

BOOK REVIEWS

NEW BOOKS ON PHYSICS

Arutyunov, V. O., Электрические измерительные приборы и измерения (Electric Measuring Instruments and Measurements) (Textbook for Power Engineering and Electrical Engineering Colleges and Faculties). M.-L., Gosenergoizdat, 1958, 61 pp. illustr. Bibliography p. 628 (23 titles). 46,000 copies, 15.15 rub.

Sections: 1. Principles of Measurements and Measuring Apparatus. 2. Electric Direct-Reading Measuring Instruments. 3. Electric Comparison Instruments. 4. Measurement of Electric Quantities. 5. Measurements of Magnetic Quantities and Determination of Characteristics of Ferromagnetic Materials. 6. Measurement of Nonelectric Quantities. 7. Telemetering. Subject Index.

Атлас спектров γ -лучей радиационного захвата тепловых нейтронов (Atlas of Spectra of Gamma Rays from Radiative Capture of Thermal Neutrons). M. Atomizdat, 1958. Compiled by L. V. Groshev, A. M. Demidov, V. N. Lutsenko, V. I. Pelekhov. Bibliography, pp. 197-198 (97 titles). 1100 copies, no price.

Baum, F. A., Kaplan, S. A., and Stanyukovich, K. P., Введение в космическую газодинамику (Introduction to Cosmic Gas Dynamics) M. Fizmatgiz, 1958, 424 pp. illustr. Bibliography at the end of each chapter, 4,000 copies, 13.50 rub.

Foreword. Part I. Cosmic Gas Dynamics, Chapters: 1. Equations of Cosmic Gas Dynamics. 2. Shock Waves. 3. Oblique Shock Waves. 4. Collisions Between Gas Masses and Solid Bodies. 5. Shock Waves With Allowance for Dissociation and Ionization of Particles of the Medium. Interaction With Radiation. 6. Solutions of the Equations of Gas Dynamics. Unsteady Motion of Gas. 7. Motion of Gas in Gravitational Field. 8. Certain Problems of Gas Dynamics of Nonstationary Stars. 9. Geophysical Application of Gas Dynamic Methods. Part II. Gas Magnetodynamics. Chapters: 1. Equations of Gas Magnetodynamics. 2. Gas-Magnetic Explosions. 3. Stability of Motion in Gas Magnetodynamics. 4. Statistical Theory of Isotropic Gas-Magnetic Turbulence. The Correlation Method. 5. Statistical Theory of Isotropic Gas-Magnetic Turbulence. The Spectral Method. Part III. Relativistic Gas Dynamics. Chapters: 1. Relativistic Gas Dynamics of Ideal Gas. 2. Relativistic Gas Magnetodynam-

ics. 3. Problems in the Relativistic Motion of a Medium.

Bessonov, L. A., Нелинейны электрические цепи (Nonlinear Electric Circuits) (Textbook for Engineering Postgraduate Faculties, for Aspirants, and for Diploma Students). M. 1958, 255 pp. illustr. (U.S.S.R. Ministry of Higher Education, All-Union Extension Power Institute). Bibliography, pp. 247-248 (46 titles). 5,000 copies, 5.80 rub.

Foreword. Chapters: 1. Principal Transformations Effected by Nonlinear Circuits and the Characteristics of Several Physical Phenomena Observed Only in Nonlinear Circuits. Nonlinear Resistances and Inductive or Capacitive Reactances and Methods of Mathematical Representation of their Volt-Ampere, Weber-Ampere and Coulomb-Volt Characteristics. 3. Certain General Properties of Nonlinear Impedances. 4. Characteristics of Nonlinear Impedances. 5. Methods of Analysis and Calculation of Steady-State Processes in Nonlinear Electric Circuits. 6. Examples of Various Transformations Performed with the Aid of Nonlinear Circuits. 7. Negative Dynamic Parameters of Electric Circuits and Negative Input Impedances of Two-Terminal Networks. 8. Transients in Nonlinear Circuits. 9. Fundamentals of Operating Stability of Nonlinear Circuits. 10. Self-Oscillations in Nonlinear Electric Circuits. 11. Self-Modulation in Nonlinear Electric Circuits. 12. Certain Phenomena in Nonlinear Circuits, not Considered in the Preceding Chapters.

