1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--AMP AMINOHYDROLASE OF SKELETAL MUSCLES -U-

AUTHOR-(02)-FERDMAN, D.L., NECHIPORENKO, Z.YU.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 155-164

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCULOSKELETAL SYSTEM, MUSCLE PHYSIOLOGY, DOG, MYOCARDIUM, ENZYME ACTIVITY, HYDROLASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1525 STEP NO--UR/0300/70/042/002/0155/0164

CIRC ACCESSION NO--AP0106281

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0106281

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS ESTABLISHED THAT DESAMINASE POSSESSING EXCEPTIONALLY HIGH ACTIVITY IN MUSCLES OF VERTEBRATES IS CONNECTED WITH MYOSIN AND DOES NOT RELEASE FROM IT EVEN BY MULTIPLY REPRECIPITATIONS. WITH ADDITION TO MYOSIN OF THE DOGS MYOCARDIUM, WHICH DOES NOT POSSESS THE DESAMINASE ACTIVITY, THE PREPARATION OF THE PURIFIED DESAMINASE OF THE SKELETAL MUSCLES THE RESISTANT COMPLEX IS FORMED, THE ULTRAVIOLET SPECTRUM OF MYOSIN ABSORPTION IS CHANGED. MYOSIN BINDING DESAMINASE PRESERVES IT FROM THE THERMAL INACTIVATION AND INACTIVATING EFFECT OF ULTRAVIOLET RAYS. DESAMINASE IS FOUND IN ALL THE SUBCELLULAR ELEMENTS OF MUSCULAR FIBRILS HAVING ESPECIALLY HIGH ACTIVITY IN MICROSOMES. THE DATA CONCERNING THE STUDY OF KINETICS OF AMP DESAMINATION POINT TO ITS COOPERATIVE INTERACTION IN MICROSOMES WITH AMP AMINOHYDROLASE. THE SARCOLEMIC MEMBRANE POSSESSES THE DESAMINASE ACTIVITY WHICH PRESERVES AFTER ITS TREATMENT WITH PHOSPHOLIPASE C AS WELL BY TRITON X-100. A CONCLUSION MAY BE DRAWN THAT MANIFESTATION OF THE DESAMINASE ACTIVITY IN THE SARCOLEMIC MEMBRANE DOES NOT DEPEND ON THE PRESENCE OF PHOSPHOLIPIDS. BY MEANS OF DETERGENTS, TRITON X-100, DISOXYCHOLATE AND DODECILSULPHATE THE SARCOLEMIC MEMBRANE IS SEPARATED BY TWO FRACTIONS AND THE DESAMINASE ACTIVITY IS STUDIED IN THEM.

UNCLASSIFIED

USSR

UDC 51.621.391

NECHIPORUK, E. I.

"Realization of Disjunction and Conjunction in Certain Monotonic Bases"

Probl. Kibernetiki [Problems of Cybernetics -- Collection of Works], No. 23, Moscow, Nauka Press, 1970, pp 291-293 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V469 by G. Blokhina).

Translation : This note is dedicated to the production of nonlinear lower estimates of the complexity of realization of Boolean functions. It is proven that in certain monotonic bases, disjunction and conjunction of n arguments is realized with a complexity on the order of n^c, where the constant c can be arbitrarily high. More precisely, the realizations of functions $D_n = x_1 \vee x_2 \vee \ldots \vee x_n$ and $K_n = x_1 \cdot x_2 \cdot \ldots \cdot x_n$ by superpositions in the base consisting of one monotonic function $\varphi_{l,m} = \bigvee_{i=1}^{l} \&_{j=1}^{m} x_{i,j}$ are studied, where $l \geq 2$, $m \geq 2$. Each of these bases generates all monotonic functions except for constants 0 and 1. It is noted that in base $\{\Phi_{1,m}, 0, 1\}$, the functions D_n and K_n are realized with complexity on the order of n. Complexity of a superposition means the number of base elements in it while $L_{\Phi_{1,m}}(f)$ represents the minimum number

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USSR

UDC 51.621.391

NECHIPORUK, E. I., Probl. Kibernetiki, No. 23, Moscow, Nauka Press, 1970, pp 291-293.

of base elements $\phi_{l,m}$ sufficient for realization of Boolean function f. The following statements are proven:

Theorem 1 $L_{\varphi_{l,m}}(D_n) \asymp n^{\frac{\log_2 m}{\log_2 l}+1}$.

Theorem 2. $L_{\varphi_{l,m}}(K_n) \asymp n^{\frac{\log_2 l}{\log_2 m}+1}$.

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USSR UDC: 519.1

NECHIPORUK, E. I.

"Concerning the Topological Principles of Self-Correction. II. Chapter IV. Self-Correction in Contact R-Circuits"

Moscow, Probl. kibernetiki--sbornik (Problems of Cybernetics--collection of works), vyp. 26, "Nauka", 1973, pp 19-26 (from RZh-Matematika, No 9, Sep 73, abstract No 9V461 by O. Lupanov)

Translation: The article is the conclusion of the author's work (RZhMat, 1969, 12V365). It is shown that self-correcting contact R-circuits can be synthesized for Boolean functions of n variables to correct a openings and b closings of contacts ($\log a = o(\log n)$, $\log b = o(\log n)$), whose complexity is asymptotically no greater than $\frac{2^n}{\log n}$; i. e., is asymptotically equal to the Shannon function without the requirement of self-correction. An analogous result (among other things) was established by the author of the article under the conditions $a = 0$, $b = o\left(\left(\frac{\log n}{\log \log n}\right)^{1/2}\right)$ or $b = 0$, $a = o\left(\left(\frac{\log n}{\log \log n}\right)^{1/2}\right)$ (RZhMat, 1969, 12V365).

1/1

USSR

UDC 621.396.967

NECHITAYLENKO V A

"Optimum Registration Units for Meteor Radars"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 16, pp 33-41 (From RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11G43)

Translation: The paper analyzes the design procedures and optimality criteria for meteor radars. The [illegible]ference suppression and operational properties of discrete detectors with inertial and inertialess registers are analyzed, and recommendations are made for using them. Estimates are given for the interference resistance of a combination system for inhibiting prolonged radio echoes. Three illustrations, bibliography of eighteen titles. Resumé.

1/1

UNCLASSIFIED PROCESSING DATE--090CT70

1/3 021

TITLE--DIRECTED GROWTH OF THIN SULFUR FILMS -U-

AUTHOR-(03)-PALATNIK, L.S., NABOKA, M.N., NECHITAILO, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 409-13

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--SULFUR, POLYSTYRENE RESIN, CRYSTAL STRUCTURE, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0363/70/006/003/0409/0413

PROXY REEL/FRAME--1994/1928

CIRC ACCESSION NO--AP0115741

UNCLASSIFIED

2/3 . 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR THE PREPN. OF THIN CONDENSED COMPACT THIN FILMS OF S ON A POLYSTYRENE SUBSTRATE WITH A SEED ENHANCING HIGH MECH. STRENGTH OF THE FILM AT ROOM TEMP. OF CONDENSATION. THE INFLUENCE OF THE CONCN. OF THE S SEED IN THE POLYSTYRENE FILM SUBSTRATE ON THE FORMATION OF THE STRUCTURE OF CONDENSED S THIN FILMS WAS STUDIED. THE MICROSTRUCTURE OF THE VACUUM CONDENSATE APPLIED AT ROOM TEMP. TO THE POLYSTYRENE SUBSTRATE WITH THE SEED TURNED WAS VERY SENSITIVE TO THE INITIAL CONCN. OF THE SEED. BELOW A CERTAIN CRIT. CONCN. OF THE SEED (C SUBK PRIMES IS SMALLER THAN 15.8), THE MICROSTRUCTURE OF THE VACUUM CONDENSATE NO LONGER DEPENDS ON THE C PRIMES. AT C PRIMES IS SMALLER THAN C SUBK PRIMES THE S CONDENSATE HAS A GLOBULAR STRUCTURE. VACUUM CONDENSATES OF S PREPD. ON A POLYSTYRENE SUBSTRATE AT C PRIMES EQUALS 15.8-28.5 HAVE A COARSE CRYST. STRUCTURE. THE CRYST. SEEDS AT C PRIMES IS SMALLER THAN 15.8 ARE FLAT SINGLE CRYSTALS. THE THIN FILM PREPD. BY VACUUM DEPOSITION ON A THIN SUBSTRATE CAN BE RELATIVELY EASILY REMOVED FROM THE GLASS PLATELET BY IMMERSING IT IN DISTD. WATER. THE OPTIMUM CONCN. OF S IN THE POLYSTYRENE FILM SUBSTRATE WAS C PRIMES EQUALS 15.8PERCENT, AT WHICH CRYST. SEEDS MEASURING IS SIMILIAR TO 0.1 MU IN SIZE EMERGE, AND WHICH HAVE A STRONG ORIENTATION EFFECT ON THE GROWTH OF S THIN FILMS DURING VACUUM CONDENSATION. IN CONTRAST TO SIMILAR FILMS PREPD. BY OTHER METHODS, THE FILMS PREPD. BY THE DIRECTED GROWTH METHOD DESCRIBED HEREIN HAVE GOOD MECH. STRENGTH RELATIVE TO VIBRATION BOTH ALONG THE FILM AND IN THE PERPENDICULAR DIRECTION.

UNCLASSIFIED

3/3 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115741

ABSTRACT/EXTRACT--NO CRACKS OR FISSURES WERE OBSD. IN SUCH THIN FILMS AT GIVEN VIBRATION FREQUENCIES AND LOADS. FACILITY: KHAR'KOV, POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

89

UNCLASSIFIED

USSR

UDC: 546.22:539.238

PALATNIK, L.S., NABORKA, M.N., NECHITAYLO, A.A., Kharkov Polytechnical Institute imeni V.I. Lenin, Kharkov, Ministry of Higher and Secondary Specialized Education USSR

"The Directed Growth of Thin Sulfur Films"

Moscow, Neorganicheskiye Materialy, Vol 6, No 3, 1970, pp 409-413

Abstract: A method is suggested for reducing the critical thickness and condensing of thin sulfur films from vapor directly to crystalline film at room temperature. The substrates consisted of thin polystyrene films containing sulfur seeds. The microstructure of the vacuum condensate applied to the polystyrene seeded substrate was found to be highly sensitive to the initial seed concentration. The film, at thicknesses up to 20μ, produced by concentration on a thin (about 0.1μ) strengthening and orienting substrate was comparatively easily removed from the glass plates by submersion in distilled water. The method provides high mechanical film strength with room temperature condensation. The optimal sulfur concentration in the polystyrene substrate layer was found to be 15.8%, which produced seed crystals about 0.1 μ in diameter

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USSR

Moscow, Neorganicheskiye Materialy, Vol 6, No 3, 1970, pp 409-413

having strong orienting influence on the growth of the sulfur films during the course of vacuum condensation. Consequently, the mechanism of formation of the vacuum condensate can be influenced by changing the concentration of seeds in the polystyrene substrate, as by changing the substrate temperature. Introduction of the seeds to the substrate causes an effect equivalent to decreasing the substrate temperature by several dozens of degrees. Vibration tests at 3 to 12 g (gravity force) showed the films to be comparatively strong in resistance to vibration both along the film and perpendicular to it. No ruptures or cracks were observed in the film after the test.

