Australia, 12–19 August 1987, and the subject of powder diffraction was a very significant part of the program. The opening Plenary Lecture by Dr. Alan Hewat was titled "Structure Solution and Refinement from Powder Data." There were two scheduled microsymposia on powder diffraction, one on "Recent Advances in Powder Diffractometry" and the other on "Development of X-ray and Neutron Powder Diffraction Methods Useful to Industry." In addition to the organized program, there were more than 25 poster papers on the acquisition and interpretation of powder data, in addition to many other posters on new information on materials which employed powder data. Clearly, powder diffraction has come of age as an important research tool in the field of materials studies.

Although powder diffraction has been used for over 50 years as an analytical method, it is now employed commonly for determining fundamental physical properties including the crystal structures of phases. Developments with fitting the diffraction profile have allowed the extraction of considerable new information from the pattern data. The recent burst of studies on high Tc superconductors has shown that powder diffraction, neutron, X-ray and electron, are at the forefront in revealing the important properties such as the phase inversion and their all-important atomic arrangements. All of these topics were included in the program of the IUCr Congress at Perth.

At the XII Congress in Ottawa, Ontario, Canada in 1981, a movement was initiated to establish a Commission on Powder Diffraction. This movement culminated in the creation of this Commission at the Perth Congress. The efforts which led to this Commission are due in part to an Ad Hoc Committee of the IUCr which was chaired by Prof. R. A. Young and, in part, to the Executive Committee of IUCr and its President, Prof. Theo Hahn. Officially, the Commission was voted into existence on 14 August 1987 at the General Assembly by the delegates of the various countries and adhering bodies of the IUCr. The constituents of the Commission include:

Prof. R. A. Young, Chairman (USA)
Prof. Z. Bojarski (Poland)
Dr. A. W. Hewat (France)
Dr. R. J. Hill (Australia)
Dr. J. I. Langford (U.K.)
Prof. P. E. Werner (Sweden)
Dr. T. Yamanaka (Japan)

In addition, Dr. L. K. Frevel will serve as the appointed representative of the JCPDS-International Centre for Diffraction Data, which is a Scientific Associate of the IUCr.

It should be noted that this Commission was designed to include neutron, X-ray and electron powder diffraction in both physical and chemical applications. The stated terms of reference of this Commission are:

i. To advise the IUCr in organizing or sponsoring meetings, schools and Congress sessions on powder diffraction and related subjects.
ii. To promote and coordinate scientific exchange between countries in the field of powder diffraction.
iii. To cooperate with other IUCr Commissions on matters concerning powder diffraction.
iv. To cooperate with other international bodies interested in powder diffraction and allied subjects.
v. To promote useful interactions of the IUCr with the large world-wide body of X-ray and neutron powder diffractionists.
vi. To promote the scientific growth and development of the field of powder diffraction.
vii. To organize a microsymposium on X-ray Powder Diffraction Profiles at the Bordeaux meeting.

The meetings of the members of the new committee held in Perth produced several projects for immediate attention.

Establish a program exchange "bank."

Organize a satellite meeting for the XV IUCr Congress in Bordeaux, France in 1990.

Organize a workshop on the Rietveld method.

Create a newsletter.

Set up some round-robin tests on the Rietveld method involving both X-rays and neutron data and several samples.

Promote new books possibly resulting from workshops.

The goals of the commission are energetic and designed to promote powder diffraction at the international level for many years. It is hoped that they will emphasize the chemical applications as well as the physical applications.

Deane K. Smith
Editor-in-Chief