Bogolyubov, N. N., Medvedev, B. V., and Polivanov, M. K., Вопросы теории дисперсионных соотношений (Problems in the Theory of Dispersion Relations). M. Fizmatgiz, 1958, 203 pp. illustr. (Modern Problems of Mathematics). Bibliography, pp. 201-202 (35 titles). 6500 copies, 7.00 rub.

1. Introduction. 2. Fundamental Physical Assumptions. 3. Relations Between Radiation Operators. 4. Vacuum Averages of Bose Second-Order Radiation Operators. 5. Vacuum Averages of Fermi Second-Order Radiation Operators. 6. Construction of Dispersion Relations. 7. Investigation of the Analytic Properties of the Function $ST_{a\omega}$. 8. Physical Dispersion Relations. Appendix A. Theorems on Analyticity. Appendix B. Calculation of the Contribution of the Single-Nucleon State. References.

Boulding, R., Radar Pocket Book. Translation from the English by O. V. Brukhanskaya. M. Voenizdat, 1958, 237 pp. illustr. (London, 1955).

Vinokurov, V. V. and Stepankov, M. M., Техника измерения основных электрических параметров приемно-усилительных ламп (The Measurement of Basic Electric Parameters of Receiving and Amplifying Tubes) M.-L. Gosenergoizdat, 1958, 206 pp. illustr. Bibliography, pp. 205 — 206 (27 titles). 1800 copies. 6.15 rub.

Foreword. Chapters: 1. General Information on Testing of Receiving and Amplifying Tubes. 2. Plate and Grid Voltage Sources. 3. Filament Sources. 4. Methods of Electric Testing. 5. Measuring Instruments and Test Apparatus.

Glebovich, G. V. and Morugin, L. A., Формирование импульсов наносекундной длительности (Shaping of Millimicrosecond Pulses). M. "Soviet Radio" Press, 1958, 238 pp. illustr. Bibliography, pp. 230-236 (142 titles), 7.20 rub.

Foreword. Introduction. Chapters: 1. Generation of Pulses in RC Circuits. 2. Generation of Pulses in Inductive Feedback Circuits. 4. Shaping of Pulses with the Aid of a Discharge Line. 5. Conversion of Short-Duration Pulses. 6. Shaping of Pulses for High-Speed Oscillograph Sweeps. Literature. Additional List of Literature.

Gol'danskiĭ, M. and Leĭkin, E., Превращения атомных ядер (Transformation of Atomic Nuclei). M. U.S.S.R. Academy of Sciences Press, 1958, 426 pp. illustr. Bibliography, p. 424 (14 titles). 20,000 copies, 12.00 rub.

Foreword. Chapters: 1. Certain Features of The Physics of the Microcosmos. 2. Fundamental Information on Atomic Nuclei and Elementary Particles. 3. Excited States of Atomic Nuclei. Nuclear Models. 6. General Characteristics of Nuclear Reactions. 5. Methods of Observing Nuclear Reactions. 6. Methods of Realizing Nuclear Reactions. 7. Nuclear Reactions. 8. Fission Chain Reactions and Thermonuclear Reactions.

Dzheleпов, B. S. and Peker, L. K., Схемы распада радиоактивных ядер (Decay Schemes of Radioactive Nuclei) M.-L. U.S.S.R. Academy of Sciences Press (Leningrad Division), 1958, 786 pp. illustr. (U.S.S.R. Academy of Sciences, Radium Institute). Introduction in Russian and English. Bibliography in text. 6000 copies, 38 rub.

