USSR

LEBEDEV, B. I., et al., Avtomat. upr. i vychisl. tekhn., Vyp. 10, Moscow, Mashinostroyeniye Press, 1972, pp 6-40

informative attributes. The necessity for determining the strict physical and mathematical informativeness criteria in the recognition problem is noted.

The concluding part of the paper is devoted to adaptive recognition automata of the perceptron type. The physical model of the mechanism of operation of the perceptron and its analogy to the classical recognition theory are discussed. The bibliography has 28 entries.

2/2

USSR

UDC 654.034.5

BURAK, B.A., LEBEDEV, V.I., and PLOTNIKOV, V.N., Moscow Higher Technical College imeni N.E. Bauman

"Some Problems in Selecting Criteria in the Task of Pattern Recognition"

Leningrad, Priborostroyeniye, No. 5, 1971, pp 66-70

Abstract: The task of selecting informative criteria is a bottleneck in the theory of pattern recognition because of the lack of an adequate mathematical apparatus. Estimates which are used in information theory do not take into consideration the specific features of pattern recognition. The authors of the present article assume that the criteria being used are mutually statistically independent and that their individual probability distributions are normal and have the same parameters. By applying these assumptions to two commonly used estimates, they obtain formulas for a combined estimate of the statistical distributions and for the probability of an error in recognition. The use of these formulas gives a rough estimate of the required number of inputs of a recognition automaton. The authors emphasize that this method of selecting criteria is only approximate, and its effectiveness is also limited by the assumption of normal probability distributions.

1/1

USSR

UDC 8.74

PLOTNIKOV, V. N., and SUKHANOV, V. A.

"Certain Problems in the Formation of Symbol Spaces in Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No 10, Moscow, "Mashinostroyeniye," 1972, pp 229-240 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V656)

Translation: Problems of forming independent symbols on the basis of an initial set of correlated parameters are discussed. A linear transformation is applied for this purpose which makes it possible to obtain parameters with particular statistical properties (minimal or maximal dispersions). This technique makes it possible to formulate a small number of new informative indicators. The informative value of the indicators is determined by an approximation formula. Authors abstract.

1/1

USSR

UDC 8.74

LEBEDEV, B. I., and PLOTNIKOV, V. N.

"Certain Statistical Aspects of Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No 10, Moscow, "Mashinostroyeniye," 1972, pp 6-40 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V660)

Translation: A general formulation and mathematical model of the problem of pattern recognition as a problem in minimizing or maximizing of a certain functional of the quality of the recognizing automaton is considered, in which the search for a family of extremals and the selection among them is carried out during the learning process of the automaton by means of a change in certain of its parameters. Finding the recognition circuit makes it possible to construct the sequence of the solution of a typical recognition problem. Determining the circuit and the sequences of the solution of the pattern recognition problem makes it possible to turn to a consideration of the basic method of solving the problem. These methods are classified in the paper on the basis of the coincidence measures used and the methods for determining statistical descriptions of separate classes of patterns. Algorithms with a rigid logic and adaptive algorithms are

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USSR

LEBEDEV, B. I., and PLOTNIKOV, V. N., Avtomat. upr. i vychisl. tekh., No 10, Moscow, "Mashinostroyeniye," 1972, pp 6-40

considered from the aspect of the method used for constructing statistical descriptions of the separate classes. Attention is also given in the paper to problems of selecting informative indicators. The necessity of determining strict physical and mathematical criteria of informability in the recognition problem is noted. The concluding section of the paper concerns adaptive recognizing automata of the perceptron type. A physical model of the operating mechanism of a perceptron and its analogy with the classical theory of recognition are discussed. 28 ref. Authors abstract.

2/2

USSR

UDC: 621.372.061:538.56

PLOTNIKOV, Ye. M.

"Phase Transformation of Self-Oscillations by Resonance Systems"

Tr. Ural'skogo politekhn. in-ta (Works of the Ural Polytechnical Institute), 1970, sb. 183, pp 59-66 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A57)

Translation: The author solves the problem of transforming small fluctuations in the amplitude and phase of self-oscillations in a resonance system without imposing restrictions on selection of the latter. It is assumed that the signal to be transformed is an additive mixture of a harmonic signal and a small interference represented by a quasi-harmonic voltage. Phase conversion of the self-oscillations in a single-tank resonance amplifier is considered by way of example. Bibliography of seven titles. N. S.

1/1

USSR

UDC 621.438.621.51-253.5:539.4

PLOTNIKOVA, N. V., GLADKOVSKIY, V. A., and PLOTNIKOV, Yu. I.

"The Effect of Geometric Parameters on the Longevity of Compressor Blades of Gas Turbine Engines"

Sb. Nauch. Tr. Perm. Politekh. In-t [Collection of Scientific Works of Perm' Polytechnic Institute], No 102, 1971, pp 133-136 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49.162)

Translation: The thickness of blade edges in their production strictly according to technological conditions does not affect essentially the endurance limit of the blades. The endurance limit of blades decreases with increasing length or sectional area in the zone of maximum bending stresses. In calculations of the cyclic safety factor of similar type blade of recently designed compressors, the fatigue limit has to be taken 20-25% below the endurance limit of laboratory test pieces. Some possible underestimating of endurance limits for small length blades will result in a small increase of the fatigue strength safety factor. One illustr., two tables, two biblio. refs.

1/1

USSR

PLOTNIKOV, Yu. P.

UDC: 629.78.015.076.6

"Stochastic Problems of Rocket Dynamics"

Moscow, Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 331-335 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.39)

Translation: Methods are outlined for solving problems in vehicle control where the solution does not admit of a separate investigation of programmed and disturbed motions. Problems of this kind are termed stochastic problems of rocket dynamics. The author formulates the problem of optimizing the deterministic programmed motion and the stochastic disturbed motion with respect to a single criterion. This problem is solved by bringing in sufficient conditions for the absolute minimum of stochastic controlled systems. The latter conditions are an extension to stochastic systems of the general form of the corresponding conditions of optimality of deterministic systems of V. F. Krotov. An algorithm for digital computer solution of the optimal control problem is found for a linear model of stochastic disturbed motion. Bibliography of eight titles. Résumé.

1/1

USSR

UDC: 621.319.4(088.8)

FILLIPOV, A. L., MOROZOV, Ye. D., ZAKHAREVICH, Yu. I., PLOTNIKOV, Yu. P.

"A Device for Preaging, Testing Electric Strength, and Sorting the Sections of Metallized Paper Capacitors With Respect to Insulation Resistance"

USSR Author's Certificate No 263005, filed 29 Jul 68, published 8 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V383 P)

Translation: A device is proposed for preaging, testing electric strength and sorting metallized paper capacitors with respect to insulation resistance. The device contains a disc conveyer, preaging module, insulation resistance measuring module, unit for sorting sections by insulation resistance, a module for testing the electric strength of the sections, which is equipped with control lamellas supporting current take-off rollers in voltage regulators, and a drive mechanism. As a distinguishing feature of the device, design of the installation is simplified and the operational reliability of the device is improved by kinematically connecting the current take-off rollers to the conveyer, placing a lamella for holding the sections under voltage between and partially overlapping the contact lamellas, and equipping the unit for sorting the sections with an extractor

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FILLIPOV, A. L. et al., USSR Author's Certificate No 263005

whose lever is loosely fit on a vertical shaft. The latter is connected to a spring-loaded rocker resting on a cam of the drive mechanism.

2/2

USSR

UDC 519.217

VLASOV, A. G., PLOTNIKOV, Yu. P.

"One Stochastic Problem of Optimal Control"

Metody Upr. Bol'shimi Sistemi. T. 2, [Methods of Control of Large Systems, Vol. 2--Collection of Works], Irkutsk, 1970, pp 128-140, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V88 by R. Liptser).

Translation: The statements of problems of stochastic optimal control of process y_t, which follows the differential equation

$$\frac{dy_t}{dt} = f(t, y_t, v_t, \xi_t),$$

are discussed, where v_t is the controlling function, ξ_t is the realization of a certain random process. It is assumed here that y_t and v_t should satisfy certain limitations. The controlling action v_s, $t_H \leq s \leq t_K$, as a function of the observations, should be selected so as to minimize a certain probabilistic criterion. Inparticular, the case of motion along a reference trajectory is studied in detail, so that perturbed motion of stochastic differential equations and observations satisfy a linear system of differential equations.

In this case, the Kalman-Busy filtration equations can be used to estimate y_t and the Krotov optimality conditions can be used to solve the variational problem.

1/1

USSR

UDC 614.449.57:615.285.7]:576.895.77+595.771

KRIVTSOVA, Ye. N., MITROFANOV, A. M., KOZIN, N. P., TIKHEYEVA, L. V., TULUPOVA, A. N., VINOGRADSKAYA, O. N., YERMISHEV, Yu. V., PLOTNIKOVA, A. S. and RYAZANTSEV, V. A., Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, and Institute of Agricultural and Specialized Application of Civil Aviation

"Testing of Some Organophosphorus Compounds and Carbamates against Larvae of Aedes Mosquitoes (Culicidae) in Experiments with Aerial Spraying"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 599-603

Abstract: The use of organophosphorus compounds and carbamates against mosquito larvae was tested in the Yakut ASSR, in the area of the villages of Novy, Aikhal, and Mirny, and the Udachnaya deposits. Water reservoirs were treated by aerial spraying from an AN-2 plane. The following pesticides were tested: bytex, methylnitrophos, trolen, sevine, and dipterex; DDT was used as the reference. Comparatively uniform marshy territories with occasional forests and bushes were selected. Bytex was shown to be especially effective as a larvicide, a dose of 40 g/hectare proving to be sufficient. Methylnitrophos

USSR

KRIVTSOVA, Ye. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 599-603

required a 100 g/hectare dose to be effective; trolen in doses 40 and 80 g/hectare reduced the density of mosquito larvae only insignificantly. Dipterex and sevin proved ineffective as larvicides, being significantly inferior to DDT. The effect of mosquito larvae eradication with organophosphorus compounds lasts for 7-14 days.

2/2

PLOTNIKOVA, G. F.

Acc. Nr: AP0044157 Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1, PP 23-28

CHARACTERIZATION OF BIOCHEMICAL SHIFTS IN EXPERIMENTAL B_6-HYPOVITAMINOSIS

Karkalitskiy, I. M.; Karkalitskaya, G. V.; Ashikhmina, Ye. M.; Kovrizhnykh, N. D.; Tuzova, G. P.; Plotnikova, G. F.; Berdnikov, M. P.