Acc. Nr: AP0054926 Abstracting Service: 6-70 Ref. Code: 4R0181
INTERNAT. AEROSPACE ABST.

N

A70-25381 # **Intermediary graphitization stages in thin films of a condensed carbon (Promezhutochnye stadii grafitizatsii v tonkikh plenkakh kondensirovannogo ugleroda).** B. T. Boiko, L. S. Palatnik, A. S. Derevianchenko, and A. A. Nechitailo (Khar'kovskii Politekhnicheskii Institut, Kharkov, Ukrainian SSR). *Fizika Tverdogo Tela*, vol. 12, Feb. 1970, p. 492-496. 24 refs. In Russian.

Electron diffraction study of carbon films obtained by using an electron beam technique involving condensation in vacuum on an unheated substrate. It is found that the film consists of aggregates of oriented and nonoriented coherent scattering regions bonded by disoriented carbon aggregates. Both oriented and nonoriented coherent scattering regions are formed by parallel packed graphite lattices. Large interlattice distances in these blocks indicate on characteristic to graphite impairments in the mutual orientations of the parallel lattices. This impairment is due to the insertion of carbon atoms between the lattices and formation of disordered, strongly supersaturated solid solutions. Z.W.

CK 18

REEL/FRAME
19840130

USSR

UDC 621.375.4

KARPENKO, R. A., NECHITAYLO, L. S.

"Analysis of the Stability of a Cascade Transistor Amplifier Using a Digital Computer"

Tr. Uralskogo politekhn. in-ta (Works of the Urals Polytechnical Institute), 1970, collection 182, pp 156-161 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8D56)

Translation: The stability of a transistor cascade amplifier is analyzed on the basis of the Nyquist number. The results are presented in the form permitting use of a digital computer for the calculations. The flow diagram of the calculation program used by the authors on the Razdan-2 digital computer is presented. The bibliography has seven entries.

1/1

USSR

UDC: 519.24

NECHVAL', N. A.

"On One Class of Adaptive Control Systems"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 121-130 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V406)

Translation: A method is outlined for constructing adaptive control systems under conditions of indeterminacy as applied to discrete processes of regulation in real time. A component part of the method was an iterative procedure of stochastic approximation. A control algorithm is proposed. Author's abstract.

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1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--GENETIC PROBLEMS IN THE STUDY OF SYSTEMIC CONGENITAL ORTHOPAEDIC DISEASES -U-

AUTHOR-(04)-VOLKOV, M.V., MEYERSON, YE.M., NECHVOLODOVA, O.L., YUKINA, G.P.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 8-14

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, HEREDITARY DISEASE, LESION, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0593 STEP NO--UR/9115/70/000/004/0008/0014

CIRC ACCESSION NO--AP0108608

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108808

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INHERITED SYSTEMIC BONE DISEASES BELONG TO HEREDITARY AFFECTIONS OF THE CONNECTIVE TISSUE WITH MARKED SKELETAL AND EXTRASKELETAL LESIONS, AND CONSTITUTE A LARGE GROUP OF DISEASES WITH A WIDE RANGE OF CLINICAL MANIFESTATIONS. A NUMBER OF CLINICAL SIMILAR SYSTEMIC BONE DISEASES ARE THE RESULT OF MUTATIONS IN VARIOUS LOCUSES AND REPRESENT GENOCOPIES. THE CORRELATION AND INTERDEPENDENCE BETWEEN THE CLINICO ROENTGENOLOGIC, LABORATORY AND GENETIC METHODS OF INVESTIGATION IN HEREDITARY SYSTEMIC BONE DISEASES IS DISCUSSED. THE GENIC MUTATIONS ARE CONSIDERED AS THE CAUSE OF DEVELOPMENT OF SPORADIC CASES OF THESE DISEASES, AND THE IMPORTANCE IS STRESSED OF THE KINDRED AND STUDY OF ISOLATES IN THE ELUCIDATION OF THE RECESSIVE FUND OF HEREDITARY MUTABILITY. THE ROLE OF DIAGNOSIS OF MICROSIGNS AND THE EFFACED FORMS OF DISEASES IN THE STUDY OF THE PENETRABILITY AND EXPRESSIVITY OF GENES IS DISCUSSED. FACILITY: TSENTRAL'NOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED

USSR

UDC 620.179.152

GORBUNOV, V. I., NEDAVNIY, O. I., KAPRANOV, B. I., ANDREYEV, M. D., DANILOVICH, A. KH., GIZATULLIN, G. G., ZABRODSKIY, V. A., and OPOKIN, V. I., Scientific Research Institute of Electron Introscopy of the Tomsk Polytechnic Institute imeni S. M. Kirov

"Possibility of Checking Aluminum Articles Using Inversely Scattered X-Rays "

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 43-46

Abstract : The theoretical premise of the method of checking welded closing joints of aluminum structures 5 mm thick using inversely scattered x-rays is considered. A description is given of the detection head of the defectoscope. The experimental data which characterize the limitations of the albedodefectoscope are presented. The effective sensitivity for exposing imperfections of the cavity type is 0.5 mm^3. Further increase of sensitivity can be attained by increasing the capacity of the tube. Five illustrations.

1/1

USSR

SIMONOV, V. D., NEDEL'CHENKO, B. M., KOGAN, L. M., ANTONOV, L. T., BURMAKIN, H. M.

"The Problem of Industrial Production of Mucochloric Acid"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 334-338. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N683 by T. A. Belyeva).

Translation: A continuous technological process has been developed for the production of mucochloric acid by the reaction of oxidative chlorination of furfural (1) with the optimal parameters: molar Cl_2:1=5.6:1, specific productivity of reactor 80 kg/m^3·hr, volumetric ratio of I to circulating solution: 0.1-0.15, temperature 95-100° (maintained by heat of reaction), yield 80-82%. For fine dispersion, the Cl_2 is passed through teflon bubblers with 1 mm diameter apertures. A diagram of the process is presented.

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USSR

SIMONOV, V. D., IVANOV, A. V., GAZIZOV, R. T., NEDEL'CHENKO, V. M., KHRENOVA, N. N.

"Method of Producing Octachlorocyclopentene"

USSR Author's Certificate No 303312, filed 6/01/69, published 28/06/71. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N591P by T. A. Belyaeva).

Translation: Octachlorocyclopentene (I), intermediate product for synthesis of pesticides, is produced by chlorination of hexachlorocyclopentadiene (II) or octachloropentadiene in a medium of chlorosulfonic acid (III) at a temperature of 40-45°. Cl_2 gas is passed through a mixture of 81.9 g II and 140 g III for 5 hr at 40-45°, gas temperature about 20° (2.3 l/hr). It is then cooled to 10°, filtered, the precipitate is washed with water, dried in air, producing I, m. p. 37-8°. III is returned to the process.

1/1

USSR

UDC 616.988.73-022.39:598.4

KAMENOV, Ye. K., NIKOLOV, Z. V., NEDELCHEVA, S. B., MATEVA-STOYEVA, Yel. V., NEDELCHEVA, N. P., PASKALEVA, M. G., DENCHEV, St. I., and TURLAKOV, I. G., Chair of Epidemiology, Institute for Specialization and Advanced Training of Physicians, Republic Antiepidemic Station, and Zoological Institute and Museum of the Bulgarian Academy of Sciences, Sofia, Bulgaria

"Aquatic and Swamp Birds -- Carriers of Agents of Infectious Diseases. Communication I: Ornithosis"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 437-441

Abstract: Since Bulgaria lies along one important flight route of migrant aquatic and swamp fowl, a serological investigation was performed on 350 wild birds caught along Bulgaria's Black Sea shore and Danube River. Specific antibodies against ornithosis were found in specimens belonging to the orders Ardiiformes, Podicipidiformes, Lariformes, Ralliformes, and Charadriiformes. In some areas densely populated by wild ducks, antibodies against ornithosis virus were found in 21.8% of wild ducks, in 44.7% of domestic ducks on neighboring farms, and in 54.5% of people. These findings support the previously advanced hypothesis that migrating aquatic and swamp birds play an important role in the epidemiology ornithosis in natural foci and in the transmission of this disease to domestic fowl and to humans.

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USSR

UDC 616.988.73-022.39:598.4

KAMENOV, Ye. K., NIKOLOV, Z. V., NEDELCHEVA, S. B., MATEVA-STOYEVA, Yel. V., NEDELCHEVA, N. P., PASKALEVA, M. G., DENCHEV, St. I., and TURLAKOV, I. G., Chair of Epidemiology, Institute for Specialization and Advanced Training of Physicians, Republic Antiepidemic Station, and Zoological Institute and Museum of the Bulgarian Academy of Sciences, Sofia, Bulgaria

"Aquatic and Swamp Birds -- Carriers of Agents of Infectious Diseases. Communication I: Ornithosis"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 437-441

Abstract: Since Bulgaria lies along one important flight route of migrant aquatic and swamp fowl, a serological investigation was performed on 350 wild birds caught along Bulgaria's Black Sea shore and Danube River. Specific antibodies against ornithosis were found in specimens belonging to the orders Ardiiformes, Podicipidiformes, Lariformes, Ralliformes, and Charadriiformes. In some areas densely populated by wild ducks, antibodies against ornithosis virus were found in 21.8% of wild ducks, in 44.7% of domestic ducks on neighboring farms, and in 54.5% of people. These findings support the previously advanced hypothesis that migrating aquatic and swamp birds play an important role in the epidemiology ornithosis in natural foci and in the transmission of this disease to domestic fowl and to humans.

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(57)

USSR UDC 535.37:621.375.8

BOL'SHOV, M. A., GUZEYEV, I. D., ZYBIN, A. V., KOLOSHNIKOV, V. G., MAYOROV, I. A., NEDLER, V. V., MANDEL'SHTAM, S. L., TIMOFEYEV, Ye. F., and FILIMINOV, L. N.

