

experiments on radiation accompanying channeling. The experimental apparatus is described and data are discussed on radiation in the cases of axial and plane channeling both for electrons and for positrons. In his article G. B. Yodh examines transition radiation from a relativistic charged particle in a semi-infinite medium, in a plate and in a multi-layered medium. Results are quoted of an experimental test of the theory, and the use of transition radiation for the detection of high energy particles and as a source of radiation are discussed.

A distinguishing feature of the topics in this collection is the large contribution made by Soviet physicists to the development of the problem being discussed. This is related to the fact that a more detailed presentation of the topics of many articles in this collection can be found in monographs published in our country. This to a greater extent relates to the theoretical problems discussed in the collection and to a lesser extent to the experimental ones. Therefore for the Soviet reader the articles describing and discussing experiments are of greater interest.

Crystal structures of germanates, stannates and plumbates

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Landolt-Börnstein: Numerical Data and Functional Relationships in Science and Technology. New Series/Eds. K.-H. Hellwege and O. Madelung. Group III: Crystal and Solid State Phys. Vol. 7: Crystal Structure Data of Inorganic Compounds. Pt d: Key Elements Si, Ge, Sn, Pb; B, Al, Ga, In, Tl; Be. d1: Key Elements Si, Ge, Sn, Pb. d1γ: Key Elements Ge, Sn, Pb/Eds. W. Pies and A. Weiss. Springer-Verlag, Berlin; Heidelberg; New York, Tokyo, 1986. pp. 215.

The volume under review of the well-known reference work completes a series of publications devoted to the structure of inorganic compounds based on the elements of the IVA subgroup of the periodic system.

The relatively modest length of the book (it contains information on 975 crystal structures) can, apparently be explained by the relatively rare appearance of papers investigating the atomic structure of phases containing Ge, Sn, and Pb. Therefore, first of all one should include among the undoubted merits of the book the practically complete inclusion of the original papers on structure.

The data are organized in the sub volume 7d1γ according to the principle adopted for the entire series "Crystal structures of inorganic compounds." Each of the elements of the IVA subgroup (Ge, Sn, Pb) is regarded as a "key" element and all its compounds (solid solutions) are arranged according to the place occupied in the periodic system by the cations and/or anions included as components of the phases under consideration.

The specific contents of this reference work comprise

information on the space symmetry group of the crystal, the parameters of its elementary cell, the number of formula units, involved in a single elementary cell.

Mention is also made of the method of obtaining the experimental data on the atomic structure of the materials (x-ray diffraction, neutron diffraction, electron diffraction, etc.), and, in addition, of the state of the sample being investigated (single crystal or polycrystal). In the majority of cases an indication is given of the phases that are isostructural to the compounds (solid solutions) being analyzed, of the methods of obtaining single crystals, and of the densities of the various materials.

Considerable attention is paid in the book to the phenomenon of polymorphism of germanates, stannate and plumbates—the book provides data on the temperatures (pressures) at which structural rearrangement is observed in a crystal, and parameters are given which characterize the special features of the structure of different polymorphic modifications.

Just as in other volumes of the present series references to articles published prior to 1971 are given in accordance with volume III/7g, while references to later articles are given directly in the text.

All this makes the reference book under discussion a convenient and sufficiently informative aid both in practical and in theoretical investigations. Without a doubt it is of interest for a wide circle of specialists in solid-state physics.