

contains its own free format routine and traps all errors inside the system so the user cannot normally exit from the system by making a mistake.

The system runs on a DEC-10 computer *via* a 4014-Tektronix Graphics Terminal with the enhanced graphics module. All output displayed on the screen can also be sent to the line printer and all plots can also be plotted on a CALCOMP plotter to create hard copy. It is possible to input a new model and calculate an image of that model in 10–15 min. (Time depends on system load *etc.*)

The system is written in Fortran with some Macro assembler routines to drive the 4014-Tektronix terminal. The system occupies approximately 1000 blocks (1 block = 640 characters on the DEC-10 system). The program is available to users of the ICF network and copies may be obtained by contacting the author.

I would like to thank Dr L. Kihlberg and the DEC-10 system, Stockholm, Sweden, the SRC and the ICF, particu-

larly I. Cook and B. Swindells, and the ZIR (ETH), particularly F. Parkel, A. Gausche and G. Rogers for their cooperation, software and assistance in making the system possible. I would like to thank ETH for the financial support to work with Dr H.-U. Nissen and the high-resolution group to establish such a system at ETH and to Dr C. F. Woensdregt for critical testing of the operation and accuracy of the system.

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Meeting Report

J. Appl. Cryst. (1979). **12**, 638–639

Inter-Congress Symposium on Accuracy in Powder Diffraction, National Bureau of Standards, Washington DC, USA, 11–15 June 1979

A symposium on 'Accuracy in Powder Diffraction' was held at the National Bureau of Standards, Washington, DC, June 11–15, under the sponsorship of NBS, the National Research Council of Canada and the International Union of Crystallography. This is the first such symposium held in North America, the last being held in Stockholm in 1959. Talks covered aspects of accuracy in the powder method. The proceedings will be published by the NBS and will be available from the National Technical Information Service, Washington, DC.

The total diffraction patterns for the X-ray and neutron cases were covered by Dr P. Suortti (Finland) and Professor T. Sabine (Australia), respectively. Both were able to report results at the 1% level. Among other topics on the first day were synchrotron radiation and energy-dispersive diffraction (Professor B. Buras, Denmark), X-ray wavelengths (Dr R. Deslattes, USA), intensity measurement techniques (Dr L. Jennings, USA) and position-sensitive detectors (Dr R. Hendricks, USA).

Techniques involving profile-fitting were stressed on the second day. Dr W. Parrish who organised the Stockholm symposium (1959) stressed the precision

possible with this method and Dr A. Hewat (France) and Professor R. Young (USA) summarised the possibilities of structure determination for the neutron and X-ray cases, respectively. A spirited discussion clearly showed strong interest in these fields. Dr C. Baerlocher (Switzerland) spoke on a new profile function being used to refine a large zeolite structure. Dr M. Cooper (UK) argued that standard deviations for the profile (Rietveld) method had been systematically underestimated; a lively discussion revealed differences of opinion. Dr D. Cox (USA) described a comparison of the profile method for the X-ray and neutron cases and Dr E. Prince gave an account of profile refinement using constraints.

In sessions stressing materials analysis, Dr J. Hilliard (USA) showed that particle-size analysis was possible for process control. Professor S. Weissman described micro-photographic techniques applicable to problems of stress-corrosion and fatigue. Drs deKeijser and Mittemeijer (Holland) reported on methods of crystallite size, strain and concentration analysis in powders of industrial importance; the discussion clearly showed the importance of these topics. The accuracy possible when using the integral breadth method was summarised by Dr Langford (UK); quite large errors are possible. Similarly, the accuracy of lattice-parameter measurement was assessed by Professor Wilson (UK) and the problems implicit in some methods were outlined. Professor Wilson joined Dr Mandel (USA) in raising questions about the Likelihood Ratio Method.

The various techniques for computer indexing of powder patterns were re-

viewed by Dr R. Shirley (UK); an active discussion on figures-of-merit followed. Dr Louer (France) spoke on the successive dichotomy method, a rigorous but time-consuming indexing method.

Stress analysis, an industrially important topic, was discussed by Professor J. Cohen (USA) and Dr Kuriyama (USA). The accuracy possible when using data derived by automated profile analysis of Guinier films was described by Drs J. Edmonds (USA) and P.-E. Werner (Sweden). The latter gave examples involving large unit cells, and discussed structure refinements based on such data. Dr E. Griger (Hungary) described the increased accuracy possible when automation was optimised. Dr C. Hubbard (USA) discussed the NBS Standard Reference Materials for quantitative analysis and 'd' spacing measurements. A more complete account of all papers presented is not possible here.

Paradoxically for a meeting devoted to powders, the social highlight was a behind-the-scenes visit to the gem collection of the Smithsonian Institution. This magnificent collection of large and very large single crystals impressed and delighted the devoted adherents of powder diffraction. Dr D. Appleman of the Smithsonian was responsible for this much appreciated event.

The meeting concluded with the report of the ACA sub-committee on powder-pattern publication standards (Dr Q. Johnson, USA) and a panel discussion on future trends.

Participants enjoyed the possibilities for relaxed discussion and many spirited and profitable discussions took place; it is believed that not all differences of opinion

were resolved, which is perhaps not surprising where accuracy is discussed.

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(Received 20 June 1979,
accepted 4 July 1979)

Crystallographers

This section is intended to be a series of short paragraphs dealing with the activities of crystallographers, such as their changes of position, promotions, assumption of significant new duties, honours, etc. Items for inclusion, subject to the approval of the Editorial Board, should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 5 Abbey Square, Chester CH1 2 HU, England).

Professor **N. Bartlett**, of the Department of Chemistry of the University of California at Berkeley, has been elected foreign associate of the USA National Academy of Sciences.

Professor **P. Coppens**, of the Chemistry Department of the State University of New York at Buffalo, has been elected a corresponding member of the Royal Netherlands Academy of Arts and Sciences.

Dr **G. Kostorz** has been appointed a Co-editor of the *Journal of Applied Crystallography*. His research interests cover a wide range of materials science and the application of both X-ray and neutron techniques. After graduating from the University of Göttingen he spent three years at the Argonne National Laboratory and several years at the Institut Laue-Langevin. In 1978 he moved to the Max-Planck Institut für Metallforschung in Stuttgart, where he has been applying X-ray and neutron scattering techniques to the study of kinetic and structural aspects of the decomposition of alloys. His full address is given on the inside front cover of the journal.

International Union of Crystallography

J. Appl. Cryst. (1979). **12**, 639-640

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