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## Foreign Documents Branch C I A Periodical Abstracts

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Number 44

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NOTE: All periodicals listed below are available in Foreign Documents Branch, CIA.

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<u>Title</u>	<u>Issue</u>	<u>Date</u>
<u>Russian Periodicals</u>		
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 5-10, 23-42, 55, 72, 94-99	Vol LIX No 5	Feb 1948
"Gigiyena i Sanitariya" (Hygiene and Sanitation) Cards 3, 43-50	No 2	Feb 1948
"Khirurgiya" (Surgery) Cards 51-53	No 3	Mar 1948
"Klinicheskaya Meditsina" (Clinical Medicine) Card 54	Vol XXVI No 3	Mar 1948
"Ogneupory" (Fireproofing) Cards 1, 21, 22	No 2	Feb 1948
"Uspekhi Fizicheskikh Nauk" (Progress of Physical Science) Cards 11, 73, 74, 100-102	Vol XXXIV No 2	Feb 1948
"Vestnik Svyazi - Elektro-Svyaz'" (Herald of Communications - Electrocommunications) Cards 12-18	No 2 (95)	Feb 1948
"Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki" (Journal of Experimental and Theoretical Physics) Cards 75-89	Vol XVIII No 2	Feb 1948
"Zhurnal Tekhnicheskoy Fiziki" (Journal of Technical Physics) Cards 4, 19, 68-71, 90-93	Vol XVIII No 1	Jan 1948
"Zhurnal Tekhnicheskoy Fiziki" (Journal of Technical Physics) Cards 2, 20, 56-67	Vol XVIII No 2	Feb 1948

NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

Distribution

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AEC	3
RDB	2
CIA	16
FDB	<u>20</u>
Total	112

## FDB Periodical Abstracts Scientific No 44

<p>USSR/Academy of Sciences Refractory Materials</p> <p>Feb 1948</p> <p>"Scientific Session of Silicetists and Chemists" <math>\frac{1}{2}</math> p</p> <p>"Ogneupory" No 2</p> <p>Session held in Leningrad toward end of 1947. Some 500 people attended, representing workers in chemistry, technology of silicates, as well as workers in factories. Some 50 papers submitted and evaluated. Among papers submitted: Those by P. P. Budnikov, D. S. Belyankin, I. V. Grebenshchikov, and P. A. Rebinder.</p> <p>FDB 44T1</p>	<p>USSR/Academy of Sciences Metals</p> <p>Feb 1948</p> <p>"Fifteen Years of Work of Institute of Physics of Metals, Ural Affiliate of the Academy of Sciences, USSR (1932 - 1947)," M. N. Mikheyev, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, <math>5\frac{1}{2}</math> pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 2</p> <p>From inception, institute directed efforts to solve basic problems in theory of metals and alloys and develop new methods and materials desired by technology with improved physical properties. Very valuable results obtained in developing general</p> <p>FDB 44T2</p>
<p>USSR/Academy of Sciences</p> <p>Feb 1948</p> <p>"Scientific-Technical Conference of the All-Union Scientific Research Institute of Heating and Ventilation," N. A. Tsiper, <math>1\frac{1}{4}</math> pp</p> <p>"Gig i San" No 2</p> <p>Conference held 24 - 28 Oct 1947, at Moscow. Aim to assemble works of the Sanitary-Technical Organization for the past ten years. Gives brief account of discussion and some of major suggestions adopted for future work by the organization.</p> <p>FDB 44T3</p>	<p>USSR/Academy of Sciences (Contd)</p> <p>Feb 1948</p> <p>bases of quantum theory of hard body with calculation of interaction between electrons. Important scientific achievements in study of diamagnetism of gases and vapors, magnetic properties of rare elements, theory of technical curve of magnetization, methods of magnetic defectoscope analysis, and magnetic structural analysis. Briefly discusses several other phases of their work.</p> <p>FDB 44T2</p>
<p>USSR/Academy of Sciences Bibliography</p> <p>Jan 1948</p> <p>"Bibliography of Materials Available at the Scientific Library of the Leningrad Physicotechnical Institute, Academy of Sciences, USSR" 8 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 1</p> <p>Lists all books available and authors, including number of foreign authors, under following headings: acoustics, mechanical qualities of materials, amorphous bodies and polymers, dielectrics, semiconductors, electronics, X-ray, gas discharge, laboratory technique, and spectroscopy.</p> <p>FDB 44T4</p>	<p>USSR/Chemistry - Synthesis, Organic Chemistry - Aluminum</p> <p>Feb 1948</p> <p>"Use of Metallic Aluminum in Organic Synthesis (Friedel-Craft's Reaction)," V. D. Azatyan, <math>3\frac{1}{2}</math> pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes value of metallic aluminum without any additions and without activation in Friedel-Craft's synthesis. Explains experiments conducted to show that metallic aluminum can be usefully employed in such reactions. Submitted by Academician V. M. Rodionov, 16 Dec 1947.</p> <p>FDB 44T5</p>
<p>USSR/Chemistry - Peroxides Chemistry - Butyl Benzene</p> <p>Feb 1948</p> <p>"Peroxide of Secondary Butyl Benzene," K. I. Ivanov, V. K. Savinova, V. P. Zhakhovskaya, All-Union Thermo- tech Inst imeni F. E. Dzerzhinskiy, <math>3\frac{1}{4}</math> pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Secondary butyl benzene reacts very slowly with the oxygen molecule in liquid state, however, reacts relatively easily with oxidizers under effect of ultraviolet light at <math>85^\circ</math> and under conditions described earlier. Describes first product obtained from peroxidizing <math>C_{10}H_{14}O_2</math>, purified and analyzed. Submitted by Academician S. S. Nametkin, 23 Oct 1947.</p> <p>FDB 44T6</p>	<p>USSR/Chemistry - Amides Chemistry - Dispersion</p> <p>Feb 1948</p> <p>"Degree of Polydispersion of Polyamides," V. V. Korshak, V. A. Zamyatina, Inst Org Chem, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes fractionating experiments on series of polyamides to determine degree of polydispersion. Results obtained differ from those obtained by Flory, who on the basis of statistics arrived at conclusion that product of the reaction of polycondensation must be polydispersed mixture, composed of chain of varying size. Submitted by Academician A. N. Nesmeyanov, 1 Dec 1947.</p> <p>FDB 44T7</p>

