

NEW BOOKS IN PHYSICS

V. I. Kalinin and G. M. Gershtein.

Введение в радиофизику (Introduction into Radio Physics. Moscow, Gostekhizdat, 1957, 660 pp. 1265 rub.

The authors of the book have set upon producing a textbook on radio physics, containing an exposition of the basic general problems of radio physics and a clarification of the connection between these problems. This is indeed why the book is called "Introduction Into Radio Physics," without pretend-

ing at a complete treatment of basic radio-physics problems.

The principal purpose of the authors has been successfully realized. A serious textbook has been produced, in which the basic general problems of radio physics are exposed systematically from a unified point of view.

The book consists of an introduction and seven sections (a total of 38 chapters).

The introduction (Chapters 1 — 3) is devoted to general problems: oscillations in radio circuits (sinusoidal and transient processes, representa-

tion of oscillatory processes in the phase plane), the spectra of oscillation processes (the Fourier series and integral, spectral analysis of pulsed processes, response of a linear network to a complex signal), and principles of modulation (amplitude, phase, and frequency modulation). We agree with the tackling of modulation problems in the very introduction, to the book. A concise mathematical formalism is used in the arguments.

The first section (Chapters 4 and 5) is devoted to a study of forced oscillations in a single closed circuit (free and forced oscillations, resonance in series and parallel circuits, spectral properties of a resonant circuit) and also oscillations in coupled circuits (free and forced oscillations in coupled circuits, resonance phenomena in coupled circuits). The problems are treated compactly and with physical clarity. We notice, however, that Figs. 5.11, 5.15, and 5.18 are not successful: it is difficult to see what the axes really represent.

Processes in circuits with distributed parameters are treated in the second section (Chapters 6–10). This covers such problems as the fundamental theory of long lines, long lines at microwave frequencies, theory of spherical diagrams in rectangular and polar coordinates, the long line is an oscillating system, and the fundamentals of filter theory. It is well that the end of Chapter 8 contains several examples on the solution of problems in impedance matching with the aid of spherical diagrams, and at the end of Chapter 9 a special paragraph is devoted to coupled systems with distributed parameters. These problems are usually not treated in radio engineering textbooks.

We note that in the theory of long lines the authors did not touch upon the important problems of the distortion of the signal waveform due to the frequency dependence of the phase velocity; nor do they consider the interesting problem of the behavior of the group velocity of the signal in a long line as a function of the frequency. They should have also indicated the connection between the particular solution of the telegraph equations, proportional to $\exp i\omega t$, with the general solution, in which includes the distributions of the current and voltage along the line at $t = t_0$. In the study of line-to-load matching they should have emphasized the existence of two types of impedance matching, direct and conjugate, used in problems of different nature.

The third section (Chapters 11–17) is devoted to waveguides and cavity resonators. The section contains the general waveguide concepts and discusses the physical picture of the propagation of waves in waveguides, and studies waves in rectangular and round waveguides and losses of wave-

guides. The conditions under which a wave guide is replaced by an equivalent line are briefly discussed. The properties of regular cavity resonators (rectangular parallelepiped, cylinder, sphere) are discussed along with the properties and application of cavity resonators of complex shapes (toroidal etc.) The exposition is compact and clear.

The following remarks can be made concerning this section. In Chapter 11, the boundary conditions on the boundary surface between two media are formulated "in the most general form" as follows: $E_{t_1} = E_{t_2}$ and $H_{t_1} = H_{t_2}$. These conditions are true only if the surface electric or magnetic (fictitious) currents are disregarded. In Chapter 12, devoted to rectangular waveguides, a formula $v_{ph}v_{gr} = c^2$ is derived. This formula is correct for cylindrical waveguides of arbitrary cross section, and should have therefore been contained in the chapter devoted to the general properties of waveguides. Figs. 12.4 and 12.5 are unsuccessful: the electric-field force lines are not normal to the metallic surface.