Tubazid in an amount of 100 mg was administered daily intramuscularly for 7 weeks to nuria cospus to produce pyridoxine deficiency. The earliest signs of B_6-hypovitaminosis was diminished passage of 4-pyridoxine acid with the urine, whose week-wise fluctuations were of an undulating nature. The blood serum of animals with pyridoxine deficiency showed a fall of α- and β-globulins, a rise of albumins, declined activity of the aspartate-aminotransferase, unchanged activity of the alanine-aminotransferase and an increase of β-lipoproteids in the blood serum and tissues. The animals also developed fatty degeneration of the liver, kidneys and fatty infiltration of aortic walls. Furthermore, they exhibited symptoms of B_6-hypovitaminosis, such as poor appetite, loss of weight, skin lesions on the tip of the nose, focal affection of the skin around the eyes, bilateral paresis of hind legs, epileptiform seizures and symmetric lamellar desquamation of the skin in hind paws and diminished passage of riboflavin with the urine. All of the listed deviations are corrected following administration of vitamin B_6 to the animals.

REEL/FRAME
19770638

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ROLE OF THE INTERVERTEBRAL DISCS IN THE DEVELOPMENT OF SCOLIOSIS -U-

AUTHOR-(02)-KAZMIN, A.I., PLOTNIKOVA, I.I.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 17-22

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, ORTHOPEDIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0902 STEP NO--UR/9115/70/000/006/0017/0022

CIRC ACCESSION NO--AP0129957

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--[illegible]70

CIRC ACCESSION NO--AP0129967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EIGHTEEN PATIENTS WITH [illegible] AND DYSPLASTIC SCOLIOSES WERE SUBJECTED TO CONTRAST STUDY OF NUCLEUS PULPOSUS AT THE APEX OF CURVATURE. A TOTAL OF 30 DISCS HAVE BEEN CONTRASTED. DISCOGRAPHY WAS CARRIED OUT DURING OPERATION OF DISCOTOMY AND WEDGE RESECTION. THE DISCOGRAMS REVEALED DEVIATION OF NUCLEI PULPOSA TOWARD THE CONVEX SIDE. SOME DISCS SHOWED SIGNS OF DEGENERATION. WEDGING OF THE VERTEBRAL BODIES WAS ONLY ENCOUNTERED IN CASES ASSOCIATED WITH DEGENERATIN OF DISC AND ITS PROLAPSES.

FACILITY: TSENTRAL'NOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ION EXCHANGE IN ALKALI ALUMINOSILICATE GLASSES -U-

AUTHOR-(03)-MOISEEV, V.V., PERMYAKOVA, T.V., PLOTNIKOVA, M.N.

COUNTRY OF INFO--USSR

SOURCE--GLASS TECHNOL. 1970, 11(1), 6-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ION EXCHANGE, ALUMINOSILICATE GLASS, ION, SODIUM COMPOUND, POTASSIUM COMPOUND, RUBIDIUM COMPOUND, CESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1980 STEP NO--UR/0000/70/011/001/0006/0009

CIRC ACCESSION NO--AP0125569

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE STUDY WAS MADE OF THE KINETICS OF ION EXCHANGE IN ALKALI ALUMINOSILICATE GLASSES IN AQ. SOLNS. OF NA, K, RB, AND CS SALTS AND IN MELTS OF NA, K, AND AG SALTS. THE EXCHANGE RATE BETWEEN MELT AND GLASS WAS DETD. ONLY BY THE DIFFUSION OF THE IONS INTO THE GLASS. IN AQ. SOLNS. THE ION EXCHANGE PROCESS AT THE SURFACE INFLUENCED THE KINETICS. THE INTERDIFFUSION OF IONS WAS STUDIED IN THE GLASS SOLN. AND GLASS MELT SYSTEMS. IN BOTH SYSTEMS THE CONCN. OF IONS IN THE LIQ. PHASE INFLUENCED THE QUANTITY OF IONS WHICH THE GLASS ABSORBED. FACILITY: INST. SILICATE CHEM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF RADIOACTIVE INDICATORS TO STUDY THE LEACHING OF GLASSES -U-

AUTHOR-(02)-MOISSEV, V.V., PLOTNIKOVA, M.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 197

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ALUMINOSILICATE GLASS, RADIOACTIVE TRACER, SODIUM COMPOUND, GLASS PROCESSING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0501 STEP NO--UR/0363/70/006/001/0187/0187

CIRC ACCESSION NO--AP0107106

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEACHING WAS STUDIED OF THE SERIES OF NA ALUMINOSILICATE GLASSES OF THE COMPN. NA SUB2 O.X AL SUB2 O SUB3 .2SIO SUB2 (I) WHERE X SUCCESSIVELY WAS 0.00, 0.01, 0.05, 0.10, 0.15, 0.30, AND 0.50 MOLE PERCENT, AND GLASSES 0.5NA SUB2 O.0.15AL SUB2 O SUB3 .2SIO SUB2 (II). PRIME22 NA WAS USED AS A TRACER. INVESTIGATION OF THE LEACHING OF GLASSES IN A 0.001M NACL SOLN. AT 95DEGREES SHOWED THAT WITH INCREASING AL SUB2 O SUB3 CONTENT IN THE GLASS THE AMT. OF NA PRIME POSITIVE ENTERING INTO SOLN. FROM 1 CM PRIME2 OF THE SURFACE DECREASES. SOME ANOMALY IN THE GENERAL BEHAVIOR OF THIS DEPENDENCY WAS OBSD. FOR GLASSES WITH X EQUALS 0.01 AND 0.15. THE EFFECT OF THE CONCN. OF THE SOLN. AND THE NATURE OF THE ALKALI ION ON LEACHING WAS STUDIED ON THE 2 RELATIVELY STABLE GLASSES I(X EQUALS 0.3) AND II. THE EXPTL. DATA SHOW THAT THE AMT. OF NA PRIME POSITIVE ENTERING INTO THY SOLN. DOES NOT DEPEND ON THE STARTING CONCN. OF KCL, RBCL, AND CSCL WITHIN THE CONCN. RANGE INVESTIGATED, BUT THAT IT DEPENDS SOMEWHAT ON THE NACL CONCN. THE DIFFUSION COEFFS. BY 2 METHODS WERE CALCD. AND THE DATA TABULATED AND COMPARED.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--RESONANCE REGISTRATION OF COBALT-57 GAMMA QUANTA -U-

AUTHOR-(03)-MITROFANOV, K.P., PLOTNIKOVA, M.V., ROKHLOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 75-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--QUANTUM RESONANCE PHENOMENON, COBALT ISOTOPE, GAMMA QUANTUM, ABSORPTION SPECTRUM, GAMMA COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1063 STEP NO--UR/0120/70/000/002/0075/0076

CIRC ACCESSION NO--AP0136483

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136493

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARAMETERS ARE GIVEN OF A RESONANCE COUNTER FOR REGISTRATION OF PRIME57 CO GAMMA QUANTA WITHOUT RECOIL. THE ABSORPTION SPECTRUM OF THE COUNTER IS A SINGLE LINE. THE COUNTER IS COVERED WITH 70PERCENT FE PLUS 20PERCENT NI PLUS 10PERCENT CR. THE REGISTRATION EFFICIENCY FOR RESONANCE GAMMA QUANTA EQUALS SIMILAR TO 15PERCENT. THEIR COUNT EXCEEDS THE NOISE LEVEL TENFOLD.

FACILITY: NAUCH.-ISSLED. INST. YAD. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 54677, 27, 5487, 53926

KRAVCHENKO, V. S., LARIKOV, L. N., and PLOTNIKOVA, N. P.

"Study of the Substructure During Annealing of Molybdenum Bombarded Following Deformation"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 143-148

Translation: Methods of x-ray topography are used to perform studies of polygonization in neutron-bombarded single crystals of Mo, preliminarily deformed by rolling in the {110} plane. It is demonstrated that the process of polygonization is accelerated in specimens bombarded following deformation while the development of the recrystallization process is retarded and in many cases is halted. 5 Figures; 8 Bibliographic References.

1/1

USSR

UDC 621.438.621.51-253.5:539.4

PLOTNIKOVA, N. V., GLADKOVSKIY, V. A., and PLOTNIKOV, Yu. I.

"The Effect of Geometric Parameters on the Longevity of Compressor Blades of Gas Turbine Engines"

Sb. Nauch. Tr. Perm. Politekh. In-t [Collection of Scientific Works of Perm' Polytechnic Institute], No 102, 1971, pp 133-136 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49.102)

Translation: The thickness of blade edges in their production strictly according to technological conditions does not affect essentially the endurance limit of the blades. The endurance limit of blades decreases with increasing length or sectional area in the zone of maximum bending stresses. In calculations of the cyclic safety factor of similar type blade of recently designed compressors, the fatigue limit has to be taken 20-25% below the endurance limit of laboratory test pieces. Some possible underestimating of endurance limits for small length blades will result in a small increase of the fatigue strength safety factor. One illustr., two tables, two biblio. refs.

1/1

USSR

UDC 669.297:661.833.2.621.543.42

PLOTNITSKIY, V. M. [Deceased], RUDOY, A. N., Institute of Problems of Material Sciences, Academy of Sciences UkrSSR

"Spectral Determination of Oxygen in Hafnium Carbide Powders"

Moscow, Zavodskaya laboratoriya, No. 11, 1971, pp 1324-1326

Abstract: A spectral method for the direct quantitative determination of oxygen in hafnium carbide powders is described. The method is based on carbon reduction of oxygenous compounds of hafnium and oxides of impurity metals contained in the carbide in a dc arc. Due to the high temperature obtained in the arc, the time for the reduction process is considerably shortened. The temperature of the carbon electrode in its upper portion containing the sample being studied is only somewhat below the melting point of hafnium carbide. The temperature of the arc plasma in an argon medium is 8000-12,000°C. The partial pressure of carbon monoxide in the chamber for the case of a maximum concentration of oxygen in the powder (1.5%) does not exceed 30 mm Hg. As distinct from the vacuum-melting or the vacuum-heating methods the requirement for complete extraction of the gas with minimum losses to sublimation is not necessary for the spectral

USSR

PLOTNITSKIY, V. M. [Deceased], RUDOY, A. N., Zavodskaya laboratoriya, No. 11, 1971, pp 1324-1326

method using standards. A necessary condition is the identity of the nature of the process for the separation of the gas from the standards and the samples being tested. Conditions for analysis are the following: the light source is a dc arc; i = 45-48 amp, and the slit width is 30 μ; there is a three-lens illumination system with an intermediate 5-mm diaphragm; the length of the arc gap is 5 mm and the depth of the carbon electrode is 7 mm. The carbide powder subject to analysis is mixed with a 5% purified carbon powder. The initial argon pressure is 600 mm Hg. The relative standard error does not exceed 8-14% in the range of oxygen concentrations $5 \cdot 10^{-2}$ - 1.5%.