<del>RUSSIAN</del>		FDB Periodical Abstracts Scientific No 44	<del>RUSSIAN</del>	
USSR/Chemistry - Electrolysis Chemistry - Iron, Activation of	Feb 1948	USSR/Chemistry - Heat of Wetting Chemistry - Barium Sulfate	Feb 1948	
<p>"Activation of Iron by Chlorine Ions in Anode Polarization," L. Vanyukova, B. Kabanov, Sec Electrochem, Inst Phys Chem, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Action of such substances as chlorine on iron, for most part, due to ease with which chlorine ions pierce passive oxidized film on the surface of iron. Describes experiments conducted to explain mechanism of activating action of chlorine ions on iron during anode polarization in alkali solutions. Submitted by Academician A. N. Frumkin, 8 Dec 1947.</p>		<p>"Absolute Magnitudes of Thermal Adsorption of Liquids. Adsorption from Solutions and Heat of Wetting Barium Sulfate," A. V. Kiselev, T. S. Kiseleva, Inst Phys, Moscow State U imeni M. V. Lomonosov, 4pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes results obtained from previous studies on heat of wetting barium sulfate powder, similar to results obtained by B. V. Il'in. Specific surface of this powder determined by adsorption isotherm of solution, while heat of wetting determined by means of adiabatic calorimeter, described by B. V. Il'in</p>		
FDB	44T8	FDB	44T9	
USSR/Chemistry - Chromatography Chemistry - Chemical Constitution	Feb 1948	USSR/Chemistry - Heat of Wetting (Contd)	Feb 1948	
<p>"M. S. Tsvet's Theory of Chromatographic Analysis," Ye. N. Gapon, T. B. Gapon, Moscow Tech Inst Fish Industry and Econ imeni A. I. Mikoyan, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Discusses Langmuir's equation:</p> <p>for conditions where _____ and initial concentrations of substances I and II in the solution are the same. Submitted by Academician M. M. Lubinin, 28 Nov 1947.</p>		<p>in another previous article. Submitted by Academician M. M. Dubinin, 28 Nov 1947.</p>		
FDB	44T10	FDB	44T9	
USSR/Chemistry - Dyes Chemistry - Photochemistry	Feb 1948	USSR/Communications Telegraphy Cables, Electric	Feb 1948	
<p>"A. N. Terenin's 'Photochemistry of Dyestuffs and Related Compounds'," E. Shpol'skiy, 2 pp</p> <p>"Uspekhi Fiz Nauk" Vol XXXIV, No 2</p> <p>Reviews 353-page book published by Academy of Sciences, USSR, 1947. Terenin discusses two main categories: photochemical processes in dyestuffs, and photochemical reactions in dyestuffs. Book is undoubtedly great contribution to world literature.</p>		<p>"Results of All-Union Congress on Improving Conditions in the Field of Communications," M. U. Polyak, Chief, Tech Sec, Ministry Communications, 2 pp</p> <p>"Vest Svyazi - Elektro-Svyaz" No 2 (95)</p> <p>Congress closed recently. More than 300 articles submitted for judgment. Total of 72 prizes awarded. Members attended from all parts of Soviet Union. Much work done in field of inventions for telegraphic communications. Of great interest: suggestion to put 4 - 8, ST-35 apparatus on one operating</p>		
FDB	44T11	FDB	44T12	
USSR/Communications - Equipment Rectification	Feb 1948	USSR/Communications (Contd)	Feb 1948	
<p>"Means of Increasing the Reliability of the ST-35 Apparatus," V. I. Shlyapoberskiy, Candidate Tech Sci, 3 pp</p> <p>"Vest Svyazi - Elektro-Svyaz" No 2 (95)</p> <p>Gives general description and study of rectifying ability of the ST-35. Discusses connection between rectifying ability of the ST-35 and voltage range of the phase regulator. Ability noticed from moment that electromagnet is inactivated, and therefore also dependent on steepness of the current build-up in electromagnetic coils, tension spring of rotor, and</p>		<p>cable. If this proves successful in tests, possible that will replace all existing multichannel systems, including the 9-channel Bodo radio. Many other suggestions submitted.</p>		
FDB	44T13	FDB	44T12	

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USSR/Communications - Equipment (Contd) Feb 1948	USSR/Communications	Feb 1948
<p>dimensions of air gap between rotor and the core. Regulation of rotor spring tension and gap between rotor and electromagnet should be timed to maximum range (phase).</p>	<p>Regulators, Current Distortion, Frequency</p>	<p>"New Subscriber Service Volume Regulator," V. M. Drugov, Engr, 1½ pp</p>
FDB 44T13	FDB 44T14	Feb 1948
<p>USSR/Communications Telegraph Equipment Telegraphy</p>	<p>USSR/Communications - Equipment Transformers - Design</p>	<p>"A New Step-Down Transformer for Subscriber Service," B. I. Rokhlin, Engr, 2 pp</p>
<p>"Comments on A. R. Kofman's Article, 'Accounting and Planning of Production in Telegraph Units'," I. A. Podgorodetskiy, Deputy Chief, Planning and Finance Adm, Ministry Communications; A. K. Rakhman'ko, Chief, Planning Sec, Cent Teleg USSR; A. S. Dolotkazina, Chief, Planning Sec, Tashkent Cent Teleg, 2 pp</p>	<p>"Vest Svyazi - Elektro-Svyaz'" No 2 (95)</p>	<p>Describes performance and construction details of new transformer. Contains table giving winding specifications for 10- and 25-volt transformers. Gives data for the core, primary and secondary windings and average performance characteristics of samples tested.</p>
<p>"Vest Svyazi - Elektro-Svyaz'" No 2 (95)</p>	<p>Briefly comment and praise article highly. Urge adoption of Kofman's suggestions.</p>	FDB 44T15
FDB 44T15	FDB 44T16	Feb 1948
<p>USSR/Communications - Equipment Cables, Electric</p>	<p>USSR/Communications Cables, Electric Cables - Insulation</p>	<p>"Determination of Points of Low Insulation in Coil Loaded Communication Cables," A. A. Kashutin, Engr, 3 pp</p>
<p>"Experiment on the Operation of Interurban Cables," F. A. Fel'ts, Engr, 1 p</p>	<p>"Vest Svyazi - Elektro-Svyaz'" No 2 (95)</p>	<p>"Vest Svyazi - Elektro-Svyaz'" No 2 (95)</p>
<p>Cable put into operation one year ago. Long cable, and sections run for 15 - 20 km without interruption. Discusses operation of cable. Notes that inefficient to put untrained personnel on new cable and permit them to gain experience by operating it. Author suggests that untrained personnel undertake period of apprenticeship, to be fully qualified specialists by time new cables put into operation.</p>	<p>Recent equipment to determine points of low insulation so constructed that unnecessary to make several measurements before being able to locate the point. Contemporary apparatus makes use of simple formula: <math>l_x = lk</math>, where <math>l_x</math> is distance from weak spot to point from which measurement being made, <math>l</math>, length</p>	FDB 44T17
FDB 44T17	FDB 44T18	Feb 1948
<p>USSR/Electricity Dielectrics Polarization</p>	USSR/Communications (Contd)	Feb 1948
<p>"Problem of High Voltage Polarization in Solid Dielectrics," Ya. M. Ksendzov, 8 pp</p>	<p>of section being measured, and <math>k</math>, reading on scale of the instrument when there is equilibrium on the bridge. Author recommends that the enameled wire, on which measurements made best, be placed so that it is on the upper side of cable. Mainly explains mathematical formulas.</p>	<p>"Zhur Tekh Fiz" Vol XVIII, No 1</p>
<p>Describes solution of problem of diffusion of potentials in state of equilibrium during movement of charges of one sign, in turn facilitating solution of reason for high voltage polarization in calcite.</p>	FDB 44T19	FDB 44T18
FDB 44T19	FDB 44T18	44T18

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<p>USSR/Electricity Currents, Electric Heating - Electric Units</p> <p>Feb 1948</p> <p>"Induction Heating of Hollow Articles with a Current-Carrying Rod," N. M. Rodigin, 14 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 2</p> <p>Solves problem of intensity of magnetic field and density of currents in hollow cylinder, having current-carrying rod through its axis. Calculates active and reactive power. Examines case of single-layer and multi-layer hollow cylinder. Describes conditions in which maximum capacity of eddy currents exists for the single-layer cylinder.</p>	<p>USSR/Engineering Refractory Materials Silicates</p> <p>Feb 1948</p> <p>"Disintegration of Siliceous Rock, and Technological Methods of Using Them in Production of Close-Grained Dinas Brick," Prof I. S. KaynarSKIY, Dr Tech Sci, 7 pp</p> <p>"Ogneupory" No 2</p> <p>Recommends method to manufacture close-grained dinas brick from loose siliceous rock. As result of method, possible to take substance out of class of semi-valuable raw materials for production of dinas brick. Also permits improved quality of dinas</p>	
<p>FDB 44T20</p> <p>USSR/Engineering Steel Casting Refractory Materials</p> <p>Feb 1948</p> <p>"Wear of Refractory Material in Steel Casting," M. S. Kamenichnyy, Engr, 5 1/2 pp</p> <p>"Ogneupory" No 2</p> <p>Greatest cause for wear of refractory material: association with molten steel, alloys, and slake. Much depends on method and care exercised while casting and on type of steel being smelted. Shows how wear increases with increase of temperature of the molten metal. Discusses some steps for decreasing wear. Best suggestion: improvement of quality of refractory material.</p>	<p>FDB 44T21</p> <p>USSR/Engineering (Contd) Feb 1948</p> <p>brick, usually prepared from ordinary high-quality raw material.</p>	
<p>FDB 44T22</p> <p>USSR/Geophysics Oceanography</p> <p>Feb 1948</p> <p>"Influence of the Relief of the Bottom on the Direction of the Average Transmission Caused by the Wind on the Field of a Mass in a Heterogeneous Ocean," V. B. Shtokman, Inst Oceanology, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Formula taking into account factors of the average mass field, the bottom current field and wind fields permits determination of effect of the sea bottom on direction of bottom currents. Discusses currents as affected by various types of ground and mass formations. Submitted by Academician P. P. Shirshov, 9 Dec 1947.</p>	<p>FDB 44T21</p> <p>USSR/Mathematics - Geometry, Analytic Feb 1948 Mathematics - Methods, Graphic</p> <p>"Crystallographic (Symmetrical) Methods of Solving Geometric Problems," N. V. Belov, Corr Mem, Acad Sci USSR, 2 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>In previous article, author discussed use of tertiary, as well as quadruple and sextuple axial symmetries for the solution of geometric problems, according to method described by Ye. S. Fedorov ("Basic Formulas for Analytic Geometry from an Improved Standpoint," SPb 1888, Zap.Min.ob-va,25,1.1889). Applies same formula to crystallographic method for</p>	
<p>FDB 44T23</p> <p>USSR/Medicine - Shellfish Medicine - Parasites</p> <p>Feb 1948</p> <p>"Somatic Substitution in Parasites," V. L. Vagin, Leningrad State U, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Details of evolution in parasites give series of data on progressive and regressive changes. However, various parasites evidence various reactions. Experiments on somatic substitution conducted on crab-like parasite of Ascothpracida family and mollusk parasites of Styliferidae and Entoconchidae families. Submitted by Academician I. I. Shmal'gauzen, 11 Dec 1947.</p>	<p>FDB 44T24</p> <p>USSR/Mathematics - Geometry, Analytic Feb 1948 (Contd)</p> <p>solution of geometry problems. Submitted, 18 Nov 1947.</p>	
<p>FDB 44T25</p>	<p>FDB 44T24</p>	



