

USSR

ZHURAKOVSKIY, L. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1917-1919

The experimental results are explained under the assumption that the conductance is of a discontinuous nature in the high frequency range and that equivalent schemes of the investigated diode structures are different at low and high frequencies. Graphs are presented for the capacitance of the Au-SbSI-Au diode structure as a function of the amplitude of the applied voltage taken at various frequencies. These relations confirm that at low frequencies the capacitance of the diode structure must depend on the injection level, that is, it must depend on the voltage amplitude and increases with an increase in the latter, and at high frequency the relation is not observed since the charge capacitance does not depend on the amount of injected charge.

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USSR

UDC 539.26

KORSUNSKIY, M. I., GENKIN, YA. YE., ZHURAKOVSKIY, YE. A., and LIFSHITS, V. G.

"X-Ray L_{β_2} Band of Niobium and K_{α} Band of Carbon in the Compound NbC"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 72, pp 68-70

Abstract: The purpose of the article was to study the L and K spectra of Nb and C respectively in Nb-C system alloys and interpret them from the standpoint of the partial collectivization of valence electrons. The L_{β_2} band of Nb and K_{α} band of C in niobium monocarbide are broken down into components subject to the rigid requirements of the CLC model on the equality of the general energy parameters of both bands. Ideas about collective, locally bonding, and core electrons are used to interpret the emission bands of niobium and carbon. Band shape distortions are taken into consideration and the parameters of the parts of these bands that reflect electron states are determined. The widths of the short-wave parts of the L_{β_2} band of niobium and

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KORSUNSKIY, M. I., et al., Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 72, pp 68-70

K_{α} band of carbon are 4.2 ± 0.3 ev, which in the free electron approximation corresponds to a collectivization of $\sim 0.86 \pm 0.05$ electron per total volume of niobium and carbon atoms in the alloy.

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USSR

UDC 529.26

ZHURAKOVSKIY, YE. A., NESHPOR, V. S., BONDARENKO, T. N., and NIKITIN, V. P.,
Institute of the Problems of Material Sciences, Academy of Sciences UkrSSR

"X-Ray Spectral Investigation of the Electron Structure of Non-Stoichiometric
Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 6(126), Jun 73, pp 75-79

Abstract: Investigation results are presented of a detailed x-ray spectral investigation of titanium carbide of limiting composition and in the region of homogeneity: K-emission lines of titanium and carbon genetically combined with the p-component (with admixture of d-states) of the valent zone of both atoms in its occupied part, L_{III}-line of titanium emission reflecting basically d-states of the valent zone of titanium, and K-region of titanium emission reflecting p- and d-like conditions above the Fermi level. At the lower boundary of the homogeneity region of the L_{III}-line of emission, in contrast to other spectra, the parameters of which do not depend on the carbon concentration, on the top of the L_{III}-line an additional substructure is observed which is interpreted as a redistribution of d-states in the abundance of vacancies with respect to carbon. Three figures, one table, twenty-three bibliographic references. 1/1

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USSR

UDC: 546.821'17:535.34

ZHURAKOVSKIY, YE. A., NIKITIN, L. V. and LYUTAYA, M. D., Institute for
Problems of Material Science, Academy of Sciences Ukrainian SSR

"X-Ray Spectra and Electron Structure of Titanium Nitrides of Limit
Composition and Within the Homogeneity Region"

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8,
No 4, Apr 72, pp 706-713

Abstract: In addition to their great practical significance, titanium
nitrides are of theoretical interest as compounds of variable composition
with a wide homogeneity range. The existence of such compounds in a
number of systems has as yet not been satisfactorily explained and is among
the central problems of the physics and chemistry of solids. This study
concerns the x-ray K- and L emission spectra and K absorption

II' III

spectra of titanium in titanium nitrides of critical composition and within
the homogeneity region (Ti_2N and $TiN_{0.60--TiN_{1.0}}$). For nitriding, use was

made of 99.8% pure titanium powder with a maximum particle size of 40 μ .

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USSR

ZHURAKOVSKIY, YE. A., et al, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8, No 4, Apr 72, pp 708-713

The K-emission spectra were obtained by fluorescence using a modified DRUS unit. The optimum K-edge density of 5 mg/cm^2 was maintained constant over the entire series of homogenous nitrides Ti_{1-x} and Ti_2N . An RSM-500 unit

was used to obtain ultra-soft L_{II}, III emission spectra of Ti in titanium

nitrides. Based on the concentration-dependent changes of the fine spectral structure and on data of quantum-mechanical computations by Bilz and Ern-Switendick, a chart is proposed for the redistribution of electron states of various symmetry in the spd-valence zone of Ti_xN crystals of variable

composition. The general nature of interactions in nitrides of critical composition of Ti_2N and TiN is discussed. The electron structure is

correlated with the properties of titanium nitrides of limit composition and within the homogeneity region. (1 illustration, 2 tables, 24 bibliographic references).

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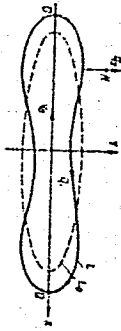
ZHURAVA, V. M.

EQUATIONS FOR A BOUNDARY LAYER ON A DEFORMABLE CONTOUR

Article by V. M. Zhurava and Yu. I. Fedyuk, Leningrad; Kiev, Ukraine.
Russian, No. 5, 1971. Edited "Naukove Dumka," pp 45-51]

JPRS 55982
15 May 72

The problem of the motion of a deformable body, being extremely complex and cannot be solved at the present time, is shown that a boundary layer exists during the movement of a deformable body in a fluid of low viscosity, this problem can be divided into two parts: 1) the problem of the movement of a deformable body in a nonviscous fluid (potential problem), 2) the problem of a boundary layer on a deformable body.



During the movement of a hydrobiontic object the induced flow of fluid is three-dimensional and the deformations of its surface have the order of magnitude of the thicknesses of its body. The correctness of the boundary layer concept for these conditions evidently requires experimental confirmation. However, for deformations of plane or axially symmetric bodies of insignificant magnitude, which is a highly simple schematic representation of the movements of hydrobiontic objects, the boundary layer concept is extremely probable. This is attributable to satisfaction of the principal requirements of this concept: low viscosity of the fluid (movement with large Reynolds numbers) and the condition of attachment on a wall. Using this schematic representation it is possible to note some

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UDC 620.172.173.174

KASHPERSKIY, V. S., SKVORTSOVA, N. V., and ZHURAVEL', A. Ye., Kiev

"Mechanical Properties of Sitall in Flexure, Extension, and Compression"

Kiev, Problemy Prochnosti, No 4, Apr 71, pp 80-83

Abstract: A method and results are presented of experimental investigation of the elasticity characteristics (Young, Modulus, Poisson, coefficient in extension, compression, and flexure) and the ultimate strength of cast sitall of composition number 23 in extension and compression. Measurement of deformation was performed using tensoresistors. A brief description is presented of the characteristic forms of rupture with various types of loading.

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USSR

Z UDC 620.181;539,374;546.74.75

LEVIT, V. I., SURKOV, YU. P., SOKOLKOV, YE. N., and ZHURAVEL', L. V., Institute of Physics of Metals, Academy of Sciences USSR

"Aging of KhN77TYuR Alloy After Plastic Flow"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1198-1203

Abstract: A study is made, using methods of electrical resistance and transmission electron microscopy, of the processes of decay of a saturated solid solution in the KhN77TYuR alloy with different dislocation structures produced by deformation at different temperatures. For estimating the effect of distribution of dislocations on the processes of subsequent aging those degrees of deformation at 20 and 1080°C were selected, which in all deformed specimens ensured a yield point of 44-47 kg/mm². Changes in mechanical properties and structure in the process of aging are determined. It is shown that the higher strength properties after high-temperature thermomechanical treatment are due mainly to the increased density of emissions of the intermetallide γ' -phase. In addition, the notched form of the boundaries of grains and the separation of carbides on such boundaries impede the intergrain disintegration and ensure adequate ductility. The authors thank N. A. Kompaneytsev for help in conducting tests on mechanical properties, R. R. Romanova and R. A. Karakhanyan for help in preparing and checking of thin foil, and S. N. Petrova for valuable suggestions during discussion.