2/2

USSR

UDC: 681.3

ATSTOPAS, F. F., PLUKAS, K. I.

"Computing the Execution Times for Micro-Operations"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 189-197 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V894)

Translation: The paper describes a method and algorithm for calculating all combinations of times of execution for micro-operations. The duration of a micro-operation is longer than a single execution cycle. The result is placed in the register immediately after completion of the micro-operation or after several execution cycles. The calculations are reduced to operations with matrices. Authors' abstract.

1/1

USSR

UDC: 51.621.391

ATSTOPAS, F. F., PLUKAS, K. I.

"One Method of Solving a System of Pseudo-Boolean Equations"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 173-176 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V563)

[No abstract]

1/1

USSR

UDC: 681.3

ATSTOPAS, F. F., PLUKAS, K. I.

"Calculation of the Fronts of Micro-Operations"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 177-181 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V895)

Translation: Part of the procedure of minimizing microprograms by the method of dynamic programming is calculation of the fronts of micro-operations. A procedure is given for calculating a set of fronts of micro-operations from the matrix of contiguity of the microprogram by means of operations on Boolean matrices.

1/1

USSR

ATSTOPAS, F. F., PLUKAS, K. I. UDC: 681.3

"Computing the Minimum Matrices of a Microprogram"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 183-187 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V893)

Translation: A procedure is given for computing the minimum matrices of a microprogram. The method utilizes the solution of a system of linear pseudo-Boolean equations and the sufficient conditions for carrying out the micro-operations. Authors' abstract.

1/1

USSR

UDC 681.142.001.51

ATSTOPAS, F. F., PLUKAS, K. I.

"Finding Contours and Paths in the Graph of a Microprogram"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 73-77

Abstract: The authors consider two different algorithms for computing all paths of any length from minorant to majorant. In addition, the first algorithm is used to determine arcs, and also the paths through which various elementary contours pass. In computations by the first algorithm, matrix operations are used with the matrix of connections of the graph of a microprogram; a peculiarity of the second algorithm is the fact that all computations are reduced to Boolean operations with the matrix of contiguity of the microprogram. Both algorithms are easily realized on a digital computer. Two illustrations, bibliography of three titles.

1/1

USSR

UDC 681.142.001:51

ATSTOPAS, F. F., PLIKAS, K. I.

"A Method of Proper Numbering of the Vertices of the Graph of a Microprogram"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 67-72

Abstract: A method is considered for correct numbering of the vertices of a finite directional graph which describes a microprogram. A peculiarity of the method is the fact that all computations relating to determining the ranks of the vertices are reduced to Boolean operations with Boolean matrices, and proper numbering of the vertices is found by means of a simple enumeration of the elements of a Boolean matrix. The proposed method is realized on a digital computer. Two illustrations, bibliography of three titles.

1/1

USSR

UDC: 620:18;539.26

PLUTALOVA, L. A., SKRIPCHENKO, G. B., and GRIGORENKO, L. P., Scientific Research Institute of Mechanical Engineering, Moscow

"Effect of Pressure on the Structure of Graphite Materials in the Process of Intensive Wear"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 1, Jan-Feb 70, pp 49-54

Abstract: A study was made of structural changes occurring in graphite materials during intensive wear. The basic parameters determining the value of "critical" pressure are the structure and strength of the graphite material, the material of the counterpart, and the composition of the gas medium. It has been shown that the wear products undergo extensive destruction down to the complete amorphous phase. The greatest structural distortions were observed at pressures close to critical when the normal process of work changes to intensive wear. With respect to the ratio of intensity maxima, it is suggested that in the products of wear there are 10% of the crystalline phase, about 40% of finely-disperse crystallites consisting of 2-3 layers, and the remaining 50%--completely amorphous carbon. As the specific pressure of friction increases, distortions in wear products decrease. It is noted that the nature of destruction depends on the surface state of the graphite specimen.

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AA0044635 P UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

243010 COMPENSATING BACKLASH IN PNEUMATIC DEVICES.
The backlash is also known as dry friction and is due to the non-linearity of a component. In order to compensate a backlash in the chamber (3) a non-linear channel (1) changes the incoming signal (x) into its derivative (x_1) with respect to time. Two signals are mixed in the summation point (2) and applied to the chamber (3). It is possible to select a right value for the derivative which when mixed with the original signal and passed through the chamber with a backlash will result in the original signal (y = x).
18.3.68 as 1226385/18-24.A.V.NETUSHIL & V.S.PLUTHS.
MOSCOW ENERGETICS INST.(23.9.69) Bul 16/5.5.69.
Class 21c. Int.Cl.G 05f.

18

AUTHORS: Netushil, A. V.; Plutes, V. S.
Moskovskiy Energeticheskiy Institut

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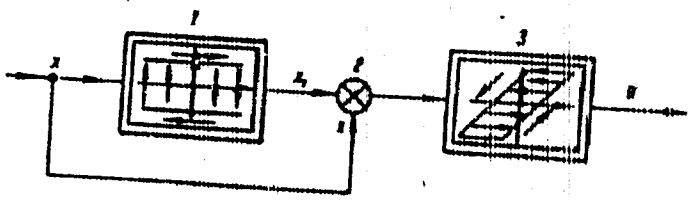
AA0044635



2/2

19771331

USSR

UDC: 51

NIKOLAYEV, K. G., PLUZHNIKOV, L. N.

"Application of the Method of 'Branches and Boundaries' to the Problem of Locating the Enterprises of a Production Unit"

Moscow, Inzh. mat. metody v fiz. i kibernet.--sbornik (Engineering Mathematics Methods of Physics and Cybernetics--collection of works), vyp. 2, Atomizdat, 1973, pp 107-118 (from RZh-Matematika, No 8, Aug 73, abstract No 8V569 by Yu. Finkel'shteyn)

Translation: The paper examines the problem of selecting the optimum variant of locating a given set of enterprises on a delineated section. The section may have any shape; the enterprises are rectangular. The presence on the section of sites where construction is forbidden is not excluded. The goal function is a sum of terms representing the nature of the terrain (situation), cost of communications (connections), effectiveness of integration and blocking, compactness in locating the objects.

For solution of the problem, the authors propose an algorithm of branches and boundaries which accounts for the specifics of the problem,

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USSR

NIKOLAYEV, K. G., and PLUSHNIKOV, L. N., Inzh. Mat. metody v fiz. i kibernet. vyp 2, Atomizdat, 1973, pp 107-118

and two approximating modifications of this algorithm. To reduce the number of branches, the authors introduce two simplifying assumptions: 1. The optimum solution is reached if the objects are located in one or more compact groups situated in the vicinity of one or more specially selected points of the territory. 2. As a step of the solution, we take only the optimum position of each object relative to those already located on preceding steps rather than any position. The authors present a detailed analysis and geometric illustration of an example with four objects for the exact and two approximating methods. Remarks are presented on storage economy in the computation process.

2/2

USSR

NIKOLAYEV, K. G., PLUZHNIKOV, L. N.

"Application of the Method of Branches and Bounds to the Placement of Enterprises in an Industrial Center"

Inzh. mat. metody fiz. i kibernet. [Engineering and Mathematical Methods in Physics and Cybernetics -- Collection of Works], No 2, Moscow, Atomizdat Press, 1973, pp 107-118 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V569 by Yu. Finkel'shteyn)

Translation: The problem is studied of selecting the optimal version of placement of a fixed set of enterprises in a given area. The area may have arbitrary shape, the enterprises are shaped as rectangles. It is not excluded that there may be areas where construction cannot be undertaken. The goal function is the sum of the components representing the nature of the terrain (situation), cost of connecting lines (connections) effectiveness of cooperation and blocing and compactness of placement of the objects.

An algorithm in branches and bounds considering the specifics of the problem and two approximate modifications of the algorithm are suggested for solution of the problem. In order to reduce the number of branches, the authors

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USSR

NIKOLAYEV, K. G., PLUZHNIKOV, L. N., Inzh. mat. metody fiz. i kibernet., No 2, Moscow, Atmoizdat Press, 1973, pp 107-118

utilize two simplifying assumptions. 1. The optimal solution is achieved if the objects are place in one or a few compact groups around one or a few specially points in the territory. 2. Each step in the solution using the method of branches and bounds consists not of arbitrary placement of some object, but rather of its optimal placement relative to the objects already placed in earlier steps. An example with four objects is discussed in detail and geometrically illustrated for the precise and to approximate methods. Certain considerations are presented concerning savings of machine memory required for calculation.

2/2

USSR

UDC: 621.319.4

SEMENOV, V. S., PLUZHNIKOV, V. M., VERBITSKAYA, T. N.

"Investigation of the Piezoelectric Constants of Type VK Varicaps and Possibilities for Controlling Them"

Elektron. tekhnika. Nauch-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21), pp 115-119 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V318)

Translation: The authors present the results of an experimental study of the piezoelectric and mechanical constants of type VK varicaps. Possible ways to use the piezoelectric properties of varicaps in some devices are pointed out. Resumé.

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USSR

OVSYANKINA, V. M., PLUZHNIKOV, V. M.

UDC 621.376

"Potential and Mode Possibilities of Dielectric Converters of Small Currents"

Novyye beskontaktn. elektron. ustroystva. Ch. 1 (New Contactless Electronic Devices. Part 1), Moscow, 1970, pp 173-176 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D225)

Translation: This article contains an investigation of the possibility of using ferroelectrics in small signal modulators. Their positive and negative qualities are noted. There are four illustrations and a four-entry bibliography.