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<p>USSR/Medicine - Regeneration Medicine - Colchicine</p> <p>Feb 1948</p> <p>"Influence of Colchicine on Regeneration of Organs in Anuran Amphibians," L. V. Polezhayev, A. Ye. Gurvich, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 3½ pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Gives experiments to further data obtained in previous studies to determine effect of colchicine on phenomenon of regeneration, as well as to attempt to solve some controversial points on regeneration. Submitted by Academician I. I. Shmal'gauzen, 26 Nov 1947.</p> <p>FDB 44T26</p>	<p>USSR/Medicine - Skin, Regeneration Medicine - Skin, Transplantation</p> <p>Feb 1948</p> <p>"Influence of Foreign Skin on Development and Regeneration of Extremities in Anuran Amphibians," G. I. Gintsburg, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Series of four experiments set up to: 1) Explain effect of replacing by foreign skin, the skin formed during first and last stages of regeneration. 2) Attempt to isolate effect of korium and explain effect of epitela of the skin of the head on regeneration of transplanted extremity. 3) Explain</p> <p>FDB 44T27</p>	
<p>USSR/Medicine - Flies Medicine - Taxonomy</p> <p>Feb 1948</p> <p>"New Type of Drosophila - Drosophila Imeretensis," N. N. Sokolov, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 2 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Gives characteristics of Drosophila imeretensis, first observed in 1940. Tests and further studies on native Drosophila populations of Kutais showed more evidence of this fly. Named "Imeretensis" due to fact that first observed in vicinity of city of Imeretiya, Georgian SSR. Submitted by Academician L. A. Orbeli, 10 Dec 1947.</p> <p>FDB 44T28</p>	<p>USSR/Medicine - Skin, Regeneration (Contd) Feb 1948</p> <p>whether or not there is change of characteristics in ontogenesis of skin used in regeneration of extremities. 4) Determine if foreign transplanted skin takes on characteristics of the skin in region to which transplanted. Submitted by Academician I. I. Shmal'gauzen, 26 Nov 1947.</p> <p>FDB 44T27</p>	
<p>USSR/Medicine - Plants Medicine - Photosynthesis</p> <p>Feb 1948</p> <p>"Photoperiodism and Capacity of Plants to Bloom," M. Kh. Chaylakhyan, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Experiments set up to solve problem of whether typical short-day plants have capacity for light in continual darkness or whether deprived of this capacity due to prolonged dark period. Submitted by Academician N. A. Maksimov, 19 Dec 1947.</p> <p>FDB 44T29</p>	<p>USSR/Medicine - Plants Medicine - Photosynthesis</p> <p>Feb 1948</p> <p>"Attenuation of Photoperiodic Impulses," A. Potapenko, 2½ pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Experiments conducted to obtain attenuation of photoperiodic impulses in pure state, during absence of leaf concurrences, such as found in various phototropic conditions. Studies conducted on short-day Chenopodium album, giving quantitative reactions. Submitted by Academician N. A. Maksimov, 17 Dec 1947.</p> <p>FDB 44T30</p>	
<p>USSR/Medicine - Cells, Growth Medicine - Stains and Staining</p> <p>Feb 1948</p> <p>"Growth of Plant Cells and Relationship of Cell Covering to Acid and Basic Stains," V. G. Konarev, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Gives basic results of studies on adsorption of acid and basic fuchsin by parenchymal cell coverings, mechanical elements, and various vessels with various values for pH. Submitted by Academician N. A. Maksimov, 20 Nov 1947.</p> <p>FDB 44T31</p>	<p>USSR/Medicine - Bacteria Medicine - Antibiotics</p> <p>Feb 1948</p> <p>"Primary Decomposition of Bacteria under Influence of Antibiotics," V. A. Dorfman, D. P. Shcherbacheva, Cent Sci Res Control Inst Vaccines and Serums, Ministry Public Health USSR, 3½ pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes quantitative relation of effect of lysozyme antibiotic to its concentration. In these experiments, zone of concentration of lysozyme greatly increased, and very important to conduct measurements of effect at proper time. Submitted by Academician B. L. Isachenko, 9 Dec 1947.</p> <p>FDB 44T32</p>	

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USSR/Medicine - Embryology Medicine - Pituitary Bodies	Feb 1948	USSR/Medicine - Plants Medicine - Growth	Feb 1948
"Activity of Hypophyseal-Thyroid Complex in the Embryogenesis of Mammals," M. S. Mitskevich, Inst Evolutionary Morphol imeni A. N. Severtsov, Acad Sci USSR, 4 pp		"Acylphosphate Type Labile Substances in Green Leaves of Plants," A. M. Kuzmin, M. Ya. Shkol'nik, Lab Growth Substances, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 3½ pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5	
Describes studies conducted to explain activity of the hypophyseal-thyroid complex during the period of embryologic development of mammals. This is in keeping with study of embryologic endocrinal correlation in higher vertebrates. Submitted by Academician I. I. Shmal'gauzen, 16 Dec 1947.		Discusses experiments with asparagine, as well as ethyl ethers of vinegars, and apple, citric and tartaric acid to determine conditions necessary to bring about reaction with acylphosphate or anhydride acids, to prevent any reaction with asparagine or citric or vinegar acid ethers, and produce only	
FDB	44T33	FDB	44T34
USSR/Medicine - Infusoria Medicine - Reproduction	Feb 1948	USSR/Medicine - Plants (Contd)	Feb 1948
"Some Data on Metamorphosis of the Nuclear Apparatus of Infusoria in Conjugation," L. S. Peshkovskiy, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp		traces of hydroxyl acids. Submitted by Academician A. I. Oparin, 19 Nov 1947.	
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5			
Describes only certain points in conjugation process of Euplotes patella and Climacostomum Stein. Pays particular attention to reconstruction of the nuclear apparatus. Submitted by Academician L. A. Orbelli, 10 Dec 1947.			
FDB	44T35	FDB	44T34
USSR/Medicine - Infusoria Medicine - Temperature, Effects	Feb 1948	USSR/Medicine - Skin Medicine - Respiration	Feb 1948
"Adaptive Changes and Long Modifications in Infusoria Paramecium Caudatum Caused by Action of High and Low Temperatures," Yu. I. Polyanskiy, A. F. Orlova, Leningrad State Pedagogical Inst imeni A. I. Gertsen, 3½ pp		"Seasonal Change in Respiratory Function of the Skin of Tritons," A. G. Bannikov, Inst Evolutionary Morphol imeni A. N. Severtsov, Acad Sci USSR, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5	
Discusses experiments to show effect of prolonged periods of hot, and cold temperatures on stability of infusoria to action of lethal high temperatures on Paramecium caudatum. Submitted by Academician I. I. Shmal'gauzen, 16 Dec 1947.		Describes the two stages of respiratory function of the triton: Period during which upper fin dilates with accumulation of blood vessels, and earth-bound period when dilation all but disappears. Submitted by Academician I. I. Shmal'gauzen, 4 Dec 1947.	
FDB	44T36	FDB	44T37
USSR/Medicine - Stains and Staining Medicine - Poisons and Poisoning	Feb 1948	USSR/Medicine - Chlorophyll Medicine - Photosensitization	Feb 1948
"Comparative Toxicity for Cells of Diffused and Granular Dyes," N. L. Fel'dman, Inst Experimental Med, Acad Med Sci USSR, 4 pp		"Photosensitizing Action of Chlorophyll on Oxidizing-Reduction Reactions," A. A. Gurevich, Lab Plant Physiol and Microbiol, Moscow Agr Acad imeni K. A. Timiryazev, 3½ pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5	
Basic stains divided into two groups: granular and diffused types. Lists various stains used in experiments and classes them in the two categories. Admits existence of intermediate stages of stains. Conducted studies to determine toxicity and staining characteristics of each of mentioned (16) stains. Submitted by Academician L. A. Orbelli, 15 Dec 1947.		Describes experiments conducted to show photosensitizing action of chlorophyll on oxidizing-reduction action which in itself, without sensitizing, is completely nonsensitive to light. Submitted by Academician N. A. Maksimov, 22 Dec 1947.	
FDB	44T38	FDB	44T39

