

### Reference book on phonon properties of metals

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W. Kress. *Phonon Dispersion Curves, One-Phonon Densities of States, and Impurity Vibrations of Metallic Systems*. Fachinformationzentrum, Karlsruhe, FRG, 1987. 409 pp. (Physics Data. V. 26-2).

"The continually increasing number of publications makes it ever more difficult for scientists and engineers to find and select from the original literature the physical data needed for their work..." It is difficult not to agree with these words which open the introduction to the series "Physics Data" published by the Information Center in Karlsruhe, FRG, beginning in 1975. Without setting themselves the goal of competing with the basic "Landolt-Börnstein" reference series the editors of this series attempt to supplement it by more detailed, but more specialized, publications. In particular, in spite of the existence of the corresponding volume on phonon properties of elemental metals in the "Landolt-Börnstein" series of reference books, the present volume in the series "Physics Data" being reviewed here was published. It includes results published up to 1985. And what is more important, in addition to the elemental metals which comprise about one third of the total volume of the book the reference book also contains materials on metallic com-

pounds, including such complex ones as Laves phases, layered chalcogenides, Chevrel phases and quasi-one-dimensional compounds. Extensive and, apparently, unique material has been compiled on hydrides and deuterides, including nonstoichiometric and binary ones (i.e., with two metals).

Finally, there is a chapter devoted to disordered binary and ternary alloys. Some information has been included on impurity and defect phonon modes.

The list of references includes more than eight hundred articles. As a rule, information of two kinds has been included: dispersion curves of photons along symmetric directions and a graph of the density of phonon states. In some cases tables of these quantities are also given. As far as possible the authors attempt to exhibit data at different temperatures.

It should be noted that the series "Physics Data" is less well known than, for example, the "Landolt-Börnstein" series, and is less widespread in the libraries in the USSR. One can recommend the acquisition of volume 26-1 of this series by the libraries of those scientific centers in which investigations are carried out on the phonon properties of metals or on problems associated with them.

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### Structure and dynamics of surfaces: phenomena, models, and methods

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*Structure and Dynamics of Surfaces II: Phenomena, Models, and Methods.* Eds. W. Schommers and P. von Blanckenhagen. Springer-Verlag, Berlin; Heidelberg; New York; London; Paris; Tokyo, 1987. 391 pp. (Topics in Current Physics. V. 43).

The structural and dynamic properties of surfaces play an important role in the explanation of such phenomena, for

example, as adsorption of particles and chemical reactions on surfaces. Electron states utilized in tunnel diodes and in semiconductor devices in metal-insulator-semiconductor systems also depend on the structure of the surface of the semiconductor.

In the volume under review properties of ordered and disordered surfaces are examined, as are the harmonic and