Исследования по физике и радиотехнике (Research in Physics and Radio Engineering) (Collection of Articles). M. Oborongiz, 1958, 134 pp. illustr. (Ministry of Higher Education, Moscow Physico-Technical Institute. Transactions of the Institute, No. 2). Bibliography at the end of each article. 3700 copies, 6.75 rub.

Kondrat'ev, V. N., Кинетика химических газовых реакций (Kinetics of Chemical Gas Reactions). M. U.S.S.R. Academy of Sciences Press, 1958, 688 pp. illustr. Bibliography, pp. 649-674 (1334 titles). 4,000 copies, 41.70 rub.

Foreword. Chapters: 1. General Kinetic Laws of Chemical Reactions. 2. Chemical Mechanism of Reactions. 3. Theory of Elementary Chemical Processes. 4. Bimolecular Reactions. 5. Monomolecular and Trimolecular Reactions. 6. Energy Exchange in Collisions between Molecules. 7. Photochemical Reactions. 8. Chemical Reactions in Electric Discharge. 9. Chain Reactions. 10. Combustion Processes. Literature. Author Index. Subject Index.

Krylov, A. N., Избранные труды (Selected Papers). Introductory Article by the Editor, Academician Yu. A. Shimanskiĭ. Comments by Professor I. G. Khanovich. L. U.S.S.R. Academy of Sciences Press, 1958, 803 pp. illustr. (Academy of Sciences, U.S.S.R., Classics of Science). Bibliography, pp. 792-802 (116 titles). (Bibliography of A. N. Krylov's Principal Works). 5,000 copies, 38.10 rub.

Lecomte, J., Le Rayonnement Infrarouge (Infrared Radiation). Translation from the French edited by L. A. Tumerman. M. Fizmatgiz, 1958, 584 pp. illustr. (Gauthier-Villars, Paris, 1948-1949).

Markov, M. A., Гипероны и К-мезоны (Hyperons and K Mesons). M. Fizmatgiz, 1958, 343 pp. illustr. ("Modern Problems of Physics" Series). Bibliography pp. 335-343 (248 titles). 5,000 copies, 10.25 rub.

Foreword. Part 1. General Characteristics of the Hyperon and of K Mesons. Part 2. Isotopic Spin and Classification of Fundamental Particles. Part 3. Interactions Between Fundamental Particles. Appendix. Table of Threshold Energies. Literature.

Megla, G., (Decimeter Wave Engineering). Translated from the German by B. M. Mal'kov, P. Zh. Kriss, and V. I. Krysanov. Edited by N. K. Svistov. M. "Soviet Radio" Press.

International Conference on Peaceful Use of Atomic Energy, Geneva, 1955. Vol. 7. of United Nations Series.

Menzer, J. R., Diffraction Scattering of Radio Waves. Translated from the English by L. N. Bryakhtov, edited by L. A. Vaĭnshteĭn. M. "Soviet Radio" Press, 1958.

Ogorodnikov, K. F., Динамика звездных систем (Dynamics of Stellar Systems) M. Fizmatgiz, 1958, 627 pp. illustr. bibliography pp. 610-616 (141 titles), 25,000 copies .40 rub.

Foreword. Introduction. Chapters: 1. Basic Concepts of Stellar Statistics. 2. Fundamentals of the Kinematics of Stellar Systems. 3. Elementary Theory of Galactic Rotation. 4. Irregular Forces in Stellar Systems. 5. Statistical Stellar Dynamics without Account for Stellar Approaches. 6. Regular Orbits of Stars. 7. Local Dynamic Problem. 8. Principles of Dynamics of Centroids. 9. Dynamics of Spherical Stellar Systems. 10. Fundamentals of the Dynamics of Rotating Stellar Systems. Alphabetic Index. Photographs.

Petrov, V. P., Искусственный спутник земли (Artificial Earth Satellite) M. Voenizdat, 1958, 306 pp. illustr. (Scientific-Popular Library). Bibliography pp. 301-303, 5.90 rub.