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
USSR/Medicine - Butterflies Medicine - Cells, Nuclei	Feb 1948	USSR/Medicine - Parthenogenesis Medicine - Silkworms
"Study of Structure of Nucleolus of Cells of the Salivary Glands of Butterfly Larvae," P. I. Zhivago, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp		"Artificial Temperature Parthenogenesis in Chinese Oak Silkworms (Antheraea Pernyi Guer.-Men.)," B. L. Asyaurov, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5
Greatest work on study of thin structure of chromosomes is in connection with study of "giant" chromosomes of the salivary glands of bialates. Several methods used in study, among which was use of photographs. Submitted by Academician L. A. Orbeli, 15 Dec 1947.		In 1947 experiments conducted to confirm new data obtained on increased parthenogenesis under conditions of higher temperatures (artificial). Submitted by Academician L. A. Orbeli, 15 Dec 1947.
FDB 44T40		FDB 44T41
USSR/Medicine - Acid, Adenylic Medicine - Spectrum Analysis	Feb 1948	USSR/Medicine - Hygiene and Sanitation Medicine - Water Supply
"Ultraviolet Spectra of Absorption of Mixtures of Nucleotides and Amino Acids," A. A. Ferkhmin, Inst Evolutionary Physiol and Pathol of Higher Nervous Activity imeni I. P. Pavlov, Acad Med Sci USSR, Selo Pavlov (Koltushi), 3 pp		"A Century of the Gor'kiy [Municipal] Water Supply," I. I. Belyayev, 2 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5		"Gig 1 San" No 2
Describes absorption spectra of muscular adenylic acid and l-tyrosine. Data obtained conforms favorably to data obtained in tests on other nucleotides and amino acids. Submitted by Academician L. A. Orbeli, 15 Dec 1947.		In 1947 this water conduit celebrated 100 years of service. Inaugurated in 1847 at which time had capacity of 40,000 buckets per 24-hour period. Presents brief history of development of water system to present size and magnitude.
FDB 44T42		FDB 44T43
USSR/Medicine - Streptococcus Lactis Medicine - Cheese	Feb 1948	USSR/Medicine - Poisons and Poisoning, Metallic Medicine - Arsenic and Arsenic Compounds
"The Interrelation of Streptococcus Lactis and Staphylococcus Aureus in Ewe's Milk Cheese," N. D. Trofimova, 4 1/2 pp		"Case of Chronic Arsenic Poisoning," G. I. Mironov-Yavel'berg, Cent Sanitary-Hygiene Lab, Rostov Don Municipal Health Sec, 1 p
"Gig 1 San" No 2		"Gig 1 San" No 2
Shows Streptococcus lactis in ewe's milk are antagonistic to Staphylococcus aureus. Staphylococcus rapidly die off, and transform to nonpathogenic form; and endotoxin disintegrates. Staphylococcus aureus has negative effect on Streptococcus lactis, produces early metamorphism, affects toxicity of ewe's milk, and lowers its acidity.		Describes case of man working in storehouse for agricultural insecticides. Describes symptoms and diagnosis. Found that patient was susceptible to arsenic paint on walls of his office.
FDB 44T44		FDB 44T45
USSR/Medicine - Vitamin C Chemistry - Hydrogen Sulfide, Absorption Capacity of	Feb 1948	USSR/Medicine - Hygiene and Sanitation Medicine - Water Supply
"Hydrogen Sulfide Apparatus for Vitamin Extraction," Maj I. L. Korotkov, Med Corps, SEO (San-Epidem Section), Nth Okrug, 2 pp		"Problem of Water Supply in Demolished Towns," Maj B. P. Tumbotin, Med Corps; Maj I. M. Tsvang, Med Corps, 1 p
"Gig 1 San" No 2		"Gig 1 San" No 2
Shows that, despite lack of proper equipment, possible to extract vitamin C by means of hermetically sealed test tubes and absorbent material. Describes apparatus and absorbent material, in this case, hydrogen sulfide. Effective apparatus to determine Vitamin C content in food.		Discusses some of problems met in restoring water supply to part of city of L., which had prewar population of 100,000. One of most important operations is constant check on bacterial content of the water, and particularly on that part of water supply going to outskirts of the town. In addition to ascertaining purity of the water, conduits should
FDB 44T46		FDB 44T47

