

der of the book. It also indicates why an understanding of the physical processes underlying the devices is important. However, in the total scheme of the book this chapter appears out of place and I felt it was put in more to whet the appetite than for any other reason.

The rest of the book proceeds logically through statistical mechanics, elements of quantum mechanics, the behavior of electrons in solids, semiconductor theory and then into the various classes of devices. Uman treats single-junction devices including rectifiers, microwave diodes and optical diodes, multijunction devices, field-effect devices and finally, integrated circuits.

At the end of each chapter are a number of questions relating to the chapter subject material. These questions are well chosen and range in difficulty from what a college freshman might do to some that would try the patience and competence of a professor—or so it seemed to me. Answers to perhaps half the questions are given at the back of the book.

The author states the book is aimed at undergraduate students who have had several years of introductory physics, specifically electromagnetics, thermodynamics and quantum mechanics. To cover the material adequately would appear to require two semesters. It would be a useful text for graduate students in physics or electrical engineering who are not majoring in this field.

As might be expected from a textbook, nearly all the references are books, rather than periodicals. This causes the book to lose some sense of immediacy. For example, in the charge-coupled devices discussion, why isn't the original work cited?

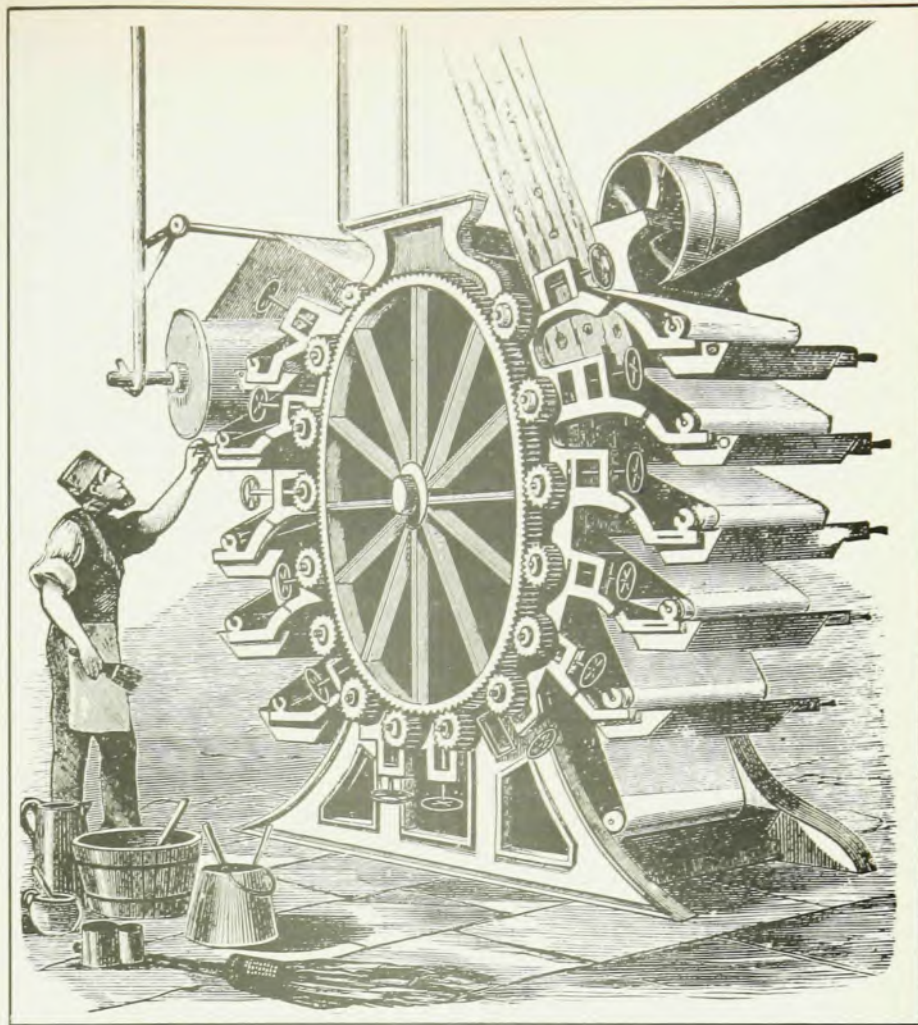
In summary, this book is certainly recommended for workers in the field of electronic devices and it would also appear to be a useful textbook.

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Physics for Technicians

Ernest Zebrowski Jr
585 pp. McGraw-Hill, New York,
1974. \$10.95

The clarity of presentation and thought in this book is refreshing. The author, Ernest Zebrowski Jr, carefully uses dimensional analysis in the worked examples, and he reports units with the numerical answers (given for odd-numbered chapter problems). The English engineering and metric systems of units are used interchangeably. He adequately covers the major areas of physics of most use to technicians



(force, torques, energy, fluids, sound, thermodynamics) in 28 of the 30 chapters. The material is both historical and current—the Carnot, Otto, Wankel and Diesel cycles are discussed in the chapter on heat engines. Two chapters on the perspectives of physics, four appendices and a good index make the book self-contained.

Zebrowski, however, does not cover accuracy, precision, statistical treatment of data and the nature of measurement. These topics are at least as important for the practicing technician as the basic principles of physics. It is the technician who makes the measurements: he must understand their relationship to the principles of physics. A treatment of the techniques of measurement and data handling in the same style as *Physics for Technicians* is needed. It is unfortunate that it was not included in this text.

Pedagogically, it is an interesting book. Zebrowski often leads the student in a way that the understanding reader catches on quickly, but the unwary student is admonished for taking too much for granted.

Overall, the text is well designed for its audience: the junior- and community-college student who wants to advance in a technician's career. It has

been "student tested" by Zebrowski at the Community College of Beaver County, Pennsylvania.

Because of its clarity, this text is also recommended as a supplementary study guide for problem solving in advanced high-school and first-year-college physics courses.

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The Logical Analysis of Quantum Mechanics

Erhard Scheibe
204 pp. Pergamon Press, New York,
1973. \$19.50

The logical analysis of quantum mechanics has generally been a subject of more interest to philosophers than physicists. Yet few in either field have had the technical competence in quantum physics, abstract mathematics, formal logic and the epistemological analysis of ontological issues to handle the complex of diverse problems involved. Erhard Scheibe seems to have mastered all of these fields and has raised the logical analysis of quantum