Получение изотопов. Мощные гамма-установки. Радиометрия и дозиметрия (Production of Isotopes. High Power Gamma Ray Installations. Radiometry and Dosimetry) Collection of Articles Edited by Yu. S. Frolov (Chief) and others. M., U.S.S.R. Academy of Sciences Press, 1958, 294 pp. illustr. (U.S.S.R. Academy of Sciences, Main Administration for the Utilization of Atomic Energy, Council of Ministers, U.S.S.R. Transactions of All-Union Scientific-Technical Conference on the Application of Radioactive and Stable Isotopes and Radiations in the National Economy and Science, 4-12 April 1957). Subtitle on Cover: All-Union Conference on the Application of Isotopes and Nuclear Radiations. Bibliography at the end of each article. 5,000 copies, 17.35 rub.

Проблемы кибернетики (Problems of Cybernetics) (Collection of Articles). Edited by A. A. Lyapunov. No. 1. M. Fizmatgiz, 1958, No. II, 1958, 268 pp. illustr. Bibliography at the end of each article. 20,000 copies, 12.60 rub.

Contents: From the Editor. I. General Problems. II. Programming. III. Computers. IV. Problems of Mathematical Linguistics. V. Chronicle.

Путь в космос (Path to the Cosmos) Excerpt from "Pravda" on the Three Soviet Satellites. M. "Pravda" 1958, 320 pp. illustr., 50,000 copies, 5.50 rub.

Contents: New Era in the Development of World Science. Chapters: 1. The First Soviet Artificial Earth Satellite. Comments by Soviet Scientists. Comments by Foreign Scientists. 2. The Second Soviet Satellite. 3. Certain Results of Scientific Research Performed with the First Two Soviet Satellites. 4. The Third Soviet Satellite. 5. Soviet Research of the High Layers of the Atmosphere with the Aid of Rockets. 6. K. E. Tsiolkovskii, Founder of Rocket Technology.

Dangers of Radioactivity (Danger of Radioac-

tive Fallout from Nuclear Explosions). J. H. Humphrey, I. Barhop, G. H. Lass, and others. Translated from the English by V. K. Svidzinskiĭ, Edited by Candidate of Biological Sciences M. F. Popova. Forewords by A. V. Lebedinskiĭ (Corresponding Member, U.S.S.R. Academy of Sciences) and B. Russell. M. Atomizdat, 1958, 182 pp. illustr. 52,000 copies, 7.60 rub.

Редкоземельные элементы (Rare Earth Elements) (Production, Analysis, Application). Collection of Articles, Editor in Chief, Professor D. I. Ryabchikov. U.S.S.R. Academy of Sciences Press, 1958, 331 pp. illustr. (U.S.S.R. Academy of Sciences, V. I. Bernadskii Institute of Geochemistry and Analytical Chemistry). Bibliography at the end of each chapter. 2200 copies, 19.90 rub.

Rozenberg, G. V., Оптика тонкослойных покрытий (The Optics of Thin Coatings), M. Fizmatgiz, 1958, 570 pp. illustr. Bibliography 547-563 (616 titles). 4,000 copies, 16.60 rub.

Foreword. Part I. Optical Properties of Thin Coatings. Chapters: 1. Structure of Thin Coating Films. 2. Principles of the Phenomenological Theory of Optical Properties of Thin Coatings. 3. Optical Properties and Application of Single-Layer Dielectric Coatings. 4. Multiple-Layer Coatings. 5. Optical Properties of Real Metallic Coatings and of Microtheory. Part II. Multiple-Ray Interferometry and Interference Light Filters. Chapters: 6. Layered Interferometer. 7. Multiple-Ray Interference Microscopy. 8. Interference Light Filters. Literature. Subject Index.

Скандий (Scandium) Collection of Translations, Edited by L. N. Komissarova. M. Foreign Literature Press, 1958.