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
<p>USSR/Medicine - Pediculi Medicine - Delousing</p> <p>Feb 1948</p> <p>"Hot Vapor Mixtures as a Means of Disinfection," M. I. Badanov, A. S. Borshchanskaya, M. L. Kuz'minova, Sec Disinfection, Uzbek Inst Epidemiol and Microbiol, 3 pp</p> <p>"Gig i San" No 2</p> <p>Experiments show that 15-minute exposure at 70° results in 100% mortality to lice and nits. Vapor mixtures recommended to disinfect epidemic typhus, as well as disinfect respiratory infection cases under conditions established by means of experiments and studies.</p> <p>FDB 44T48</p>	<p>USSR/Medicine - Hygiene and Sanitation (Contd)</p> <p>Feb 1948</p> <p>be cleansed periodically, and water should be sufficiently chlorinated.</p> <p>FDB 44T47</p>	
<p>USSR/Medicine - Hygiene and Sanitation Medicine - Air, Impurities</p> <p>Feb 1948</p> <p>"Hygienic Control of Composition of Air in Railroad Tunnels during the Passage of a Locomotive," I. N. Popov, 5 pp</p> <p>"Gig i San" No 2</p> <p>Has been noticed that accumulation of gases by locomotive smoke in tunnel can be poisonous to locomotive and train personnel. Study conducted on composition and amount of poisonous gases released by average locomotive. Experiments conducted to determine necessary ventilation to clear tunnel of such gases to insure safety for train personnel. Presents some 14 points which will aid greatly in decreasing danger.</p> <p>FDB 44T49</p>	<p>USSR/Medicine - Hygiene and Sanitation Medicine - Air, Impurities</p> <p>Feb 1948</p> <p>"Microclimate of a City as Object of Hygienic Research," B. V. Rikhter, 3 pp</p> <p>"Gig i San" No 2</p> <p>Recently in connection with general study of climate has arisen the new field, study of microclimate. Discusses some questions on methods of studying it. Microclimate greatly affected by local conditions, and study particularly important in large cities. Sets forth facts which must be noted in plotting microclimate of a city. Concludes that most important future task to determine effect of microclimate on diseases of population.</p> <p>FDB 44T50</p>	
<p>USSR/Medicine - Epilepsy, Jacksonian Medicine - Tissue</p> <p>Mar 1948</p> <p>"Experience with Tissue Therapy of Epilepsy Patients by Academician Filatov's Method," Prof S. A. Bakkal, L. L. Papadato, Odessa Med Inst, 5 pp</p> <p>"Khirurgiya" No 3</p> <p>Discusses clinical reports on five cases. Concludes that Filatov's method at present suitable method for treating traumatic Jackson's epilepsy, effective and perfectly safe. In genuine epilepsy, use of tissue therapy also gives very good results for a time, after which attacks may recur. However, matter requires further study.</p> <p>FDB 44T51</p>	<p>USSR/Medicine - Typhus Medicine - Stomach, Perforation</p> <p>Mar 1948</p> <p>"Acute Stomach in Infectious Diseases," I. I. Zaltsberg, Faculty, Surgical Clinic, Second Moscow Med Inst, 6 pp</p> <p>"Khirurgiya" No 3</p> <p>Discusses number of clinical cases, concluding that in typhus, any symptom of acute stomach requires constant attention, that unnecessary to give sedative unless all standard symptoms of perforation evident, and preferable to resort to operation which may be useless than to ignore perforation.</p> <p>FDB 44T52</p>	
<p>USSR/Medicine - Hemorrhage Medicine - Blood, Coagulation</p> <p>Mar 1948</p> <p>"Stanching Encephalic Hemorrhages by Electrical Coagulation," A. G. Sosnovskiy, Hosp Surgical Clinic, Odessa Med Inst; Odessa Br, Ukrainian Inst Urgent Surgery and Blood Transfusion, 5 pp</p> <p>"Khirurgiya" No 3</p> <p>Discusses results of experiments on dogs and rabbits. Concludes that: Electrical coagulation has good hemostatic effect in cerebral hemorrhages. Hemostasis cannot always be counted on in hemorrhages from medium-caliber membrane and cerebral vessels, since coagulation scab may come off and start another</p> <p>FDB 44T53</p>	<p>USSR/Medicine - Blood Pressure, Venous Medicine - Blood Pressure, Determination</p> <p>Mar 1948</p> <p>"A New Model of a Phlebotonometer," N. M. Davydov, V. B. Blank, Leningrad, Second Chair Internal Diseases, State Order Lenin Inst for Advancement of Doctors imeni S. M. Kirov, 2 pp</p> <p>"Klinich Medits" Vol XXVI, No 3</p> <p>Describes new model for apparatus to measure blood pressure in veins. New method overcomes earlier objection to use of phlebotometer: Fact that values obtained to be used as scale had to vary according to pathologic condition of patient. Gives diagram of apparatus, and brief account of operation.</p> <p>FDB 44T54</p>	

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USSR/Medicine - Hemorrhage (Contd) Mar 1948	hemorrhage. Electric coagulation quite unreliable in large cerebral blood vessels. Electric coagulation may increase and prolong brain inflammation resulting from operational trauma.	USSR/Medicine - Blood Pressure, Venous Mar 1948 (Contd)
FDB 44T53	USSR/Metals Feb 1948	Deputy of Second Chair of Internal Diseases: Prof I. M. Flekel'.
USSR/Metals Metallurgy, Ferrous Oxygen	"Combustion of Carbon," Z. V. Chukanov, Corr Mem, Acad Sci USSR, Bur Oxygen Use, Ministry Ferrous Metal USSR, 4 pp	FDB 44T54
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5	Discusses oxygen zone in carbon channel. Presents differential equation for determination of distribution of oxygen concentration. Observes that dimensions of oxygen zone vary little with changes in temperature of the reaction. Submitted, 15 Dec 1947.	USSR/Metals Feb 1948
FDB 44T55	USSR/Metals Alloys, Ferrous Resistance, Electric - Changes	USSR/Metals Ferromagnetism Alloys, Ferrous
"Special Features of Change in Electrical Resistance of Various Ferromagnetic Alloys in a Magnetic Field," S. V. Vensovskiy, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 4 pp	"Zhur Tekh Fiz" Vol XVIII, No 2	"Theory of Ferromagnetism in Binary Alloys," S. V. Vensovskiy, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 14 pp
Indicates possible explanation for some recently discovered peculiarities in relationships of signs of longitudinal and transverse Thomson effects in number of ferromagnetic substances.	FDB 44T57	"Zhur Tekh Fiz" Vol XVIII, No 2
USSR/Metals Feb 1948	USSR/Metals Alloys, Ferrous Resistance, Electric - Changes	Gives simple generalization of quantum theory of ferromagnetism for case of binary ferromagnetic alloys. Finds that dependence exists between ferromagnetic Curie point of these alloys and concentration of components and degree of close arrangement in distribution of atoms about nodes of crystalline
"Change in Electrical Resistance of High Coercive Alloys in a Magnetic Field (Thomson Effect)," V. I. Drozhzhina, Ya. S. Shur, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 4 pp	FDB 44T58	FDB 44T56
Attempts to explain connection between magnitude of coercive force and relationship of signs of longitudinal and transverse Thomson effects on specimens of high coercive al'ni [sic] alloy (58% Fe, 27% Ni, 15% Al) in which, by varying conditions of thermal treat-	FDB 44T59	USSR/Metals (Contd) Feb 1948
FDB 44T58	USSR/Metals Feb 1948	lattice of alloy. Shows that in low temperatures, also place of similar dependence of spontaneous magnetization upon the temperature in pure ferromagnetic metals. Gives critique of quasi-classic treatise on ferromagnetism of alloys by Bitter.
FDB 44T59		"Effect of Austenite on Magnetization Curve of Steel," V. V. Parfenov, R. I. Yanus, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 6 pp
FDB 44T59	USSR/Metals Feb 1948	"Zhur Tekh Fiz" Vol XVIII, No 2
FDB 44T59	USSR/Metals Feb 1948	Gives experimental magnetization curves for tempered forms of KhG steel containing 74% austenite in field intensities of 20 - 12,000 oersteds. Shows that proportionality between magnetization and concentration of ferromagnetic phase, natural in the

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
USSR/Metals (Contd)	Feb 1948	USSR/Metals (Contd)
<p>ment, possible to measure magnitude of coercive force over wide range. Provides answer to question of whether or not "anomalous" behavior of Thomson effect caused by same structural transformations causing appearance of high coercive force, or whether "anomaly" independent of structural transformation and maintained even in considerably decreased coercive forces of same form and same chemical composition.</p>		Feb 1948
		<p>range of high flux, maintained to considerable degree also in range of lower flux, in spite of calculations published earlier by Sadikov.</p>
FDB	44T58	FDB
<p>USSR/Metals Steel, Transformer Magnetism</p>	Feb 1948	Feb 1948
<p>"Effect of Processes of Relaxation and Recrystallization on Magnetic Properties of Weakly Magnetic Materials," V. I. Drozhzhina, M. G. Luzhinskaya, Ya. S. Shur, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 7½ pp</p>		<p>"Stress Situation in Circular Iron Plate with Sharply Defined Texture during Deep Drawing: I," K. V. Grigorov, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 11½ pp</p>
<p>"Zhur Tekh Fiz" Vol XVIII, No 2</p>		<p>"Zhur Tekh Fiz" Vol XVIII, No 2</p>
<p>Reports on study of magnetic properties of previously deformed specimens of most frequently used soft magnetic materials: Transformer steel and molybdenum permalloy, after tempering at different temperatures</p>		<p>Calculates azimuth distribution of sheering stress in circular iron plate with sharply defined texture in drawing cylindrical socket. Also calculates all systems of slipping in different types of textures. Azimuth distribution of sheering stress sharply</p>
FDB	44T60	FDB
USSR/Metals (Contd)	Feb 1948	USSR/Metals (Contd)
<p>and periods, because of fact that these different specimens are distinguished by degree of regularity of crystalline lattice. On basis of results, rational technology of preparation of magnetic conductors from soft magnetic materials tested.</p>		Feb 1948
		<p>anisotropic and depends upon character of texture. Explains unequal drawing, formation of creases and folds in places of least drawing, of transverse and longitudinal cracks, and unevenness of thickness and hardness in edge of product.</p>
FDB	44T60	FDB
<p>USSR/Metals Ferromagnetism Steel Alloys</p>	Feb 1948	Feb 1948
<p>"Magnetic Properties of Chrome-Nickel-Molybdenum Steels after Various Thermal Treatments," P. N. Zhukova, M. N. Mikheyev, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 10 pp</p>		<p>"Distribution of Deformation According to Volume in Metallic Crystals during Their Deformation by Sliding," D. G. Kurnosov, N. M. Tronina, M. V. Yakumovich, 10 pp</p>
<p>"Zhur Tekh Fiz" Vol XVIII, No 2</p>		<p>"Zhur Tekh Fiz" Vol XVIII, No 2</p>
<p>Studies magnetic and electrical properties of two chrome-nickel-molybdenum steels in comparison with mechanical properties after different thermal treatment. Establishes possibility of magnetic control of quality of thermal treatment of product of 18KhNMA</p>		<p>Plastic deformation of monocrystalline specimens localized only to insignificant degree, but more distributed throughout entire volume of crystal (in slight deformations). Fact, established experimentally, that entire volume of crystal affected in</p>
FDB	44T62	FDB
		44T63