The important concept of the wave impedance of a rectangular waveguide of sides a and b is discussed very briefly. It is introduced with the aid of the equation $Z_0 = E_y/H_x$. It is known, however, that in many cases Z_0 is defined as $Z_0 = E_y b/H_x a$; this means that the concept of the wave impedance of a waveguide is not unique. The physical significance of the appearance of H^2 in Eqs. (14.4) and (16.8) should have been explained with the aid of the boundary condition $H_t = 4\pi I/c$, where I is the surface current density. In Chapter 17, devoted to cavity resonators of complex shape, the formula $k^2 = k_0^2 (1 + \frac{\Delta W_e - \Delta W_H}{W_0})$ should have been supplemented, say, with an illustrative example of a toroidal resonator whose capacitive portion is slightly deformed; incidentally, there is a misprint in this formula. It must also be noted that certain interesting problems (such as the transformation of waves of different modes in waveguides) are not discussed at all.

In the fourth section (Chapters 18–25) we consider general problems of generation and amplification of electromagnetic oscillations. The general properties of self-oscillating systems are formulated; the elements of the theory of the vacuum-tube oscillator are given; linear, nonlinear, and quasi-linear methods of the theory of vacuum-tube oscillators are studied, along with relaxation self-oscillations, parametric excitations of electromagnetic oscillations, and frequency stabilization. The end of the section includes an analysis of amplifier

circuits, an investigation of amplifier stability, and examples of the use of the Nyquist-Tsytkin criterion.

A large amount of material is treated very concisely in the section. The authors succeeded in so doing because of their economical method of exposition: the general formulas are usually first established at the beginning of the chapter, and are then applied further to individual problems (see for example Chapters 24 and 25). Among the shortcomings of the section is the almost complete lack of treatment of semiconductor devices and semiconductor electronics, which gains in importance from year to year.

The fifth section is devoted to problems of generation and amplification of microwave frequencies (Chapters 26 – 32). The section begins with general problems of interaction between an electric beam and an electric field (the energy effect of the interaction, the induced-current theorem, the behavior of the electron gap at microwave frequencies, etc.). This is followed by a brief description of the properties of generators with static control of the electron beam, and then by a discussion of the principles of dynamic beam control and of properties of microwave devices with intermittent interaction (klystrons and magnetrons). The end of the chapter contains a brief formulation of the properties of slow-wave systems and microwave devices with continuous interaction. The exposition is logical and clear, disclosing the connection between the various problems in generation and amplification of microwaves. We notice that this is apparently the first time that a Russian textbook contains the description of properties of slow-wave systems with anomalous dispersion and of their dispersion characteristics.

The following remarks can be made concerning the section on the generation and amplification of microwaves. In the klystron bunching theory the authors disregarded the important phenomenon of debunching by Coulomb forces. The theory of multi-cavity magnetron contains no discussion of the connection between the parabola of the critical mode, the threshold line, and the synchronism line — the principal lines that characterize the operating conditions of a magnetron in the V_a, B (anode voltage — induction) plane. Formula (31.8) contains a misprint. The example of a coaxi-helix transition (Fig. 32.3) has been unsuccessfully chosen: it is not clear where the electron beam will travel. Another shortcoming of the section is the almost complete lack of data on the electron-wave tube. The bibliography on waveguides, slow-wave systems, and theory of traveling waves omits without justification the papers by L. A. Vainshtein.

In section VI, devoted to nonlinear signal transformations, the authors treat the theoretical principles of detection, regeneration, superregeneration, and frequency transformation.

Chapter VII, the last in the book, discusses briefly problems of noise in electric circuits and vacuum tubes, and also problems of microwave reception.

Summarizing, we must say that the book touches upon almost all fundamental problems of modern radio physics. The exposition is at a high scientific level, logical and systematic, employing a unique mathematical formalism. The book helps in the interpretation of the connection between different fields of radio physics. The authors pay principal attention to the physical picture of the processes, and the mathematical description acquires a subsidiary role. The important role of Russian scientists in the development of the principal problems of radio physics is correctly presented.