"Determining Small Na Concentrations by the Fluorescence Resonance Method Using Tunable, Pulsed Dye Lasers"

Minsk, Zhurnal Prikladnoy Spektroskopii, November 1973, pp 821-824

Abstract: The subject of this article involves the method of fluorescence resonance in the use of tunable radiation dye lasers for detecting small concentrations of elements. Experiments designed to demonstrate the possibilities of this method in the saturation mode of resonance transition with Na as the element to be detected are described. For the excitation of the Na vapor a rhodamine laser of the 6Zh type, pumped by the second harmonic radiation of a neodymium laser, was employed. The duration of the pulses was $2 \cdot 10^{-8}$ sec, their power was 10^5 W, the width of the fluorescence line was 1 Å, and the tunable range 5600-6200 Å, with an interval of 20-30 sec between scintillations. The [illegible] was used as receiver. A block diagram of the equipment is given, together with a curve for the amplitude of the 1/2

(5)

USSR

BOL'SHOV, M. A., et al., Zhurnal Prikladnoy Spektroskopii, November 1973, pp 821-824

fluorescence signal varying with time. The authors find that using a laser with high scintillation repetition rates and increasing the light power increase the sensitivity of the element detection.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SOLUBILITY AND THERMODYNAMICS OF ARGON DISSOLUTION IN AQUEOUS ETHYLENE GLYCOL SOLUTIONS AT 25-70DEGREES -U-

AUTHOR-(02)-KRESTOV, G.A., NEDELKO, B.YE.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 17-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, THERMODYNAMICS, ARGON, ETHYLENE GLYCOL, ENTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1572 STEP NO--UR/0153/70/013/001/0017/0020

CIRC ACCESSION NO--AT0116980

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0116980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OSTWALD SOLY. COEFF. 10 PRIME3 GAMMA OF AR IN H SUB2 O DECREASES FROM 30 AT 25DEGREES TO 19 AT 70DEGREES. FOR SOLNS. CONTG. 0.25 MOLE FRACTION (CH SUB2 OH) SUB2 IN H SUB2 O, 10 PRIME3 GAMMA IS 27 ESSENTIALLY INDEPENDENT OF TEMP. AT HIGHER CONCNS. OF GLYCOL, THE SOLY. OF AR INCREASES WITH TEMP., I.E., FOR 0.6 MOLE FRACTION GLYCOL FROM 10 PRIME3 GAMMA EQUALS 28 AT 25DEGREES TO 37 AT 70DEGREES. THERMODYNAMIC DATA ARE CALCD. FROM THE SOLY. TEMP. RELATIONSHIPS. DELTAF SUBSOLN. SHOWS LITTLE VARIATION WITH CONCN. OF (CH SUB2 OH) SUB2 AND IS SIMILAR TO 4000 CAL-MOLE AT 25DEGREES AND 4700 CAL-MOLE AT 70DEGREES. DELTASDEGREES AT 70DEGREES DECREASES FROM 5700 CAL-MOLE IN H SUB2 O TO 3500 CAL-MOLE IN H SUB2 O CONTG. 0.7 MOLE FRACTION GLYCOL. ABOVE A 0.15 MOLE FRACTION GLYCOL, DELTAHDEGREES SUBSOLN. SHOWS LITTLE EFFECT OF TEMP. AND INCREASES FROM MINUS 500 CAL-MOLE AT 0.15 MOLE FRACTION TO 1000 CAL-MOLE AT 0.7 MOLE FRACTION. IN THE SAME RANGE, DELTASDEGREES SUBSOLN. INCREASES FROM MINUS 15 TO MINUS 10 ENTROPY UNITS. FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

USSR

NEDEL'KO, S. A.

"Deterministic Models of Certain Probabilistic Automata"

pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. [Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 27, pp 70-73 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V400 by the author)

Translation: The possibility is studied of extending methods of synthesis of probabilistic automata to deterministic automata. The models suggested in this work use a shift register with linear feedback. The results produced in the work can be be applied in practice in the solution of problems of mathematical physics by the Monte Carlo method.

1/1

USSR UDC: 621.382.3

IGNATKINA, N. S., KURGANOVA, N. Ya., KRASIUK, B. A., [illegible], G. S., MEDELOKY, M. E., RAVICH, V. N., TSARENKOV, B. V., Moscow Coordinative Institute, Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"The Gallium Phosphide Electroluminescent Dynistor"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 9, Sep 71, pp 1695-1699

Abstract: This paper describes sources of red and green light with an S-shaped current-voltage curve based on epitaxial gallium phosphide PNPN structures -- electroluminescent dynistors. The electrical and electroluminescent characteristics and parameters of these devices are presented, and it is shown that the properties of electroluminescent gallium phosphide dynistors are similar to those of dynistors based on other materials.

1/1

USSR

UDC: 621.371:538.569.4

NEDELYAYEV, A. M., GRUDINSKAYA, G. P., BOGOMOLOVA, Ye. V.

"Measuring the Absorption of Ultrashort Waves by Trees"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 119, pp 167-170 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12A301 by N. S.)

Translation: An investigation was made of the frequency dependence of absorption of ultrashort waves with normal incidence on the tips of trees. The measurements were made by using various arrangements of felled trees in a special cell to simulate forests of various densities. The measurements showed that trees (birch and spruce) are essentially opaque to decimeter waves; attenuation rises with an increase in working frequency, and is higher for conifers. Attenuation also depends on the season (due to variations in the moisture content of the wood and the thickness of the treetops). One illustration.

1/1

Electromagnetic Wave Propogation

USSR UDC: 621.371.332.3:551.463.7:538.3

NEDELYAYEV, A. M., PRAKHOV, V. P., OSETROVA, T. A.

"Determination of the Geometric Characteristics of the Surface of the Sea From the Signal Reflected by the Surface"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp. 110, pp 80-83 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8G50)

Translation: The paper is an exposition of a theory of scattering of electromagnetic waves from a complex rough surface which is a superposition of two kinds of unevenness -- large waves and the ripples covering them. The theory is based on the Kirchhoff approximation in combination with perturbation theory, which makes it more accurate than the theory based on the Kirchhoff approximation alone. The latter gives satisfactory results for incidence close to normal when the effect of the fine structure of the wave can be disregarded. Bibliography of three titles. N. S.

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USSR UDC 621.315.592

GUSLIKOV, V. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., and TIMCHENKO, I. N.

"Effect of a Magnetic Field on the Ionization Energy of Small Donor Impurities in GaAs and InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, Sep 73, pp 1785-1789

Abstract: An analysis is made of the ionization energy of small donors as a function of the magnetic field intensity in the area of fairly weak fields, using as specimens pure GaAs and InP crystals. As described in earlier articles published in the journal noted above (V. F. Dvoryankin et al, 5, 1971, p 1882), experiments along this line have already been conducted. In the present paper, the analysis noted above is made by considering the Hall coefficient as a function of the temperature under various magnetic field intensities. A table of the parameters for n-GaAs and n-InP, together with curves of the Hall coefficient, as functions of the temperature for the various types of specimen listed in the table is given. Curves are also plotted for the Hall coefficient and the resistivity as functions of the magnetic field intensity in GaAs at 4.5° K and for the change in ionization energy of small donor impurities as a function of the magnetic field intensity. In this last curve, the theoretical results are compared with the data found by the authors of the present article and others.
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UDC 621.315.592

USSR

DVORYANKIN, V. F., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., TELEGIN, A. A.

"Electric Properties of n-GaAs Epitaxial Layers"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1882-1887

Abstract: A study was made of the Hall effect, electrical conductivity and mobility in n-GaAs epitaxial layers in the temperature range of 2.5-295° K. The layers were obtained by the method of gas epitaxy on a semiinsulating substrate made of gallium arsenide alloyed with chromium, and they had an electron concentration of $5.7 \cdot 10^{14}$-$4.9 \cdot 10^{15}$ cm^{-3} and a current carrier mobility of 7,500-8,000 cm^2/volt-sec at T=295° K. The maximum mobility in the investigated layers was 104,000 cm^2/volt-sec. In the n-GaAs epitaxial layers with $n \geq 10^{15}$ cm^{-3} at low temperatures, scattering of the neutral atoms of the admixture becomes significant. From analysis of the temperature dependence of the Hall factor, the donor concentration N_d, the acceptor concentration N_a, and the ionization energy of the small donor admixture E_d were determined. In

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DVORYANKIN, V. F., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1882-1887

layers with a concentration of $n \sim 10^{15}$ cm^{-3}, a deep admixture level was detected with $E_{deep} \approx 0.1$ electron volts. The concentration of the admixtures giving a deep admixture level decreases with an increase in the purity of the layers. In the purest test piece ($n = 5.7 \cdot 10^{14}$ cm^{-3}) no deep level was detected. The ionization energy of small donor admixtures decreases with an increase in their concentration as $N_d^{1/3}$.

In order to perform a more detailed analysis, measurements of E_d in crystals with a different degree of admixture compensation are necessary. In addition, the possible dependence of E_d on temperature must be considered and studied to which variations in the number of admixture ions in the crystal and variation of the screening effect of the current carriers can lead.

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Chemical Ind.

FID # 617614

(5)

SO: JPRS # 61125 DATE

Translations on U[illegible] Industrial [illegible]

No.

IMPLEMENTATION OF SCIENTIFIC RESEARCH IN THE CHEMICAL INDUSTRY

[Article by A. I. Nedeshev; Moscow, Khimicheskaya Promyshlennost', Russian, No 11, November 1973, #] Chemical Ind

At a recent meeting, the Board of Directors of the Chemical Industry looked into the matter of implementing the Government plan for scientific research work and use of science and technology achievements in the chemical industry.

The report on this matter was presented by V. M. Zimin, chief of the Science and Technology Branch of the Board. He advised about achievements of the field in development of scientific and technological progress and noted serious shortcomings in the implementation of the plan for introducing new technology into industry.

For the past 2½ years of the current 5 years, considerable work has been done by scientific research workers, experimental constructors, planning organizations, and enterprises of the chemical industry Board on solving basic scientific-technological problems and introducing science and technology achievements into industry.

In 1971-1972, in enterprises of the chemical industry Board, some 1,300 new types of products and articles were introduced, especially pure material and reagents; production was discontinued on about 100 obsolete articles, and about 1,000 products were improved. Use of new techniques and technologies led to improvement of technical-economic indexes and raising of the technical level of production. Thus the higher quality output in 1972 amounted to 632 million rubles as against 198 million in 1971. Raw material consumption per ruble of merchandized product was decreased 1.3 percent and power, 2.1 percent.

Acceleration of technological progress in this field contributed to establishing of highly efficient technological processes and methods for producing new chemical products and articles. The development of a process for making concentrated phosphoric acid from Karatau phosphorites was a

NEDESHEV, A. I

significant step in the production of multiple-use fertilizers with a high nutritive-substance content. New, high-productivity schemes for making sulfuric acid, ammonia, and ammonium nitrate were mastered and a number of problems in the scientific study and development of the technology for making chemicals for plant protection were investigated.

At the Polotski chemical concern, the first industrial equipment was made for producing low-density polyethylene in tubular reactors, and at the Dnepropetrovsk Chemical Plant, shock-resistant polystyrene was made by an incomplete-conversion method. Studies were completed and new studies were planned on complex schemes for purifying, for disposal, of waste waters from production at the Pervomaysk ("First of May") chemical plant, ensuring a closed water-circulation cycle.

For the last part of the Ninth Five-Year Plan, methods were mastered for producing many new highly concentrated food additives and fertilizers with improved physico-chemical properties, chemical means of protecting plants, chemical fibers of better quality, polymer materials, and other products. Commodities of everyday chemistry were made available in a wider assortment and better quality.

With the successful completion of many tasks of the State plan for scientific research work and use of the achievements in science and technology in the chemical industry in this period, the organization and undertaking, of all All-Union firms Soyuzazot [Nitrogen Company], Soyuzkhlor [Chlorine Company], Soyuzkhimplast [Chemi-plastic Company], and Soyuzkhimfoto [Chemi-photo Company] were not accomplished. In the first half of 1973, the plan for new techniques of the Novomoskovsk, Voskresensk, Gorlevsk, and Shostkinsk chemical firms, the Kuibyshevsk chemical factory, Nizhne Tagilsk plastics factory, Ferganask chemical fibers factory, Gaurdaksk sulfur combine, Pylmeskov mining chemical combine, and the Moshytkhim firm was not implemented. Construction of experimental and pilot plant equipment for testing of technological processes and for obtaining data for scale-up to large-tonnage production at Soyuzkhimplast, Soyuzkhlor, and Soyuzazot was delayed.

