Some recent books

Materials
Radio and electronic materials†
N. P. BOGORODITSiK and V. V. PASYNKOV
Illiffe, 1967. 350 pp. £3 3s.

Many books on materials are so specialised that they are of interest only in particular fields. This work is an exception; it covers the whole subject of electronic materials in a brief factual form which is easy to read. It deals with dielectrics, metals, and semiconductor and magnetic materials. An initial brief chapter on fundamental ideas of the structures of materials is excellent in its simple and clear illustrations. The subject of dielectrics—both organic and inorganic—is dealt with most thoroughly, including breakdown and radiation effects. The only criticism which might be made is that too much space is given to dielectrics at the expense of other materials, particularly semiconductors, in view of the increasing importance of micro-electronics. The factual 'summary'-type treatment of this complex subject is most informative, and the book is thoroughly recommended to first- and second-year electronics engineers and to all those taking courses in materials sciences.

Microscopy
Scanning electron microscopy*
P. R. THORNTON
Chapman & Hall, 1968. 368 pp. £4

So far as the reviewer is aware, this is the first book on scanning electron microscopy to be published and it is therefore certain to arouse a good deal of interest. Nevertheless, the general reader should be warned that, as the subtitle 'Applications to materials and device science' indicates, the author is not primarily interested in the use of the microscope as an instrument for the examination of the topographical features of a specimen. He is concerned rather with its adaptation for the study of materials, particularly semiconductors, and for the examination of semiconductor devices. This means that less than half of the text is devoted to various aspects of the physics of the interaction of an electron beam with a solid—matters which are not of great interest to the electron microscopist who merely wishes to look at a magnified image of the surface of an object. However, for the reader who is interested in the further development of the scanning microscope for the study of materials, the book will be of great value. It summarises a large number of original papers and brings together a mass of information which is not otherwise readily available.

C. W. OATLEY

Shorter notices

An introduction to radioactivity for engineers†
R. A. COOMBE

The nature, detection and measurement of radioactivity, and the industrial and scientific uses of radioisotopes, are introduced in this work for practising engineers and senior students. The value of the text is as a guide to the types of problems that can be tackled only, or most efficiently, by the application of the unique characteristics of radiation. The book is intended for HNC, HND and first-year degree-course students, and contains many references, worked examples and problems for solution.

Selenium and selenides*
D. M. CHIZHIKOV and V. P. SHCHASTLIVTY
Collet's, 1968. 403 pp. £7 12s. 6d.

The properties and the production of selenium and selenides are dealt with in this translation of a Russian monograph. The text deals with general information, production of commercial selenium, selenides, method of preparation of selenides, method of preparation of single crystals of selenium and selenides, selenium and elements of groups 1, 2, and 8, and toxicity of selenium and selenides. A detailed subject reference is provided.

Semiconductors. Volume II: Linear circuits
E. J. CASSIGNOL
Philips Technical Library, 1967. 337 pp. £3 3s. 6d.

This volume is devoted to the study of transistor circuits in the linear-amplification range. The first part of the text deals with the methods of studying linear systems and discusses the properties of embodied semiconductors. The second main part is concerned in detail with the practical use of linear amplifiers incorporating semiconductors. Numerical examples are included in the text, and practical exercises are given at the end of the book.

* Copy held in the reference library of the IEE
† Copy held in both the lending and reference libraries of the IEE

IEA purchasing directory 1968*
Morgan Brothers, 1968. 708 pp. £5

Compiled and arranged to help the purchasing officer and the engineer find products quickly and efficiently, this directory lists 4800 product groups, with names of the suppliers of each product. Addresses of manufacturers, a 'who's who', a glossary of trade names and other useful information are provided. Equipment surveys, written by specialists, survey the 'state of the art' in 15 selected categories, ranging from pH meters and electrodes to variable-speed drives.

Industrial research in Britain (6th edn.).*
Editor: I. D. L. BALL
Horrocks, 1968. 923 pp. £8 8s.

This excellent reference work provides information of those engaged in industrial research in Britain. There are sections dealing with establishments that are now connected with the UK Ministry of Technology and the Department of Industry. Each company, and with British universities (nearly all the colleges of advanced technology in Britain have become universities, and several new universities have been established). Since the last edition, the section on research within industrial firms has been enlarged, and the section on translations of Russian scientific periodicals has been discontinued. There are sections on trade and development associations, and on international and learned societies and institutions, embassies and scientific attachés, computer services, patent agents, libraries and British periodicals and abstracts covering industrial research.

Reflex klystron circuits
T. BERCELI
Akadémiai Kiadó, Budapest, 1967. 137 pp. £2 15s.

A novel theory for the design and scientific investigation of reflex-klystron modulators and oscillators is given, by whose application circuit parameters and transfer characteristics can easily be determined. The main purpose of this work is to discuss coupled-cavity klystron modulators and oscillators, for which new methods of measurement are given, and the stability and noise, together with operating conditions, are studied.

Transform circuit analysis for engineering and technology
W. D. STANLEY
Prentice-Hall, 1968. 314 pp. £5 7s.

In covering the fundamentals of transient circuit and system analysis utilising the Laplace transform and pole-zero approaches, this work offers engineers a bridge between classical steady-state d.c. and a.c. circuits and modern advanced network and system theory. The text is engineering-oriented and requires that the reader has a mathematical background only through basic calculus. Beginning with classical treatments of simple circuits, and reviewing the necessary fundamentals of basic engineering calculus, the author introduces Laplace transform and pole-zero concepts as a means for dealing with more complex circuits and systems, and progresses in simple step-by-step sections from circuits to basic systems. The work contains detailed illustrations and offers a background for further work in electronics, control systems and communication systems.

Transistorized amateur radio projects
C. CARINGELLA
Foulsham, 1968. 128 pp. 25s.

20 constructional projects are described, of varying degrees of complexity. This paper is intended for those interested in the further development of the scanning microscope for the study of materials, the book will be of great value. It summarises a large number of original papers and brings together a mass of information which is not otherwise readily available.

C. W. OATLEY

Logical design manual†
D. ZISSOS and G. W. COPPERWHITE
Pitman, 1968. 181 pp. £2

The investigation of race and hazard phenomena in switching circuits has attracted great interest in recent years. The aim of this work is to explain the nature of these phenomena and how to detect their possible presence in circuits, and to suggest means of eliminating them. Also included in the text are step-by-step design techniques for nor and nand switching circuits, a chapter on Boolean algebra, worked examples and answers, and a reference list of switching circuits. The text is developed from courses given at the Liverpool College of Technology by the authors.