1/1

UNCLASSIFIED

ITLE—ANALYSIS OF TUMOR TRANSFORMATION OF TISSUES. II. BIOCHEMICAL DEDIFFERENTIATION OF TISSUE DURING CARCINOGENESIS. CHANGES OF CREATINE

PROCESSING DATE--30OCT70

UTHOR-(05)-SALYAMON, L.S., ASHMARIN, I.P., OSTRETSOVA, I.B., LYZLOVA, S.N., PLUZHNIKOVA, G.F.

OUNTRY OF INFO—USSR

OURCE—TSITOLOGIYA 1970, 12(1), 102-10

ATE PUBLISHED————70

UBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

OPIC TAGS—TUMOR, TISSUE PHYSIOLOGY, CELL PHYSIOLOGY, ENZYME ACTIVITY, CARCINOGEN, CARBON TETRACHLORIDE, LEAD COMPOUND, BENZENE DERIVATIVE

CNTROL MARKING—NO RESTRICTIONS

OCUMENT CLASS—UNCLASSIFIED

ROXY REEL/FRAME--3001/2107

STEP NO--UR/9053/70/012/001/0102/0110

IRC ACCESSION NO--AP0127480

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

IRC ACCESSION NO--AP0127480

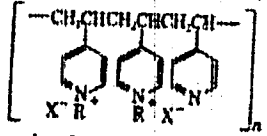
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CREATINE KINASE (I) AND ALK. PHOSPHATASE (II) ACTIVITY WAS STUDIED IN TRANSPLANTABLE TUMORS (HEPATOMA 22A IN C SUB3 HA MICE, HEPATOMA 27 AND KIDNEY TUMOR AB-12 IN RATS) AND TISSUES OF MICE AND RATS ADMINISTERED CARCINOGENIC COMPDS. (CCL SUB4, PB(OAC)SUB2, URETHANE AND 3,4,BEZNO(ALPHA) PYRENE). I ACTIVITY WAS INCREASED 3 FOLD IN HEPATOMA 27 AND 5-10 FOLD IN HEPATOMA 22A. IT INCREASED ALSO UP TO 2 FOLD DURING THE HEPATOCARCINOGENESIS IN MICE AFTER CCL SUB4 ADMINISTRATION. AFTER THE ADMINISTRATION OF 3,4,BENZC(ALPHA)PYRENE, I ACTIVITY IN SKELETAL MUSCLES DECREASED TO 56PERCENT OF THE NORMAL VALUE WITHIN 26 DAYS AND A SIMILAR DECREASE WAS FOUND IN KIDNEYS OF RATS ADMINISTERED PB ACETATE. HOWEVER, I ACTIVITY IN THE LIVER WAS INCREASED. II ACTIVITY IN THE LIVER OF MICE ADMINISTERED CCL SUB4 INCREASED UP TO 3 FOLD DURING THE 1ST FEW DAYS THEN RETURNED TO NORMAL VALUES. PB ACETATE CAUSED A DECREASE IN II ACTIVITY IN THE KIDNEY AND KIDENY TUMORS. AFTER THE ADMINISTRATION OF URETHANE, II ACTIVITY IN THE LIVER INCREASED. IT WAS CONCLUDED THAT CHEM. CARCINOGENESIS IS ACCOMPANIED BY REPRESSIONS AND DEREPRESSIONS OF GENES REGULATING THE SYTHESIS OF ENZYMES IN CERTAIN TISSUES.

FACILITY: LAB. PATHOL. PHYSIOL. TUMOR GROWTH, INST. UNCOL., LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr: AP0042509 Abstracting Service: CHEMICAL ABST. 4-76 Ref. Code: ILR0459

86675v **Synthetic polymeric analogs of enzymes with esterase activity.** Kirsh, Yu. E.; Pluzhnov, Sheremet, T. S.; Kabanov, V. A.; Karpov, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1974, 16(1), 186–204 (Russ). Polymeric catalysts (I, R = Me, Et, Pr, iso-Pr, Bu, iso-Bu, isoamyl, $PhCH_2$ and X = Cl, Br, I) were prepd. by partial *N*-alkylation of poly(4-vinylpyridine) with the corresponding alkyl halide at 60–70° in 10:1 $MeNO_2$–MeOH. I had high



(I)

catalytic activity and selectivity in the hydrolysis of esters such as *p*-$NO_2C_6H_4OAc$. The active centers for the catalysis were the unsubstituted pyridine rings. The catalytic activity of an unalkylated link was 10^{-4}–10^{-5} times greater than that of the simplest analog, 4-ethylpyridine. The kinetic behavior of I was similar to that of α-chymotrypsin. The kinetic parameters for each step of the hydrolysis were calcd., and their dependence on the nature of

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the substituents and macromol. dimensions were held. The catalytic activity of I was a function of their shape in soln. and the type of solvent. The high catalytic activity of I was explained by the development of local hydrophobic cavities, each of which contains a nucleophilic group (pyridine ring) and is surrounded by hydrophobic substituents.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FINE MOSAIC STRUCTURE OF NATIVE GOLD CRYSTAL GRAINS ELECTRON MICROSCOPE DATA -U-

AUTHOR-(03)-PETROVSKAYA, N.V., FROLOVA, K.YE., PLYASHKEVICH, L.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 433-5 (MINERAL)

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GOLD, ELECTRON MICROSCOPY, MINERAL DEPOSIT, SINGLE CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1046 STEP NO--UR/0020/70/191/002/0433/0435

CIRC ACCESSION NO--AT0119913

UNCLASSIFIED

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AT0119913 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FINE MOSAIC STRUCTURE WAS STUDIED WITH SAMPLES OF NATIVE AU FROM BALEISK AREA (TRANSBAIKALIA) AND AGATOVSK DEPOSIT (OKHOTSK-CHUKOTKA VOLCANIC BELT). THE BALEISK AND AGATOVSK DEPOSIT AU CONTAINED 21.67-2.14 AND 44.70-5.67PERCENT AG, RESP., WITH TRACES 2PERCENT CU, FE, SE, HG, AND SB. SINGLE CRYSTALS OF BALEISK AU HAD A COMPLEX STRUCTURE CORRESPONDING GENERALLY TO THE TYPICAL MOSAIC (BLOCK) STRUCTURE OF CRYSTALS. FINE GRAINS OF EARLY AU CONSISTED OF VERY FINE (0.2-1 MU) SUBINDIVIDUALS, SO CALLED BLOCKS. THEY HAD ISOMETRIC SHAPE OFTEN CLOSE TO OCTAHEDRAL. THE FINE ZONES OF SOME OTHER AU, MORE EASILY ETCHABLE BY AQUA REGIA, WERE PRESENT BETWEEN THESE SUBINDIVIDUALS. THESE ZONES CONSISTED OF PARTICLES GREATER THAN OR EQUAL TO 1-10 AS SMALL AS MOSAIC BLOCKS. THE AG RICH AU FROM AGATOVSK DEPOSIT CONSISTED OF IRREGULAR DENDRITIC SEGREGATIONS IN A FINE GRAINED QUARTZ. THEY HAD SHARPLY EXPRESSED MOSAIC STRUCTURE OF THE GRAINS. THE MOSAIC BLOCKS, WHICH ARE USUALLY SMALL IN CENTRAL PARTS OF SEGREGATIONS (0.2-0.3 MU), BECOME LARGER (1-2 MU) TOWARDS THE PERIPHERY. IN PLACES, THEY BECOME MUCH LONGER, ACQUIRING DIRECTION SUBPARALLEL TO THE GRAIN BOUNDARY.

FACILITY: INST. GEOL. RUD. MESTOROZHD., PETROGR., MINERAL. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

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USSR

UDC: 621.69.2

BEZNOGIKH, YU. D., ZINOV'YEV, L. P., KADYROV, R. B., [illegible], YU. K., PLYASHKEVICH, N. N., POPOV, V. A., SEMENYUSHKIN, I. N. and STEPANYUK, V. L.

"Injector Debuncher of the OIYAI Synchrophasotron With Energy Modulation of the Accelerated Beam"

Moscow, Pribory i Tekhnika Eksperimenta, Zhurnal Akademii Nauk SSSR, No 1, Jan/Feb 72, pp 37-38

Abstract: The particle intensity in the OIYAI synchrophasotron can be increased by 75% by reducing the energy scattering in the outlet beam and by modulating the energy of the injected beam. Both functions can be performed by a single high-frequency debuncher resonator located at a certain distance from the linear accelerator.

The debuncher resonator is 1/4 of the wave length of the round coaxial line. The tuning is achieved by deflecting the end walls and by a secondary power input. The diagram and the description of this device are presented. Some experimental results obtained with and without the debuncher are also given.

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UDC 681.32

USSR

MALAKHOVA, M. M., PLYASHKEVICH, VL. N., GRAIEVA, V. M., LOZHENNIK, I. M., BATUASHVILI, SH. A., and KHEYFETS, V. I.

"Updating the Minsk-22 Computer"

Tr. N.-i. i proyekt. in-ta mekhaniz. i avtomatiz. upr. proiz-vom v avtomob. prom-sti (Works of Scientific-Research and Planning Institute for the Mechanization and Automation of Production Control in the Automobile Industry), 1971, vyp. 1, pp 132-141 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B75 by V. F.)

Translation: The article describes a number of modernizations in the Minsk-22 computer and gives circuits and descriptions of changes affecting the card and magnetic tape input units, the start-stop input mechanism, etc. Eight illustrations. Bibliography with two titles.

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USSR

MALAKHOVA, M. M., PLYASHKEVICH, Yu. N., GRANEVA, V., LOZDERNIK, I. M., BATUASHVILI, Sh. A., KHEYFETS, V. I.

"Modernization of the Minsk-22 Computer"

Tr. N.-i. i Proekt. In-ta Mekhaniz. i. Avtomatiz. upr Proiz-vom v Avtomob. Prom-sti. [Works of Scientific Research and Planning Institute for Mechanization and Automation of Production Control in the Motor Vehicle Industry], No 1, 1971, pp 132-141, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V482 by the author's).

Translation: A number of modernizations of the Minsk-22 computer are described. Diagrams and descriptions are presented of changes concerning the punch card input device, magnetic tape reader, input start stop mechanism card puncher and matching of magnetic drum to computer.