At the chemical industry Board conference, the assistant director for chemical industries E. F. Glaski, the assistant director of GIAP [State Institute of the Nitrogen Industry] A. M. Alekseyev, the assistant chief of the All-Union Association of the aniline industry department P. A. Kochnev, the assistant chief of the All-Union association Soyuzkhimfoto Z. K. Averbakh, and director of VNIIV [All-Union Scientific Research Institute for Synthetic Fibers] I. G. Shimko took part in the discussion of V. M. Zimin's report.

A participant in the conference, Minister of the chemical industry L. A. Kostandov, proposed that the manager of the association take measures to eliminate the delay in implementing the plan for new techniques in 1973. He also called the attention of the manager of the All-Union association to the fact that, as soon as possible, the matter of readiness to undertake and organize the implementation of this plan in 1974-1975 should be examined.

NEDEV, N.K.

JPRS 59208
6-73
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X-8. EXPERIMENTAL STUDY OF THE DISTRIBUTION OF THE ADMIXTURES IN MULTILAYERED FILM STRUCTURES OF GALLIUM ARSENIDE GROWN BY THE METHOD OF LIQUID EPITAXY

[Article by A. A. Barybin, A. A. Zakharov, I. Ya. Kostyreva, N. K. Nedev, V. M. Prigorovskiy, Leningrad; Novosibirsk, III Simpozium po Tekhnologii Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 136]

This paper contains a discussion of the results of an experimental study of the admixture distribution in film structures of GaAs of the $n-n-i$, $n-n^{++}$, $p-n-i$ type and others grown from the melts-solutions using forced cooling and using a temperature gradient. The conditions of epitaxial growth of the films are the following: the saturation temperature of the solution-melt is 800° to 900°C, the cooling rate is 1-5 deg/min, the temperature gradient is 2-10 deg/cm. Tin, germanium and zinc were used as the alloying admixtures. The distribution of the admixtures in the structures obtained was investigated by the known volt-farad and sonde methods and also using the chemical decoration procedure developed for gallium arsenide. The research demonstrated that depending on the conditions and the growth regimes, sharp transitions of the admixture concentration are obtained between the layers and also structures with intermediate high-resistance and low-resistance layers. It was discovered that when using the temperature gradient method, a more uniform distribution of the admixtures is obtained with respect to the thickness of the layers. The measurement results obtained by different methods agree quite well with each other.

USSR

UDC: 621.398

DMITRIYEV, V. F., Candidate of Technical Sciences, and KOL'CHIK, A. D., NEDIL'KO, A. F., Engineers

"Experiences in the Installation and Operation of the TM-100 Remote Control System"

Moscow, Pribory i Sistemy Upravleniya, No 9, 1973, pp 19-21

Abstract: Details of the installation and operation of the new remote control system TM-100, designed by the TsNIIKA (State All-Union Central Scientific Research Institute of Complex Automation) and NIPINeftekhimavtomat (Scientific Research and Planning Institute for Complex Automation of Production Processes in the Petroleum and Chemical Industries) in 1966. The system prototype was built in 1968 by the ZTA (Plant for Remote Control Equipment), underwent interdepartmental testing, and was put into production. This equipment provides the answer of these principal technical problems: a duplex method for transmitting signals in a communication channel using standard telegraphic channel-forming equipment; a combination of highly effective message safeguards and synchronous operation independent of noise; constant control of communications channels and such system devices as output remote control units

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DMITRIYEV, V. F., et al., Pribory i Sistemy Upravleniya, No 9, 1973, pp 19-21

with no false command outputs; economy in reproducing information through the use of memory systems; and automatic self-modifying programs for command output in an emergency situation. Photographs of the system control desk and the receiver-transmitter UPP-KP assembly are produced, and a summary of the results obtained from installation is given, together with some relevant technical specifications.

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USSR UDC 614.833

NEDIN, V. V.

Kiev, Vzryvoopasnost' Metallicheskikh Poroshkov (Explosion Hazard of Metallic Powders), "Naukova Dumka," 1971, 140 pp

Translation of Foreword: In the production and processing of powders, particularly metal powders, gas dispersion systems can develop with a solid phase of vigorously oxidizing substances with heat separation capable of igniting and exploding under specific conditions. In the Soviet economy a great deal of production is linked in one way or another with the production or reprocessing of fire or explosion danger powders. The relative significance of powder metallurgy enterprises is on the increase. Of particular danger is a large group of metal powders characterized by low ignition temperature, high calorific power, and development of high explosion pressures (dust of aluminum, magnesium, zirconium, titanium, iron, various alloys based on them, etc. The self-ignition of industrial materials alone causes a yearly material loss of tens of million rubles. It should be noted that a tendency to an increased number of fires has been observed. Many enterprises are producing new

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NEDIN, V. V., Vzryvoopasnost' Metallicheskikh Poroshkov, "Naukova Dumka," 1971, 140 pp

materials without appropriate safety measures. Other enterprises, however, take unnecessary safety measures, which results in considerably increased production costs. In order to develop a safe technology for the production and use of powders, it is necessary to have exhaustive data on spontaneous ignition and explosion properties. The determination of these characteristics involves serious methodological difficulties. The known methods have basic deficiencies. This makes it difficult to use them in practice. Moreover, additional difficulties arise due to the lack of an exact terminology. The literature gives information on the explosive characteristics of powders of predominantly organic origin. There are much less data on metal powders, and these data are over many different periodicals. The book of M. G. Godzhello, "Vsryvy Promyshlennykh Pyley i ikh Preduprezhdeniye," was published in 1952. The works of I. V. Ryabov, S. I. Taubkin, and M. N. Kalganova do not fill the gap in the literature. For these reasons, the authors decided to write this monograph, in which the methods of rating fire- and explosion-danger powders

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NEDIN, V. V., Vzryvoopasnost' Metallicheskikh Poroshkov, "Naukova Dumka," 1971, 140 pp

are critically analyzed and investigation results are reported. It is very important to have data on the physico-chemical properties of powders and gas-suspended particles affecting their activity (dispersibility, concentration of particles, specific surface, oxidation degree). Therefore, particular attention in the book was given to methods of investigating these properties and determining the rapidly changing in time concentration of particles suspended in gas. The authors thank their colleagues at the Institute of the Problems of Material Science of the Academy of Sciences UkrSSR who participated in the investigations.

Translation of Table of Contents:

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NEDIN, V. V., Vzryvoopasnost' Metallicheskikh Poroshkov, "Naukova Dumka," 1971, 140 pp

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NEDIN, V. V., Vzryvoopasnost' Metallicheskikh Poroshkov, "Naukova Dumka," 1971, 140 pp

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NEDIN, V. V., Vzryvoopasnost' Metallicheskikh Poroshkov, "Naukova Dumka," 1971, 140 pp

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Acc. Nr. AP0048832 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code UR0460

90928x **Conoscopic study of dendrite structures in a thin film of poly(oxymethylene) diacetate.** Mikhailov, M.; Nedkov, E. (USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 100 (Russ). Conoscopic studies of dendritic and ovoid structures obtained in a thin layer of fused title polymer showed that a resolved diffraction pattern could be obtained from them with a well-collimated, entirely fine, and weakly intense light beam which converged at a short distance from the object. The relative position of the interference maxima is due not to diffraction of the sym. disposed, approx. identical scattering elements of which the spherulites consist, but to diffraction of the different (in form and size) scattering elements which at first glance appeared to be chaotically arranged. DBJR

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NEDLER, V.

"All-Union Symposium on Spectral Analysis of Low Level and Trace Elements"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 806-807

Abstract: The symposium was hled in October 1969 in Tbilisi and covered the following topics: Current status of standards for spectral analysis of traces and low concentrations of elements (ABASHIDZE, N. F., and GRUDINKINA, N. P.). Metrologic problems in the area of industrial control of the composition of pure compounds (ALIMARIN, I. P., ZAKHAROVA, E. N., et al). Criteria for accuracy, reproducibility and sensitivity of analysis of high purity materials (ARAKEL'YAN, N. A., and BELYAYEV, YU. I., et al). Method of periodic scanning of the spectrum as a means of detecting weak lines (ABRAMSON, I. S., ARAKEL'YAN, N. A., et al). Mass spectroscopic methods for analysis of pure substances (GLAVIN, G. G., and KORMILITSYN, D. V.).

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NEDLER, V., Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 806-807

The use of atomic absorption method in analysis of pure materials and determination of microimpurities (BRITSKE, M. E., KATSKOV, D. A., et al). Spectrochemical determination of impurities in pure materials (KARABASH, A. G., ZAKHARIYA, N. F., et al). Activation methods of analysis of pure materials (YAKOVLEV, YU. V.). Contemporary spectroanalytical instrumentation for analysis of pure substances (STARTSEV, G. P.).

A series of papers was concerned with spectrochemical analysis, such as: concentration of impurities by extraction, or by extraction of their bases (BARANOVA, L. L., et al; BELORUKOVA, S. N., et al; ZHIVOPISTSEV, V. P., et al; KOLENKO, L. I., et al; YUDELEVICH, I. G., et al; GONCHAROVA, N. N., et al); by coprecipitation (DVORTSMAN, A. G., et al; USTIMOVA, A. M., et al); by ion exchange chromatography (KOMAROVSKIY, A. G., et al; OTMAKHOVA, Z. N., et al), or directed crystallization (ZOLOTOVITSKAYA, E. S.). The papers of MAYBORODA, I. K., et al, LARINA, L. K., et al, MAKULOV, N. A., et al,

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NEDLER, V., Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 806-807

KUBASOVA, N. B., et al, and ROGINSKAYA, L. K., et al, were concerned with increased absolute sensitivity of spectral analysis. Atomic absorption analysis was covered by GONCHAROVA, N. N., et al, and YUDELEVICH, I. G., et al. BLUDOV, V. D., et al, and ANTONOV, A. V., et al, discussed luminescent analysis. Possibilities of using an atomic-fluorescent method with impulse evaporation of the sample was the subject of GUZEYEV, I. D., et al, and KARYAKIN, A. V., et al. A novel method for preparation of standards for spectral analysis was discussed by KUZNETSOV, YU. N., et al, photoelectric spectroscopy of residual impurities in semiconductors -- by LIFSHITS, T. M., principles of various stages of spectral analysis -- by ZAKHARIYA, N. F., and criteria and methods for determination of the observation range -- by ZILBERSHTEYN, KH. I.

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USSR

NEDLIN, G. M., Physicotechnical Institute imeni A. F. Ioffe, USSR Academy of Sciences, Leningrad

"On the Theory of Exchange Interaction"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 10, Oct 73, pp 3048-3052

Abstract: It is shown that when examining indirect exchange interaction between magnetic ions *a* and *b* through a nonmagnetic ion *O* it is necessary to account for the exchange interaction between a magnetic ion (to which one of the electrons of ion *O* is transferred) and the ion pair *Ob*. This interaction is of the same order as the interatomic exchange interaction between ions *O* and *b*.

