argon were identified as such by comparing computer-drawn Laue diagrams with an experimentally obtained Laue film. A crystal was judged to be single when every observed Laue spot on a given photograph was reproduced on the corresponding calculated pattern, and when this criterion was satisfied for several crystal orientations.

The remaining chapters cover thermodynamic, conductivity, dielectric, optical, and electronic transport properties. In general, the level of discussion is excellent, careful attention was paid to coordinating and cross-referencing the various chapters, and the quality of production is high. Numerous references are made to Volume I and the index in this volume covers both volumes.

Since this book is the work of many authors it was inevitable that a few of them were late in completing their manuscripts. As a result, several of the chapters are already out-of-date in this rapidly changing field. However, let us remember that those chapters which are commendable for being up-to-date (with references past 1974) are most probably the chapters which delayed the publication of the book.

Each chapter has a well-written conclusion and/or summary. After reading these, it is clear that the full story of the theory and properties of rare gas solids is not yet known. When the concluding chapters to this story are published we look forward to seeing an equally outstanding job, which will, hopefully, include a more comprehensive treatment of the role of X-ray diffraction.

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Solid electrolytes (Topics in applied physics, Vol. 21). Edited by S. GELLER. Pp. xi + 244. Springer-Verlag, 1977. Price DM72·00, $33.20.

So quickly has this field blossomed that there is no general agreement yet as to what to call the materials that are its subject matter. Various terms, such as *superionic conductors*, *fast ion conductors* and *solid electrolytes* are being used by various authors. The editor of this book prefers the term *solid electrolytes* and he uses it to mean those solids which exhibit sufficiently high ionic conductivity coupled with low electronic conductivity to enable them to be used in electrochemical cells, batteries and other devices. The recent upsurge of interest in these components derives from the considerable advantages which may accrue from the replacement of liquids by solid electrolytes in these systems, as evidenced by the current world expenditure on solid electrolyte research, amounting to many tens of millions of pounds.

The book strikes an excellent balance between the theoretical (H. Sato), the structural (S. Geller, on halogenide solid electrolytes), the electrochemical (L. Heyne, on electrochemistry of mixed ionic-electronic conductors) and the application aspects (J. E. Oxley and A. F. Sammells on applications of halogenide solid electrolytes). Many of these aspects are combined elsewhere in the book, especially in excellent chapters on the β-aluminas* by J. H. Kennedy and on oxide electrolytes by W. L. Worrell. To take but one example, the β-alumina field has developed dramatically in the past ten years and Kennedy's chapter covers the recent developments up to 1976 in both theoretical studies and applications. This chapter is the one text I would recommend, both to late arrivals in the field and, because of its scope, also to those wishing to teach the subject. This rare combination of virtues extends throughout the book and it will be valued not only by physicists but equally by chemists, ceramacists, materials scientists and electrochemists, both in research and teaching. It will also be of value to those simply wanting to learn something about these intriguing materials and their role in the economic use of energy.

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* 'β-alumina' is essentially $Na_{1+x}Al_{11}O_{17+(x/2)}$.