Acc. Nr: AP0044594 Ref. Code: UR0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48, Nr 1, pp 21-26

BLOOD STREPTASE IN THE DIAGNOSIS OF RHEUMOCARDITIS IN PATIENTS SUFFERING FROM CARDIAC FAILURE AT REMOTE POSTOPERATIVE PERIODS

I. S. Golubev, S.Ye. Yufit, A. V. Plyashina

Summary

The authors describe the clinico-laboratory signs of rheumocarditis in 34 patients with rheumatic cardiac diseases at remote periods after the operation. By means of clinico-laboratory confrontations the authors stress the importance of the new test in the diagnosis of rheumocarditis. The authors are of the opinion that the streptase titer is a valuable auxiliary diagnostic test in the complex investigation of patients with active rheumocarditis, especially in its torpid course. One could assess the effectiveness of treatment by changes of the streptase titer in patients suffering from active rheumocarditis.

REEL/FRAME
19771270

Ion Exchange

UDC 541.183:661.183.6

USSR

VLASOVA, O. A., IONE, K. G., KARAKCHIYEV, L. G., and PLYASOVA, L. M., Institute of Catalysis, Siberian Department, Academy of Sciences USSR

"Influence of Machining on Grain Size and Crystalline Structure of Type NaY Zeolites"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 534-536

Abstract: The possible change in the size of the zeolite particles with mechanical working was studied, as was the effect of the intensity of mechanical grinding on the grain size and crystal structure of the zeolites. An original sample and samples ground for 1, 2, 3, and 4 hours were studied. The surface area, as determined by the BET method using argon, decreased from 620 m^2/g for the unground sample, NaY, to 40 m^2/g for the sample ground for 4 hours, NaY-4. The surface areas calculated from electron micrograph data show an increase from 2.3 for NaY to 16.5 m^2/g for NaY-4. The latter was calculated from the equation $S = 6/\rho d$ where ρ is the density of the zeolite, equal to 2 g/cm^3; d is the average radius of the particles, obtained from a radius distribution curve. The radius decreased from 1.3 for NaY to 0.16 μ for NaY-4. In x-ray studies the very marked fine structure exhibited by NaY was

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USSR

VLASOVA, O. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 534-535

much reduced for the sample ground for 1 hour, NaY-1, and absent for NaY-4. The total intensity was also much reduced, indicating decreasing crystallinity with increasing grinding time. The IR spectrum of NaY-4 between 1400 cm-1 and 300 cm-1 was much smoother and showed much greater absorption than that for NaY, although the peak positions were similar for all the spectra. The data obtained indicate that grinding induces changes in the crystal structure and adsorption capacity of NaY type zeolites.

2/2

Acc. Nr: A70048316 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: 21R0020

104446c Isotopic exchange of oxygen on films of silver and gold alloys. Starostina, T. S.; Khasin, A. V.; Boreskov, G. K.; Plyasova, L. M. (Inst. Katal., Novosibirsk, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(2), 394-7 [Phys Chem] (Russ). In their relation to O, Ag and Au differ greatly. Whereas O is readily adsorbed on Ag at room temp. and at 200° there is perceptible reaction of homomolecular isotopic O exchange between the adsorbed and gaseous O, O is not adsorbed on Au at room temp. and no perceptible isotopic exchange occurs at 400°. Adsorption of O was studied on a series of Ag-Au alloys. On a Ag alloy with up to 50-60% Au, the rate of isotopic O exchange increases. Beyond this Au content, the rate starts to drop. The max. rate of exchange on the alloys is 5-6 times greater than on Ag alone. Inclusion of up to 60% Au in the alloy does not materially affect the activation energy of homomolecular O exchange and it remains the same as on pure Ag, 28-33 kcal/mole. In alloys with 60-80% Au, the activation drops to 16-17 kcal/mole. The quantity of O on alloys decreases with a decrease of Ag content. For pure Ag it is ~2.7 monolayers, whereas for alloys with 33, 63, and 89% Au, it is 1.0, 1.1, and 0.1 monolayers, resp.

M. Husain

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REEL/FRAME 19800018

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PLYASUNOV, A. K.

So: JPRS 54019
9 Sep 71

UDC: 362.11(47-21)

LEVEL, STRUCTURE, AND DISTINCTIVE FEATURES OF EMERGENCY HOSPITAL CARE IN DIFFERENT TYPES OF CITIES

All-Public Health

(Article by Ye.A. Loginova, V.V. Zhigareva, T.S. Belyakova, N.T. Trubilin, A.K. Plyasunov, L.F. Bugurd, Institute of Social Hygiene and [illegible] Research Institute of Social Hygiene and [illegible], All-Union [illegible] (head N.A. Semashko, Kostovskaya, Ul'yanovskaya and [illegible], All-Union Organization (head N.A. Semashko, Sovetskoye Zdravookhraneniye, Public Health Department; Moscow, Sovetskoye Zdravookhraneniye, Kazakhstan, No 7, 1972, submitted 16 February 1971, pp 18-23)

In spite of the known accomplishments by Soviet public health in the area of planning and developing norms for medical care in hospitals, still unsolved is the matter of the requirements referable to emergency hospitalization of patients and the structure of such requirements. Of special interest is the development and improvement of the network and structure of the specialized emergency hospitals founded on the basis of Decree No 517 dated 5 July 1968 "On the [illegible] and for emergency hospitalization in view of the specialized [illegible] issued by the Central Committee of the CPSU and USSR Council of Ministers, "On Further Improvement of Public Health and Development of Medical Services in the Nation," as well as Instruction of emergency stations and hospitals, as reflected in Order No [illegible] dated 4 August 1968, issued by the USSR Minister of Health.

In resolving planning and organizational problems pertaining to emergency hospital care it is not always possible to be governed by official reports, since the statistics on hospitalized patients include data on emergency hospitalization only referable to surgical emergencies whereas a considerable place is occupied by emergency hospitalization of therapeutic, obstetric-gynecological, infectious, and other patients.

For the purpose of substantiating the structure of the beds allocated for emergency hospitalization, the All-Union Scientific Research Institutes of Social Hygiene and Public Health Organization (head N.A. Semashko) jointly with the Moscow health departments and the Ministry of Health of Kazakhstan SSR, and Volgodonskaya Oblast and Ul'yanovskaya, Kurskaya, and Volgodonskaya oblasts and the Ministry of Health of Bashkir ASSR, conducted a complex study to determine the level, scope, and nature of emergency hospital care in different types of cities.

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PLYASUNOV, A.K.

So: JPRS 55015
25 Jan 72

UDC: 362.11(47-21:47-22)

DISTINCTIONS IN LEVEL AND STRUCTURE OF HOSPITAL CARE FOR RURAL PATIENTS IN
DIFFERENT TYPES OF CITIES

[Article by Ye.A. Loginova, N.V. Potekhina, V.M.Shipova, N.T. Trubilin, I.V. [illegible], A.F. [illegible] Smolevik, L.T. Bugun, A.K. [illegible], V.P. [illegible]nenko, Ye.F. Kolesnikov, [illegible] Shirayev, [illegible] [illegible] All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, Rostovskaya, Ul'yanovskaya, and Kurskaya oblast health departments; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 17, 1971, submitted 24 March 1971, pp 16-21]

Urban therapeutic institutions play an important role in rendering qualified and particularly specialized care for the rural population.

It is a known fact that the volume of medical care rendered to the rural population by urban institutions is increasing annually, however, to date this is not taken into consideration in planning urban public health care. In addition, there are still insufficient special investigations to substantiate the rural residents demand for specialized hospital and extramural care at different stages of organization of rural public health.

The absence of differentiated standards of the demands of the rural population with regard to special forms of medical care makes it imperative to pursue indepth investigations of the level and distinctions of the demand for different forms of therapeutic and prophylactic care in concrete institutions of different types of cities.

For this purpose, the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, jointly with the oblast public health departments of Rostovskaya, Ul'yanovskaya, Kurskaya, Vologodskaya oblasts and the Bashkir Ministry of Health conducted a complex study of the level and structure of hospital, polyclinic, and visiting consultation services offered to rural residents in the different cities.

In this article we submit the results of a study of the level and structure of hospital care rendered to the rural population in different types of cities in Rostovskaya, Ul'yanovskaya, and Kurskaya oblasts; data pertaining to other bases are undergoing statistical processing.

PLYATSKO, G.V.

Lasers

TECHNICAL TRANSLATION

AFCRL-TRC-72-12-72

ENGLISH TITLE: On the Influence of the Strong Shock on the Character of Rupture of Transparent Polymers by a Laser Beam

FOREIGN TITLE: O vliyanii sil'nogo udarnogo sotryaseniya na kharakter razrusheniya prozrachnykh polimernykh tel lazerom

AUTHOR: G. V. Plyatsko, Yu. E. Sedel'nikov, T. M. Shirvindt-skiy

SOURCE: Fiziko-khimicheskaya Mekhanika Materialov No. 4, Vol. 5, 1969

Translated for FSTC by Lao Kanner Associates, Redwood City, Calif.

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UDC 620.186.5

USSR

SHIROVETSKIY, V. M., KOYSA, M. I., PLYATSKO, G. V., and TURCHENKO, N. P., Institute of Physics and Mechanics of the Academy of Sciences UkrSSR, L'vov

"Some Peculiarities of the Change in Properties of Alloys After Laser Beam Treatment"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 1, 1972, pp 84—87

Abstract: Investigation results of the effect of local pulsed heating with a laser beam on the structure and microhardness changes of different steel brands, including tool steels U8, U10, high-chromium steel Kh12M, nine other steel brands, and Armco iron, are discussed by reference to microstructures and diagrams. After cooling, the structure and physico-mechanical properties of the metal of former melted stabe differ substantially from its initial condition: specific needle-shaped desintegration of grains and increased microhardness resulted in all investigated cases, including Armco iron. The laser beam

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USSR

ZHIROVETSKIY, V. M., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 1, 1972, pp 84-87

treated zone of tool steels U8 and U10 was found to consist of martensite, residual austenite, Fe_3C carbide, and Fe_3O_4 oxide. Supposedly, the high heating rates of steels affect favorably the dissolution process of carbides. The laser-beam treatment of annealed Khl2M steel, apparently, comminutes the net of carbides effecting a local conversion of Fe_2W in the M carbide and the W_2C β-phase, developing by 2600°C, and at the same time the microhardness increases from 240 to 520 kg/mm^2. The observed decrease in microhardness of the hardened Khl2M steel from 720 to 460 kg/mm^2 is probably due to the fact that Va, which decreases the overheating sensitivity, is bonding a part of carbon in poorly soluble VC carbides. Four illustr., seven biblio. refs.