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USSR

NEDLIN, G. V., Brucellosis Department, Kazakh Scientific Research Institute of Regional Pathology

"Dynamics of S-Reactive Proteins and Organic Antoantibodies During Two Different Methods of Treating Brucellosis"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 7, 1971, pp 28-30

Abstract: Serum titers of S-reactive proteins (SRP) and of autoantibodies (tested on antigens obtained from the brain, liver, spleen, and connective tissue of healthy young men who had died in accidents) were determined on two groups of brucellosis patients. A total of 34 patients received symptomatic treatment with or without antibiotics, and 43 patients were treated with specific antigens (vaccine or brucellin). After the symptomatic treatment, both SRP and autoantibodies were found in fewer patients and in smaller concentrations, while after the specific treatment, a large number of patients had a higher titer of both factors. Since the presence of SRP as well as of autoantibodies in the serum is indicative of intensified, destructive tissue inflammation, it is recommended that regular SRP and autoantibody tests be run on patients receiving the specific treatment against brucellosis (which should be replaced with the symptomatic treatment if necessary).
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USSR

NEDOREZOV, S. S. (Physics-Engineering Institute of Low Temperatures, Ukrainian Academy of Sciences, Khar'kov)

"Spatial Quantization in Semiconductor Films"

Leningrad, Fizika Tverdogo Tela, August 1970, pp 2269-2276

Abstract: An analysis is made of the spatial quantization of the energy spectrum in semiconductor films with degenerate bands. It is shown that electron states arise as the result of spatial quantization in the valence bands of germanium and silicon. The upper subband (nearest the border of the valence band), together with the points of the minimum and maximum, has saddle points, which cause logarithmic singularities in the density states. The method suggested for determining the dimensionally quantized energy levels (subbands) from the known band structure of a solid sample is applicable to semiconductor films with a thickness $L \gg a$ (a is the interatomic distance).

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USSR

UDC 617-001.17-092.9-085.38-07:616.36-008-072.7

NEDOSHIVINA, R. V., Pathophysiological Laboratory (Professor N. A. Fedorov, Member of Academy of Medical Sciences, USSR, Chief) of the Central Institute of Hematology and Blood Transfusion (Professor A. Ye. Kiselev, Director)

"The Effect of Immunohemotherapy on the Function of the Reticuloendothelial System in the Liver in Burns"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 59-61

Abstract: Because of the vital role of the RES of the liver in immunization reactions in burns, tests were carried out of the effect of immunotherapy on its function in dogs during the acute stage of burn sickness. Three series of experiments (20 dogs each) were performed: series one -- control animals with thermal trauma; series two -- dogs with similar trauma, treated with burn convalescent serum; series three -- dogs treated with serum of intact dogs. Twenty to twenty-five microcoulomb radioactive colloidal gold solution -- Au^{198} -- was injected intravenously into each animal. Blood was taken from the femoral vein every 5 minutes for 30-45 minutes until minimal constant gold level was reached. A standard burn of 15-20 percent

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NEDOSHIVINA, R. V., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 59-61

total body surface was applied for 15-17 seconds to a depth of third degree burns by means of electrical apparatus. Active reconvalescent serum with 1:16 and 1:32 antitoxin titers were taken from blood of dogs 1-3 months after burn. Immunization and normal sera were administered to animals in doses of 10-15 milliliters per kilogram starting 4 hours after the burn for 5-7 days. Depression of ingestive capacity of hepatic RES function was noted with marked slowing down of Au^{198} ingestion from the blood, demonstrating diminished phagocytic activity of hepatic cells and probably due the post-burn day to slowing down of the blood flow and subsequently -- to entry into the bloodstream of decomposition products from the focus of the disease. The ingestive function was restored on the 7th day of immunotherapy, whereas in dogs treated with normal serum it was restored on the 13th to 15th day.

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Burn Studies

USSR UDC 617-001.17-07:616.42-008.6-07

NEDOSHIVINA, R. V., Pathophysiology Laboratory, Central Institute of Hematology and Blood Transfusion

"Change in Uptake Function of the Reticuloendothelial System After Burns"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, pp 91-92

Abstract: Fifteen to 20% of the body surface of dogs was burned shortly before they were given Au^{198} intravenously. The uptake of the radioisotope by the reticuloendothelial system (RES) was sharply inhibited from the first day. Clearance of Au^{198} from the blood was two to three times slower than normal. This inhibition continued with some fluctuations until day 23 after the burn was inflicted when RES activity returned to normal. The lowered RES activity was accompanied by general depression of the animals, anorexia, and development of weak granulations with copious suppurative discharges from the wound. Thus, a blockade of the RES, as evidenced by the increased time of Au^{198} uptake from the blood, is one of the pathological changes that arise in the body after a burn.

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USSR

MILLIONSHCHIKOV, M. D., LYUL'KA, A. M., NEDOSPASOV, A. V., SHEINDLIN, A. YE.

"Possibilities of Using Gas Turbines and Magnetogas-Dynamic Generators at Atomic-Electric Power Plants with High-Temperature, Gas-Cooled Reactors"

Moscow, Teplofizika Vysokikh Temperatur, Vol 8, No 2, March-April 1970, pp 379-393

Abstract: This article describes an investigation of the possibilities of atomic-electric power plants with gas turbines and magnetogas-dynamic generators, using as examples preliminary designs of 1,200-megawatt power units. Although power units of this type will not be built in the near future, selection of them for this study has permitted not only evaluation of the technical parameters of the plants but also their basic economic indexes. The article is based on a report presented at the meeting of the magnetogas-dynamic generator group under the International Atomic Agency in Paris, January 1970.

The article contains discussions of the thermal circuit and basic elements of atomic-electric power plants with gas-cooled reactors and closed gas turbines, the equipment composition of these plants, design principles for plasma magnetogas-dynamic generators for electric power plants, the thermal circuit of atomic-magnetohydrodynamic electric power plants with steam turbine compressor drive, and

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MILLIONSHCHIKOV, M. D., et al., Teplofizika Vysokikh Temperatur, Vol 8, No 2, March-April 1970, pp 379-393

the layout of an atomic-magnetohydrodynamic-electric power plant with a 2,000°C reactor and gas turbine. Economic indexes showing the cost of electric power and specific calculated expenditures of atomic-electric power plants with gas turbines and magnetogas-dynamic generators based on the 1980-1985 price level are tabulated. The tabulated data shows that atomic power plants with gas-cooled reactors have better over-all technical and economic indexes than plants using organic fuel. The specific annual expenditures of the atomic electric power is 2-3 times lower. The specific capital investments in equipment are approximately the same for steam power plants using organic fuel and for atomic-electric power plants with gas turbines at 850°C or for magnetogas-dynamic generators at 1,700°C. It is concluded that even the simplest atomic-electric power plants with gas turbines at temperatures of 850°C cannot be put into operation in less than ten or fifteen years.

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NEDOSPASOV, A.V.

Turbines - Generators

TECHNICAL TRANSLATION

AEC/ FSTC-HT-23- 1003-71

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ENGLISH TITLE: On the Possibilities of Using Gas Turbine Installations and Magnetohydrodynamic Generators at Atomic Power Stations with High Temperature Gas Cooled Reactors

FOREIGN TITLE: O Vozmozhnostyakh Ispol'zovaniya Gazoturbinnykh Ustanovok i MGD-Generatorov na AES s Vysokotemperaturnymi Gazookhlazhdayemymi Reaktorami

AUTHOR: M. D. Millionshchikov, A. M. Lyul'ka, A. V. Nedospasov and A. Ye. Sheyndlin

SOURCE: Teplofizika Vysokikh Temperatur, Vol. 8, No. 2, 1970

GRAPHICS NOT REPRODUCIBLE

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1/2 038

TITLE--EFFECT OF IONIZED OSCILLATIONS ON CURRENT INTERCHANGE INSTABILITY OF A POSITIVE COLUMN -U-

AUTHOR--NEDOSPASOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1310-1317

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENT INTERCHANGE INSTABILITY OF A GAS DISCHARGE POSITIVE COLUMN IS CONSIDERED THEORETICALLY BY TAKING INTO ACCOUNT VARIATION OF THE NUMBER OF IONIZATIONS PER PLASMA ELECTRON. THE RESULTS AGREE WITH THE MAIN EXPERIMENTAL FACTS PERTAINING TO TURBULENT COLUMNS IN STRONG MAGNETIC FIELDS. IT IS SHOWN THAT IN CONDITIONS WHEN THE ELECTRON ENERGY DISTRIBUTION FUNCTION DEPENDS ON THE PALSMA CONCENTRATION THE STABILITY OF THE POSITIVE COLUMN DECREASES.

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PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 6 March 1970, Vol III, Nr 45, p D 1

USSR

MODEL OF UNSTABLE PLASMA--Moscow March TASS--Discoveries by Soviet scientists Yuri Ivanov, Boris Kadomtsev, Arthur [redacted]ov, and Solomon Rynkin make it possible to simulate and study unstable plasma of thermonuclear processes. Today, the Soviet Committee for Inventions and Discoveries entered this discovery in its register.' Experimenting with samples of germanium semiconductor, the authors discovered a phenomenon called screw-type plasma instability and explained it. A possibility appeared to substitute huge and very expensive installations, simulating plasma of thermonuclear synthesis by simple samples of the semiconductor and to test on them different methods of dampening of plasma instability. The discovery also made it possible to design a series of original instruments in which the instability is used for the generation and intensification of electric oscillations. (Moscow TASS International English 2135 GMT 3 Mar 70 L)

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19730695

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 055

TITLE--POSSIBILITIES FOR USING GAS TURBINE ASSEMBLIES AND MAGNETOHYDRODYNAMIC GENERATORS IN A NUCLEAR POWER STATION WITH HIGH

AUTHOR-(04)-MILLIONSHCHIKOV, M.D., LYULKA, A.M., NEDOSPASOV, A.V., SHEYNDLIN, A.YE.

