

basic ideas occur again and again in different guises. His highly intuitive approach will appeal more to experimentalists than to theorists.

While I felt that there should have been more discussion of the parton model and certainly a more extensive description of symmetry principles, Perl does cover his chosen topics clearly. A study of this text will give the careful reader a balanced understanding of the current state of high-energy strong-interaction physics. I recommend it especially for advanced graduate and post-graduate students. The casual reader must be warned, however, that there is a regrettably large number of errors, most of them typographical.

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## Nuclear Electronics

P. W. Nicholson

388 pp. Wiley, New York, 1974. \$24.95

This book spans most areas of interest in the nuclear electronics and detection field. In most cases the treatment is on a conceptual level (similar to *Nuclear Radiation Detection* by W. J. Price) which is very beneficial for the reader who is not well acquainted with the principles involved. However, P. W. Nicholson emphasizes modern techniques used in electronics, where Price emphasized detector and detection techniques prior to 1958.

Although there is very little attempt to cover the detailed theory of various concepts, the author provides a very well selected list of references that allow the reader to pursue the various subjects to any desired extent.

Two of the chapters, "Resolution in Spectroscopy Systems," and "Amplifiers," appear to have the most appropriate treatment. In these chapters, the author covers such subjects as the statistical nature of noise by defining the three basic types of noise, the equivalent noise charge, optimum signal-to-noise ratio (including the optimum cusp pulse shaping), semi-Gaussian pulse shaping and many other subjects that are of vital interest to the nuclear-physics experimenter.

Nicholson discusses the many methods of time derivation in nuclear experiments, including fast-slow coincidence circuits, limiter-type pick-offs, leading-edge triggers, zero-crossing discriminators and constant fraction of pulse height pick-offs. Instead of attempting to explain the performance and limitations of such techniques in detail, he simply quotes results of leading papers

on the specific subjects. In the "Timing Circuits" chapter alone, the author uses 85 references to establish the major points.

The last two chapters of the book cover the subjects of multichannel analyzers and computer analysis. On the subject of MCA's, the author emphasizes the various methods of analog-to-digital conversion, such as the Wilkinson, successive approximation and dual-ramp types. There is very little discussion on the subject of memories or on various methods of displaying the data.

In summary, this book is a significant contribution for those interested in obtaining a broad understanding of the various nuclear electronics concept. With the extensive list of specific references, the reader can probe to any depth that he desires.

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## new books

### Elementary Particles and Fields

**Nuclear and Particle Physics A: Background and Symmetries.** H. Frauenfelder, E. M. Henley. 573 pp. W. A. Benjamin Advanced Book Program, Reading, Mass., 1975. \$21.50 hardcover, \$13.50 paperback

### Atoms and Molecules

**Atomic Inner-Shell Processes, Vol. 2: Experimental Approaches and Applications.** B. Crasemann, ed. 220 pp. Academic, New York, 1975. \$27.50

**Atomic Physics.** J. C. Willmott. 357 pp. Wiley, New York, 1975. \$22.00

### Chemical Physics

**Excited States, Vol. 2.** E. C. Lim, ed. 403 pp. Academic, New York, 1975. \$29.50

**Higher Excited States of Polyatomic Molecules, Vol. 2.** M. B. Robin. 418 pp. Academic, New York, 1975. \$39.50

**Seltenerdelemente, Teil B3: Sc, Y, La und Lanthanide.** (Gmelin Handbuch der Anorganischen Chemie.) G. Kirschenstein, ed. 344 pp. Springer-Verlag, New York, 1974. \$186.50

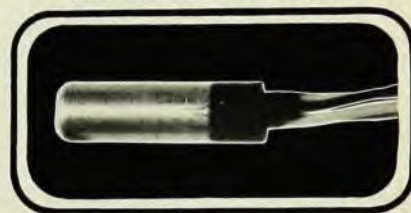
**Tables of Spectral-Line Intensities, 2nd ed., Part 1: Arranged by Elements; Part 2: Arranged by Wavelengths.** (NBS Monograph 145). W. F. Meggers, C. H. Corliss, B. F. Scribner. 387 pp., 213 pp. National Bureau of Standards, Washington, D.C., 1975. (Available from the US Government Printing Office, Washington, D.C. 20402 as Catalog No. C13.44:145/1) Part 1, \$8.55; part 2, \$6.80

**Vibrational Spectra and Structure, Vol. 3.** J. R. Durig, ed. 328 pp. Marcel Dekker, New York, 1975. \$29.75

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