G. Brauer (65 references); "Phase equilibria studies in mixed systems of rare earth and other oxides," by R. S. Roth (52 references); "Crystal chemistry of rare earth sesquioxides, aluminates, and silicates," by Israel Warshaw and Rustum Roy (34 references); "Structural and physical properties of alloys and intermetallic compounds," by Karl A. Gschneidner, Jr. (139 references); "Composés Minéraux et Organiques," by F. Gaume-Mahn (255 references); "Thermodynamic and magnetic properties of the rare earth chalcogenides," by Edgar F. Westrum, Jr. (264 references); "La Chimie Analytique des Terres Rares," by Jean Loriers (253 references); "Soviet research on analytical chemistry of the rare earths," by D. I. Ryabchikov and V. A. Ryabukhin (136 references); and "Uses and applications," by Richard M. Mandle and H. H. Mandle (864 references).

The reviews give the reader a condensed survey of the literature in the areas mentioned and for the time covered (1955 to 1961). Many of the surveys overlap, and it is interesting to note that, among the contributors who treat the same subject, there is a wide divergence in the literature cited and emphasized. It is unfortunate, however, that publication of the book has been so long delayed; in the last 3 years new work equal to the amount covered in this volume has appeared in the literature.

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New Books

Mathematics, Physical Sciences, and Engineering

Abelian Categories. An introduction to the theory of functors. Peter Freyd. Harper and Row, New York, 1964. 176 pp. Illus. $7.

Advances in Chemical Physics. vol. 6. I. Prigogine, Ed. Interscience (Wiley), New York, 1964. 516 pp. Illus. $17.50. Nine papers: "Toward an analytic theory of chemical reactions," by H. Aroeste; "Electron gas in a lattice of positive charges," by A. Bellemans and M. de Leener; "On the thermodynamics of surface systems," by J. Christer Eriksson; "The critical region," by M. Fixman; "The equation of state of the classical hard sphere fluid," by H. L. Frisch; "Studies in the kinematics of isothermal diffusion: A macrodynamical theory of multicomponent fluid diffusion," by O. Lamm; "Many-electron theory of atoms, molecules, and their interactions," by O. Sinanoğlu; "Ionic solvation," by J. Stecki; and "Melting mechanisms of crystals," by A. R. J. P. Ubbelohde.

Basic Methods in Transfer Problems. Radioative equilibrium and neutron diffusion. V. Kourganoff and I. W. Busbridge. Dover, New York, 1963. 297 pp. Illus. Paper, $2. A reprint of the volume published by Oxford Univ. Press, 1952.

Behavior of Electrons in Atoms. Structure, spectra, and photochemistry of atoms. Robin M. Hochstrasser. Benjamin, New York, 1964. 174 pp. Illus. Paper, $1.95; cloth, $3.95.

Calculation of Thermal Stresses in Nuclear Reactors. Iosif Izrailevich Gol'denblat and Nikolai Aleksandrovich Nikolaenko. Translated from the Russian edition (Moscow, 1962). Consultants Bureau, New York, 1964. 84 pp. Illus. Paper, $15.

Cathode Processes in the Mercury Arc. I. G. Kesaev. Translated from the Russian edition (Moscow, 1961). Consultants Bureau, New York, 1964. 363 pp. Illus. $17.50.

Design and Performance and Centrifugal and Axial Flow Pumps and Compressors. André Koviáts. Pergamon, London; Macmillan, New York, 1964. 484 pp. Illus. $15.

Differential Equations: A Modern Approach. Harry Hochstadt. Holt, Rinehart, and Winston, New York, 1964. 302 pp. Illus. $6.50.

Dispersion and Absorption of Sound by Molecular Processes. Course 27, *International School of Physics "Enrico Ferini."* Academic Press, New York, 1963. 457 pp. Illus. $17. Eighteen lectures.

Effects of Radiation on Materials and Components. John F. Kircher and Richard E. Bowman, Eds. Reinhold, New York; Chapman and Hall, London, 1964. 702 pp. Illus. $22.50.

Foundations of General Topology. William J. Pervin. Academic Press, New York, 1964. 221 pp. Illus. $7.95.

Friedel-Crafts and Related Reactions. vol. 2, pts. 1 and 2, *Alkylation and Related Reactions.* George A. Olah, Ed. Interscience (Wiley), New York, 1964. pt. 1, 688 pp.; pt. 2, 230 pp. Illus. Set, $50.