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USSR

UDC 612.014.42

ZHURAVIN, I. A., and TOLKUNOV, B. F., Laboratory of Comparative Physiology of the Central Nervous System, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Use of Amplitude Analyzers for Time Analysis of the Impulse Activity of Neurons"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 6, Jun 70, pp 932-935

Abstract: Apparatus was devised for use in the time analysis of neuron impulse activity. An amplitude analyzer is used in which the principle of direct control of the regulating arrangement of a pulse analyzer by means of a clock and an external clearing pulse is used. A control assembly was designed for this apparatus which shapes counting pulses from neuron discharges and shapes clearing pulses.

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USSR

UDC 669.71.472

ZHURAVIN, YU. D.

"Power Economy During Aluminum Production"

Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii (All-Union Seminar of Electrical Engineers of the Enterprises of Non-ferrous Metallurgy on the Question of Economizing on Electrical Power - collection of transactions), Moscow, 1970, pp 73-77 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 GL21)

Translation: A description is given of measures implemented at the Novokuznetsk Aluminum Plant for reducing power consumption during the production of electrolytic Al. Currently, the plant is among the leaders in its low consumption of power. This was achieved as the result of a series of constructive measures: increased section of the anodes of electrolytic reduction cells; switching of electrolytic reduction cells with side current input to pins 0.9--1.1 m long instead of 0.75 m, a fact which reduced anode voltage to 60 mv; and redesigning of bottoms, leads and other measures. Technological measures carried out include
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ZHURAVIN, YU. D., Sb. materialov Vses seminara energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii, Moscow, 1970, pp 73-77 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G121)

operation of electrolytic reduction cells at optimal levels of Al (35--45 cm), small inter-pole spacing (4.1--4.2 cm), cryolitic ratio of 2.7--2.5 at MgF_2 content of 2.5--3.0% and CaF_2 of 3.0--3.5% in the electrolyte; reduced duration of anode effects to 1--1.5 min with flash frequency of 0.5--0.55 per bath day. A flow-regulated 8-fold diagram of the treatment of the electrolytic reduction cell is introduced. For the first time in the Soviet nonferrous metallurgy, the motor-generators of the transformer substation have been replaced by silicon semiconductor rectifiers and other measures.

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1/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--NATURE OF THE DESTABILIZATION OF ZR SUB1 MINUS X CA SUBX 0 SUB2
MINUS X SOLID SOLUTIONS DURING REACTION WITH BORON OXIDE -U-

AUTHOR--(04)--FILATOV, S.K., FRANKKAMENETSKIY, V.A., ZHURAVINA, T.A.,
KRYLOV, V.N.

COUNTRY OF INFO--USSR

Z

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 166-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SOLID SOLUTION, CRYSTAL LATTICE STRUCTURE, ZIRCONIUM, CALCIUM
OXIDE, CHEMICAL REDUCTION, BORON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0082

STEP NO--UR/0363/70/006/001/0166/0167

CIRC ACCESSION NO--AP0054879

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054879

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE UNIT CELL PARAMETERS OF THE STABILIZED CUBIC LATTICE OF ZR SUB1 MINUS X-CA SUBX O SUB2 MINUS X SOLID SOLNS. IN THE PRESENCE OF B SUB2 O SUB3 AND OF THE MONOCLINIC PHASE FORMING DURING DESTABILIZATION WERE MEASURED. SAMPLES WITHOUT ANY B PRESENT ARE REPRESENTED ONLY AS THE CUBIC PHASE WITH THE PARAMETER A BEING CONST. FOR ALL FIRING TEMPS. IN SAMPLES CONTG. 0.3 MOLE PERCENT CAO AND IN SAMPLES CONTG. B AND ANNEALED AT 600 AND 800DEGREES, THE PARAMETER OF THE CUBIC PHASE IS CONST. WITHIN THE SAME LIMITS. AFTER FIRING AT 1000 AND 1200DEGREES, THE SAMPLES ARE A MIXT. OF THE CUBIC AND MONOCLINIC PHASES, WHICH PREVENTS AN ACCURATE DETN. OF LATTICE PARAMETERS. THE A PARAMETER OF THE CUBIC PHASE REMAINS CONST. WITHIN THE EXPTL. ERROR OF PLUS OR MINUS 0.002 ANGSTROM, WHICH CORRESPONDS TO CONST. CHEM. COMPN. OF PLUS OR MINUS 2 MOLE PERCENT CAO. THE LATTICE PARAMETERS OF THE MONOCLINIC PHASE ARE CONST. IN ALL CASES WITHIN EXPTL. ERROR AND ARE CLOSE TO THE PARAMETERS OF PURE ZRO SUB2; THE CA CONTENT IS INSIGNIFICANT. DESTABILIZATION OF CUBIC ZR SUB1 MINUSX CA SUBX O SUB2 MINUS X SOLID SOLNS. IS ASSOCD. WITH A LOSS OF CA. THE MONOCLINIC PHASE FORMING DURING THE DESTABILIZATION IS PRACTICALLY PURE ZRO SUB2 AND THE CA CONTENT IN THE REMAINING CUBIC PHASE REMAINS CONST. WITHIN THE LIMITS OF .12 PLUS OR MINUS 2 MOLE PERCENT CAO.

UNCLASSIFIED

USSR

BOGATOV, S. V., ZHURAVKOV, V. O.

"Problems and Exercises on Mathematical Programming"

Zadachi i Uprazhneniya po Matematicheskomu Programirovaniyu [English Version Above], Kaliningrad, 1970, 104 pages, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V390K).

NO ABSTRACT.

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USSR

ZHURAVLEV, A., Professor and Doctor of Biological Sciences, and GUMAN, A.,
Biophysicist

"Vernal Water"

Moscow, Sel'skaya Zhizn', 1 Apr 73, p 4

Abstract: Inspired by empirical observations made in polar regions, scientists at the Tomsk Medical Institute used thaw water in agricultural experiments, and the crops and animals fed this water by far excelled the controls in growth rate, health, and productivity. By combining the fact that thaw water retains, for a while, the dodecahedral molecular structure of ice with the fact that intracellular water also forms a dodecahedral lattice in which protein, lipid, and carbohydrate molecules are incorporated, the explanation was formulated that thaw water absorbed into tissue facilitates organization of biological molecules by which it then is firmly held. Thus, dehydration is prevented, healthy tissue proliferates, and the individual organs and the whole organism remain highly functional. No explanation is offered as to how the dodecahedral structure is preserved while the ingested thaw water is in the gastrointestinal tract. It is conjectured that hypothermal treatment may some day be used to postpone aging. Caution is expressed that bathing in and drinking pure thaw water, though highly beneficial to some individuals, is likely to cause pathology in untrained and sick persons.

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1/2 010
UNCLASSIFIED
TITLE--SOME RESULTS OF COMPLEX TUNING AND START UP OF THE IHEP 70 GEV
PROTON SYNCHROTRON -U- PROCESSING DATE--27NOV70
AUTHOR-(03)-ADD, YU.M., ZHURAVLEV, A.A., LOGUNOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. (USSR): 28: 132-8 (FEB 1970).
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PROTON ACCELERATOR, PARTICLE PHYSICS, SYNCHROTRON/(U)IHEP
PROTON ACCELERATOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0755 STEP NO--UR/0089/70/028/000/0132/0138
CIRC ACCESSION NO--AP0131350
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS AND CHARACTER OF WORKS ON COMPLEX TUNING AND START UP OF THE ACCELERATOR ARE DESCRIBED. FEATURES AND METHODS OF TUNING OF THE MAIN ACCELERATOR SYSTEMS ARE BRIEFLY DISCUSSED (RING ELECTROMAGNET, POWER SUPPLY SYSTEM, CORRECTION SYSTEM, INJECTION SYSTEM, VACUUM SYSTEM, AND RADIOTECHNICAL SYSTEMS). THE MAIN RESULTS OBTAINED DURING THE ACCELERATOR TUNING ARE REPORTED. FACILITY: INST. OF THEORETICAL AND EXPERIMENTAL PHYSICS, MOSCOW.

