

BOOK REVIEW

Quantum Theory of the Solid State, 2nd ed. By JOSEPH CALLAWAY. Academic Press Inc., Boston, 1991. xiv + 954 pp. \$149.95.

This massive compilation represents a significant revision of the 1974 version of the book. Some of the original material has been omitted to make room for new theoretical developments that have occurred over the last two decades. In the present volume the reader will find an up-to-date discussion of virtually every topic of importance in the theory of solid state physics. To have so much material authoritatively assembled in a single volume represents a veritable tour de force for which the author must be highly commended.

The solid state chemist who wishes to work his way through all this material, or even through a small part of it, will find the going rather heavy. Inevitably, a compendium of this type mandates that the presentations be compact and terse. The reader must therefore either already have a first-rate background education

and working knowledge of the fundamentals of the entire field, or be willing to put in a lot of effort toward acquiring the necessary background information. In this latter task he is aided by many references which the author provides in each subject area to help close the gaps. However, even without such background reading the present volume provides a collection of useful theoretical models and results, as a jumping-off point for the pursuit of contemporary topics in the literature.

As might be expected the expository writing is kept to a minimum; instead, emphasis is placed on the formal development of theoretical concepts. The volume is therefore highly recommended to readers of advanced standing who desire a comprehensive overview of the theory of solid state physics.

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