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
USSR/Metals (Contd)	Feb 1948	USSR/Metals (Contd)
steel. Establishes different magnetic properties with same mechanical properties for tempered products from 18KhNMA steel after high temperature annealing, properties depending on manner of cooling product in hardening.		process of deformation, beginning with very slightest degrees of deformation, permits us to understand consolidation of all crystals in deformation without admission of presence of exceptionally sharply defined heterogeneity of structure.
FDB	44T62	FDB
USSR/Metals	Feb 1948	USSR/Metals
Steel Plates - Stresses Steel - Thermal Measurements		Iron Slag
"Residual Stress in Cemented Steel Plates Chilled to Temperature of Below $A_{c3}$ ," E. S. Yakovleva, M. V. Yakutovich, 4 pp		"Texture of Iron Slag: IV, Research at 'Intermediate' Zone of Temperature," V. I. Arkharov, F. P. Butra, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, Molotov State U, 4½ pp
"Zhur Tekh Fiz" Vol XVIII, No 2		"Zhur Tekh Fiz" Vol XVIII, No 2
Describes experiments made to explain magnitude of stress arising in incomplete cooling of cemented specimens. Obtained curves for magnitude and distribution of stress arising in cemented-plastic low-carbon steel cooled to temperature of below $A_{c3}$ .		No texture observed in slag formed by oxidizing iron in air at temperature of 500° C. At 500° C texture arises in external layer of slag characterized by a grouping of $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> phases parallel to surface. Describes changes in texture for gradual increases
FDB	44T64	FDB
USSR/Metals	Feb 1948	USSR/Metals (Contd)
Alloys Electromagnetism		in temperature. Structure of slag, characterized by newly discovered texture, reflects condition intermediate between low-temperature stability against oxidation and high-temperature strong oxidation of iron.
"Effect of Remote Arrangement and Composition of Atoms on the Hall Effect in Regulated Alloys," A. A. Smirnov, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 8 pp		
"Zhur Tekh Fiz" Vol XVIII, No 2		
Calculates Hall's constant for regulated alloys, and shows it possible to obtain change in sign of Hall's constant in process of regulation. Not a quantitative description of Hall effect in regulated alloys, as experiments conducted in simplified models of the metal and in some cases artificial alloy structure used.		
FDB	44T66	FDB
USSR/Metals	Feb 1948	USSR/Metals
Electrolysis Chromium		Steel Alloys Heat Treatment
"Nature of Hexagonal Chrome and Structure of Electrolytic Chrome Deposit," S. A. Nemmonov, Inst Phys Metals, Ural Affiliate, Acad Sci USSR, Sverdlovsk, 7 pp		"Thermoelectric Study of Certain Processes Taking Place in Alloys: I." Yu M. Margolin, 11 pp
"Zhur Tekh Fiz" Vol XVIII, No 2		"Zhur Tekh Fiz" Vol XVIII, No 1
Hexagonal chrome and hexagonal nickel obtained by electrolytic precipitation must be looked on not as allotropic modifications inherent to dense metallic chrome and nickel, but as metastable phase of introduction of hydrogen in chrome and nickel. Furnishes basis to explain observed variety of structural		Describes experiments designed to study use of electromotive force in process of tempering and cooling various types of carbon steel, and process of transformation in tetragonal martensite during annealing.
FDB	44T67	FDB
		44T68

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
USSR/Metals (Contd)	Feb 1948	Jan 1948
peculiarities of various precipitates of electrolytic chrome, as well as to explain variation of physico-mechanical properties of these precipitates.		USSR/Metals Steel, High Speed Boron "Effect of Boron on Structure of High Speed Steel," A. K. Shevelov, Gor'kiy Physicotech Res Inst, 6 pp' "Zhur Tekh Fiz" Vol XVIII, No 1 Describes X-ray research on carbon steels, including details of experiments on alloys, and tabulates results. Concludes that addition of boron permits preservation in calcinated RFl steel of residual austenite.
FDB	44T67	FDB
USSR/Metals Steel Alloys Currents, Electric - High Frequency	Jan 1948	44T69
"Transformation during Heating by High Frequency Currents," I. N. Kidin, Moscow Steel Inst imeni I. V. Stalin, 10 pp "Zhur Tekh Fiz" Vol XVIII, No 1 Established theory on transformation and carried out extensive study of U7 steel showing that when heating by high frequency current possible to obtain structure of cryptocrystalline martensite.		USSR/Minerals Combustion Coal "Some Problems of Combustion," V. S. Pushkin, 11 pp "Zhur Tekh Fiz" Vol XVIII, No 1 Discusses combustion of coal particles, burning out of coal seam from the surface, and combustion of coal wall in a passage. Includes formulas and experimental data.
FDB	44T70	FDB
USSR/Nuclear Physics - Electrons, Positive Feb 1948 Nuclear Physics - Gamma Radiation		44T71
"Angular Distribution of the -Quanta Which Are Formed in the Annihilation of Positrons," N. A. Vlasov, E. A. Tsirel'son, Phys Inst, Leningrad State U, 3½ pp "Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5 Experiments set up to solve two problems: 1) to determine form of distribution, and 2) conclusively determine sensitivity of calculators based on insufficient data on relation of positrons to electrons. Submitted by Academician P. I. Lukirskiy, 8 Dec 1947.		USSR/Nuclear Physics - Nuclear Research Feb 1948 Nuclear Physics - Isotopes "Direct Methods of Isotopic Identification in Nuclear Research," A. P. Grinberg, 3½ pp "Uspekhi Fiz Nauk" Vol XXXIV, No 2 Describes two methods used to determine mass number of isotopes resulting from absorption of neutrons. In first method, substance tested subjected to prolonged and powerful neutron bombardment. Tested material must have its natural isotopic content. Possible to determine the isotope that absorbed neutrons. In the second test, materials prepared so that they had particularly high content of one
FDB	44T72	FDB
USSR/Nuclear Physics - Neutrons - Measure- Feb 1948 ments Nuclear Physics - Neutrons - Cross Sections		44T73
"Interaction of Neutrons and Nuclei," V. N. Kondrat'yev, 92 pp "Uspekhi Fiz Nauk" Vol XXXIV, No 2 Discusses theory of nuclear reaction, methods of measuring cross section, and experimental data. Describes theory as it applies to cross-section measurements. Contains some 57 pages of tables showing element tested, the E <sub>n</sub> per Mev, source of neutrons, σ, σ of dispersion, σ of absorption, and various remarks. Long bibliography contains many works of foreign scientists.		USSR/Nuclear Physics - Nuclear Research Feb 1948 (Contd) particular isotope. Isotopes differed with samples. Studies conducted to determine amount of absorption by each of various samples. Most of material in article is from foreign sources.
FDB	44T74	FDB
		44T73