The book is written in very good style, clarity, and brevity of exposition; it is easy to read, a circumstance helped by the large number of small well thought-out diagrams, which contain nothing excessive, but include everything necessary for the understanding of the text.

In addition to the specific critical remarks made above, we note that the authors have devoted too little place to the new rapidly-developing trends in radio physics — statistical radio physics and semiconductors. The problems of quantum radio physics, which have a great future, are not discussed at all. Thus, the book summarizes and systematizes well the development of many branches of radio physics, but does not indicate sufficiently fully its further development. We also note that the authors have preferred the Gaussian system of units, although recently the practical system of units is more frequently employed in radio physics.

On the whole, the book by V. I. Kalinin and G. M. Gershtein "Introduction to Radio Physics," is an exceedingly valuable textbook for students in universities, teachers' colleges, and in some engineering colleges. It will be widely used by students taking special courses in radio engineering, theory of oscillations, electronics, microwave electronics, and propagation of radio waves.

Representing the long teaching experience of the authors, the book reviewed is an example of a masterful exposition of the fundamentals of radio physics. It will be met with satisfaction by all radio physicists.

—S. D. Gvozdover and V. M. Lopukhin
Usp. Fiz. Nauk 66, 700-702 (December, 1958)

Abdullaev, G. B., Полупроводниковые выпрямители (Semiconductor Rectifiers). Baku, Azerbaidzhan S.S.R. Acad. Sci. Press 1958, 204 pp illustr. (Azerbaidzhan S.S.R. Academy of Sciences, Institute of Physics and Mathematics). Bibliography pp 198-201 (155 titles). 1,000 copies, 11.00 rub.

Chapters: 1. Brief Survey of Physical Theory of Semiconductor Rectifiers. 2. Selenium and its Physical and Chemical Properties. 3. Modern Selenium Rectifiers. 4. Investigation of the Formation of the Electronic Semiconductor Layer in Selenium Rectifiers. 5. Selenium Rectifiers with Artificial n-p Junctions. 6. Analysis of the Complex Impedance of Selenium Rectifiers. 7. High Voltage Selenium Elements.

Babikov, O. I. Ультразвук и его применение в промышленности (Ultrasound and its Application in Industry). Moscow, Fizmatgiz, 1958, 260 pp. illustr. (Physical-Mathematical Engineering Library). Bibliography, pp 249-253, 15,000 copies, 8.70 rub.

Chapters: Introduction. 1. Propagation and Absorption of Ultrasound. 2. Production of Ultrasound. 3. Pulsed Method of Ultrasonic Defectoscopy. 4. Ultrasonic Defectoscopy with the Aid of Undamped Oscillations. 5. Investigation of the Microstructure of Metals and the Measurement of Elastic Constants. 6. Pulsed Ultrasonic Methods of Physical and Chemical Analysis. 7. Working of Hard and Brittle Materials. 8. Soldering and Tinning of Aluminum. 9. Ultrasonic Cleaning. 10. Metallurgical Effects of Ultrasonic Metal Working. Literature. Subject index.

Bogolyubov, N. N. and Mitropol'skiĭ, Yu. A. Асимптотические методы в теории нелинейных колебаний (Asymptotic Methods in the Theory of Nonlinear Oscillations). Second edition, revised. Moscow, Fizmatgiz, 1958, 480 pp. illustr. Bibliography, pp. 407-408 (49 titles), 7,000 copies, 17.55 rub.

Nils Bohr and the Development of Physics. Anthology devoted to Nils Bohr on his 70th birthday. Edited by W. Pauli. Foreign Press Publishing House, 1958, Moscow.

Valitov, R. A. and Sretenskiĭ, V. N. Радионизмерения на сверхвысоких частотах (Radio Measurements at Microwave Frequencies). Second revised edition, Moscow, Voenizdat, 1958. 412 pp. illustr. Bibliography, p 408, 8.90 rub.