COUNTRY OF INFO--USSR

SOURCE--TOPLOFIZ. VYS. TEMP. 1970, 8(2), 379-93

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAS TURBINE, MAGNETOHYDRODYNAMICS, NUCLEAR POWER PLANT, MHD GENERATOR, GAS COOLED NUCLEAR REACTOR/(U)3000MW REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0294/70/008/002/0379/0393

PROXY REEL/FRAME--3008/0589

CIRC ACCESSION NO--AP0137674

UNCLASSIFIED

2/2 055 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137674

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMODYNAMIC EFFICIENCIES (ECONOMICS) AND REDUCED LEVELS OF THERMAL POLLUTION ATTAINABLE IN HE GAS COOLED REACTORS COUPLED TO GAS TURBINES OR MAGNETOHYDRODYNAMIC (MHD) GENERATORS ARE DISCUSSED. GAS TURBINE DESIGNS, THEIR COUPLING TO 1200-MW REACTORS, THEIR OPERATION AT 850, 950, AND 1200DEGREES, AND THEIR EFFICIENCIES OF 46.2-54.5PERCENT ARE COMPARED AND ARE DISCUSSED IN RELATION TO COUNTERFLOW AND CROSS FLOW REGENERATOR CHARACTERISTICS. THE CHARACTERISTICS AND EFFICIENCIES OF CARBIDE FUELED 3000-MW REACTORS COUPLED TO MHD GENERATORS OPERATING ON AR-CS OR HE-CS MIXTS. AT GAS COUTLET TEMPS. OF 1733-1973DEGREESK AND REACTOR PRESSURES OF 5-50 ATM ARE DISCUSSED. AN EFFICIENCY OF 57-9PERCENT WAS CALCD. FOR A 3000-MW MHD COUPLED REACTOR OPERATING AT A GAS OUTLET TEMP. OF 2273DEGREESK AT A HEAT RECOVERY OF 90-3PERCENT; INCREASING THE INLET PRESSURE FROM 30 TO 60 ATM REDUCED CAPITAL INVESTMENTS BY SIMILAR TO 25PERCENT AND THE COST PER KW-HR BY SIMILAR TO 11PERCENT.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MOVEMENT OF AN IONIZATION FRONT IN AN ARGON CESIUM PLASMA IN A MAGNETIC FIELD -U-

AUTHOR-(02)-KARPUKHIN, V.T., NEDOSPASOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIIZ. VYS. TEMP. 1970, 8(2), 266-71

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ARGON, CESIUM, MAGNETIC FIELD EFFECT, PLASMA PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1409 STEP NO--UR/0294/70/008/002/0266/0271

CIRC ACCESSION NO--AP0133361

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133361

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VELOCITY OF THE MOVEMENT OF THE IONIZATION FRONT WAS MEASURED FOR AN AR PLASMA (AR PRESSURE 100 TORR, CS PRESSURE 5.5 TIMES 10 PRIMENEGATIVE2 TORR) IN A PULSED DISCHARGE TUBE, SIMULTANEOUSLY PARALLEL (V IS PARALLEL TO) AND PERPENDICULAR (V IS PERPENDICULAR TO) TO THE MAGNETIC FIELD. THE MOVEMENT OF THE PLASMA BOUNDARY WAS CONSIDERED AT DIFFERENT MUTUAL ELEC. AND MAGNETIC FIELD ORIENTATIONS. THE VELOCITY WAS MEASURED PHOTOGRAPHICALLY. AT SMALL MAGNETIC FIELDS, THE VELOCITY V IS PERPENDICULAR TO OF THE FRONT DECREASES WITH THE INCREASE OF THE PRODUCT OMEGA SUBETAO E, ELECTRON CYCLOTRON FREQUENCY AND MEAN FREE FLIGHT TIME. THE APPEARANCE OF THE IONIZATION INSTABILITY MANIFESTS ITSELF WITH A STEPWISE INCREASE OF V IS PERPENDICULAR. THIS VALUE OF V IS PERPENDICULAR DEPENDS ON THE SIGN OF THE MAGNETIC FIELD. THE VELOCITY ANISOTROPY CAN BE EXPLAINED BY ADDNL. HEAT RELEASE BY SHORT CIRCUITED HALL CURRENTS NEAR THE MOVING PLASMA BOUNDARY. PLOTS OF V IS PARALLEL AND V SUB1 ARE SHOWN. FACILITY: INST. AT. ENERG. IM. KURCHATOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 616.993.162-022.39-084.47-036.8

SERGIYEV, P. G., BEYSLEKHEM, R. I., MOSHKOVSKIY, Sh. D., DEMINA, N. A., KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS, I. I., SHCHERBAKOV, V. A., YARMUKHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N., and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 541-551

Abstract: Preventive mass vaccinations with a virulent strain of Leishmania tropica major were found to give reliable protection against cutaneous leishmaniasis. Only virulent strains can be used for vaccination. The degree of inoculation with such strains is almost 100%, the inoculative process having, as a rule, a favorable effect. The maximum size of the vaccination lesion does not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically all cases, the process does not last more than 5-6 months. Morbidity occurred in the group vaccinated with the low-virulence strain, among those without lesions, and among those whose lesions were less than 0.5 cm in diameter.

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USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed; allergic exanthem was noted occassionally. In order to prevent local and general allergic reactions after vaccination, it is necessary to exclude persons who have had cutaneous leishmaniasis. If past disease cannot be revealed by means of anamnesis or medical examination, the intracutaneous leishmanin test is recommended. The level of the virulence in inoculative strains should be periodically tested, since insignificant initial virulence or its weakening during culturing make a given strain unfit for preparation of inoculum.

USSR

UDC 621.317.799

NEDOSTUP, L. A., YAVICH, A. A.

"Automation of Control for Long-Term Testing of Equipment"

Obmen opytom v radioprom-sti (Exchange of Experience in the Radio Industry), vyp. 5, Moscow, 1970, pp 77-79 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A133)

Translation: On the basis of the operating experience of one of the enterprises, the advantages of using automatic control devices when performing long-range reliability tests on electronic measuring equipment are demonstrated.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIENCE WITH HEXONOUM ELECTROPHORESIS IN HEALTH RESORT TREATMENT OF PATIENTS WITH HYPERTENSIVE DISEASE -U-

AUTHOR-(05)-NEDOSTUPOV, S.P., ALEKSANDROVA, K.M., MERKULOVA, YE.YU., VAKHNOVSKAYA, O.I., ZYKIN, N.N.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 73-75

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROPHORESIS, HYPERTENSION, BLOOD PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1686 STEP NO--UR/0475/70/000/004/0073/0075

CIRC ACCESSION NO--AP0129056

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX HEALTH RESORT TREATMENT INCLUDING HEXONIUM ELECTROPHORESIS RESULTED IN MOST CASES IN REDUCTION OF THE ARTERIAL PRESSURE. AN IMPROVEMENT OF THE PATIENTS CONDITION WAS OBSERVED IN 98.8PERCENT. THE EXPEDIENCY IS CONCLUDED OF INCLUSION OF HEXONIUM ELECTROPHORESIS IN THE COMPLEX OF HEALTH RESORT TREATMENT OF PATIENTS WITH HYPERTENSIVE DISEASE (STAGES I AND II). FACILITY: YALTINSKOGO TERRITORIAL'NOGO SOVETA PO UPRAVLENIYU KURORTAMI PROFSOZUZOV.

UNCLASSIFIED

USSR

UDC: 621.372.412

LOBANOV, Ye. M., CHUBAROV, L. B., YAKOVLEV, V. N., NEDOSTUPOV, V. N., BAGAYEV, N. M.

"Oscillation Frequency Temperature Dependence of Crystal Plates"

[Tr.] Tashkent. in-ta inzh. zh.-d. transp. ([Works] of the Tashkent Institute of Railway Transportation Engineers), 1970, vyp. 66, pp 146-148 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D345)

Translation: An investigation is made into the effect which temperature has on the frequency of oscillations of a quartz AT-section plate. An expression is derived which can be used to evaluate the effect of the temperature coefficients of the constants of elasticity of quartz as well as the effect of the angle of plate cut-off on the temperature coefficient of frequency. V. V.

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Steels

USSR

UDC 669.15'24'26-194

KACHALKIN, G. S., MEDOSHKOV, Yu. D., and KACHALKIN, V. G., Gor'kiy Automobile Plant; Gor'kiy Polytechnic Institute

"Cast High Temperature Steels With Reduced Nickel Contents"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1972, pp 57-58

Abstract: The objective of this study was Kh24N12SL low-nickel steel as a replacement for Kh18N25S2 and Kh18N16 steels in accessories and reinforcements for heat treating furnaces. The requirements on the new metal included scale, acid, wear, and high temperature resistance under thermal cycles of 20≠1000°C. The mechanical properties of the test specimens of the new steel were found to be similar to those of the other steels. Microstructural examinations of the steel after repeated anneals for 5000 hr showed structural changes similar to those in the other steels. The overall test results of Kh24N12SL steel over the entire set of properties showed little or no differences from those of the other steels in current use. The present output of castings from the new steel amounts to no less than 80% of the total output of high temperature castings. The replacement of

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USSR

KACHALKIN, G. S., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1972, pp 57-58

Kh18N25C2 and Kh18N16, the high-nickel steels, with Kh24N12SL steel saves about 12,500 kg nickel per year, resulting in 31,625 rubles of yearly savings. (1 table)

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UDC: 681.84

USSR

NAKHODKIN, N. G., KUVSHINSKIY, N. G., SHEVLYAKOV, YU. A., NERTSEV, V. P., NEDUZHIY, S. A., BORODKINA, M. S., USPENSKIY, V. I., SHEBERSTOV, V. I., Kiev State University imeni T. G. Shevchenko and the All-Union Scientific Research Institute of the Chemical and Photographic Industry

"A Photothermopolymerization Data Recording Method"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 48, patent No 259961, filed 25 Jan 67

Abstract: This Author's Certificate introduces a photothermopolymerization data recording method based on the cross-linking response of polymers when they are exposed to radiation such as light. As a distinguishing feature of this method, the resolving power of the recording is improved and permanent recordings are made by converting the latent image to a three-dimensional relief with subsequent fixation through the process of heating the carrier material to its softening temperature and then cooling it.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MEASURING THORON, RADON-220, EXHALATION -U-

AUTHOR-(03)-STYRO, B., NEDVECKAITE, T., SENKO, E.E.

COUNTRY OF INFO--USSR

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3635-8

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--RADON ISOTOPE, NUCLEAR EMULSION, RADIOACTIVITY MEASUREMENT, IONIZATION CHAMBER, NATURAL RADIOACTIVITY, SEASONAL VARIATION, GROUND SURVEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1059 STEP NO--US/0000/70/075/018/3635/3638

CIRC ACCESSION NO--AP0136479

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 022
CIRC ACCESSION NO--AP0136479
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF MEASURING PRIME220 RN EXHALATION, BY DISINTEGRATION CHAMBER AND BY NUCLEAR EMULSION, ARE DESCRIBED. THE DATA ON THE PRIME220 RN EXHALATION UNDER VARIOUS WEATHER CONDITIONS AND STATES OF GROUND SURFACE ARE SUMMARIZED. THE AV. VALUES RANGE FROM ZERO, WHEN THE SNOW SURFACE IS COVERED BY ICE, TO 33 TIMES 10 PRIME NEGATIVE10 CI-CM PRIME2 SEC FOR DRY GROUND IN SUMMER.

