

an indiscriminate collection of materials on pulse technology is not apt to be very useful to most persons.

It is not at all evident that the author of *The Elements of Pulse Techniques* has a very clear understanding of all of the material he has presented in this book. As an example, in his discussion on page 9 of carrier frequency pulses, he mentions coherent pulses and quotes this definition from ASA C42.65-1957, *American Standard Definitions of Electrical Terms*: "Coherent pulse operation is the method of pulse operation in which a fixed phase relationship is maintained from one pulse to the next." (Incidentally, his parenthetical reference to this Standard is incomplete.) However, on page 186 in his discussion of the coherent light radiated from a laser, he refers to page 9 of his own text, presumably for a definition of coherence. This reviewer believes there is no relation between the use of the word coherent with reference to electromagnetic radiation and the very special usage in the terms of pulse-modulated carriers.

Although the author has referred to these American Standard Definitions, he does not seem to have made use of them in his own definitions of "mark to space ratio" or of "duty factor", since his definitions of these terms on page 2 seem quite foreign to customary usage.

On this same page of his text one finds this statement: "An enhanced response at low frequencies causes the top of the pulse to rise instead of fall." Most workers in this field find that sag or rise of a pulse is a distortion caused by nonlinearity of the phase-frequency relation at low frequencies rather than by decreased or enhanced response at low frequencies.

Just one more quotation to suggest the lack of understanding which appears throughout this text. This sentence is found on page 51: "The OR and AND gates have their counterparts in computer technology: these are known as NOR and NAND gates." Those persons familiar with the logic circuitry of digital computers are aware that all four types of gates may be found in these machines.

If this reviewer has given the impression that he does not believe *The Elements of Pulse Techniques* is a very good book, he has been successful in conveying his feelings about it.

Les Modèles en Spectroscopie nucléaire. By R. Nataf. 246 pp. Dunod, Paris, 1965. Paper 48F.

Reviewed by W. Benenson, Michigan State University.

This work is intended principally for young graduate students in experimental nuclear physics. In fact it is a version of a course given by the author to students of the troisième Cycle which is roughly equivalent to our first year of graduate school. Six of the nineteen chapters are quantum mechanics intended to serve as background. However, the subject matter has certainly been given a sufficiently mathematical and sophisticated treatment to be of interest to the more advanced experimental nuclear physicist who is not looking for the most complete and up-to-date treatment.

The Negotiators. The Challenge of the Atomic Age. By O. Kofoed-Hansen. 155 pp. Munksgaard, Copenhagen, 1964. Dkr. 21.

Reviewed by R. B. Lindsay, Brown University.

The problem of the social responsibility of the scientist for the application of scientific discoveries has been discussed in many books and articles during the past two decades, though it must be confessed with inconclusive results. The writer of the present volume, a well-known Danish nuclear physicist, now essays to take another look at the matter. He is obviously sincere and thoughtful, and the respect in which he is held is attested by the various Pugwash conferences he has attended. His main concern is, of course, the necessity for a negotiated nuclear-weapons disarmament to obviate the wholesale destruction of a large part of the human race in all-out nuclear warfare.

The book takes the form of a series of informal essays or storylike sketches grouped around such topics as who should be the principal negotiators in disarmament conferences, why they should meet, and how they should behave when they do meet.

The style is breezy and moderately engaging. Unfortunately, there is no particular coherence in the treatment, and the reader is likely to wind up with the feeling that the author is a rather pessimistic and cynical individual, as he may well be excused for being in view of the enormous difficulty of the problem in hand. Many of his sketches are highly emotional and convey few recipes for the solution of the problem save the exhortation to human beings to replace hate by love. This is a consummation devoutly to be wished, and it is perhaps hopeful to find a scientist supporting it. But one might have desired a few more practical, constructive suggestions.

Fundamentals of Microwave Electronics. By Marvin Chodorow and Charles Susskind. 297 pp. McGraw-Hill, New York, 1964. \$12.50.

Reviewed by H. J. Hagger, Albiswerk, Zurich, Switzerland.

In the field of microwave electron tubes, some very comprehensive, but neither elementary nor introductory books have been published. A gap, therefore, did exist in the literature of the field, probably because research workers in microwave electronics did not feel competent enough to undertake the writing of a sound, up-to-date and easy-to-read book covering the total field. The authors of this very fine book are competent scientists and very good teachers, too, and they have tried to avoid presenting the theory as an exercise of boundary-value mathematics. They present the approximate methods which show clearly the physical meaning of the problems. The book is the outgrowth of a first-year graduate course at Stanford University.

The authors start, after a short historical and descriptive survey on microwave tubes, with problems on electron beams. This chapter is an excellent introduction to beam production and focusing, disclosing all the technical terms related to electron beams and adding also some remarks on scaling laws. In the next section these electron beams are brought together with electromagnetic fields to describe velocity modulation and problems of interaction in high-velocity gaps. In Chapter 4 space-charge