UNCLASSIFIED

USSR

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ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHABRAMISHVILI, K. Z., SHUKAYLO, I. A., BOYKO, S. N., KOMAR, YE. G., MALYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radio-electronic systems for acceleration process control and generation of

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USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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USSR

UDC 539.126

TERNOV, I. M., KHALILOV, V. R., ZHURAVLEV, A. F., and CHIZHOV, G. A., Moscow State University imeni M. V. Lomonosov

"On the Effect of a Strong Radiation Field on an Electron Moving in a Plane Electromagnetic Wave"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 1, 1973, pp 7-17

Abstract: Let there be a charged particle (electron) which is simultaneously acted on by the field of a monochromatic plane electromagnetic wave (first wave) and a second wave of arbitrary spectral composition (external radiation field). The first wave is considered to be more intense, and hence the motion of the electron is mainly due to interaction with it. The article considers the action of the second wave on the electron, as well as the question of variations in the mean energy of the electron during its interaction with the radiation field. Conditions are found whereby the acceleration of the electron by the external field compensates for intrinsic electronic energy losses.

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USSR

UDC: 621.391.8:519.27

GORYAINOV, V. T., ZHURAVLEV, A. G., TIKHONOV, V. I.

"Examples and Problems in Statistical Radio Engineering. A Textbook for College Students Majoring in Radio Engineering"

Primery i zadachi po statisticheskoy radiotekhnike. Uchebn. posobiye dlya stud. radiotekhn. spetsial'nostey vuzov (cf. English above), Moscow, "Sov. radio", 1970, 597 pp, ill. 1 r. 35 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A42 K)

Translation: The book is written on the basis of practical classes on statistical radio engineering with students. The fifteen chapters of the book cover all the fundamental areas of statistical radio engineering. In addition to problems, each chapter contains the necessary theoretical data and an analysis of the procedure for solution based on typical examples. The book contains 120 examples and 670 problems in all, selected from Soviet and non-Soviet sources and also formulated by the authors. Reference tables are provided. The book is written chiefly for undergraduate and graduate students majoring in the field of radio engineering and automation.
N. S.

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UDC 669.271

USSR

KOLOBOV, G. A., MAKSIMENKO, V. M., ZHURAVLEV, A. I., VAZHENIN, S. F., and DOBRUNOV, Yu. V.

"Use of Titanium Equipment in Magnesium Production"

Moscow, Tsvetnyye Metally, No 6, Jun 70, pp 39-40

Abstract: An account is given of investigations conducted jointly by the Solikamsk Magnesium Plant and the Titanium Institute on the use of titanium alloys in equipment intended for magnesium production. The corrosion resistance of the VT1, VT14, and VT5-1 titanium alloys was investigated. The results of tests conducted at chlorine and electrolysis plants are presented in a table. The VT1 alloy was found to be more corrosion-resistant than the VT14 and VT5-1 alloys. A brief history of the use of equipment made of titanium alloys at the Solikamsk plant is given. An inventory of various equipment, such as valves, pumps, gas-pumps, calorizers, gas scrubbers, etc., is presented, and the planned installation of new titanium alloy equipment is described. It is stated that the use of such equipment in the plant has already resulted in savings of 60,000 rubles.

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Biochemistry

UDC 535.37.577.15

USSR

ZHURAVLEV, A. I., Institute of Balneology and Physical Therapy, Ministry of Health USSR

"Super-Weak Luminescence and Enzymes"

Moscow, Uspekhi Sovremennoy Biologii, Vol 69, No 3, May/June 70, pp 398-408

Abstract: The connection with the initial work by Zhuravlev, B. N. Tarusov, et al on super-weak luminescence of biosubstrates and living organisms, the hypothesis was advanced that luminescence is produced by energy evolved in auto-oxidation processes accompanied by the formation of free radicals, principally the auto-oxidation of lipids. The free radicals combine with the evolution of free energy, which produces luminescence. The view was subsequently expressed by D. N. Gusar et al that super-weak luminescence is due to enzymatic processes. Experimental work conducted since then indicated that the association of super-weak luminescence with enzymatic processes in cases in which the latter were involved was purely incidental; luminescence was due to free oxidation and was not produced by the action of enzymes. Thus, inactivation of enzymes with heavy metal ions did not suppress luminescence. The problem was studied most thoroughly in connection with luminescence accompanying the action of catalase. It was shown that luminescence of a biosubstrate being oxidized with H_2O_2 increased rather than

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ZHURAVLEV, A.I., Uspekhi Sovremennoy Biologii, Vol 69, No 3, May/June 70, pp 398-408

decreased after all enzymes had been destroyed, while the decomposition of H_2O_2 , which is activated by catalase, proceeded at a much lower rate in the absence of enzymes. Destruction of the enzymes in the substrate (liver tissue) was accomplished by boiling an aqueous salt solution extract of the tissue. An increase in luminescence during oxidation of a salt-solution tissue extract with H_2O_2 also occurred in experiments on rats after the animals had been irradiated with gamma-rays in a dose of 800 r (G. A. Popov, 1964). Luminescence increased with an increasing degree of autolysis of the tissue extract (increasing the length of time before H_2O_2 was added). On the basis of these results, it was proposed that a test based on measurement of the intensity of chemiluminescence upon addition of H_2O_2 be used for the determination of the biological soundness and viability of damaged tissue.

USSR

UDC 615.837.3.015.45:612.112

ZHURAVLEV, A. I., and PEVNEVA, R. F., Biophysics Laboratory, Experimental Department, Central Institute for Health Resorts and Physiotherapy, Moscow

"The Efficacy of the Physico-Chemical Action of Continuous and Pulsed (Generator YTC-1) Ultrasound on the Blood Serum of Man"

Moscow, Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 3, 1972, pp 202-207

Abstract: The intensity of luminescence (electron excitation) of human serum samples during irradiation with ultrasound waves was used as an index of the amount of acoustic energy absorbed. According to the results, irradiation intensity is divided into three ranges: 1) 0.1-0.4 watts/cm², a range in which the cumulative luminescence and the unit effect increase with increasing irradiation; 2) 0.5-0.7 watts/cm², in which the cumulative effect increases but the unit effect decreases with increasing irradiation; 3) 0.8 watts/cm² and more, in which both the cumulative and unit effects decrease with increasing irradiation. It is believed that the first range induces mainly reversible changes and the third range mainly destructive changes. Pulsed irradiation is less destructive than continuous irradiation. The intensity range of 0.2-0.3 watts/cm² is recommended as the best for therapeutic purposes.

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USSR

UDC 666.117.2

PAVLUSHKIN, N. M., and ZHURAVLEV, A. K.

"Legkoplavkiye Stekla" (Low-Melting Glasses), Moscow, Izd-vo "Energiya," 1970, 144 pp

Translation of Annotation: A summary is given of the results of studies on the production of low melting glasses, methods of investigating them, and areas of their application carried out in the USSR and elsewhere. Theoretical concepts regarding the structure of low melting glass are presented and methods and results of investigations on oxide, oxygen-free, and oxyhalogenide glasses are discussed. Data on the application of low-melting glasses as sealing coatings and as solders for various electronic devices are presented.

The book is intended for scientific and engineering personnel concerned with the study and development of low-melting glasses and their applications.