Generalized Functions. vol. 1, *Properties and Operations.* I. M. Gel'fand and G. E. Shilov. Translated from the Russian edition (1958) by Eugene Saletan. Academic Press, New York, 1964. 441 pp. Illus. $12.

Identification and Analysis of Surface-Active Agents. By infrared and chemical methods. 2 volumes. Dieter Hummel. Translated from the German edition (München, 1962) by E. A. Wulkow. Interscience (Wiley), New York, 1964. Text volume, 400 pp.; spectra volume, unpaged. Illus. $20.

Inertial Guidance Sensors. J. M. Slater. Reinhold, New York; Chapman and Hall, London, 1964. 231 pp. Illus. $11.

Laplace and Fourier Transforms for Electrical Engineers. Edward J. Craig. Holt, Rinehart, and Winston, New York, 1964. 528 pp. Illus. $13.50.

Laser Abstracts. vol. 1. A. K. Kamal. Plenum Press, New York, 1964. 185 pp. $12.50.

Lectures on Differential Geometry. Shlomo Sternberg. Prentice-Hall, Englewood Cliffs, N.J., 1964. 408 pp. Illus. $16.

Linear Programming. Robert W. Llewellyn. Holt, Rinehart, and Winston, New York, 1964. 383 pp. Illus. $9.

Masers et Lasers. Voyages au pays de l'électronique quantique. Michel-Yves Bernard. Presses Universitaires de France, Paris, 1964. 156 pp. Illus. Paper.

Mathematical Conversations. pts. 1–3. E. B. Dynkin and V. A. Uspenskii. Translated from the first Russian edition (1952). pt. 1, *Multicolor Problems,* translated by Norman D. Whaland, Jr., and Robert B. Brown (72 pp., $1.65); pt. 2, *Problems in the Theory of Numbers,* translated by Norman D. Whaland, Jr., and Michael B. P. Slater (125 pp., $2.35); pt. 3, *Random Walks,* translated by Norman D. Whaland, Jr., and Olga A. Titelbaum (88 pp., $2). Heath, Boston, 1964. Illus. Paper.

Matrix Algebra for Electrical Engineers. R. Braae. Pitman, London; Addison-Wesley, Reading, Mass., 1964. 174 pp. Illus. $4.50.

Noble Gases and Their Compounds. G. J. Moody and J. D. R. Thomas. Pergamon, London; Macmillan, New York, 1964. 70 pp. Illus. $2.

Nuclear Power Plants. Design, operating experience, and economics. Robert L. Loftness. Van Nostrand, Princeton, N.J., 1964. 560 pp. Illus. $12.50.

Nuclear Radiation Detection. William J. Price. McGraw-Hill, New York, ed. 2, 1964. 440 pp. Illus. $12.75.

The Nuclear Reactor. Alan Salmon. Methuen, London; Wiley, New York, 1964. 144 pp. Illus. $3.

Opticks. Or a treatise of the reflections, refractions, inflections and colours of light. Isaac Newton. Dover, New York, 1964. 524 pp. Illus. Paper, $2.25. A reprint of the fourth edition, London, 1730.

Organic Chemistry. David A. Shirley. Holt, Rinehart, and Winston, New York, 1964. 960 pp. Illus. $10.75.

Partial Differential Equations of Mathematical Physics. vol. 1. A. N. Tychonov and A. A. Samarski. Translated from the Russian edition (Moscow, 1959) by S. Radding. Holden-Day, San Francisco, Calif., 1964. 390 pp. Illus. $11.75.

Perturbation Techniques in Mathematics, Physics, and Engineering. Richard Bellman. Holt, Rinehart, and Winston, New York, 1964. 128 pp. Illus. $3.75.

Real Numbers. Stefan Drobot. Prentice-Hall, Englewood Cliffs, N.J., 1964. 112 pp. Illus. $3.95.

Rings and Homology. James P. Jans. Holt, Rinehart, and Winston, New York, 1964. 96 pp. Illus. $3.25.

Sampling Systems Theory and Its Application. vols. 1 and 2. Ya. Z. Tsypkin. vol. 1, translated from the Russian edition (Moscow, 1958) by R. C. Hutchison (392 pp.); vol. 2, translated from the Russian edition (Moscow, 1958) by A. Allan (374 pp.). I. Cochrane, Ed. Pergamon, London; Macmillan, New York, 1964. Illus. Set, $30.

The Theory of Branching Processes. Theodore E. Harris. Springer, Berlin, 1963; Prentice-Hall, Englewood Cliffs, N.J., 1964. 246 pp. Illus. $9.