

vices for Alternating-Current Theory; 12) Basic Alternating-Current Parameter Relations; 13) Phasor Algebra; 14) Alternating-Current Circuit Analysis; 15) Selected Alternating-Current Topics; 16) Polyphase Circuits.

This text offers an introduction to a.c. and d.c. circuit theory, for students of colleges and technical institutes, suitable for use in a two- or three-term course. Algebra and trigonometry are applied extensively throughout, and calculus is introduced principally in selected examples.

Applications of Ion Flow Dynamics, Demetrios G. Samaras, *Fellow of the Royal Aeronautical Society, and Consultant, U. S. Air Force* (Prentice-Hall Inc., Englewood Cliffs, N. J., 1962), 595 pp. \$16.00.

Chapters: 1) Periosis; 2) Production of Plasmas—Discharges; 3) Isoenergetic Applications; 4) Applications with Energy Release; 5) Space Propulsion Applications; 6) Experimental Installations, Instrumentation, and Measurements.

This book may be considered the sequel to *Theory of Ion Flow Dynamics*, in which the fundamentals of ion flow dynamics were developed. At the end of each chapter, a collection of problems is given to enable the student to assimilate and digest the pertinent theory.

Printed Circuits in Space Technology: Design and Application, Albert E. Linden, *Manager, Aerospace Support Systems Development, General Electric Company* (Prentice-Hall Inc., Englewood Cliffs, N. J., 1962), 197 pp. \$9.00.

Chapters: 1) Concepts; 2) Design; 3) Reproduction; 4) Testing; 5) Fabrication; 6) Applications; 7) New Techniques.

This book probes the problems encountered in the production of electronic equipment possessing a degree of reliability commensurate with the costs and risks involved in space exploration. It should be of value to the graduate engineer as well as to the novice in the manufacturing, design, chemical, test, quality control, electrical, electronic processing, and packaging fields.

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Chapters: 1) Equations of the Calculus of Variations; 2) Theory of Fields; 3) Generalizations of the Fundamental Problem; 4) Direct Methods of the Calculus of Variations. *Appendix:* Supplementary Topics and Exercises.

This translation from the Russian is presented so that it can be covered in a one-semester course for both graduate and advanced undergraduate students. It also should be useful for scientists, engineers, and mathematicians.

Solar Activity and the Ionosphere for Radio Communications Specialists, N. Ya. Bugoslavskaya, translated by G. O. Harding (Pergamon Press, Oxford, 1962), 39 pp. \$2.50.

Chapters: 1) Regular Solar Radiation, Laws of Irradiation of the Earth; 2) Radiation of Disturbed (Active) Regions of the Sun, and Ionospheric Disturbances. *Appendix:* The Sun Service.

This lecture, translated from the Russian, is designed to acquaint the reader with the influence of solar activity on the

state of the ionosphere. The author assumes that the reader is acquainted with the general structure of the ionosphere and the fundamentals of short-wave radio propagation and has a basic knowledge of astronomy.

Theoretical Elasticity and Plasticity for Engineers, D. E. R. Godfrey, *Head, Mathematics Department, Woolwich Polytechnic* (Thames and Hudson, London, 1959), 311 pp.

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