

## Crystallographers

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*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 **J. M. Bijvoet** died on 4 March 1980. A full obituary will be published in *Acta Crystallographica* Section A.

Professor **H. Curien**, President of the Centre National d'Etudes Spatiales in Paris, is to succeed Lord **Flowers** as President of the European Science Foundation in 1981.

Professor **D. K. Smith**, of the Department of Geosciences of Pennsylvania State University, has been elected Chairman of the Joint Committee on Powder Diffraction Standards - International Centre for Diffraction Data.

Dr. **G. J. McCarthy**, of the Chemistry Department of the North Dakota University, has been elected Vice Chairman and Dr **J. Messick** has been appointed Secretary.

Professor **W. H. Zachariasen** died on 19 December 1979. A full obituary will be published in *Acta Crystallographica* Section A.

## International Union of Crystallography

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### President's Fund

Members of the crystallographic community are reminded that a President's Fund was established by the International Union of Crystallography in 1977, as suggested by Professor Hodgkin at the 1975 General Assembly. The fund is intended for use in emergency and in special or difficult circumstances, to help crystallographers to take part in the activities of the Union, and is operated by the President and the General Secretary and Treasurer of the Union.

The Executive Committee is most grateful to those crystallographers who have

already made donations to the fund. Any further donations may be sent to the Executive Secretary, International Union of Crystallography, 5 Abbey Square, Chester CH1 2HU, England.

## Book Review

*Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.*

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**Nondestructive evaluation of semiconductor materials and devices.** Edited by *J. N. Zemel*. NATO Advanced Study Institutes Series B: Physics, Vol. 46. Lectures presented at the NATO Advanced Study Institute held on this topic at Villa Tuscolano, Italy, Sept. 19–29, 1978. Pp. XI + 782. New York, London: Plenum Press, 1979. Price US \$ 69.50.

In a total of 14 lectures, many important measurement techniques for the determination of the properties of semiconductor materials and devices are reviewed. Moreover, measurements characterizing some fundamental devices such as MIS (metal-insulator-semiconductor), Schottky diodes (metal-semiconductor) and ohmic contacts are described; most of them are used as tools for material-characterizing measurements. It seems advantageous to have some knowledge of these 14 topics before acquisition of the book.

J. R. Ehrstein deals with the spreading resistance techniques and their application, including problems such as contacts and possible errors (66 pp.). H. H. Weider presents a lecture on four-probe measurements, *i.e.* Hall-effect measurements (37 pp.). G. De Clerck's chapter on MIS structures and interface states extends as far as the application in charge-coupled devices (43 pp.). This is completed by an essay on relaxation phenomena in MOS (metal-oxide-semiconductor) devices by J. G. Simmons (50 pp.). K. Heime presents material-evaluation

techniques by Schottky contacts with emphasis on shallow and deep levels (56 pp.). A. D'Amico reviews noise phenomena and measurements in semiconductors and in their devices (58 pp.). E. D. Palik and R. T. Holm introduce the basic optical properties such as transmission and reflection, including measurements (82 pp.). W. E. Spicer discusses photoemission and related techniques such as sputter Auger techniques to analyse surface coverings and Schottky barriers (60 pp.). This is actually not expected in a book on nondestructive methods. T. H. DiStefano presents a review on scanning techniques utilizing photovoltage and photoemission effects (58 pp.). C. J. Varker completes the field of scanning methods by adding a paper on scanning electron microscopy (SEM), by which material defects as well as device properties can be analysed. Electron-beam induced-current microscopy (EBIC) is an important part of this chapter (66 pp.). M. A. Nicolet reviews backscattering spectroscopy methods (50 pp.). The acoustic microscope techniques, not as widely known as most of the others, are presented by J. Attal (46 pp.). G. G. Harman's paper reports on the testing of packaged semiconductor devices by 'passive acoustic techniques'. These include vibrating tests and acoustic emission as a result of mechanical stressing (62 pp.). The book is concluded by a chapter by F. H. Reynolds on accelerated device-lifetime testing and evaluation (42 pp.).

This book is a detailed handbook on many types of measurements of semiconductor material properties and on device testing. It does not, however, completely review semiconductor measurements. It is useful for companies intending to extend their semiconductor testing and measuring equipment, but it is also an interesting source of information for people who have to familiarize themselves with one or more of the fourteen topics cited above, both students and those employed in scientific laboratories working in the semiconductor field.

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