2/2

USSR

UDC 621.774.35.001.4

PLYATSKOVSKIY, O. A., Doctor of Technical Sciences, POROKHNIKOV, YU. Z., SULADZE, O. N., STATNIKOV, V. M., UBIRIYA, A. YE., Candidate of Technical Sciences, and TSERETELI, P. A.

"Principal Parameters of the Deformation Process by High-Temperature Thermomechanical Treatment of Pipes"

Dnepropetrovsk Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4, (70), Jul-Aug 71, pp 34-37

Abstract: At many active pipe rolling plants, reduction mills can be utilized for high-temperature thermomechanical treatment (HTMT) of pipes. Workers of the All-Union Scientific Research Institute of Pipes and specialists of the Rustavsk Metallurgical Plant have developed the technology of HTMT of hot-rolled compressor pump pipes (73 x 5.5 mm) of carbon steels (brands 20 and 35) and low-alloyed steel (36G2S) by rolling on a 20-cage reduction mill with rolls 350-400 mm in diameter. The HTMT technology is discussed by reference to diagrams showing the general arrangement and the change of the metal pressure on rolls under different rolling conditions. In HTMT the metal pressure on the rolls of pipes with precooling in deforming cases is approximately twice as high as in the standard process of hot reduction. Investigation data were used for planning an industrial experimental produc-

1/2

USSR

PLYATSKOVSKIY, O. A., et al., Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4 (70), Jul-Aug 71, pp 34-37

tion sector of high-quality compressor pump pipes. Two illustrations, one table, three bibliographic references.

2/2

USSR

UDC 539.12.04;541.6;531.781

PLYATSKO, G. V., and PODSTRIGACH, YA. S., Institute of Physico Mechanics, Academy of Sciences Ukrainian SSR

"Laser-Beam-Induced Stress in the Breakdown of Transparent Polymers"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, No 3, May-June 70, pp 93-97

Abstract: An investigation was made of processes involved in the failure of transparent solids by a laser beam and to explain the mechanism of light energy absorption sufficient for this failure. Processes of laser energy absorption by solids have a complex physical nature, and determination of the stressed state is caused by phenomena which are associated with the transformation of electromagnetic energy into mechanical energy. A portion of the paper deals with vector and tensor analysis of the energy input from a laser beam. From the mathematical data obtained the authors confirmed that absorption of energy of the proper magnitude will cause the bonds between monomers in the material to break.

1/1

UDC 632.95

USSR

NOVIK, R. M., [redacted]

"Analysis of DNOK Against a Mixed Aqueous-Organic Background by the AC Polarographic Method"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaznenlya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 245-248 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N507)

Translation: In analyzing residues of DNOK in apple tree branches, the ground sample is mixed with a solution of borate buffer in a 40% aqueous solution of DMFA for 15-30 minutes, it is agitated for 45 minutes and the polarographic analysis is run on an AC polarograph with a mercury drop cathode and Hg-anode. The sensitivity of the method is 1 γ of DNOK in a milliliter of solution. The accuracy of analyzing the DNOK within the limits of ±10% coincides with the data from other methods.

1/1

Water Treatment

USSR

UDC 628.543:546.214

KUL'SKIY, L. A., PLYSYUK, A. A., and SLIPCHENKO, V. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences Ukrainian SSR

"Use of Ozone for the Final Purification and Decontamination of Biochemically Pure Waste Water"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

Abstract: This study concerns ozonization as a multi-purpose and economical method for the final purification of biochemically pure waste water. Ozone, a strong oxidizer, not only decontaminates water but considerably improves its physicochemical and sanitary-hygienic characteristics. Research on the use of ozone for oxidizing the organic matter of industrial sewage at organic synthesis and processing plants has shown ozone to be effective in removing phenols, thiocyanates, and cyanides, petrochemicals and products of methane thermooxidative pyrolysis, as well as polynuclear aromatic compounds (possessing carcinogenic properties), nitrocompounds, etc. Ozone, unlike chlorine, does not produce harmful oxidation products of organic matter, and ozonization does not require temperature and

1/2

USSR

KUL'SKIY, L. A., et al, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

pH regulation. Experiments conducted on a small laboratory device with an oxidation column demonstrated the high effectiveness of final purification with ozone. At dose rates of 20--25 mg/l ozone is sufficiently effective in decolorizing, deodorizing and decontamination of water. A table in the original article gives comparative data on the effectiveness of purifying water with ozone as a function of its concentration in the ozone-oxygen mixture. Ozone has also gained wide acceptance in decontamination of drinking water. The bactericide activity of ozone is shown in another table in the original article.

2/2

K P

UDC 628.543:546.214

2

USSR

KULSKIY, L. A., PLYSYUK, A. A., and SLIPCHENKO, V. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences Ukrainian SSR

"Use of Ozone for the Final Purification and Decontamination of Biochemically Pure Waste Water"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

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USSR

KUL'SKIY, L. A., et al, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

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2/2

USSR UDC 620.194.8:678.5.06 - 419.8

CHERVATYUK, V. F., KOSTENKO, A. YE., NAKONECHNAYA, A. A., PIDSYUK, A. K., SHAMRAY, R. YA., and YAZON, Z. P., Severodonetsk

"Study of the Corrosive Resistance and Atmospheric Stability of Fiberglass Produced From the Composition 311 TKhS"

Kiev, Khimicheskaya Tekhnologiya, No 2 (62), Mar-Apr 78, pp 22-23

Abstract: Fiberglass material studied was resistant to hydrochloric acid, dilute and concentrated acetic and formic acids, acetic anhydride, aniline, trichlorobenzene, toluene, and gaseous Cl_2, HCl, and SO_3. Prolonged usage of this material shows considerable wear due to the action of light, temperature and moisture. With aging the firmness of the plastic deteriorates at an increasing rate. The laboratory results were fully corroborated by experiments carried out in the field.

1/1

USSR

GROSS, Ye. F., PLYUKHIN, A. G., SUSLINA, L. G., SHADRIN, Ye. B.

"Luminescence and Resonant Combination Scattering in $Zn_xCd_{1-x}Te$ Crystals"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 6, 20 Mar 72, pp 312-315

Abstract: Resonant combination scattering in semiconductors has been the subject of a number of works. However, until now there have been no detailed investigations of the behavior of the intensity of the scattered light with a continuous change in frequency in the area of exciton absorption. This is the subject of the present article. The experiments were performed with a helium-neon laser at 4.2° K and 77° K. Concentration x in the specimens studied was varied between 0.4 and 0.5, corresponding to a change in the width of the forbidden zone from 1.905 to 1.965 ev at 4.2° K. The studies indicate that the resonant nature of combination scattering is related to excitation of free excitons in the mixed crystals studied.

1/1

PLYUSHCH, G. V.

JPRS 59873

23 August 1973

TECHNOLOGY OF PRODUCING NEW MATERIALS

Translation of Russian-language collection: Tekhnologiya polucheniya novykh materialov, 1972, Kiev.

Contents

- a -

[I - USSR - 1]

CONTENTS (Continued)

1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--USE OF SURFACE ACTIVE SUBSTANCES IN THE DIE EXTRUSION OF HARD ALLOYS -U-

AUTHOR-(02)-PLYUSHCH, G.V., SLEZKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAYA MET., FEB. 1970, (2), 11-13

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PLASTICIZER, SURFACE ACTIVE AGENT, METALWORKING LUBRICANT, METAL EXTRUSION, HARD ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0126 STEP NO--UR/0226/70/000/002/0011/0013

CIRC ACCESSION NO--AP0124898

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123698

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MERITS OF INCORPORATING SURFACE ACTIVE SUBSTANCES IN THE PLASTICIZERS USED FOR THE DIE EXTRUSION OF WC-CO AND OTHER HARD ALLOYS ARE CONSIDERED IN THE LIGHT OF PRACTICAL EXPERIENCE. THUS, THE ADDITION OF 1PERCENT SURFACE ACTIVE SUBSTANCES TO THE 5PERCENT PARAFFIN CONVENTIONALLY USED AS PLASTICIZER LEADS TO A MARKED ADSORPTION EFFECT RESULTING IN THE REDUCTION OF THE SPECIFIC PRESSURE REQUIRED BY SIMILAR TO 100 KG-CM PRIME2. THE SURFACE ACTIVE SUBSTANCES GREATLY EASE THE PREPARATION OF THE MIXTURE FOR DIE EXTRUSION.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTROLYTIC TREATMENT OF SEWAGE AS A METHOD OF ITS DEHELMINTHIZATION -U-

AUTHOR-(02)-GREBENEVICH, YE.V., PLYUSHCHEVA, G.L.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL 39, NR 3, PP 315-318

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PARASITE, ELECTROLYSIS, WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0199 STEP NO--UR/0358/70/039/003/0315/0318

CIRC ACCESSION NO--AP0123968

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED POSSIBILITIES OF DEHELMINTHIZATION OF SEWAGE BY ELECTROLYTIC TREATMENT. THE STUDY WAS CARRIED OUT ON A LABORATORY MODEL OF ELECTROLYSER FLOTATOR. EGGS OF AS. SUUM WERE ADDED TO UNCLARIFIED SEWAGE. THE DECLINE IN THE CONTENT OF HELMINTH EGGS IN THE SEWAGE WAS DIRECTLY PROPORTIONAL TO THE CURRENT POWER USED. THE AVERAGE PERCENT OF REDUCTION OF THE HELMINTH EGG CONTENT WAS 93 AT 75 A-HR-M PRIME3 AND OVER 98 AT 200 A-HR-M PRIME3. AN INCREASE IN DEHELMINTHIZATION EFFECT UPON AN INCREASE OF CURRENT POWER IS ASSOCIATED WITH AN INCREASED DEGREE OF FLUID CLARIFICATION. ELECTROLYTIC TREATMENT OF SEWAGE AT THE CURRENT POWER OF AT LEAST 150 A-HR-M PRIME3 RESULTS IN ALMOST COMPLETE DEHELMINTHIZATION OF SEWAGE.

FACILITY: INSTITUT MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM MARTSINOVSKOGO AKADEMIYA KOMMUNAL'NOGO KHOZYAYSTVA IM PAMFILOVA.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REGENERATION OF ZEOLITE CATALYSTS -U-

AUTHOR-(02)-KOMAROV, V.S., PLYUSHCHEVSKIY, N.I.