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USSR

PAVLUSHKIN, N. M., and ZHURAVLEV, A. K., "Legkoplavkiye Stekla" (Low-Melting Glasses), Moscow, Izd-vo "Energiya," 1970, 144 pp

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3/3

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PAINT AND VARNISH COATINGS APPLIED BY ELECTRODEPOSITION -U-
AUTHOR--(05)-TIKHONOVA, R.M., TSYRLIN, M.I., ZHURAVLEY, A.K., ROZNO, L.I.,
KISTANOVA, G.A.
COUNTRY OF INFO--USSR
SOURCE--AVTO. PROM. 1970, 36(4), 39-41
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRODEPOSITION, PAINT, VARNISH, TEST METHOD, AUTOMOBILE,
CORROSION RESISTANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0773 STEP NO--UR/0113/70/036/004/0039/0041
CIRC ACCESSION NO--AP0136210
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

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CIRC ACCESSION NO--AP0136210

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A TESTING METHOD WAS DEVELOPED FOR DETG. THE CORROSION RESISTANCE OF AUTOMOTIVE COATINGS. THE SAMPLES WERE EXPOSED TO A SPRAY OF 3PERCENT NACL SOLN. AT 40-50DEGREES IN A SPECIAL CHAMBER. SINGLE ENAMEL LAYERS DEPOSITED ON PHOSPHATIZED METAL BY THE ELECTROSTATIC METHOD WERE CORRODED FASTER THAN THE COATINGS OBTAINED BY THE CONVENTIONAL SPRAYING OF A GROUND COAT FOLLOWED BY AN ENAMEL. FACILITY: GORK. AVTOZAVOD, GORKI, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CERTAIN REGULARITIES OF THE STRENGTH DISTRIBUTION IN PYROCERAMICS
-U-
AUTHOR--(04)-BELOIVAN, A.F., BEREZANSKIY, V.V., ISAKHANOV, G.V., ZHURAVEL,
A.YE.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, APR. 1970, P. 74-78
DATE PUBLISHED----APR 70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--QUALITATIVE ANALYSIS, PYROCERAM, QUANTITATIVE ANALYSIS,
BENDING STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0144 STEP NO--UR/3663/70/002/000/0074/0078
CIRC ACCESSION NO--AP0123916
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123916

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STUDY OF THE TRANSIENT STRENGTH OF A PYROCERAMIC AS MEASURED ON CYLINDRICAL AND PRISMATIC SAMPLES SUBJECTED TO STATIC BENDING. THE RELATIONSHIPS BETWEEN THE STRENGTH OF THE PYROCERAMIC ON THE ONE HAND AND THE SHAPE AND DIMENSIONS OF THE SAMPLE, AND TYPE OF TESTING ON THE OTHER, ARE ESTABLISHED. QUALITATIVE AND QUANTITATIVE ESTIMATION IS MADE OF THE OBSERVED DISPERSION OF STRENGTH VALUES WITH RESPECT TO A NORMAL VALUE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 612.822.3

SUDAKOV, K. V., ZHURAVLEV, B. V., and KOTOV, A. V., Chair of Normal Physiology,
First Moscow Medical Institute imeni I. M. Sechenov

"Neurophysiological Mechanisms of Sensory Satiation"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23,
Vyp 1, Jan/Feb 73, pp 24-33

Abstract: Liquid food (milk or carrot juice) was gently sprayed over the oral mucosa and, through a gastric tubing, injected into the stomach of hungry, anesthetized cats and rabbits, while EEG's were being recorded from the cerebral cortex and various hypothalamic areas. On the basis of the results obtained, the following theory was formulated. In the hungry state, the lateral hypothalamus is active and discharges impulses to the motor and sensory cortex and to the ventromedial hypothalamic nucleus, increasing the sensitivity of these structures to afferent impulses from oral and gastric receptors. When stimulated by food, these receptors discharge afferent impulses primarily to the ventromedial nucleus, whose activity thus gradually increases with the intake of food. At the same time, progressive inhibition takes place in the lateral hypothalamus and brain cortex. Eventually, excitation of the ventromedial nucleus, which functions as the satiation center, and inhibition of the lateral hypothalamus, which functions as the hunger center, create a state of sensory

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USSR

SUDAKOV, K. V., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni
I. P. Pavlov, Vol 23, Vyp 1, Jan/Feb 73, pp 24-33

satiation which stops food intake before the food present in the gastrointes-
tinal tract is digested, absorbed, and distributed, that is, before metabolic
satiation is reached.

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USSR

ZHURAVLEV, D. A., MARCHENKO, O. D., ZHVOROSTUKHIN, I. A.

"Algorithm for Determination of the Stress State when a Spherical Indentor is Pressed into an Elastic-Plastic Half Space"

Mosk. Aviats. Tekhnol. In-t [Moscow Institute of Aviation Technology], Moscow, 1972, 14 pp (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5V411, by the authors).

Translation: The stress state of a material is studied when a hard spherical indenter is pressed into the flat surface of an elastic-plastic body and is moved along this surface. The three-dimensional vector elastic field of displacements resulting from deformation of the body considering the forces of surface friction is studied in a cylindrical system of coordinates. The equations produced represent a system of quasilinear differential equations with second order partial derivatives and three unknown functions. The solution of the equations in analytic form is not possible. Therefore, numerical methods of solution are used, in particular the grids method. In order to simplify the problem, several assumptions were made concerning the properties of the material of the body. In addition to determination of the instantaneous

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USSR

Zhuravlev, D. A., Marchenko, O. D., Zhvorostukhin, L. A., Mosk. Aviats. Tekhnol. In-t, Moscow, 1972, 14 pp.

field of displacements of all points and geometry of the outer deformed surface, normal force N acting on the indenter and friction force F are both determined.

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- 113 -

USSR

UDC: 8.74

ZHURAVLEV, D. A., MARCHENKO, O. D., KHVOROSTUKHEIN, L. A., Moscow Aviation Technology Institute

"Solution of a Special System of Second-Order Partial Differential Equations by the Method of Successive Approximations"

Moscow, Resheniye spetsial'noy sistemy nelineynykh differentsial'nykh uravneniy v chastnykh proizvodnykh vtorogo poryadka metodom posledovatel'nykh priblizheniy (cf. English above), 1972, 10 pp, bibl. 2 titles (manuscript deposited in VINITI 6 Feb 73, No 5459-73 Dep.) (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V660 Dep. by the authors)

Translation: An algorithm is presented for solving a system of two non-linear differential equations with linear boundary conditions in differential form. The problem is solved by reducing solution of the initial problem to sequential solution of a system of second-order linear differential equations. The number of successive steps depends on the rate of convergence of the iteration process, and also on the required accuracy of the calculations. In the final analysis, the problem reduces to solution of a system of linear algebraic equations in which the unknowns are the sought functions at grid intersections.

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USSR

ZHURAVLEV, D. A., MARCHENKO, O. D., ZHVOROSTUKHIN, L. A.

"Algorithm for Determination of the Stress State when a Spherical Indentor is Pressed into an Elastic-Plastic Half Space"

Mosk. Aviats. Tekhnol. In-t [Moscow Institute of Aviation Technology], Moscow, 1972, 14 pp (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No SV411, by the authors).

Translation: The stress state of a material is studied when a hard spherical indenter is pressed into the flat surface of an elastic-plastic body and is moved along this surface. The three-dimensional vector elastic field of displacements resulting from deformation of the body considering the forces of surface friction is studied in a cylindrical system of coordinates. The equations produced represent a system of quasilinear differential equations with second order partial derivatives and three unknown functions. The solution of the equations in analytic form is not possible. Therefore, numerical methods of solution are used, in particular the grids method. In order to simplify the problem, several assumptions were made concerning the properties of the material of the body. In addition to determination of the instantaneous

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USSR

Zhuravlev, D. A., Marchenko, O. D., Zhvorostukhin, L. A., Mosk. Aviats. Tekhnol. In-t, Moscow, 1972, 14 pp.

field of displacements of all points and geometry of the outer deformed surface, normal force N acting on the indenter and friction force F are both determined.

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- 113 -

Acc. Nr:

170041516

Abstracting Service:
CHEMICAL ABST.

