

BOOKS

MODERN PHYSICS FOR THE ENGINEER

Edited by Louis N. Ridenour
McGraw-Hill, 1954

\$7.50

*Reviewed by Gilbert D. McCann,
Professor of Electrical Engineering*

THIS BOOK presents a fundamental, technical, and yet easily readable treatment of the highlights of recent developments in modern theoretical and applied physics. It is recommended for all engineers and others with a general interest in modern physics, many fields of which are already influencing our engineering activities and society in general.

The book is made up of eighteen chapters, each by a different author, originally delivered as lectures in an extension course at the University of California at Los Angeles. Of the eighteen authors, four are on the Caltech faculty: H. P. Robertson, William A. Fowler, R. V. Langmuir, and Jesse Greenstein. Two others,

Simon Ramo and Louis Ridenour, received their doctorates here.

The series has been divided into three main groups. The first of these is concerned with the fundamental laws of nature. It comprises the following nine lectures: "Relativity" by H. P. Robertson, "Atomic Structure" by L. L. Schiff, "Solid State Physics" by Frederick Seitz, "Magnetism" by Charles Kittel, "Microwave Spectroscopy" by W. D. Hershberger, "Nuclear Structure and Transmutation" by W. A. Fowler, "Electronuclear Machines" by R. V. Langmuir, "The Actinide Elements and Nuclear Power" by Glenn T. Seaborg, and "Elementary Particles" by W. K. H. Panofsky.

In the second group, Man's Physical Environment, Jesse Greenstein presents a summary of modern astrophysics, including stellar lifetimes and evolution, structure of the galaxy, and the fundamental physics of astronomical spectroscopy. David T. Griggs describes a new field of physics, high-pressure phenomena, and its applications to the geophysics of the earth's interior. Roger Revelle presents an interesting pic-

ture of geophysics under the ocean, and Leonard B. Loeb summarizes the present knowledge of atmospheric electricity, thunder storms and lightning. Modern knowledge of the fluid mechanics of supersonic flow is treated by Walker Bleakney in the last lecture of this series. This is the subject which has become so important to the design of high-speed missiles and aircraft.

The third general group presents topics in the important new field of applied physics and engineering which is having a profound influence on our modern way of life—communication and information processing. Simon Ramo discusses some of the modern concepts of physical electronics, from which have evolved such new devices as traveling wave tubes. John Bardeen discusses the fundamental solid state physics of semiconductors and their applications to diodes and transistors. In the last two lectures of the series, J. B. Wiesner presents modern concepts of communication and information theory, and Louis Ridenour discusses the basic principles of large scale digital computers.

highest quality and standards

look to..... **SMOOT-HOLMAN** ..for quality

INGLEWOOD, CALIFORNIA

MADE IN U.S.A.

ILLUMINATION EQUIPMENT

PM-284 COLLEGIATE

SKYLIKE

168 RECESSED TROFFER

FLOODS

EDUCATOR

aeronautics
astronomy
biology
business
chemistry
economics
electronics
engineering
geology
management
mathematics
mechanics
metallurgy
meteorology
mineralogy
nucleonics
petroleum
physics
plastics
statistics

cybernetics

H. S. Tsien "Engineering Cybernetics" (\$7.50, McGraw-Hill)

"... basic theory and mathematics underlying the practice of servomechanism and feedback control."

All technical books are available at

VROMAN'S

Technical Book Division

695 E. Colorado St., Pasadena
SY. 3-1171 RY. 1-6669

Industrial Discount
Inquiries Welcomed

Write for
Free Catalog

E&S SCIENCE WRITING CONTEST

for undergraduates & graduate students

\$100 first prize

\$50 second prize

Articles should be based on some phase of scientific or engineering research, or some individual, connected with Caltech. They may be from 1,000 to 5,000 words, typed, double-spaced.

All manuscripts submitted will be sent to editors of Scientific American for judging. Contest closes May 1, 1955.

E&S will publish all suitable articles throughout the year, paying at rate of \$10 per published text page, or roughly a cent a word.