Sokolov, V. and Sinytsin, S., Ультразвук в промышленности (Ultrasonics in Industry) M. "Moscow Worker" Press, 1958, 108 pp. illustr. 17,000 copies, 1.60 rub.

Sturrock, P. A. Statistical and Dynamic Electron Optics. Theory of Focusing in Lenses, Deflecting Devices, and Accelerators. Translated from the English by E. L. Burshtein, Edited by M. L. Levin. M. Foreign Literature Press, 1958.

Troitskiĭ, V. L. and Tumanyan, M. A., Влияние ионизирующих излучений на иммунитет (Effect of Ionizing Radiations on Immunity). M. Medgiz, 1958, 199 pp. illustr. Bibliography, 191-198 (269 titles). 6,000 copies, 8.00 rub.

Foreword, Introduction. Part I. Effect of Ionizing Radiations on Natural Resistance of the Organism to Infection. Chapters: 1. Change in the Natural Resistance of the Irradiated Organism to Infection. 2. Mechanisms of Reducing the Natural Resistance to Infection in the Irradiated Organism.

2. Radiation Bacteriemia. 4. Latent Infections in the Irradiated Organism. 5. Experimental Data on Chemotherapy in Radiation Sickness. Part II. Effect of Ionizing Radiations on Artificial Immunity. Chapters: 6. Formation of Antibodies in Irradiated Animals. 7. Mechanism of Action of Ionizing Radiations on the Formation of Antibodies. 8. Change in General Reactivity of the Organism Under the Influence of Radiation. 9. Antitoxic Immunity in the Irradiated Organism. 10. Immunity Under Multiple Irradiation in Small Doses. 11. Problem of Stimulating Action of Ionizing Radiations on the Immunity. Conclusion.

Управляемый термоядерный синтез (Controllable Thermonuclear Fusion) Collection of Translated Articles (Foreword by Academician I. V. Kurchatov). M. Atomizdat, 1958, 66 pp. illustr. Bibliography at the end of each article. 26,200 copies, 2.40 rub.

Успехи в области ядерной энергии (Progress in Nuclear Energy.) Translated from the English by V. F. Gerasimov and V. I. Lebedev. Edited by V. I. Kalashnikova and M. I. Pevzner. M. Foreign Literature Press, 1958.

Физика плазмы и проблема управляемых термоядерных реакций (Physics of Plasma and Problem of Controllable Thermonuclear Reactions) (Collection of Articles). Editor in Chief, Academician M. A.

Leontovich Vol. 1-4. M., U.S.S.R. Academy of Sciences Press, 1958. (U.S.S.R. Academy of Sciences, Institute of Atomic Energy). Bibliography at the end of each article. Vol. 1, 300 pp. illustr. 11.00 rub. Vol. 2, 356 pp. illustr. 13.70 rub. Vol. 3, 363 pp. illustr., 13.2 rub. Vol. 4, 440 pp. illustr., 12.10 rub. 3,000 copies.

Khriqian, A. Kh., Физика атмосферы (Physics of the Atmosphere). Textbook for State Universities. Second Revised Edition, M. Fizmatgiz, 1958, 476 pp. illustr. Bibliography, p. 472 (19 titles). 5,000 copies, 14.20 rub.

Sheftel', I. T., Термосопротивления. Характеристики, конструкции и области применения (Thermoresistances. Characteristics, Construction, and Applications). M. Fizmatgiz, 1958, 147 pp. illustr. (Physical-Mathematical Collection for the Engineer). Bibliography, pp. 145-147 (48 titles). 15,000 copies, 2.15 rub.

Introduction. Chapters: 1. Fundamentals of the Technology of Manufacture of Thermoresistances. 2. Fundamental Parameters and Characteristics of Thermoresistances. 3. Thermoresistances in Modern Engineering. 4. Commercial Types of Thermoresistances. Conclusions.

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