7-76

Ref. Code:

4R0078

83463p Cerium(III) chloride-hexamethylenediamine dihydrochloride-water system. Kadantseva, M. I.; Zhuravlev, E. F. (Voronezh. Politekh. Inst., Voronezh, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 211-14 (Russ). Soly. diagrams (35 and 50° isotherms) are constructed for $CeCl_3 \cdot H_2N(CH_2)_6NH_2 \cdot 2HCl$ (I)- H_2O system. At 25° the system has only 2 soly. isotherms of $CeCl_3 \cdot 7H_2O$ and I. A compd., $[H_2N(CH_2)_6NH_2][CeCl_3]$, sep. at 50° in addn. to the above mentioned solids. HMJR

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REEL/FRAME
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Acc. Nr

MP 0034224

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code

UR 0078

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71198t Solubility of solid phases in cerium(III) nitrate-water-hydrazine nitrate and cerium(III) nitrate-water-aniline nitrate systems. Mininkov, N. E.; Zhuravlev, B. F. (Kafedra Fiz. Khim., Voronezh. Politekhn. Inst., Voronezh, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 205-10 (Russ). Soly. diagrams (25 and 50° isotherms) of systems $Ce(NO_3)_3-N_2H_4NO_3-H_2O$ and $Ce(NO_3)_3-PhNH_2NO_2-H_2O$ (system I and II, resp.) are constructed. Congruently sol. $Ce(NO_3)_3 \cdot 2N_2H_4NO_3$, supposedly $(N_2H_4)_2[Ce(NO_3)_6]$, forms in I. II is a simple eutonic system. $Ce(NO_3)_3 \cdot 6H_2O$ has a strong salting out effect for $PhNH_2NO_2$. Soly. data and n_D of II solns. at 50° are tabulated. HMJR

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Acc. Nr:

AP0034077

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

UR 0078

71172e Na⁺, K⁺||SO₄²⁻-NO₂⁻-H₂O system. ~~Zh. Neorg. Khim.~~
 E. F. Kolesnikova, A. S. (Voronezh, Politekh. Inst., ~~USSR~~)
 USSR). *Zh. Neorg. Khim.* 1970, 15(1), 222-3 (Russ.). Solj.
 in the title system was detd. at 0, 25, and 50°; the data are
 tabulated and soly. diagrams for 0 and 50° are constructed. The
 soly. was detd. by *n* measurements. Crystn. field of glaserite
 widened with increasing temp. and nitrites concn. in the system.
 Apparently Na and K nitrites stabilize glaserite. HMJR

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REEL/FRAME

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Acc. Nr. **AP0034223**

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code
MR 0078



71191k Cosolubility of lanthanum nitrate and ethylenedi-
amine ~~en.2HNO₃~~ E. F.; Gorshunova, V. P. (Voronezh. Polj-
tekh. Inst., Voronezh, USSR). *Zh. Neorg. Khim.* 1970, 15(1),
195-200 (Russ). Soly. diagrams for La(NO₃)₃-en.2HNO₃-H₂O
system at 25 and 50° are constructed. The system has 3 solids:
en.2HNO₃, La(NO₃)₃·nH₂O, and en.2HNO₃·La(NO₃)₃·6H₂O.
The soly. curves cross in 2 eutonic points. The ternary compd.
of the system is congruently sol. and its most probable structure
is (CH₂NH₂)₂[La(H₂O)₈(NO₃)₆].

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Acc. Nr:

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Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR 0080

Z

103961e Physicochemical properties of 1,4-tetra- and 1,8-octamethylene diisocyanates. Zhuravlev, E. Z.; Yonina, T. L.; Pereslegina, L. S.; Kormushchikina, A. L.; Konstantinov, I. I. (Inst. Azot, Prom. Org. Sin., Dzerzhinsk, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 159-63 (Russ). From temp. dependence of mol. vols. in $(CH_2)_n(NCO)_2$ with $n = 4$ or 8, as well as from temp. dependence of their d., viscosity and n , it was concluded that the contribution of methylene groups to mol. vols. depends not only on the temp. but also on their location in the mol. Activation energy of flow is increased by 120 cal/mole per CH_2 in the 20-50° interval and by 90 in the 50-80° interval. The NCO group contribution is 2700 cal/mole and 2350 cal/mole, resp. Thus, these isocyanates have a degree of interaction or conjugation not only within NCO groups but also between the terminal NCO groups, which declines with increasing value of n .
G. M. Kosolapoff

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USSR

UDC: 8.74

ZHURAVEL', N. M., ZHURAVEL', F. A.

"Sequential Grouping Based on Qualitative Features"

Novosibirsk, Raspoznavaniye obrazov i regression. analiz v ekon. issled.--sbornik (Pattern Recognition and Regression Analysis in Economic Research--collection of works), 1972, pp 45-59 (from RZh-Kibernetika, No 5, May 73, abstract No 5V836 by E. Vagner)

Translation: In economic, sociological and biological research there is an urgent problem of distinguishing qualitatively homogeneous groups among the totality of investigated objects. The traditional methods of simple and combination grouping are not especially suitable in a number of instances, in particular when the volume of an aggregate is limited and there is a considerable selection of qualitative features with various degrees of significance from the standpoint of research goals and mutual dependence between qualitative features.

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USSR

ZHURAVEL', N. M., ZHURAVEL', F. A., Raspoznavaniye obrazov
i regression. analiz v ekon. issled., 1972, pp 45-59

The conventional multistep procedure permits a breakdown in accordance with any single feature on each step. In this connection, complexity consists in choice of the group feature for breakdown on each step. As a formal criterion for selecting such a parameter we can take the coefficient of qualitative variation which reflects the complete number of differences in the qualities of all objects of an aggregate. However, in real cases the formal criterion must be supplemented by a number of limitations relating to the specific problem. A complex approach to solution of the grouping problem is suggested, and a program written in the ALPHA algorithmic language is described for the M-220 computer.

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRENGTH AND MINERALOGICAL COMPOSITION OF PELLETS FROM
SOKOLOVO-SARBAI BENEFICIATING COMBINE IN RELATION TO FIRING CONDITIONS
AUTHOR-(04)-CHERNYSHEV, A.M., MALYSHEVA, T.YA., MDREYEVA, G.P., ZHURAVLEV,
E.M.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(4), 293-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PELLETIZATION, IRON ORE, SLAG, CERAMIC BINDER, TEMPERATURE
DEPENDENCE, MECHANICAL STRENGTH, CALCIUM OXIDE, MAGNESIUM OXIDE,
ALUMINA, SILICA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1275 STEP NO--UR/0133/70/030/004/0293/0298
CIRC ACCESSION NO--AP0136681
UNCLASSIFIED

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136681

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF TIME AND TEMP. AT DIFFERENT STAGES OF FIRING FLUXED FE ORE PALLETS WAS INVESTIGATED MINERALOGICALLY AND BY CRUSHING STRENGTH DETN. AT HIGH TEMPS. COMPLEX SILICOFERRITES CONTG. LESS THAN OR EQUAL TO 8PERCLNT (CAO PLUS MGO PLUS AL SUB2 O SUB3 PLUS SID SUB2) HAVING A MAX. CRIT. STRENGTH TEMP. SERVE HERE AS A BOND WHICH HAS A LESSER REDUCIBILITY THAN HEMATITE AND MAGNETITE AND REMAINS SUCH UP TO THE REDN. OF FE TO METAL. A MAX. RANGE OF 650-700DEGREES OF CRIT. STRENGTH WAS RECORDED WITH A STRUCTURE OF INTERMESHED HEMATITE AND FERRITES. ADDN OF DOLOMITE TO THE CHARGE CAN BE RECOMMENDED IN THIS LIGHT.