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USSR/Nuclear Physics - Electron Theory Feb 1948 Nuclear Physics - Nuclear Theory	<p>"Derivation of the Schwarzschild-Nordstrom Type for Ordinary Point Charges (Classical Theory of the Electron)," M. F. Shirokov, Moscow State U, 7 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Shows that for the point charge <math>e_0</math> general solution of the equation for Einstein's tension and the electromagnetic field, including product function <math>\mu(r)</math>, after proper selection, can be applied to gravitational as well as electromagnetic field and yet have no particular characteristic for all ranges of measurement for <math>r</math> within the limits of zero to infinity.</p>	USSR/Nuclear Physics - Mass Spectrometers Feb 1948 Nuclear Physics - Haloids
FDB 44T75		<p>"Mass Spectrometric Study of Formation of Negative Ions of Haloids during Interaction of Haloid Salts with the Surface of Incandescent Tungsten," N. I. Ionov, Phys Chem Inst, Acad Sci USSR, Leningrad, 13 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Mass spectrometric study made on negative ions (NaCl, KCl, RbCl, CsCl, etc.) on incandescent tungsten. In all cases, possible to determine the atom of negative haloid ions entering into composition of the salt studied. Shows that temperature re-</p>
USSR/Nuclear Physics - Electron Theory Feb 1948 (Contd)		USSR/Nuclear Physics - Mass Spectrometers Feb 1948 (Contd)
Shows that electron has right relative 4-vector energy impulse and that the tensor of the energy impulse satisfies Lau's theorem. Submitted for publication, 5 Jul 1947.		relationship for formation of negative atom ions can be calculated on thermodynamic formula, analogous to Sacks-Langmuir's formula. Submitted for publication, 6 Jun 1947.
FDB 44T75		FDB 44T76
USSR/Physics Feb 1948 Electrolytes Conductivity		USSR/Physics Feb 1948 Hydraulics Quantum Mechanics
<p>"Theory of Electroconductivity of Strong Electrolytes," I. Khalatnikov, Inst Phys Problems, Acad Sci USSR, 14 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Describes nonstationary problem: The binary electrolyte with equal movement of both types of ions at the instant when time <math>t = 0</math>, is acted on by constant external electric field <math>K</math>. Determines electroconductivity of this electrolyte, as function of time and intensity of constant electric field. Submitted for publication, 18 Jun 1947.</p>		<p>"Quantum Hydromechanics," K. P. Gurov, 16 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Discusses construction of general macroscopic hydrodynamic equations for "normal" fluids, based on quantum mechanical equations for the molecular system. Pays particular attention to fundamentals of such construction and to analysis of physical prerequisites, and fundamentals of method hereby developed, which appears to be quantum analogy of Bogolyubov. Evaluation of final results shows that</p>
FDB 44T77		FDB 44T78
USSR/Physics Feb 1948 Electromagnetic Waves Fields, Electromagnetic		USSR/Physics (Contd) Feb 1948
<p>"Remarks on Spherical Electromagnetic Waves," V. Sorokin, Ivanovo State Pedagogical Inst, 8 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>With aid of vector functions, author shows how it is possible to obtain, by elementary methods, functions and representations for electromagnetic spherical waves in empty space and electromagnetic fields of multipoles. Submitted for publication, 25 Jun 1947.</p>		initial quantum-mechanical picture reflected in formulas for the coefficient of hydrodynamic equations. Submitted for publication, 17 Nov 1947.
FDB 44T79		FDB 44T78

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
USSR/Physics Luminescence Zinc Oxide  "Spectra of Luminescence of Zinc Oxide," F. I. Vergunas, F. F. Gavrilov, Siberian Physicotech Inst, Tomsk U, 3½ pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  Studies spectra of luminescence of zinc oxide, generated as a result of thermal processing at various temperatures. Submitted for publication, 23 Jun 1947.	Feb 1948	USSR/Physics Low Temperature Research Conductivity  "Electroconductivity of Ferromagnets at Low Temperatures," S. V. Vonsovskiy, Inst Phys Metals, Ural Br, Acad Sci USSR, 5 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  Electrical resistance at low temperatures determined by means of experiments on approximate models of ferromagnets, acted on by various "outer" s-electrons of conductance, and "internal" d-electrons which cause spontaneous magnetization. Shows that process of collision of s-electrons and "ferromag-
FDB	44T80	FDB
USSR/Physics Spectra, Band Spectra, Adsorption  "Theory of Adsorption Spectrum of Molecular Crystals," A. S. Davydov, Inst Phys, Acad Sci, Ukrainian SSR, 9 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  States general theory of energy state of electrons in molecular crystals. Shows that in this type of crystals occurs displacement and division of energy levels into two components, having different polarization. Submitted for publication, 19 Jun 1947.	Feb 1948	USSR/Physics (Contd) Feb 1948  nons" ("spin wave" of d-electrons) during magnetizing, generates electric resistance specific for ferromagnets which vary with temperature T <sup>2</sup> . Submitted for publication, 16 Oct 1947.
FDB	44T82	FDB
USSR/Physics Spectra, Adsorption Spectroscopy  "Theory of Adsorption Spectrum of the Diphenyl Molecule," A. S. Davydov, Inst Phys, Acad Sci, Ukrainian SSR, 9 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  Calculates spectrum for the diphenyl molecule on basis of observations of division of energy stages of the phenyl group. Submitted for publication, 19 Jun 1947.	Feb 1948	USSR/Physics Crystals Conductivity  "New Opinion on Electronic Conductivity in Ionic Crystals," S. I. Pekar, Inst Phys, Acad Sci, Ukrainian SSR, Kiev State U, 5 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  States that basic current flow in semiconductors not that formed by electrons in conduction zone but by "polaron" current (formed by electrons, localized in ideal ion crystal). Gives methods to calculate movement of "polarons" in external electric field. Submitted for publication, 14 Jun 1947.
FDB	44T83	FDB
USSR/Physics Polarization Dispersion  "Polarization of the Line of Combination Dispersion," M. V. Vol'kenshteyn, State Opt Inst, 11 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  Rules for general approximation based on valency-optical system. Rules applicable to polarization of the line of combined dispersion, and considered supplementary to Plachek's rules. Gives experimental confirmation of rules. Submitted for publication, 24 May 1947.	Feb 1948	USSR/Physics Polymers Polarographic Analysis  "Depolarization of Light Dispersed by Polymer Solutions," E. Frisman, V. Tsvetkov, Leningrad State U, 12 pp  "Zhur Eksper i Teoret Fiz" Vol XVIII, No 2  Studies depolarized light, dispersed by some rubber-like polymers in solution, for various conditions of polarization of the falling light. Determines concentration relationship of depolarization in polystyrene solutions and high molecular isobutyl (opanol). Experiments show that the whole macromole-
FDB	44T85	FDB

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
<p>USSR/Physics Luminescence Crystals - Color</p> <p>Feb 1948</p> <p>"Nature of the Centers of Luminescence in Photochemically Colored Alkali-Haloid Crystals," M. L. Kats, Saratov State U, 10 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Studies relation between luminescence of photochemically colored crystals of NaCl and KCl and concentration of color centers, and determines that luminescence of these crystals not accidental result of admixtures of foreign atoms, but result of optical and thermal dissociation of the F-centers. Evaluates</p> <p>FDB 44T87</p>	<p>USSR/Physics (Contd)</p> <p>Feb 1948</p> <p>cule is dispersion center in the solution. Molecular chains have appearance of irregular knots. Submitted for publication, 7 Jun 1947.</p> <p>FDB 44T86</p>	
<p>USSR/Physics (Contd)</p> <p>Feb 1948</p> <p>mechanism of illumination of colored alkali-haloid crystals. Submitted for publication, 4 Jun 1947.</p> <p>FDB 44T87</p>	<p>USSR/Physics Luminescence Electrons</p> <p>Feb 1948</p> <p>"Influence of Distribution of Electrons According to Level of Localization on Course of Luminescent Processes in CaS-SrS-Ce, Sm, La-Phosphori, and Number of Multiple Localized Electrons," V. L. Levshin, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 15 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Shows that the progress of various illuminating processes of subject substances dependent not only on number of ionized centers and corresponding lo-</p> <p>FDB 44T88</p>	
<p>USSR/Physics Illumination Mathematics, Applied</p> <p>Feb 1948</p> <p>"Principle of Illumination," A. N. Tikhonov, A. A. Samarskiy, Moscow State U, 6 pp</p> <p>"Zhur Eksper i Teoret Fiz" Vol XVIII, No 2</p> <p>Formulates general principle of illumination for wave equation to find limited solutions that satisfy this equation (where <math>t \rightarrow</math> infinite) in accordance with Kosh's works. Shows that for unlimited spaces, method produces solutions conforming to solutions obtained by Zomerfel'd. Submitted for publication, 8 Jul 1947.</p> <p>FDB 44T89</p>	<p>USSR/Physics (Contd)</p> <p>Feb 1948</p> <p>calized electrons, but also on distribution of electrons along levels of localization. Discusses phenomenon of recurrent discharges and phosphorescence. Gives schematic calculation of build-up of light discharges and phosphorescence during intense discharges, as well as illumination of phosphors with infrared rays. Submitted for publication, 30 May 1947.</p> <p>FDB 44T88</p>	
<p>USSR/Physics Amplifiers, Photoelectric Cathodes, Photoelectric</p> <p>Jan 1948</p> <p>"Photoelectric Amplifier with an Antimony-Cesium Cathode," S. M. Faynshteyn, Inst Automatics and Telemech, Acad Sci USSR, 10 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 1</p> <p>Describes experiments on special photoelectric amplifier, and gives details of method of research, method of activation, photosensitivity of the cathode, secondary electronic emission of Cu-S-Cs layer, and spectral sensitivity.</p> <p>FDB 44T90</p>	<p>USSR/Physics Luminescent Materials Photometry</p> <p>Jan 1948</p> <p>"Photoelectric Photometry of Temporarily Luminous Bodies," S. A. Fridman, N. O. Chechik, Inst Automatics and Telemech, Acad Sci USSR, 4 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 1</p> <p>Discusses fading effect of temporarily luminous bodies, points out necessity of detailed study of this effect from theoretical and practical viewpoint, and makes suggestions for photoelectric experiments.</p> <p>FDB 44T91</p>	