Weber, Ernst. Transients in Linear Circuits. Translated from the English by E. I. Gurvich and V. V. Slutskaya. Edited by I. I. Temin. Vol. 1, Moscow, "Soviet Radio" Press, 1958. [Wiley, N. Y., 1955].

Wiener, N. Cybernetics and Society. Translated by E. G. Panfilov. Edited by E. Ya. Kol'man. Moscow, Foreign Literature Press, 1958.

Includes the editor's "The Philosophical and Social Ideas of Norbert Wiener."

Vinokur, M. M. et al. Выдающиеся физики мира (The World's Outstanding Physicists), compiled by M. M. Vinokur, D. S. Nikolaev, and M. A. Raevskaya, Moscow, 1958, 436 pp. illustr. 8500 copies, 15.10 rub.

Vol'kenshteĭn, V. S. Сборник задач по общему курсу физики (Collection of Problems in General Physics). (Textbook for colleges). Moscow, Fizmatgiz 1958, 303 pp. illustr. 75,000 copies, 5.65 rub.

Contents: Problems. Introduction. Chapters: 1. Physical Foundations of Mechanics. 2. Molecular Physics in Thermodynamics. 3. Electricity of Magnetism. 4. Wave Processes. 5. Optics. 6. Physics of the Atom and of the Atomic Nucleus. Answers and solutions. Appendices. Tables.

Problems of Combustion and Detonation Waves. Fourth Symposium (International) on the Problems of Combustion and Detonation Waves. Collection of articles. Translated from the English by A. S. Predvoditelev. Introductory remarks by the editor. Moscow, Oborongiz, 1958.

Wooster, W. A. A Textbook on Crystal Physics. Translated from the English by V. A. Koptsik. Edited by Academician A. V. Shubnikov. Moscow, Foreign Literature Press, 1958.

Gel'fer, Ya. M. Закон сохранения и превращения энергии в его историческом развитии (Law of Conservation and Conversion of Energy in its Historical Development). Handbook for teachers. Moscow, Uchpedgiz, 1958, 258 pp. illustr. 16,000 copies, 4.40 rub.

Contents: Part 1. Supporting Premises for the Discovery of the Law of Conservation and Transformation of Energy. Chapters: 1. Development of Theory of Conservation of Motion in Mechanics in the 17 and 18th Centuries. 2. Development of the Concepts of the Nature of Heat in the 17th and 18th Centuries. 3. Discoveries and Investigation of the Interactions Between Various Forms of Energy During the First Half of the 19th Century. Part 2. Development of the Theory of Conservation and Transformation of Energy. Chapters: 1. The Research of R. Maier. 2. The Research of Joule and Colding. 3. Helmholtz's "On the Conservation of Force." 4. Discovery of the Directivity of Energy Processes. 5. Discovery of the Laws of Motion in Absorption and Emission of Energy. 6. Law of Conservation and Transformation of Energy in Physics During the 20th Century. Chronological

table of the most important discoveries connected with the law of conservation and transformation of energy.

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Contents: Foreword. Photometry. History of Photometry. Scattering of Light. Photometric Methods in Physical Optics. Light Measurements. Theory of the Light Field. The Light Field. Illumination Engineering. Illumination. Visibility of Objects. Visibility Through Optical Instruments. Illumination-Engineering Design in Signalization. Appendices.

Gurov, V. S. Полупроводники в технике и в быту (Semiconductors in Industry and in the Home). Moscow, "Moscow Worker Press," 1958. 144 pp. illustr. Bibliography, p 143. 24,000 copies, 2.25 rub.

Contents: Something on the Structure of Matter. The Secret of Electric Conductivity of Semiconductors. Semiconductor Rectifiers. Amplifiers of Electric Oscillations. Thermoelectricity. Semiconductor Thermoresistances. Thermoelectric Generator. Photoelectric Phenomena. Principal Fields of Application of Photocells and Photoresistances. Use of Luminescence. Quartz Elements. This will Happen Tomorrow.