COUNTRY OF INFO--USSR

SOURCE--USSR 266,736

REFERENCE--OTKRYTIYA, IZOBRET., PROM., OBTAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, CATALYST REGENERATION, CHEMICAL PATENT, COKE, HYDROGEN PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1472 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128871

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128871

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZEOLITE CATALYSTS CLOGGED WITH COKE DEPOSITS WERE REGENERATED BY TREATMENT WITH 30PERCENT H SUB2 O SUB2 AT 450-500DEGREES TO PREVENT THE DESTRUCTION OF THE CRYST. STRUCTURE OF THE ZEOLITE AND AVOID HOT SPOTS. FACILITY: INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY, ACADEMY OF SCIENCES, BELORUSSIAN SSR.

UNCLASSIFIED

USSR

UDC 621.3.032.21

SELIVERSTOV, V. P., MEL'NIKOV, A. M., PLYUSHKOVA, V. S., TIKHOMIROVA, A. N., KUNIN, T. I. (Deceased), Department of Electrochemical Production Processes, Ivanovo Institute of Chemical Technology

"Fabrication of Brush-on-Type and Molded Copper Chloride Cathodes for Magnesium Power Sources"

Ivanovo, Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, Vol 14, No 11, 1971, pp 1705-1708

Abstract: A new technique described is for making copper chloride-base active mass for brush-on-type positive electrodes designed for use in magnesium power sources as well as a method of fabricating molded porous copper-chloride cathodes based on the reduction of $CuCl_2 \cdot 2H_2O$ with a highly disperse dry copper powder. The experimental data indicate that the presence of chemical pure excess copper powder acts favorably on the efficiency of power sources. The cell voltage is increased by 15-50 mv and the activation period is decreased. The factors responsible for the 1/2

USSR

SELIVERSTOV, V. P., et al, Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, Vol 14, No 11, 1971, pp 1705-1708

improved cell characteristics, other than the higher conductivity of the active mass, is the much higher dispersion of the copper chloride produced by the dry method. The latter aspect is the basis for making of molded positive porous electrodes. The porosity of the finished electrodes is rated at 56.4 percent against 35.7 percent in factory-made molded electrodes with graphite. The load potential is about the same in both; the cell voltage, however, is considerably higher and more stable with time. The efficiency of copper chloride is 95 percent. The effective utilization of the anodic material is increased by 9 percent. The pickup w/hr capacity at discharge to 1.2 v is increased by 20 percent. A contributing factor is the lower solubility of copper chloride on the electrode in the presence of higher porosity as well as the higher concentration of chloride ions in the electrolyte causing anode activation.

2/2

PLYUTTO, A. A.

JPRS 6065[illegible]

29 November 1973

(7)

UDC 533.9.07

ACCELERATION OF IONS BY A RELATIVISTIC ELECTRON BEAM

/Article by A. A. Plyutto, K. V. Suladze, S. M. Temchin, G. P. Mkheidze, Ye. D. Korop, [illegible] and [illegible]; Moscow, Zhurnal Tekhnicheskoy Fiziki, Russian, Vol. 43, No. 8, 1973, signed to press 22 June 1972, pp. 1627 - 1631/

Abstract

The effect of ion acceleration by a relativistic electron beam was investigated. Protons were accelerated to 6 - 7 million electron volts for an energy of an electron beam of approximately one million electron volts. The beam composition and its energy distribution were studied. It was demonstrated that the energy of protons accelerated by electrons rises more rapidly than linearly with an increase in the accelerating voltage in the 0.1 - 1 million electron volts range.

The effect of ion acceleration in an electron beam was observed initially when obtaining nonrelativistic electron beams from a plasma emitter /1/. Protons and ions of carbon with maximum energies of 4 - 5 and 10 - 20 Mev were recorded in the following experiments for an average of 200 - 300 kev electron energy /2/. A linear rise in the energy of ions with an increase in the energy of electrons was observed in the range of 10 - 200 kilovolt accelerating voltages under optimal conditions for ion acceleration. This opened up the possibility for creating an electron jet ion accelerator at 10 - 100 Mev using 1 - 2 Mev relativistic electron beams. Some investigations in this direction were conducted using high current electron resonator accelerators.

Arrangement of Experiment

Ion acceleration by means of electrons was done by using a variable accelerating voltage oscillating with a frequency of 6.3 megaHz and an initial amplitude of 0.2 - 1 megavolts applied to the accelerating gap. The high

[I - USSR - L]

USSR

SULADZE, K. V.; TSKHADAYA, B. A.; PLYUTTO, A. A. (Sukhumi Physicotechnical Institute)

"Peculiarities of Intensive Electron Beam Formation in a Bounded Plasma"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; June, 1971; pp 992-4

ABSTRACT: Peculiarities of the formation of strong-current, pulsed electron beams were studied by a method of the preliminary filling of an accelerating gap with plasma. A distinctive feature of the method is that the plasma-filled gap has a high conductivity which allows currents of 10^4 - 10^5 amps with a duration of 10^{-7} - 10^{-8} sec to be attained in the gap. After a certain critical value of the current has been attained in the gap, the ohmic resistance of the gap rises, resulting in a sharp decrease in the current and a sharp increase in the potential difference across the gap. In this case the plasma is broken into anodic and cathodic with corresponding potentials.
1/2

USSR

SULADZE, K. V., et al., Ukrainskiy Fizicheskiy Zhurnal, Jun 71, pp 992-994

Probe measurements show that all of the drop in voltage at the stage at which the current sharply decreases is concentrated in the plasma gap. It is at this stage that the electron beam is formed. The critical current value depends on the plasma concentration, and at a concentration of 10^{13} cm^{-3} it reached $5 \cdot 10^{4}$ amps. At the same time, the beam current reached $2 \cdot 10^{4}$ amps, the accelerating voltage was 45 kv, and the current pulse duration was $3 \cdot 10^{-7}$ sec.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--USE OF RAPID METHOD FOR DETERMINING SERUM PROTEINS -U-

AUTHOR--PLYUTTO, A.M.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (3), 184-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD SERUM, PROTEIN, CHEMICAL ANALYSIS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0208 STEP NO--UR/9099/70/000/003/0184/0185

CIRC ACCESSION NO--AP0119204

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119204

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID METHOD FOR DETG. SERUM PROTEINS (CF. S. A. KARPYUK (1962) AND YU. M. NEMENOVA (1967)) GAVE RESULTS COMPARABLE WITH THOSE FROM ELECTROPHORETIC DETN. ON BLOOD OF HEALTHY MEN AND MEN WITH DIFFERENT DISEASES. FACILITY: MEDSANCHAST A, SUKHUMI, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--FUNCTIONAL DISORDERS OF THE LIVER IN CHRONIC TONSILLITIS -U-

AUTHOR--PLYUYKO, M.YE., NOSENKO, A.G., YEDOMAKHA, V.KH.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 47-49

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, LIVER FUNCTION, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0964 STEP NO--UR/0475/70/000/003/0047/0049

CIRC ACCESSION NO--AP0102903

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

CIPC ACCESSION NO--AP0102903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE FUNCTIONAL STATE OF THE LIVER IN 157 PATIENTS SUFFERING FROM CHRONIC TONSILLITIS REVEALED DISORDERS OF THE HEPATIC FUNCTION MANIFESTED IN CHANGES OF THE METABOLIC, ANTITOXIC, PIGMENTARY, CARBOHYDRATE FUNCTIONS AND OTH. LONG LASTING SUBCOMPENSATED AND DECOMPENSATED FORMS OF TONSILLITIS ARE ACCOMPANIED BY MORE SEVERE DISORDERS OF THE HEPATIC FUNCTION. GRADUAL NORMALIZATION OF THESE INVOLVED FUNCTIONS OF THE LIVER IS OBSERVED FOLLOWING TONSILLITIS CURE.

UNCLASSIFIED

USSR

UDC 541.127:541.515:547'1'118

POBEDIMSKIY, D. G., BUCHACHENKO, A.L., KURBATOV, V. A.

"Kinetic Application of Stable Nitroxyl Radicals in Phosphite Reactions. 3. Phosphoranylperoxide Radical"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2454-2458

Abstract: The phenomenon of competition of two acceptors of the primary radicals O_2 and the stable nitroxyl radicals is analyzed, and the kinetic laws of destruction of the stable nitroxyl radicals in the system made up of tertiary butyl hydroperoxide and triethyl phosphite in the presence of O_2 and without it. The radical acceptor (stable nitroxyl radicals) method demonstrated that the phosphoranyl radicals formed in the reaction of the tertiary butyl hydroperoxide with triethyl phosphite in the presence of oxygen are converted into phosphoranylperoxide radicals. The rate constant found for the formation of phosphoranylperoxide radicals at 20° is 250 times less than the rate constant of disproportionation of the primary phosphoranyl radicals by the reaction with a stable radical.

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UDC 77

USSR

MAKAROV, N. V., [redacted]

"Synthesis of Photographic Emulsions With a High pBr Value to Raise Their Sensitivity"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 90-96 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12G1335)

Translation: An increase in the storage life of photoemulsion layers, especially those for the IR-region of the spectrum, involves raising their pBr, so that the best results are given by emulsions in which a high value of pBr is not produced in the prepared emulsion but before the beginning of the second aging. The latter requires many special conditions in carrying out the aging, of which three are studied in this paper: the concentrations of thiosulfate (I), sulfite (II), and rhodanide (III). It was established that the effect of I on the light sensitivity of the emulsion is of a complex nature: with an increase in the concentration of I the value of S^{max} initially rises and then decreases, so that to obtain a high value of S^{max} requires a smaller concentration of I for a higher

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USSR

MAKAROV, N. V., POBEDINSKAYA, A. V., Uspekhi khimii, 1962, [illegible]
pp 90-96

pBr of the emulsion. An increased concentration of I, however, can lead to obtaining a high S if II is introduced into the emulsion (before and after aging), although for an optimal concentration of I the introduction of II does not give this effect and only accelerates aging without a change in the achievable S_{max}. It was shown that the presence of III can also be of value in raising S; the concentration of III should be smaller for a higher pBr. Authors abstract.

