cations described and some analysis of mathematical models. Surprisingly, there is only one specific study of nonlinear control functions. Several control papers are primarily concerned with measurement devices. The section on physical methods of chemical analysis is oriented towards laboratory measurements rather than industrial applications. A majority of the papers deal with mass spectrometry and other spectrum methods. The powerful newer field of gas chromatography is almost ignored compared to what might be expected. The nuclear-instrumentation section concerns both radioactivity measurements, as in the human body, and industrial isotope applications. The widest variety is in the section on electric and magnetic measurements. Besides techniques for measuring many different quantities, there are a laboratory description and discussions of digital handling. The section on reactor control discusses the instrumentation and reports the experiences at a number of nuclear power installations.

An Introduction to Magneto-Fluid Mechanics. By V. C. A. Ferraro and C. Plumpton. 181 pp. Oxford U. Press, London and New York, 1961. $4.00. *Reviewed by L. Talbot, University of California.*

TO quote from the authors' preface, "The object of this book is to provide an introduction to magneto-fluid mechanics for the use of physicists and engineers." There is a need for a book which fulfills this stated object, but unfortunately this volume does not quite succeed.

The introduction of the book is in essence the text of an address given by Ferraro at the British Theoretical Mechanics Colloquium in 1960 on the history of magnetohydrodynamics research. This interesting and informative review is, however, marred by the almost complete absence of adequate source data for the references cited. In fact, this defect persists throughout the entire volume; it is a frustrating and often impossible matter to track down the locations of many of the references, even with the aid of the annotated bibliography.

The main body of the text is divided into two parts. Part 1, Magnetohydrodynamics, comprises five chapters in which the topics discussed include a review of general principles, magnetohydrostatics, magnetohydrodynamic waves, turbulence and hydrodynamic shock waves. Mks units are used in Part 1. Part 2, entitled Plasma Dynamics, comprises three chapters which contain material on particle motion, collision theory based on a relaxation-model of the Boltzmann equation, and additional material on plasma waves. Gaussian units are used in Part 2.

Although some of the individual sections of the book are well written, the volume as a whole is poorly organized from a pedagogical point of view and gives this reviewer the impression that it was rather hastily assembled. The worker in the field of MHD may find certain portions of this book useful, but it is not the answer to the quest of a scientist, newly arrived on the MHD scene, for a slim volume which will take him carefully through the first principles of the subject and prepare him for more specialized study. (In fact, the fluid dynamicist may be shaken rather early by reading in Chapter 1 that the transition Reynolds number for pipe flow is of order unity!)

Progress in High Polymers, Volume 1. J. C. Robb and F. W. Peaker, eds. 340 pp. Academic Press Inc., New York, 1961. $12.00. *Reviewed by Stuart A. Rice, Institute for the Study of Metals, University of Chicago.*

EVERY time a new review volume or a new journal appears on my desk, my emotions range from an involuntary shudder to violent rage. The multiplicity of journals and review volumes is truly enormous and each case must be examined carefully to determine its value.

Fortunately, I believe the volume under review to be a useful addition to the literature. In my own work, I have already found the article by W. Cooper on stereospecific polymerization to be of considerable assistance. The article by R. S. Lehrle on ebulliometry is an authoritative and relatively exhaustive discussion of the subject. The review articles by G. M. Guzman on fractionation of high polymers and G. J. Howard on molecular distribution are also quite useful. However, I found the article by T. B. Grimley on the theory of high-polymer solutions to be deficient in a number of respects. For a review volume to be truly useful, there must be as little overlap as possible between the article and standard texts. The article must also present to the reader as much as possible of the latest development in the field. It is therefore with surprise that I found in Grimley's article reviews of elementary light scattering theory, the McMillan-Mayer theory, and general statistical mechanics, but no mention of the work of Yamakawa or of the recent work of Fixman.

In all, the current volume justifies its existence. It will be necessary, however, for the editors to continue to exercise judgment and to choose only articles of importance. It would be best if the review volumes would appear only when sufficient articles of merit accumulate rather than on a regular annual or semiannual schedule.

Instrumental Optics. By G. A. Boutry. Transl. from French by R. Auerbach. 544 pp. Interscience division of John Wiley & Sons, Inc., New York, 1962. $27.50. *Reviewed by W. T. Wintringham, Bell Telephone Laboratories.*

USUALLY one finds upon study that a new text fits neatly into a well-defined niche. The reviewer's task in such cases is easy and straightforward. However, Professor Boutry's *Instrumental Optics* is different and there seems to be no simple way of categorizing it. Nevertheless it is interesting, although at times tedious reading.

Professor Boutry's major premise is that an optical instrument should be designed to match the receiver with which it is to be used, i.e., the performance of