UNCLASSIFIED

1/2 005 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--FIRST INDUSTRIAL TEST OF THE CEMENTING OF A WELL BY ADDING
PETROLEUM TO THE CEMENT SLURRY --U-
AUTHOR--(05)-NAKHUDDOV, M.N., ZHURAVLEV, G.I., SHVARTS, YA.A., SIMBENKOV,
I.D., TAVANETS, A.I.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(3), 19-24

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, PETROLEUM EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1212

STEP NO--UR/0152/70/013/003/0019/0024

CIRC ACCESSION NO--AT0133209

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CEMENT SLURRY MIXED WITH
1.5PERCENT PETROLEUM AND 0.35PERCENT TARTARIC ACID BASED ON DRY CEMENT
GAVE SUFFICIENTLY STRONG STONE. THE PUMPABILITY OF THE CEMENT SLURRY
WAS THUS IMPROVED AND GREATER SPEED OF ITS ASCENDING FLOW PROVIDED.
FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

Acc. Nr:

AP0034221

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

MR 0078

71215w Mechanism of cadmium iodide extraction by tri-
 butyl phosphate. Kol'tsov, Yu. I.; Kuz'min, N. M.; Zhurav-
 lev, G. I. (USSR). *Zh. Neorg. Khim.* 1970, 15(1), 179-81
 (Russ). Extn. of CdI_2 by Bu_3PO_4 from satd. aq. solns. of Cd,
 in the presence or without HI, was studied by ir spectroscopy.
 $Bu_3PO_4 \cdot CdI_2$ is extd. as solvate. The ir spectra indicate that
 extd. species are $3Bu_3PO_4 \cdot Cd[CdI_4] \cdot H_2O$ or $3Bu_3PO_4 \cdot 2CdI_2 \cdot H_2O$,
 $2Bu_3PO_4 \cdot CdI_2$, and $Bu_3PO_4 \cdot H_2O \cdot CdI_2$. Charged species form in
 the presence of HI. Here, the equil. shifts toward formation of
 CdI_{2-x}^{x-} , where $x = 0, 1, 2, 3, 4$.

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Acc. Nr.: AP0040398

Ref. Code: UR0103

UDC 621.375.4:621.382.3

JPRS 50248

USSR

IL'IN, V. A., DIMITRAKI, P. N., ZHURAVLEV, I. G., and NOREKYAN, P. A.

"Experimental Investigation of Semiconductor Diodes Designed for Pulse Bridge Elements"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 84-88

Abstract: An experimental investigation of semiconductor diodes intended for pulse bridge elements was carried out, to determine their forward current voltage characteristics and the values of the differential resistance of certain types of diodes. This data is necessary for determining the stability of pulse bridge elements. Two sets (20 each) of diodes of different origin were tested at -50°C, +25°C, and +75°C for germanium diodes and at -60°C, +25°C, and +120°C for silicon diodes, the technological spread of their parameters was investigated. The results are presented in the form of current voltage and resistance characteristics. The characteristics of the maximum and minimum technological spread and the dependence of the differential resistance of

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the diode set at each experimental temperature were plotted on the basis of experimental data. An analysis of the results shows that: 1. The silicon junction pulse diodes are the best suited for pulse bridge elements; 2. The germanium junction diodes can be used successfully in circuits with pulse bridge elements only at average frequencies (1.0-50 KHz), while the use of germanium point-contact diodes is not justified. Original article has ten figures.

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UDC 621.375.4:621.382.3

USSR

IL'IN, V. A., DIMITRAKI, P. N., ZHURAVLEV, I. G., and NOREKYAN, P. A.

"Experimental Investigation of Semiconductor Diodes Designed for Pulse Bridge Elements"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 84-88

Abstract: An experimental investigation of semiconductor diodes intended for pulse bridge elements was carried out, to determine their forward current voltage characteristics and the values of the differential resistance of certain types of diodes. This data is necessary for determining the stability of pulse bridge elements. Two sets (20 each) of diodes of different origin were tested at -60°C, +25°C, and +75°C for germanium diodes and at -60°C, +25°C, and +120°C for silicon diodes, the technological spread of their parameters was investigated. The results are presented in the form of current voltage and resistance characteristics. The characteristics of the maximum and minimum technological spread and the dependence of the differential resistance of the diode set at each experimental temperature were plotted on the basis of experimental data. An analysis of the results shows that: 1. The silicon junction pulse diodes are the best suited for pulse

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USSR

IL'IN, V. A., et al., Moscow, Radiotekhnika, Vol. 25, No 1, Jan 70, pp 84-88

bridge elements; 2. The germanium junction diodes can be used successfully in circuits with pulse bridge elements only at average frequencies (1.0-50 KHz), while the use of germanium point-contact diodes is not justified. Original article has ten figures.

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USSR

UDC 620.181:669.1

SHTEYNBERG, M. M., MIRZAYEV, D. A., and ZHURAVLEV, L. G., Chelyabinsk Poly-
technic Institute

"Features of Martensite Transformation in Iron and Its Alloys"

Moscow, Metallovedeniye, No 9, Sep 72, pp 21-29

Abstract: This article is primarily a discussion of martensite transformation processes based on other literature sources. Particular attention is given to a comparison of steels Kh18N10T and 000Kh18N12. The greatest strengthening effect was observed for these two steels when they were deformed 25-30% at -100°C and then aged for one hour at 400-450°C. The steels then had the following mechanical properties:

	Kh18N10T	000Kh18N12
Yield strength, kgf/mm ²	199	139
Tensile strength, kgf/mm ²	200	140
Elongation, %	6	12
Reduction in area, %	38	69
Impact strength, kgf-m/cm ²	1	5

After deforming 25-40% at -40 to -100°C, aging at 400-450°C, and brief heating somewhat above the A_c temperature, they had the following properties:

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USSR

SHTEYNBERG, M. M., et al., Metallovedeniye, No 9, Sep 72, pp 21-29

	COOKh18N12	Kh18N10T
Yield strength, kgf/mm ²	70-87	62-75
Tensile strength, kgf/mm ²	80-98	62-95
Elongation, %	25-30	25-30
Reduction in area, %	70-75	65-70
Impact strength, kgf/m/cm ²	11-12	7

5 figures, 4 tables, 12 bibliographic references.

2/2

Titanium

USSR

UDC 669.295.5

KOLACHEV, B. A., LIVANOV, V. A. and ZEURAVLEV, L. N. (Moscow)

"On the Selection of the Composition of Titanium Alloys with a Negligible Tendency toward Hydrogen Brittleness"

Moscow, Izvestiya AN SSSR, Metally, No 3, May-Jun 70, pp 158-164

Abstract: The authors classify hydrogen brittleness of titanium alloys into two major groups. The first is determined by causes existing in the initial metal due to high hydrogen content. The second is determined by sources developing in metal with a high hydrogen content during plastic deformation. The tendency and the sensitivity of α and $(\alpha-\beta)$ titanium alloys to hydrogen brittleness are investigated. The influence of β -phase quantity on maximum hydrogen concentrations in $(\alpha+\beta)$ alloys in the development of both brittleness aspects is analyzed on the basis of available data. An expression is derived for the average hydrogen concentration in the $(\alpha+\beta)$ alloy at which the β -phase becomes brittle. The stabilizing effect of alloying metals is considered. It is stated in conclusion that: 1) the tendency of α -alloys to hydrogen brittleness can be reduced by increasing the aluminum content, which increases the solubility of hydrides in the α -phase; 2) the sensitivity of $(\alpha+\beta)$ alloys to hydrogen brittleness can be reduced by increasing the β -phase share, by increasing the critical hydrogen concentration in the β -phase, above which the embrittlement begins, and by reducing

USSR

KOLACHEV, B. A., et al., Izvestiya AN SSSR, Metally, No 3, May-Jun 70, pp 158-164

the correlation of hydrogen concentration in the β and α phases. All this can be achieved by an appropriate selection of ($\alpha + \beta$) alloy composition or conditions of their heat treatment.

2/2

USSR

UDC 621.397:621.396.61

ZHURAVLEV, M. I.

"Economical Synchrogenerator for a Portable Television Camera"

Vopr. radioelektroniki. Nauchno-tekhn. sb. Tekhn. televideniya (Problems of Radio Electronics. Scientific and Technical Collection. Television Equipment), 1970, vyp. 1, pp 64-71 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G130)

Translation: This article contains an investigation of a schematic for a synchrogenerator made of tunnel diodes and transistors with an intake of no more than 150 milliwatts. Data are presented from experimental testing of individual assemblies of the synchrogenerator both for normal ambient temperature and in the temperature range from -60 to +70° C.

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USSR

UDC: 8.74

ZHURAVEL', N. M., ZHURAVEL', F. A.