Dudnik, L. A. Испытание электронных ламп (Testing Vacuum Tubes). Textbook. Moscow. "Soviet Radio" Press 1958, 231 pp. illustr. Bibliography at end of each chapter. 6.70 rub.

Жидкометаллические теплоносители (Liquid-Metal Coolants). Moscow, Atomizdat, 1958. 206 pages illustr, authors: S. S. Kutateladze, V. M. Borishanskii, I. I. Novikov, and O. S. Fedinskii. Appendix No. 2 to Journal "Atomic Energy" for 1958. Bibliography, pp 203-205 (81 titles), 8,750 copies, 8 rub.

Contents: From the Editor. Chapters: 1. Fundamental Properties of Liquid Metals. 2. Fields of Applications of Liquid-Metal Coolants. 3. Hydraulic Resistance in Flow of Liquid Metals. 4. Turbulent Heat Transfer in Liquid Metals. 5. Heat Output During Flow in Pipes. 6. Heat Output in Longitudinal Flow Over a Plate. 7. Heat Transfer in Transverse Flow Over Cylinders.

8. Heat Transfer in Compound Convection. 9. Heat Transfer in Vapor Condensation. 10. Heat Transfer in Boiling. 11. Heat Exchangers. 12. Resistance of Refractory Materials in Liquid Metals. 13. Measuring Instruments.

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Изотопы и излучения в химии (Isotopes and Radiations in Chemistry). Editorial Board: Academician A. P. Vinogradov (Editor in Chief) and others. Moscow, U.S.S.R. Acad. Sci. Press, 1958, 380 pp. illustr. (Academy of Sciences Press, Main Administration for the Use of Atomic Energy, Council of Ministers, U.S.S.R. Transactions of the All-Union Scientific-Technical Conference on the Application of Radioactive and Stable Isotopes and Radiations in the National Economy and Science, April 1-12, 1957). Subtitle: All-Union Conference on the Application of Isotopes and Nuclear Radiations. Bibliography at the end of each paper. 5,000 copies, 21 rub.

Институт ядерной физики. Алма-Ата, Труды... (Transactions, Institute of Nuclear Physics, Alma Ata.) Vol. I, Alma Ata, Kazakh S.S.R. Acad. Sci. Press, 1958. 304 pp., 20,000 copies, 21.50 rub.

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Contents: 1. Measuring Apparatus for Transistors. 2. Properties of Semiconductor Diodes and Transistors. 3. Transistor Circuits.

Исследование в области электрического разряда в газах (Research on Electric Discharges in Gases). Collection of articles, edited by Professor B. N. Klyarfel'd. Moscow-Leningrad, Gosenergoizdat, 1958, 240 pp. illustr. (All-Union Order of Lenin Electrotechnical Institute in the name of Lenin. Transactions of the All-Union Electrotechnical Institute, No. 63). Bibliography at the end of each chapter.

Kalinin, S. K. and Marzuvanov, V. L. Атлас дугового и искрового спектров железа от 3718 до 9739 А (Atlas of Arc and Spark Spectra of Iron from 3718 to 9739 A). Edited by S. E. Frish. Moscow, Metallurgizdat, 1958, 48 pp. illustr. (Academy

of Sciences, Kazakh S.S.R.). Bibliography at the end of the text. 32,000 copies, 12.25 rub.

Kaplan, S. A. Как увидеть, услышать и сфотографировать искусственные спутники Земли (How to Observe, Hear, and Photograph Artificial Earth Satellites) Moscow, Fizmatgiz, 1958, 80 pp. illustr. 50,000 copies, 1.40 rub.

Kaplan, S. A. Межзвездная газодинамика (Interstellar Gas Dynamics). Moscow, Fizmatgiz, 1958, 194 pp. illustr. Bibliography, pp. 192-194 (97 titles). 25,000 copies, 7.15 rub.

Contents: Foreword. Chapters: 1. Distribution and Motion of Interstellar Gas. 2. Physical State of Interstellar Gas. 3. Discontinuities in the Motion of Interstellar Gas. 4. Equation of Motion of Interstellar Gas. 5. Interstellar Turbulence. Literature.