RESTRICTED	FDB Periodical Abstracts Scientific No 44	RESTRICTED
<p>USSR/Physics Sound Waves Sound - Measurements</p> <p>Jan 1948</p> <p>"Sound Key and Homogenous Sound Lens," L. D. Rozenburg, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 24 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 1</p> <p>Describes in detail experiments designed to produce accurate solution to problem of the passage of sound waves through prism or lens, and tabulates results.</p> <p>FDB 44T92</p>	<p>USSR/Physics Centrifuges Kinetics</p> <p>Jan 1948</p> <p>"Theory of Centrifuging," V. I. Sokolov, All-Union Sci Res Inst Chem Mach Construction, 6 pp</p> <p>"Zhur Tekh Fiz" Vol XVIII, No 1</p> <p>Describes experiments leading to conclusion that use of laws of ground mechanics permits subjection of centrifuging process to theoretical analysis and discovery of relations characterizing its kinetics.</p> <p>FDB 44T93</p>	
<p>USSR/Physics Spectrographic Analysis Spectra, Vibration</p> <p>Feb 1948</p> <p>"Frequency of Vibration of the Hydroxide Group of Aliphatic Acids in the Gas Phase in Spectra of Combinational Dispersion of Light," M. I. Batuyev, Inst Org Chem, Acad Sci USSR, 3½ pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Many studies convinced scientists of absence of the frequency O-H in combinational spectrums of aliphatic acids. Series of theories developed to support this fact. Author describes series of experiments he conducted. Results disprove all previous work done on subject. Submitted by Academician B. A. Kazanskiy, 6 Dec 1947. FDB 44T94</p>	<p>USSR/Physics Crystal Structures Indium</p> <p>Feb 1948</p> <p>"Crystalline Structure of InBi," Ye. S. Makarov, 1 p</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Briefly describes crystalline structure of the mineral compound InBi and In<sub>2</sub>Bi. Submitted, 9 Dec 1947.</p> <p>FDB 44T95</p>	
<p>USSR/Physics Magnetism Alloys, Magnetic</p> <p>Feb 1948</p> <p>"Phenomena of Retardation of Abrupt Changes in Magnetization," R. V. Telesin, Sci Res Inst Phys, Moscow State U imeni M. V. Lomonosov, 2 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>During course of investigating magnetic viscosity of ferrous-nickel alloys, new phenomenon determined: intense retardation of abrupt changes in magnetization (Barkhausen effect). Describes experiments set up to clarify phenomenon, and evaluation of results. Submitted by Academician V. F. Mitkevich, 4 Dec 1947.</p> <p>FDB 44T96</p>	<p>USSR/Physics Gas Flow Thermodynamics</p> <p>Feb 1948</p> <p>"Some Movements of Gas with Variable Entropy and Full Energy," Yu. V. Rudnev, 2 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes case of plane-parallel wholly ideal gas with established adiabatic movement. Submitted by Academician M. V. Kel'dysh, 3 Dec 1947.</p> <p>FDB 44T97</p>	
<p>USSR/Physics Vibration, Supersonic Frequency Vibration - Absorption</p> <p>Feb 1948</p> <p>"Absorption of Supersonic Vibrations by Hard Bodies," S. Ya. Sokolov, Leningrad Electrotech Inst imeni V. I. Uliyanov, 3½ pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Gives results of studies on absorption of supersonic vibrations by hard bodies. Experiments conducted on various metal-containing materials, as well as monocrystalline quartz, and rock salt. Concludes that degree of absorption greatly dependent on amount of elastic irregularities present in material being</p> <p>FDB 44T98</p>	<p>USSR/Physics Elasticity Mathematics, Applied</p> <p>Feb 1948</p> <p>"Horizontal Waves and Relay Waves in Anisotropic Medium," V. A. Sveklo, Karelo-Finnish U, Petrozavodsk, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 5</p> <p>Describes method for calculations on, and also discusses horizontal waves as well as Rayleigh waves for, elastic anisotropic semiplane. In particular, describes operation of source of fluctuation in elastic semispace. Submitted by Academician V. I. Smirnov, 8 Dec 1947.</p> <p>FDB 44T99</p>	

USSR/Physics (Contd) Feb 1948  
 tested. Submitted by Academician M. A. Leontovich,  
 20 Dec 1947.

USSR/Physics Feb 1948  
 Acoustics  
 Optics  
 "A. G. Stoletov's 'Collection of Papers: Vol III,  
 Introduction to Acoustics and Optics'," N. Andreyev,  
 1 p  
 "Uspekh Fiz Nauk" Vol XXXIV, No 2  
 Reviews 624-page book released by State Publishing  
 House for Technical and Theoretical Literature in  
 1947. Consists of collection of articles by var-  
 ious scientists in field of acoustics and optics.

FDB 44T98  
 USSR/Physics Feb 1948  
 Ionosphere  
 Heaviside Layer

FDB 44T100  
 USSR/Physics Feb 1948  
 Bibliography

"Contemporary Status of Question of Research on the  
 Ionosphere," Ya. L. Al'pert, 4 pp

"Annotated List No 31 of Nonperiodical Literature  
 on Physical Sciences Published in the USSR during  
 the Third Quarter of 1947," S. A. Shorygin, 10 pp

"Uspekh Fiz Nauk" Vol XXXIV, No 2

"Uspekh Fiz Nauk" Vol XXXIV, No 2

Discusses general outline on propagation of radio  
 waves in the ionosphere, structure of, diurnal and  
 seasonal motions of, data on various layers of, and  
 irregular phenomena of the ionosphere. Author states  
 that not his intention to discuss entire subject.  
 However, he presents data on the ionosphere assembled  
 basically by radio-physical methods. Long bibliog-  
 raphy contains works by Soviet as well as foreign  
 authors. FDB 44T101

Lists books published by various authors in the  
 Soviet Union indexed according to author. Briefly  
 describes contents of various books and articles.

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List of Abbreviations  
 used in FDB Periodical Abstracts

ID Intelligence Division Library  
 AMC Air Documents Division, Air Materiel Command  
 ST Reference Division, State Department  
 BM Bureau of Mines, Dept of Interior  
 BS National Bureau of Standards  
 SI Smithsonian Institution  
 LC Library of Congress  
 FDB Foreign Documents Branch, CIA  
 COM Department of Commerce  
 AF A-2 Library, USAF

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 ST Reference Division, State Department  
 BM Bureau of Mines, Dept of Interior  
 BS National Bureau of Standards  
 SI Smithsonian Institution  
 LC Library of Congress  
 FDB Foreign Documents Branch, CIA  
 COM Department of Commerce  
 AF A-2 Library, USAF