"Sequential Grouping Based on Qualitative Features"

Novosibirsk, Raspoznavaniye obrazov i regression. analiz v ekon. issled.--sbornik (Pattern Recognition and Regression Analysis in Economic Research--collection of works), 1972, pp 45-59 (from RZh-Kibernetika, No 5, May 73, abstract No 5V836 by E. Vagner)

Translation: In economic, sociological and biological research there is an urgent problem of distinguishing qualitatively homogeneous groups among the totality of investigated objects. The traditional methods of simple and combination grouping are not especially suitable in a number of instances, in particular when the volume of an aggregate is limited and there is a considerable selection of qualitative features with various degrees of significance from the standpoint of research goals and mutual dependence between qualitative features.

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ZHURAVEL', N. M., ZHURAVEL', F. A., Raspoznavaniye obrazov
i regression. analiz v ekon. issled., 1972, pp 45-59

The conventional multistep procedure permits a breakdown in accordance with any single feature on each step. In this connection, complexity consists in choice of the group feature for breakdown on each step. As a formal criterion for selecting such a parameter we can take the coefficient of qualitative variation which reflects the complete number of differences in the qualities of all objects of an aggregate. However, in real cases the formal criterion must be supplemented by a number of limitations relating to the specific problem. A complex approach to solution of the grouping problem is suggested, and a program written in the ALPHA algorithmic language is described for the M-220 computer.

2/2

- 117 -

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--X RAY DIFFRACTION STUDY OF PLATINUM BARIUM AND PALLADIUM BARIUM
ALLOYS IN THE REGION OF PT SUB5 BA AND PD SUB5 BA COMPOSITIONS -U-
AUTHOR--(03)-ZHURAVLEV, N.N., YESAULOV, N.P., RALL, I.V.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 374-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS
TOPIC TAGS--X RAY DIFFRACTION, PLATINUM ALLOY, PALLADIUM ALLOY, BARIUM
ALLOY, MICROSCOPY ALLOY, BARIUM COMPOUND, X RAY EMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0320 STEP NO--UR/0070/70/015/002/0374/0376
CIRC ACCESSION NO--AP0119307
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119307

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PT-BA AND PD-BA ALLOYS THAT ARE RICH IN PT AND PD HAVE EMISSIVE PROPERTIES. AN ALLOY CORRESPONDING TO THE PT SUB5 BA COMPN. WAS HOMOGENIZED AT 1320DEGREES IN A PROTECTIVE ATM. OF AR FOR 50 HR AND THEN ANNEALED AT 800DEGREES FOR 30 HR AND AT 700DEGREES FOR 50 HR. INTENSITIES WERE MEASURED WITH A DIFFRACTOMETER BY USING MICROSCOPIC CONTROLLED MICROSECTIONS PROTECTED WITH PARAFFIN WAX. THE COMPD. IS STABLE IN THE ABOVE TEMP. RANGE, DESPITE PREVIOUS DATA (T. HEUMANN, CA 45:6451G), AND IT PRESERVES THE STRUCTURE OF THE CACU SUB5 TYPE WITH A EQUALS 5.505 PLUS OR MINUS 0.006 AND C EQUALS 4.337 PLUS OR MINUS 0.0009 ANGSTROM. THE DIFFERENT DIFFRACTOGRAMS REVEALED DIFFERENT INTENSITIES, WHICH MIGHT BE DUE TO VARIOUS DEGREES OF DECOMP. OF PT SUB5 BA ON THE MICROSECTION SURFACE UNDER THE INFLUENCE OF THE ATM. PD SUB5 BA WITH A EQUALS 5.54 PLUS OR MINUS 0.01 AND C EQUALS 4.33 PLUS OR MINUS 0.02 ANGSTROM IS ISOMORPHIC WITH PT SUB5 BA.

FACILITY: MOSK. GOS. UNIV. IM. LONONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 681.332.05

VOSTOKIN, Ye. A., YERSHOV, L. I., ZHURAVLEV, P. A., LEBEDEV, M. P., NOVIKOV, A. I., and TSYBIN, Yu. B.

"Device for Linking a Computer With a Communication Channel"

USSR Authors' Certificate No 341054, Cl. G 06j 3/00, filed 4 May 70, published 5 Jun 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, 5 Jun 72, p 186)

Abstract: The device contains an electronic telegraph receiver and transmitter, a block of keys, and delay circuit flip-flops. For simplification the outputs of the computer are connected to the inputs of the block of keys, whose outputs are connected to the inputs of the electronic transmitter; and the inputs of the control circuits of the block of keys are connected to the outputs of a flip-flop, one input of which is connected to the "trigger" output of the computer; the other, to the transmitter output; the outputs of the electronic receiver are connected to the inputs of the flip-flops, whose outputs are connected to the inputs of the computer, and the "trigger" output of the electronic receiver is connected through the delay circuit to the "clear" inputs of the flip-flops.

1/1

1/2 : 010 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--NITROCELLULOSE ENAMELS BASED ON WOOD CHEMICAL RAW MATERIAL -U-
AUTHOR--ZHURAVLEV, P.I. Z
COUNTRY OF INFO--USSR
SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(1), 25-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--NITROCELLULOSE RESIN, WOOD CHEMICAL PRODUCT, ENAMEL, LACQUE⁰,
PIGMENT, PYROXYLIN, ZINC OXIDE, TITANIUM DIOXIDE/(U)NTS224 LACQUER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1047 STEP NO--UR/0328/70/023/001/0025/0026
CIRC ACCESSION NO--AP0104445

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104445

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO FORMULATIONS WERE DEVELOPED FOR THE PRODUCTION OF FURNITURE ENAMELS. THE 1ST METHOD WAS TO BLEND PIGMENT (ZNO OR TIO SUB2) 25, CAMPHORIC OIL (CAMPHOR 40, ETOH 46, PHME 1, TERPENE HYDROCARBONS 13PERCENT) 25, AND LACQUER NTS-224 (PYROXYLIN 11, BUOAC 10, ET SUB2 O 32, ROSIN 6, BU SUB2 O 10, ETOAC 9, XYLENE 10, OXIDIZED TERPENE OIL 10, TERPENE SOLVENT 2PERCENT) 50 PARTS. THE 2ND METHOD WAS TO PREP. A PASTE CONTG. PIGMENT 19.5-60.5, DI BU PHTHALATE 14-24, AND PYROXYLIN 25.5-57.5PERCENT AND BLEND 15 PARTS OF THE PASTE WITH ETOAC 10, CAMPHORIC OIL 10, AND LACQUER NTS-22465 PARTS.

UNCLASSIFIED

USSR

UDC: 629.783.015.076.6

ZHURAVLEV, S. G.

"The Analytic Theory of Motion of a Stationary Satellite. Part 2. Secular, Long-Period and Short-Period Perturbations"

Probl. Mekh. Upravlyayemogo Dvizheniya [Problems of the Mechanics of Controlled Motion -- Collection of Works], No 1, Perm', 1972, pp 85-99 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 7, Moscow, Abstract No 7.41.78, from the Resume).

Translation: In the preceding work (see Abstract No 7.41.77), the problem was stated and analytic formulas were produced, describing the intermediate orbit of a stationary satellite moving in orbits of low eccentricity and low inclination to the Earth's equatorial plane. The purpose of the present work is to produce analytic formulas describing the secular, long-period and short-period perturbations not considered in the intermediate orbit. 4 figures.

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USSR

UDC: 629.783.015.076.6

ZHURAVLEV, S. G.

"Analytic Theory of Motion of a Stationary Satellite. Part 1. Intermediate Orbit"

Probl. Mekh. Upravlyayemogo Dvizheniya [Problems of the Mechanics of Controlled Motion -- Collection of Works], No 1, Perm', 1972, pp 68-84 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 7, Moscow, 1973, Abstract No 7.41.77, from the Resume)

Translation: The orbit of a stationary satellite is in the area of outer space (about 36,000 km over the surface of the Earth), in which the perturbations resulting from the polar compression of the Earth on the one hand and the influence of the moon and sun on the other hand are quantities of the same order of magnitude and must be defined together. Earlier, these perturbations were defined independently of each other. Furthermore, in determining various perturbations, different systems of elements and different planes of reference were used. Naturally, this makes the use of analytic formulas produced earlier for investigation of the motion of a stationary satellite difficult. The purpose of the present work is to construct an analytic theory of motion of a

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ZHURAVLEV, S. G., Probl. Mekh. Upravlyayemogo Dvizheniya, No 1, Perm', 1972, pp 68-84.

stationary satellite, in which the perturbations generated by the polar compression of the Earth and the influence of the moon and the sun are considered together and a single system of elements in a single plane of reference (the equatorial plane of the Earth) are used in determining the individual perturbations. The most important orbits from the point of view of practical utilization, those with slight inclination of the satellite, are studied. 13 biblio. refs.

