

the structure) was simulated during and just succeeding the war by a grating used with visible light in connection with an apparatus called the 'fly's eye', there were no further European developments of the 'Bragg X-ray microscope' until about 1951, when Lipson and his co-workers began extensive use of the tool. From their laboratory flowed dozens of papers, dealing mainly with the use of optically synthesized molecular transforms and how they could be used in deriving the structures of organic crystals. The book, *Optical Transforms* by Taylor and Lipson is written by the chief protagonists of this method, and represents an effective integration of all their earlier contributions.

This book, dedicated to Sir Lawrence Bragg, is divided into ten chapters and two appendices, as follows: 1. *Historical survey*, 2. *Basic postulates*, 3. *Optical apparatus*, 4. *Preparation of masks*, 5. *Optical Transforms*, 6. *Symmetry and related topics*, 7. *Practical procedures in structure determination*, 8. *Direct interpretation of weighted reciprocal lattices*, 9. *Image reconstruction*, 10. *Miscellaneous applications*, Appendix I: *Auxiliary instruments*, and Appendix II: *Auxiliary techniques*.

The first thing to strike the reader as he picks up this book is the set of 54 plates which are bound together in the center section. These are photographs of various optical transforms, mostly taken with the Manchester apparatus, which serve to illustrate the text. These plates have complete legends and provide an interesting study in themselves.

The subject matter of the book centers in the Manchester application of optical Fourier transforms. This consists chiefly of a description of their apparatus, how they use it, and how they apply it to studying organic crystals by the means of Fourier transforms as produced by the optical method. Although optical Fourier syntheses have been used in Chile, Germany, India, Japan, Russia, Spain and the United States, the book generally omits or deprecates non-Manchester developments. One might properly expect to find in a book entitled *Optical Transforms* a good treatment of holography and holograms, which were introduced by D. Gabor even before the first Manchester publication appeared. These subjects, however, do not appear in the index, and Gabor's name does not appear in the bibliography. Were holography included, this book could well merit a wide sale, since this subject is receiving increasing attention from physicists at the present time. Without it, the book treats a technique chiefly of historical interest, since its use has declined in those countries having adequate high-speed computing facilities.

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### Physics of high pressures and the condensed phase.

Edited by A. VAN ITTERBEEK. Pp. xv + 598. Amsterdam: North-Holland Publishing Company, 1965. Price \$ 20.00.

This book consists of fourteen chapters on various aspects of high-pressure research. Most of these emphasize research at cryogenic temperatures, *i.e.* at liquid-nitrogen temperature or below. It would perhaps have been desirable to have indicated this emphasis in the title.

The first two chapters concern techniques and mechanical properties of metals for high-pressure construction. The emphasis is on the ten-kilobar region and below. The references here are useful, but there is not a great deal of information not reviewed elsewhere.

There are eight chapters which concern themselves with gases and liquids including equations of state, optical properties, transport phenomena and related topics. Of these, a chapter on the theory of the liquid state and one on liquid helium under pressure offer material of interest and not covered thoroughly in other books. The discussion of optical properties of gases under pressure is extensive and well done.

There are four chapters on properties of solids at high pressure which would be of most interest to readers of *Acta Crystallographica*. These include a discussion of solidified rare gases, a section on solid helium, a discussion of pressure effects on superconductors and a chapter on electrical properties of metals and semiconductors.

The chapter on solid helium under pressure is particularly well done. The discussion of superconductivity is specially welcome, as pressure effects in superconductivity have not been frequently reviewed in the past. The final chapter on electrical properties gives a very nice review of a very extensive field, and provides a good starting point for anyone interested in an introduction to a number of active problems. In a book with heavy cryogenic emphasis it is surprising that there is not more extensive discussion of Swenson's experiments on alkali metals as well as condensed rare gases.

It is perhaps desirable to compare this book with other recent high-pressure reviews. *High Pressure Physics and Chemistry*, edited by R. S. Bradley, is a somewhat more extensive discussion of the field. *Solids under Pressure*, edited by Paul and Warschauer, has considerably more emphasis on solid-state properties. The present book should certainly be consulted if one is considering research at high pressure and cryogenic temperatures. Most technical libraries will want to purchase it. In view of the relatively high price (\$20) and the relatively small emphasis on solids, it is doubtful if many people doing solid-state work at high pressure will want to invest in a personal copy.

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### Growth of crystals. Vol 3. Herausgegeben von A. V.

SCHUBNIKOV und N. N. SCHEFTAL. Referate der zweiten Tagung über Kristallwachstum in Moskau vom 23.3.-1.4. 1959. Autorisierte Übersetzung aus dem Russischen ins Englische: New York: Consultants Bureau, 1962, Preis \$25. Russischer Originaltext: Moskau, Verlag der Akademie der Wissenschaften der USSR, 1961.

Das Werk umfasst 77 Beiträge von Autoren aus der USSR und einigen weiteren Ostblockländern. Es ist wie folgt aufgeteilt: I. Allgemeine Probleme; theoretische und experimentelle Untersuchungen über Keimbildung und Wachstum. II. Züchtungen von Einkristallen und damit verbundene Studien.