Kichka, V. E. Инфракрасные лучи в военном деле (Infrared Rays in Military Affairs). Moscow, Voenizdat, 1958, 94 pp. illustr. Bibliography, p. 92 (10 titles). 1.80 rub.

Contents: Introduction. Chapters: 1. Radiant Energy. 2. Propagation of Infrared Rays in the Atmosphere. 3. Sources of Infrared Rays. 4. Photography in Infrared Rays. 5. Photoelectric Effect of Light. 6. Luminescence. 7. Instruments for the Recording of Infrared Rays. 8. Seeing With Infrared Rays. Conclusion. Literature.

Книга для чтения по физике (Physics Reader). Part 1. Moscow, Uchpedgiz, 1958. Part 1. Mechanics (Compiled by S. K. Andrievskii, N. A. Pushkarev, and M. I. Rozenberg). 1958, 403 pp. illustr. 30,000 copies, 7.35 rub.

Contents: Sections: 1. Basic Measurements. Motion. 2. Laws of Dynamics. 3. Mechanical Energy. Operation of Machines and Mechanisms. 4. Statics of Liquids and Gases. 5. Dynamics of Liquids and Gases. 6. Rotary Motion. 7. Vibrations and Waves. Sound.

Lomonosova, L. S. and Fal'kova, O. B. Спектральный анализ (Spectral Analysis). (Textbook for Technical High Schools). Edited by A. R. Striganov. Moscow, Metallurgizdat, 1958, 420 pp. illustr. Bibliography pp 414-417. 7,000 copies, 10.35 rub.

Contents: Introduction. Chapters: 1. Atomic Spectra. 2. Spectral Instruments. 3. Sources of Light. 4. Methods for Introducing the Sample Material into the Discharge and Processes on the Electrodes and in the Discharge. 5. Qualitative Analysis. 6. Methods of Quantitative Analysis. 7. Gathering the Samples. Standards. 8. Special Measures in Spectral Analysis.

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Contents: Foreword. Symbols. Introduction. Chapters: 1. Fundamental Equations. 2. The Diffusion Approximation. 3. The Diffusion-Age Approximation. 4. Refinement in the Diffusion-Age Theory. 5. Homogeneous Reactor Without Reflector. 6. Group Method. Weak Absorption of Slowing-Down Neutrons. 7. Group Method. Strong Absorption of Slowing-Down Neutrons. 8. Finite-Difference Equations of Diffusion. 9. Solution of Finite-Difference Equations of Diffusion. 10. The Grid Method. 11. Perturbation Theory. 12. Heterogeneous Effect in Nuclear Reactors. 13. Fast-Neutron Reactors. 14. Reactors with Hydrogen-Containing Moderators. Appendices. Literature.

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Minnaert, M. The Nature of Colour and Light in the Open Air. Translation edited by G. A. Leikin. Moscow, Fizmatgiz 1958. [Dover, N. Y., 1954].

Certain Problems in Modern Electrochemistry. J. Bokris. Translated from the English by I. I. Tret'yakov. Edited by Professor Ya. M. Kolotyrkin. Preface by editor. Moscow, Foreign Literature Press, 1958.

Низкие температуры и редкие газы (Low Temperatures and Rare Gases). Collection of Articles. Edited by Doctor of Technical Sciences, V. G. Fastovskii. Moscow-Leningrad. Gosenergoizdat 1958, 288 pp. illustr. (Transactions of the All-Union Technical Institute, No. 61). Bibliography at the end of each chapter. 2,260 copies, 11.85 rub.

Nikolai, E. L. Теоретическая механика (Theoretical Mechanics). Part 2. Dynamics. 13th Ed., Moscow, Fizmatgiz, 1958. 484 pp. illustr. 35,000 copies. 10.85 rub.

Nozdrev, V. F. Применение ультразвуки в молекулярной физике (Application of Ultrasonics to Molecular Physics). Moscow, Fizmatgiz, 1958, 456 pp. illustr. Bibliography pp. 445-452 (280 titles). 5,000 copies, 13.55 rub.

