

Encyclopedia of semiconductors

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Landolt-Börnstein. Numerical Data and Functional Relationships in Sciences and Technology. New Series/Editors in Chief K.-H. Hellwege and O. Madelung. Group III: Crystal and Solid State Physics. V. 17. Semiconductors/Editors O. Madelung, M. Schulz, H. Weiss. Subvolume i. Special Systems and Topics. Comprehensive Index for III/17 a. . . i/D. Bimberg, I. Eisele, W. Fuchs, H. Kahlert, N. Karl. Edited by O. Madelung, M. Schulz, and H. Weiss, Springer-Verlag, Berlin; Heidelberg; New York; Tokyo (1985) pp. 385.

Recently the concluding subvolume 17i of the “Landolt-Börnstein” reference series on semiconductors has been published. Thus a unique undertaking has been completed which made it possible to collect in a single series the tremendous reference material that has been accumulated by the beginning of the 1980s on the physical properties and the structural and technological characteristics of practically all the semiconductors known up to that time.

Of course, one cannot assert that all the data collected in this reference series have the same degree of reliability. Such a requirement would not be sensible with respect to a publication whose aim is to give the most up-to-date and as far as possible complete information on the state of the subject in such a rapidly developing field of science as the experimental investigation of the physical characteristics of semiconducting materials. This aim has been achieved with the publication of the “Encyclopedia of Semiconductors”.

In the present rapidly changing situation in technology the specialists must have sufficiently simple access to information on the entire spectrum of the physical properties of various semiconductors, in order to be able to choose in an optimal manner the material for achieving their aims. Prior to the appearance of the publication being reviewed such a problem was very difficult to resolve. Now it is to a large extent solved, since the reference volumes contain not only detailed tables of physical characteristics of semiconducting materials, but also an extensive and a very representative bibliography of the original papers which enables one to carry out a search in depth for the required information.

In the concluding subvolume 17i “Special systems and a subject index” reference material has been included on the following topics: 1) amorphous semiconductors, 2) organic semiconductors, 3) layers of space charge on surfaces and interfaces, 4) hot electrons, 5) electron-hole liquid.

At the end of subvolume 17i is given a complete subject index covering all the previous parts of volume 17 “Semiconductors”.

Here for the convenience of readers of Usp. Fiz. Nauk we consider it to be necessary to reproduce the brief contents of all the preceding subvolumes of volume 17:

	Subvolume	Section
Physical parameters of semiconductors		
Group IV elements and IV-IV compounds	17a	1
III-V compounds	17a	2
II-VI compounds	17b	3
I-VII compounds	17b	4
Semimagnetic compounds	17b	5
Elements with nontetrahedral bonds	17c	8
Group III elements	17c	8.1
Group V elements	17c	8.2
Group VI elements	17c	8.3
Binary compounds with nontetrahedral bonds	17c	9
IA-IB compounds	17c	9.1
I _x V _y compounds	17c	9.2
I _x VI _y compounds	17c	9.3
II _x IV _y compounds	17c	9.4
II _x V _y compounds	17c	9.5
II _x VII _y compounds	17c	9.6
III _x IV _y compounds	17f	9.7
III _x VII _y compounds	17f	9.8
IV _x V _y compounds	17f	9.9
IV _x VI _y compounds	17f	9.10
IV _x VII _y compounds	17f	9.11
V _x VI _y compounds	17f	9.12
V _x VII _y compounds	17f	9.13
Boron compounds	17g	9.14
Binary compounds of transition metals	17g	9.15
Binary compounds with rare earths	17g	9.16
Ternary compounds	17h	10
Ternary and quasibinary compounds with tetrahedral bonds	17h	10.1
Ternary compounds of transition metals	17h	10.2
Ternary compounds with rare earths	17h	10.3
Other ternary compounds	17h	10.4
Technology of semiconductors		
Semiconductors with tetrahedral bonds	17c	6
Si and Ge	17c	6.1
SiC	17c	6.2
III-V compounds	17d	6.3
II-VI compounds (wide-gap)	17d	6.4
II-VI compounds (narrow-gap)	17d	6.5
Semiconductors with nontetrahedral bonds	17d	7
IV-VI compounds	17d	7.1
HgI ₂	17d	7.2
Se	17d	7.3

The contents of the last subvolume 17i have already been described above.