2/2

USSR

UDC 548.736.6

PUSHCHAROVSKIY, D. Yu, BAATARYN, T., POBEDIMSKAYA, Ye. A., and BELOV, N. V., Moscow State University imeni M. V. Lomonosov

"The Crystal Structure of the Zn-Analog Milarite"

Moscow, Kristallografiya, Vol 16, No 4, Jul-Aug 71, pp 721-724

Abstract: The authors determine the structure of synthetic Zn-milarite $K(Mn,Fe)_2(Zn,Mn)_3Si_{12}O_{30}$, which serves as another example of the close crystallochemical similarity between Zn and Be. They examine the possibility of the equilibrium $Mn^{2+} + Fe^{3+} \rightleftarrows Mn^{3+} + Fe^{2+}$ and on this basis solve the question as to the Fe distribution. Figure 1 shows the axonometric projection of Zn-milarite crystals; Figure 2 is a line diagram of powder patterns of Zn- and Be-milarites. The authors' findings are graphically illustrated in four tables: Table 1 gives the results of a chemical analysis of Zn-milarite made at the Institute of Geology and Geophysics of the Siberian Branch of the USSR Academy of Sciences; Table 2 compares the powder patterns of Zn- and Be-milarites; Table 3 lists the coordinates of the elementary atoms in the structure of Zn-milarite; and Table 4 gives the interatomic spacings in the structure of Zn-milarite. The article contains 2 figures, 4 tables, and a bibliography of 6 titles.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CRYSTAL STRUCTURES OF BARIUM MOLYBDATE AND BARIUM TUNGSTATE -U-

AUTHOR--BYLICHKINA, T.I., SOLEVA, L.I., POBEDIMSKAYA, YE.A., PORAYKOSHITS, N.A., BELOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1) 165-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, BARIUM COMPOUND, TUNGSTATE, X RAY DIFFRACTION, MOLYBDATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0017 STEP NO--UR/0070/70/015/001/0165/0167

CIRC ACCESSION NO--AP0102117

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102117

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CRYSTALS WERE SYNTHESIZED HYDROTHERMALLY. RESULTS OF THE GONIOMETRIC MEASUREMENTS AND UNIT CELL PARAMETERS COORDINATES OF THE ATOMS, AND INTERAT. DISTANCES OBTAINED FROM X RAY DIFFRACTION DIAGRAMS ARE GIVEN FOR BAWO SUB4, BAMOO SUB4, CAWO SUB4, SRWO SUB4, SRMOO SUB4, AND COMOO SUB4. THE LATTICE PARAMETERS FOR THE TITLE CRYSTALS ARE A EQUALS 5.614 PLUS OR MINUS 0.003 AND C EQUALS 12.719 PLUS OR EQUAL 0.003 ANGSTROM FOR BAWO SUB4 AND A EQUALS 5.62 PLUS OR MINUS 0.03 AND C EQUALS 12.82 PLUS OR MINUS 0.03 ANGSTROM FOR BAMOO SUB4. THE INTERAT. DISTANCES IN THE BAWO SUB4 POLYHEDRON ARE CLOSE TO THOSE IN SRWO SUB4, AND THE INTERAT. DISTANCES IN BAMOO SUB4 ARE CLOSE TO THOSE IN SRMOO SUB4 AND COMOO SUB4.

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USSR

UDC 548.736.5

BYLICHKINA, T. I., SOLEVA, L. I., POBEDIMSKAYA, YE. A., BORAY-KOSHITS, M. A. and BELOV, N. V., Moscow State University imeni M. V. Lomonosov

"Crystal Structures of Ba-Molybdate and Ba-Tungstate"

Moscow, Kristallografiya, Vol. 15, No. 1, Jan/Feb 70, pp 165-167

Abstract: Well faceted tetragonal crystals of $BaWO_4$ and $BaMoO_4$ were measured on the GD-1 optical goniometer. Clear crystals of $BaWO_4$ and $BaMoO_4$ of diamond brightness were obtained by the hydrothermal method at the Institute of Crystallography by L. N. Dem'yanotes. The lattice parameters of the crystals were found to be the following: for $BaWO_4$, a = 5.614±0.003 Å, c = 12.719±0.003 Å and $c:a$ = 2.26; for $BaMoO_4$, a = 5.62±0.03 Å, c = 12.82±0.03 Å and $c:a$ = 2.28. The coordinates of $BaWO_4$ and $BaMoO_4$ atoms are also given in a table. The interatomic distances of Ca-, Ba-, Sr-, and Cd-polyhedra were calculated. It was observed that the crystal structure of both crystals is of the Scheelite type.

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USSR UDC: 548.736.6

FILIPENKO, O. S., LITVIN, B. N., POBEDIMSKAYA, Ye. A., and BELOV, N. V.

"Hydrothermal Synthesis and X-Ray of Barium Silicates"

Moscow, Kristallografiya, Vol. 15, No. 4, 1970, pp 863-865

Abstract: As opposed to similar calcium systems, which have been thoroughly researched, only one paper has been devoted to the BaO-SiO_2-H_2O system in the last 30 years. This brief communication describes experimentation performed to synthesize barium silicates for the purpose of obtaining crystals good enough for x-ray analysis. The synthesis was conducted in autoclaves with a temperature gradient of 20-30° C. The original chemical reagents were barium hydroxide and x-ray amorphous silica; the aqueous solution of $Ba(OH)_2$ had the double function of a silica solution and a supply of barium. A table is given of 17 attempts to obtain the proper composition for crystallization. The results of the x-ray analysis of the various crystal phases are given, and there is a second table of the morphological and x-ray analysis details. The authors express their gratitude to T. I. Ivanova for her assistance with the measurements.

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USSR UDC 541.124+541.127+661.718.1

CHEBOTAREVA, E. G., POBEDIMSKII, D. G., KOLUBAKINA, N. S., MUKMENEVA, N. A., KIRPICHNIKOU, P. A., AKHMADULLINA, A. G., Kazan Chemical Technology Institute imeni S. M. Kirova

"Kinetics of Reaction of Phosphites With Cumol Hydroperoxide"

Moscow, Russian, Kinetika i kataliz, Vol 14, No 4, Jun-Aug 73, pp 891-895

Abstract: The kinetics were studied and the rate constants determined for the reaction of various aliphatic and aromatic phosphites with cumol hydroperoxide in benzene. The rate constants did not change with a reaction rate change of 4 orders of magnitude, which indicates the absence of kinetic bends. The reaction was first order with respect to each component. The aromatic phosphites were less reactive than the aliphatic, possibly because of polar effects. Analysis of the data on competition between the phosphite-hydroperoxide reactions and the spontaneous disintegration of hydroperoxides at 200°C in molten polymers indicated that phosphites suppress confluent branching.

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Organophosphorus Compounds

UDC 547.15:547.451

USSR

POBEDIMSKIY, D. G., MUKMENEVA, N. A., and KIRPICHNIKOV, P. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reactions of $R\dot{O}$, $R\dot{S}$, and $R\dot{O}_2$ Radicals With Phosphites and Phosphines"

Moscow, Uspekhi Khimii, Vol 41, No 7, Jul 72, pp 1242-1259

Abstract: A review of studies concerned with detailed mechanism and quantitative laws in the kinetics of $R\dot{O}$, $R\dot{S}$, and $R\dot{O}_2$ radical reactions with phosphites and phosphines is given, citing 49 references from the period 1959-1970. Using the method of radioactive tagging, it was shown that the formation of phosphoranyl radical is an irreversible reaction, this being the first intermediate product in such radical reactions. An analysis has been carried out of the competitive reactions between the addition of $R\dot{O}$ and $R\dot{S}$ radicals to the phosphites and phosphines, and other reactions such as splitting of the H atom from hydrocarbons, addition to double bonds, monomolecular decomposition, etc. The last chapter is devoted to the discussion of the mechanism of inhibitory action of aromatic phosphites during thermooxidative destruction of polyolefins in the frame of the concepts on the termination of kinetic oxidation chain reaction by means of the exchange of radicals.

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2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0124403
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTIONS OF N,PHENYL,N,ISOPROPYL,P,PHENYLENEDIAMINE, AND 2,2 PRIME,4,4 PRIME,6,6 PRIME HEXAMETHOXYDIPHENYLAMINE WITH OZONIDES OF 1,HEXENE AND STYRENE WERE EXAMD. BY AN EPR METHOD, WITH THE REACTIOS RUN IN SITU. THE REACTIONS FOLLOWED 2ND ORDER KINETICS AND IN THE 1ST STEP RESULTED (IN POLAR AND ACID MEDIA) IN CATION-RADICALS OF THE AMINES, WHILE IN NONPOLAR MEDIA THERE WERE FOUND RADICALS OF N OXIDES WHICH ARE PRODUCTS OF CONVERSION OF THE ORIGINAL CATION RADICALS. THUS EVEN THE RATHER STABLE N OXIDE RADICALS REACT RATHER RAPIDLY WITH THESE OZONIDES AND FORM PRODUCTS OF NONRADICAL NATURE. THIS WAS CONFIRMED BY EXPTS. WITH TETRAMETHYLPIPERIDONE 1,OXYL RADICAL AND THE ABOVE OZONIDES. IN NONPOLAR MEDIA THE RATE OF ACCUMULATION OF THE N OXYL RADICAL FORMED FROM THE ABOVE AMINES WAS SIMILAR TO 1.6 TIMES 10 PRIME NEGATIVE6 MOLE-L. SEC, I.E. SOME 30 TIMES SMALLER THAN THE RATE OF SUMMARY BIMOL. REACTION OF AMINE WITH OZONIDE (5 TIMES 10 PRIME NEGATIVE5 MOLE-L. SEC).
FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

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UDC 615.849(47)(091)

VOROB'YEV, Ye. I., and POBEDINSKIY, M. N.

Ocherki Razvitiya Otechestvennoy Radiatsionnoy Meditsiny (Essays on the Development of Domestic Radiation Medicine), Moscow, Meditsina, 1972, 228 pp

Translation: Annotation: The present book attempts to analyze the history of the development of radiation medicine in our country.

In order to give the reader a more complete idea of the development of medical radiology, the book includes sections on the history of the organization of radiation medicine, the training of radiology specialists, and the development of scientific research institutions

Special attention in the monograph is devoted to questions of the medical use of various sources of ionizing emission for radiation therapy, radioisotope diagnosis, and radon therapy.

More sketchy information is given on the history of the development of radiation hygiene, occupational radiation pathology, and radiotoxicology.

The monograph is illustrated with 33 photographs. The bibliography includes 103 sources of literature.

Table of Contents:

USSR

VOROB'YEV, Ye. I and POBEDINSKIY, M. N., Meditsina, 1972, 228 pp