Contents: Chapters: 1. Optical Methods and Apparatus for the Investigation of the Propagation and Absorption of Ultrasonic Waves in Liquids and Gases. 2. The Pulse Method and Pulse Apparatus for the Investigation of the Propagation and Absorption of Ultrasonic Waves in Liquids and Gases. 3. Investigation of the Propagation of Ultrasonic Waves in Liquids. 4. Propagation of Ultrasonic Waves in the Critical Region of Individual Substances and Their Binary Mixtures. 5. Propagation of Ultrasonic Waves in Saturated and Superheated Vapors of Organic Liquids. 6. Investigation of the Absorption of Ultrasonic Waves in Organic Liquids and their Mixtures Over a Broad Range of Temperatures, Concentrations, and Frequencies. Appendices. Literature. Subject index.

Памяти Алексея Николаевича Крылова (Memorial to Aleksī Nikolaevich Krilov). Collection of articles. Editor in Chief Academician Yu. A. Shiman'skiĭ. Moscow-Leningrad, U.S.S.R. Acad. Sci. Press, 1958, 248 pp. illustr. 4,000 copies, 13.70 rub.

Sections: Articles on the Activity of A. N. Krilov. Memories of A. N. Krilov.

Poletaev, I. A. Сигнал (Signal). Certain Concepts of Cybernetics. Moscow, "Soviet Radio" Press, 1958, 404 pp. illustr. Bibliography pp. 401-402. 7.80 rub.

Contents: Foreword. Chapters: 1. Power and Cybernetics. 2. Signal. 3. Event. 4. Amount of Information. 5. Transfer of the Signal. 6. Feedback. Control. 7. Signal in a Machine. 8. Robot. 9. Thought. 10. Play. 11. A Robot Smarter Than its Builder. 12. The Large Robot. Conclusion. Short bibliography.

Полупроводниковые диоды и триоды и их применение (Semiconductor Diodes and Triodes and Their Application). Collection of articles. Moscow. Central Bureau for Technical Information. 1958, 103 pp. illustr. (Council for National Economy of the Economic Administrative Region of the City of Moscow. Progress in Science and Technology).

Semiconductor Triodes in Radio Circuits. Collection of translations from the English. Translation and appendices by V. M. Stishkovskiĭ and A. V. Savodnik. Moscow, Voenizdat 1958, 216 pp. illustr. 7.40 rub.

Contents: R. P. Taner. Transistors. L. M. Krugman. Basic Transistor Circuits. L. H. Light and R. M. Hooker. Transistorized dc Voltage Converters. Appendices.

Applied Mass Spectrometry. Papers delivered to the Conference on Mass Spectrometry, organized by the Petroleum Institute, London, October 29-31, 1953. Translated from the English. Edited by K. I. Zimina and others. Moscow Gostoptekhizdat 1958.

Применение полупроводников в приборостроении (Application of Semiconductors in Instrument Building). Transaction of Conference. Edited by Professor N. I. Chistyakov. Moscow, Mashgiz 1958. 259 pp. illustr. (Scientific-Technical Society for Instrument Building in Industry, Moscow Administration). Bibliography at the end of each article. 20,000 copies, 8.80 rub.

Prokof'ev, V. K. Эмиссионный спектральный анализ в СССР (Emission Spectrum Analysis in the U.S.S.R.). Survey. Leningrad 1958, 35 pages. (Society on the Dissemination of Political and Scientific Knowledge, RSFSR. Leningrad House for Scientific-Technical Propaganda). Bibliography pp. 29-35 (217 titles). 1.15 rub.

Investigation of the Upper Atmosphere by Means of Rockets. Collection of articles. Edited by R. L. F. Boyd and M. J. Seaton. Translated from the English by V. M. Morozov. Edited by V. I. Krasovskiĭ. Moscow. Foreign Literature Press 1957.

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— T. O. Vreden-Kobetskaya
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