UNCLASSIFIED

Acc. Nr. AP0049965 Abstracting Service: CHEMICAL ABST. 5/70 N Ref. Code 4R0051

105580k Structure of electron-vibrational luminescence spectra in diamond crystals. Nedzvetskii, D. S.; Dymkg, N. (USSR). *Opt. Spektrosk.* 1970, 28(1), 82-8 (Russ). Luminescence spectra of natural diamonds were run at 77°K. The interpretation of 2 systems of narrow lines at a low background in the ranges 4152 and 5032 Å is given. The electronic vibrational spectrum in the 4152 Å region is due to the interaction of the center with phonons of different vibrational branches. The fairly well resolved sharp lines in the luminescence spectra of diamonds are given by the character of the function detg. the distribution of the vibrational frequency satns. The spectra are affected by the interactions between the center and the local, or pseudolocal, vibrations. The system of lines at 5032 and 4959 Å are due to the quasi-local vibration (frequency 330 cm^{-1}). Only weak interactions occur between the centers and phonons in diamond crystals. H. Parizkova

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REEL/FRAME
19801903

7 pd

USSR

UDC: 621.791.763.1:669.24

LUGIN, V. P., Candidate of Technical Sciences, and NEDZVETSKIY, G. V., Bryansk Institute of Transport Machine Building

"Spot Welding Nickel to Kovar"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 17-18

Abstract: The authors show that it is possible to weld 2mm thick kovar to 0.5mm thick nickel on the TKM-7 capacitor type spot welding machine with the aid of a low-inertia compression mechanism. Welding at a capacitor battery capacitance of 28 microfarads and a force at the electrodes of 28kg produces the strongest welded joint with respect to rupture. Rupture strength is significantly increased by increasing the rigidity of the welding regime, i.e., by reducing the transformation factor of the welding transformer.

USSR

MOROZ, O.; NEDZVETSKIY, V.

"A Dream of a Million Watts"

Moscow, Literaturnaya Gazeta, 24 Mar 71, p 11

Abstract: A popular account is presented of the xenon lamp and its potential use in plant breeding and crop growing, especially in the northernmost regions of the Soviet Union, where climatic factors are hostile to agriculture. Experiments have shown, for example, that early wheat varieties ripen 50 to 70 days sooner under xenon lamps than in the field and late varieties mature 70 to 80 days sooner. No special equipment is needed for this purpose. While the technical feasibility of "indoor agriculture" has apparently been demonstrated, the costs of electricity and other economic factors remain a formidable barrier.

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UNCLASSIFIED PROCESSING DATE--020CT70
1/2 012
TITLE--CALCULATION OF AUTOMOBILE MOTION CONDITIONS BY MEANS OF COMPUTERS
-U-
AUTHOR--YEFIMOV, A.F.

COUNTRY OF INFO--USSR

SOURCE--CALCULATION OF AUTOMOBILE MOTION CONDITIONS BY MEANS OF COMPUTERS
TRASCHET REZHIMOV DVIZHENIYA AVTOMOBILEY NA VYCHISLITEL'NYKH MASHINAKH)
DATE PUBLISHED--------70

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

TOPIC TAGS--MONOGRAPH, COMPUTER APPLICATION, AUTOMOBILE, DIGITAL COMPUTER, MOTION MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1288 STEP NO--UR/0000/70/000/000/0001/0171

CIRC ACCESSION NO--AM0112334
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210007-5

USSR

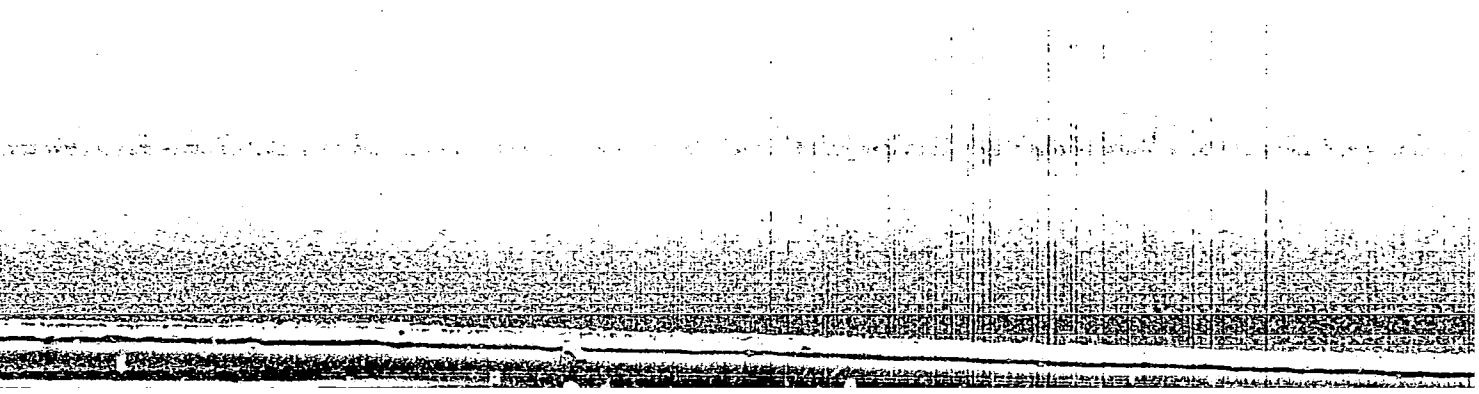
UDC 771.531.37.7.8.33

BOGDANOV, L. M., GRECHKO, M. K., DONSKAYA, S. A., ZHORRES, V. I., KISLITSYN, V. K., and NEFEDCHENKOV, V. M., Shostinskiy Branch, Gosniikhimfoto-proyekt Shostinskiy Chemical Combine

"A New X-Ray Film for Rapid Machine Processing"

Moscow, Zhurnal Nauchnoy i Prikladony Fotografii, Vol 18, No 4, 1973, pp 306-307

Abstract: The Shostinskiy branch of the Gosniikhimfoteproyekt and the Shostinskiy Chemical Combine completed in 1972 the development of a new medical X-ray film, the RM-1 "M" which, in distinction from the series-produced RM-1 medical X-ray film, is suitable for rapid machine processing. The specifications of this new film are similar to those of the East German Supervidox Roentgen Film/x-ray. The emulsion layer of the RM-1 "M" film is thinner than that of the RM-1 film, and of the RM-1T film that is being produced in series for tropical use; the emulsion layer of the new film is capable of withstanding the severe temperature conditions of machine processing. During machine processing, each of the operations of developing, fixing, washing, and drying require 45 seconds. The RM-1 "M" film has been tested for machine processing with entirely satisfactory results, and is now being produced in series.
2 tables. 2 references.
1/1



APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210007-5"

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MEASURING THORON, RADON-220, EXHALATION -U-

AUTHOR-(03)-STYRO, B., NEDVECKAITE, T., SENKO, E.E.

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SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3635-8

DATE PUBLISHED-------70

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1059 STEP NO--US/0000/70/075/018/3635/3638

CIRC ACCESSION NO--AP0136479

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136479

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF MEASURING PRIME220 RN EXHALATION, BY DISINTEGRATION CHAMBER AND BY NUCLEAR EMULSION, ARE DESCRIBED. THE DATA ON THE PRIME220 RN EXHALATION UNDER VARIOUS WEATHER CONDITIONS AND STATES OF GROUND SURFACE ARE SUMMARIZED. THE AV. VALUES RANGE FROM ZERO, WHEN THE SNOW SURFACE IS COVERED BY ICE. TO 33 TIMES 10 PRIME NEGATIVE10 CI-CM PRIME2 SEC FOR DRY GROUND IN SUMMER.

UNCLASSIFIED

Acc. Nr. AP0049965 Abstracting Service: CHEMICAL ABST. 5/70 N Ref. Code 64R0051

105586k Structure of electron-vibrational luminescence spectra in diamond crystals. Nedzvetskii, D. S.; Dyuke, N. (USSR). *Opt. Spektrosk.* 1970, 28(1), 82-8 (Russ). Luminescence spectra of natural diamonds were run at 77°K. The interpretation of 2 systems of narrow lines at a low background in the ranges 4152 and 5032 Å is given. The electronic vibrational spectrum in the 4152 Å region is due to the interaction of the center with phonons of different vibrational branches. The fairly well resolved sharp lines in the luminescence spectra of diamonds are given by the character of the function detg. the distribution of the vibrational frequency satns. The spectra are affected by the interactions between the center and the local, or pseudolocal, vibrations. The system of lines at 5032 and 4959 Å are due to the quasi-local vibration (frequency 330 cm^{-1}). Only weak interactions occur between the centers and phonons in diamond crystals. H. Parizkova

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REEL/FRAME
19801903

7 pd

USSR

UDC: 621.791.763.1:669.24

LUGIN, V. P., Candidate of Technical Sciences, and NEDZVETSKIY, G. V., Bryansk Institute of Transport Machine Building

"Spot Welding Nickel to Kovar"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 17-18

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USSR

MOROZ, O.; NEDZVETSKIY, V.

"A Dream of a Million Watts"

Moscow, Literaturnaya Gazeta, 24 Mar 71, p 11

Abstract: A popular account is presented of the xenon lamp and its potential use in plant breeding and crop growing, especially in the northernmost regions of the Soviet Union, where climatic factors are hostile to agriculture. Experiments have shown, for example, that early wheat varieties ripen 50 to 70 days sooner under xenon lamps than in the field and late varieties mature 70 to 80 days sooner. No special equipment is needed for this purpose. While the technical feasibility of "indoor agriculture" has apparently been demonstrated, the costs of electricity and other economic factors remain a formidable barrier.

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USSR

UDC 771.531.37.778.33

BOGDANOV, L. M., GRECHKO, M. K., DONSKAYA, S. A., ZHORRES, V. I., KISLITSYN, V. K., and NEFEDCHENKOV, V. M., Shostinskiy Branch, Gosniikhimfotoproyekt Shostinskiy Chemical Combine

"A New X-Ray Film for Rapid Machine Processing"

Moscow, Zhurnal Nauchnoy i Prikladony Fotografii, Vol 18, No 4, 1973, pp 306-307

Abstract: The Shostinskiy branch of the Gosniikhimfotoproyekt and the Shostinskiy Chemical Combine completed in 1972 the development of a new medical X-ray film, the RM-1 "M" which, in distinction from the series-produced RM-1 medical X-ray film, is suitable for rapid machine processing. The specifications of this new film are similar to those of the East German Supervidex Roentgen Film/x-ray. The emulsion layer of the RM-1 "M" film is thinner than that of the RM-1 film, and of the RM-1T film that is being produced in series for tropical use; the emulsion layer of the new film is capable of withstanding the severe temperature conditions of machine processing. During machine processing, each of the operations of developing, fixing, washing, and drying require 45 seconds. The RM-1 "M" film has been tested for machine processing with entirely satisfactory results, and is now being produced in series.
2 tables. 2 references.
1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CALCULATION OF AUTOMOBILE MOTION CONDITIONS BY MEANS OF COMPUTERS
-U-
AUTHOR--NEFEDOV, A.F.

COUNTRY OF INFO--USSR

SOURCE--CALCULATION OF AUTOMOBILE MOTION CONDITIONS BY MEANS OF COMPUTERS (RASCHET REZHIMOV DVIZHENIYA AVTOMOBILEY NA VYCHISLITEL'NYKH MASHINAKH)
DATE PUBLISHED--------70

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

TOPIC TAGS--MONOGRAPH, COMPUTER APPLICATION, AUTOMOBILE, DIGITAL COMPUTER, MOTION MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1288 STEP NO--UR/0000/70/000/000/0001/0171

CIRC ACCESSION NO--AM0112334
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AM0112334

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. CHAPTER I METHODS FOR CALCUALTION OF AUTOMOBILE MOTION 6. II DIFFERENTIAL EQUATIONS OF MOTION OF AN AUTOMOBILE AND THEIR SOLUTION 29. III THE EFFECT OF CERTAIN FACTORS ON BASIC OPERATING INDICES OF AUTOMOBILE PERFORMANCE 55. IV DIGITAL COMPUTERS FOR SIMULATION OF OPERATING CONDITIONS IN AUTOMOBILE MOTION 82. V CALCULATION OF AUTOMOBILE MOTION ON DIGITAL COMPUTERS FOR SOLUTION OF PRACTICAL PROBLEMS 138. BIBLIOGRAPHY 166. ANALYZED ARE METHODS FOR TRACTION CALCULATION USED IN INVESTIGATION OF OPERATING PROPERTIES OF AUTOMOBILES, EQUATIONS OF MOTION AND THE EFFECT OF VARIOUS FACTORS ON OPERATING INDICES OF AUTOMOBILES. MAIN ATTENTION IS GIVEN TO METHODS FOR CALCULATIONS ON DIGITAL COMPUTERS. THE BOOK WAS WRITTEN FOR SCIENTISTS, ENGINEERS, TECHNICIANS, AS WELL AS COLLEGE STUDENTS.

UNCLASSIFIED

UDC 621.382

USSR

BELOV, ALEKSANDR SERGEYEVICH; GORDEYEVA, VALENTINA IVANOVNA; NEFEDOV, ANATOLIY VLADIMIROVICH

"Interchangeable Native And Foreign Semiconductor Devices"

Vzaimozamenyayemyye otecheestvennyye i zarubezhnyye poluprovodnikovyye pribory (cf English above), Moscow, Izd. "Energiya," 1971. 104 pp. ill. 32 k.

Abstract: Information is presented in this handbook concerning native and foreign semiconductor devices, recommendations are made with respect to a selection of approximate analogs, and the nomenclature is cited of semiconductor devices and interchangeable devices of a number of countries. The handbook is intended for a wide circle of readers occupied with electronics.

CONTENTS

1/3

USSR

BELOV, ALEKSANDR SERGEYEVICH, et al., Vzaimozamenyayemyye otechestvennyye i zarubezhnyye poluprovodnikovyye pribory, Moscow, Izd. "Energiya," 1971. 104 pp. ill. 32 k.

2/3

USSR

BELOV, ALEKSANDR SERGEYEVICH, et al., Vzaimozamenyayemyye otechestvennyye i zarubezhnyye poluprovodnikovyye pribory, Moscow, Izd. "Energiya," 1971. 104 pp. ill. 32 k.

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ENGINEERING
Acoustical and Ultrasonic

UDC 534.2

USSR

NEFEDOV, L. M.

"Fluctuations in Path Time of a Ray in an Underwater Sound Channel"

Tr. Sakhalin. Kompleks. NII [Works of Sakhalin Combined Scientific Research Institute], No 28, 1972, pp 38-39, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B289 by N. K. Ivanov-Shits).

Translation: There is a linear dependence between dispersion of signal path time over a ray and distance between source and receiver in a statistically homogeneous medium with no refraction. A model is studied of an underwater sound channel with a random gradient (fluctuating medium). Formulas are produced for the time fluctuations. It is demonstrated that the dispersion of path time of a signal in the medium for the given model is proportional to the square of the distance.

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1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CRYSTAL STRUCTURE OF A COMPLEX OF GERMANIUM DICHLORIDE WITH 1,4-DIOXANE -U-

AUTHOR--KULISHOV, V.I., BOKIY, N.G., STRUCHKOV, YU.T., NEFEDOV, O.M., KOLESNIKOV, S.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 71-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, GERMANIUM COMPOUND, COMPLEX COMPOUND, DIOXANE, X RAY STUDY, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0316 STEP NO--UR/0192/70/011/001/0071/0074

CIRC ACCESSION NO--AP0103971

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103971

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTAL STRUCTURE OF THE COMPLEX OF GECL SUB2 WITH 1,4,DIOXANE, GECL SUB2 TIMES C SUB4 H SUB8 O SUB2, IS DETD. BY MEANS OF 3 DIMENSIONAL X RAY DATA. THE CRYSTALS BELONG TO THE MONOCLINIC SYSTEM, A 7.59, B 11.72, C 8.85 ANGSTROMS, BETA EQUALS 96.30EGREES, ZETA EQUALS 4, AND SPACE GROUP IS CC. THE CRYSTAL IS MADE UP OF ENDLESS CHAINS...-GECL SUB2-OC SUB4 H SUB8 O), BETWEEN WHICH ONLY VAN DER WAALS INTERACTION EXISTS. THE GE ATOM FORMS TWO NORMAL ELECTRON BONDS WITH ATOMS OF CL (GE-CL DISTANCES OF 2.25 AND 2.28 ANGSTROMS, CL-GE-CL-ANGLE EQUALS 94.6DEGREES) AND ITS VACANT THIRD P,ORBITAL INTERACTS WITH TWO ATOMS OF O (GE-O DISTANCES OF 2.41 AND 2.48 ANGSTROMS).

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210007-5"

USSR

UDC 534.2

APANASENKOV, V. A., NEFEDOV, P. M., SHAROMOV, I. P.

"Study of Fluctuations of Propagation Velocity of Sound in the Region of the Frontal Zone"

Tr. Sakhalin. Kompleks. NII [Works of Sakhalin Combined Scientific Research Institute], No 28, 1972, pp 25-31, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B290 by N. K. Ivanov-Shits).

Translation: The Sakhalin Institute has measured the propagation times of a pulse signal in the surface layer of the ocean. The time of arrival of the leading edges (rays traveling through the mass of the ocean) and trailing edges (surface rays) of the signal were recorded. The fluctuations in travel time (Δt^2) were calculated for these cases. It was shown that for the leading edge, this quantity is practically independent of distance, while there is a linear relationship for the trailing edge between Δt^2 and distance (up to 100 km). This agrees with the assumption made concerning the path of the rays. An estimate is given for the mean horizontal heterogeneity, equal to 4 km.

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Acc. Nr. AA0108167 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR 0482

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134782b **Briquets for silicocalcium production.** Kozhevnikov, G. N.; Nefedov, P. Ya.; Vorob'ev, V. P.; Ryss, M. A.; Getmanchuk, Y. M.; Zaiko, V. P.; Belyaev, G. S.; Mikulinskii, A. S. (Ural Institute of Metallurgy, Academy of Sciences, U.S.S.R.) U.S.S.R. 260,653 (Cl. C 21c), 06 Jan 1970, Appl. 25 Feb 1969; From *Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki* 1970, 47(4), 26. Briquets for silicocalcium production were made from lime 60–70 and a carboniferous reducing agent 30–40 wt. % to reduce the losses of Si and the consumption of charge materials.

MSCI

Eb

1/1

REEL/FRAME

19891833

18

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 029

TLE--THERMAL HARDENING OF COMPOSITIONS CONTAINING POLY(METHYLPHONYISILOXANE) AND FINELY DISPERSED LAMINATED SILICATES -U-

UTHOR-(05)-DENISOVA, N.A., KROTIKOV, V.A., KHARITONOV, N.P., FILINA, L.V., NEFEDOV, V.D.

OUNTRY OF INFO--USSR

OURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER., 1970, 6(2), 362-7

ATE PUBLISHED--------70

UBJECT AREAS--MATERIALS

OPIC TAGS--HARDNESS, SILOXANE, LAMINATED PLASTIC, TALC, ASBESTOS, ALCOHOL, POLYMER CROSSLINKING, THERMAL EFFECT, BUTANOL

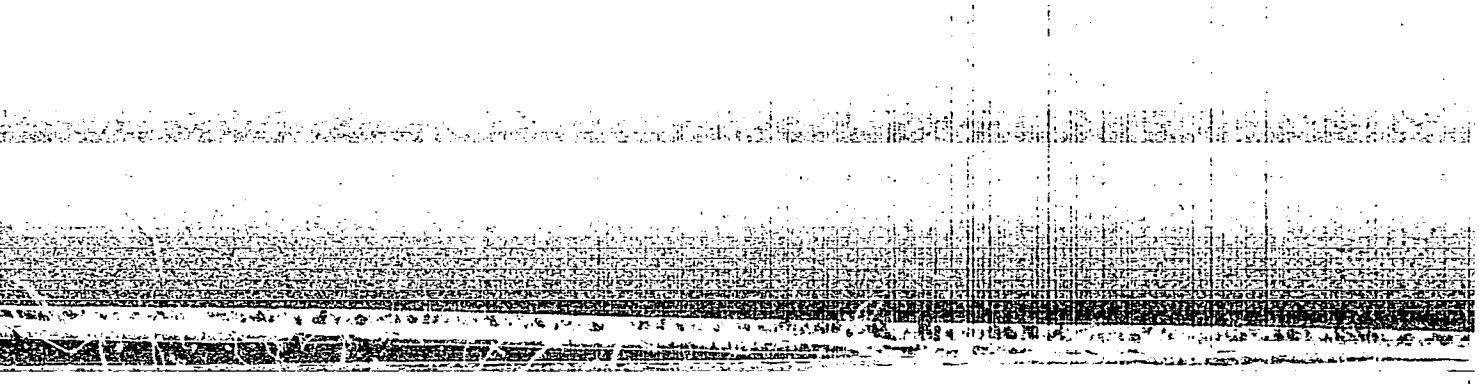
ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRAME--1997/0623 STEP NO--UR/0363/70/006/002/0362/0367

IRC ACCESSION NO--AP0119535
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70
IRC ACCESSION NO--AP0119535
BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ORG. SILICATE COMPNS. CONTG. POLY(METHYLPHENYLSILOXANE) (I) WERE HARDENED IN THE PRESENCE OF FINELY DIVIDED MUSCOVITE, TALC, ASBESTOS, AND MONTMORILLONITE (WHICH HAD BEEN TREATED WITH BOILING BUOH, OCTANOL, OR DECANOL AT 180-300DEGREES). DTA INDICATED THAT THE HYDROXIYLATED SURFACE OF THE LAMINATED SILICATES REACTED WITH ALCS. ONLY AT LARGER THAN OR EQUAL TO 200-30DEGREES. THUS, THE SIOH GROUPS PARTICIPATED IN CONDENSATIONS OCCURRING DURING THE HARDENING OF I. THERMAL HARDENING OF I WITHOUT LAMINATED SILICATES PROCEEDED WELL ONLY AT LARGER THAN OR EQUALS TO 200-300DEGREES. THE THERMAL HARDENING OF I WAS ACCOMPANIED BY EVOLUTION OF GASEOUS PHME, C SUB6 H SUB6, AND CO SUB2. A CROSSLINKING MECHANISM FOR THE HARDENING OF I WAS PROPOSED. FACILITY: INST. KHLM. SILIKAT. IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED



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USSR

BELOV, ALEKSANDR SERGEYEVICH, et al., Vzaimozamenyayemyye otechestvennyye i zarubezhnyye poluprovodnikovyye pribory, Moscow, Izd. Energiya, 1971, 104 pp. ill. 32 k.