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USSR

Z

UDC 614.2(-22)(47):[338:91]

AGAYEV, E. R., SACHKOV, A. M., and ZHURAVLEV, S. M.

"Problems of the Regionalization of the USSR Territories in Planning of Rural Public Health"

Moscow, Zdravookhraneniye Rossiyskoy Federatsii, No 2, 1970, pp 21-25

Abstract: Considerable differences exist in the organization of medical aid to rural populations due to the complex background of economic and geographical conditions. Central and even some municipal bodies responsible for this field are slow and lack imagination in developing a differential approach to this problem. This is due mostly to the lack of good scientific reasoning for planning the medical aid. The authors report on their attempts to solve the problem by regionalizing the country on the basis of economic and geographical factors. No actual data, tables or graphs are reported, but the work which went into the study is enumerated. Factors considered include the density of rural and urban populations, transportation network, scattering of population centers, distances from first-aid stations to medical centers, etc. It was concluded that the organization of rural medical aid should be based on village regions, since they already are discrete administrative units.

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USSR

UDC 615.31:547.869.2].012.1

GRITSENKO, A. N., YERMAKOVA, Z. I., ZHURAVLEV, S. V., VIKHLYAYEV, Yu. I., and KLYGUL', T. A., Institute of Pharmacology of the USSR Academy of Medical Sciences Moscow

"Synthesis in the Phenthiazine Series. XXXI. 10- γ -Alkylaminopropyl and 10- β -Alkylaminopropionyl Derivatives of Substituted Phenthiazines"

Moscow, Khimiko Farmatsevticheskiy Zhurnal, No 7, Vol 5, July 1971, pp 10-14

Abstract: A study was made of the synthesis of a series of 10- γ -alkylaminopropyl and 10- β -alkylaminopropionyl derivatives of 1-nitro, 4-nitro, 1-bromo and 1,3-dibromophenthiazines, and their pharmacological characteristics were compared. In order to obtain the aminoalkyl chain in position 10 of the phenthiazine, γ -dimethylaminopropylchloride and *N*-methyl-*N'*-(γ -chloropropyl)piperazine were used. The 10-(β -chloropropionyl) derivatives were obtained by interaction of the phenthiazine with β -chloropropionylchloride. All the investigated compounds had a clear sedative effect and were active with respect to all tests. The piperaziny derivatives were, as a rule, more active than the compounds with dialkylaminoalkyl substitutions in position 10. Halogenation of the phenthiazine ring with respect to positions 1, 3 and 4 leads to weakening of the activity of the compounds by comparison with the unsubstituted analogs and with compounds having similar substitutions in position 2. Halogenation with 1/2

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GRITSENKO, A. N., et al., Khimiko Farmatsevticheskiy Zhurnal, Vol 5, No 7,
July 1971, pp 10-14

respect to position 2 is the optimal version for activity of the compounds. Formation of the ethers with respect to position 2 leads to lowered activity. The mechanisms of these effects are discussed.

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1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PSYCHOTROPIC 10-2- DIETHYLAMINO
- PROPIONYL-2-TRIFLUOROMETHYLPHENOTHIAZINE HYDROCHLORIDE --U-
AUTHOR--(05)-ZHURAVLEV, S.V., GRITSENKO, A.N., VIKHLYAEV, YU.I., KLYGUL,
T.A., ULYANOVA, O.V.
COUNTRY OF INFO--USSR
SOURCE--BRIT. 1,191,800
DATE PUBLISHED--13MAY70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PATENT, TRANQUILIZER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0073 STEP NO--UK/0000/70/000/000/0000/0000
CIRC ACCESSIGN NO--AA0127700
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0127700

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. (I), HAVING PSYCHOTROPIC PROPERTIES, WAS PREPD. BY TREATMENT OF 2 TRIFLUOROMETHYLPHENOTHIAZINE WITH CLCH SUB2 CH SUB2 COCL, AND CONVERTING THE RESULTING 10 (BETA CHLOROPROPIONYL) 2 TRIFLUOROMETHYLPHENOTHIAZINE WITH NHET SUB2 INTO I. FACILITY: INSTITUTE OF PHARMACOLOGY AND CHEMOTHERAPY, ACADEMY OF MEDICAL SCIENCES, U.S.S.R.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DERIVATIVES OF IMIDAZO, 4,5,1,KL, PHENOTHIAZINE -U-

AUTHOR--(03)-GRITSENKO, A.N., YERMAKOVA, Z.I., ZHURAVLEV, S.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,395

REFERENCE--OTKRYTIYA, IZOBRET., PRGM. OBRAZTRY, TOVARNYE ZNAKI, 1970 47

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, IMIDAZOLE, ORGANIC SULFUR COMPOUND, ORGANIC
AZINE COMPOUND, AMINE, FORMIC ACID, ACETIC ACID, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0853

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136287

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AA0136287
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPS. ARE PREPD. BY
TREATING L,AMINOPHENOTHIAZINE WITH FORMIC OR TRIFLUOROACETIC ACID AT
100-20DEGREES. FACILITY: INSTITUT FARMAKOLOGII I KHIMioterapii
AKADEMII MEDITSINSKIKH NAUK SSSR.

UNCLASSIFIED

172 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--1, MERCAPTOIMIDAZO 4,5,1,N,N PHENOTHIAZINE -U-

AUTHOR--(03)-GRITSENKO, A.N., YERMAKOVA, Z.I., ZHURAVLEV, S.V.

COUNTRY OF INFO--USSR

SOURCE--USSR 265,111

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

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCAPTAN, IMIDAZOLE, ORGANIC SULFUR COMPOUND, ORGANIC AZINE
COMPOUND, CHEMICAL PATENT, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/1458

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128857

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128857

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TITLE COMPD. IS PREPD. BY
TREATING 1-AMINOPHENOTHIAZINE WITH CS SUB2 IN THE PRESENCE OF AN AQ.
SOLN. OF KOH AND ALC. OR POWD. S.

FACILITY: INSTITUTE OF
PHARMACOLOGY AND CHEMOTHERAPY, ACADEMY OF MEDICINAL SCIENCES, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--AMPHIBIAN OF THE 20TH CENTURY -U-
AUTHOR--ZHUKAVLEV, V.
COUNTRY OF INFO--USSR
SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, JULY 26, 1970, P 4, COLS 1-5
DATE PUBLISHED--26JUL70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, AERONAUTICS
TOPIC TAGS--HOVERCRAFT, PHOTOGRAPH, AMPHIBIOUS PERSONNEL CARRIER
CENTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0891 STEP NO--UR/0533/70/000/080/0004/0004
CIRC ACCESSION NO--AN0122935
UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AN0122935

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR DESCRIBES HIS RIDE IN A HOVERCRAFT WHICH RESEMBLES A SUBMARINE AND A TWO ENGINE AIRPLANE. LANDING OF A MARINE UNIT ON A ROCKY SHORE OF THE MOSCOW RIVER WAS DEMONSTRATED. THE CRAFT WAS TO BE SHOWN DURING THE NAVY DAY PARADE IN MOSCOW. A PHOTOGRAPH IS GIVEN WHICH SHOWS A SECTION OF SOME UNIDENTIFIED VESSEL.

UNCLASSIFIED

AN0012626

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480533

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54

AUTHORS-- VLADIMIROV, V., ENGINEER, AND ZHURAVLEV, V.,
CORRESPONDENT

TITLE-- THE MAGIC LASER BEAM

NEWSPAPER-- SOTSIALISTICHESKAYA INDUSTRIYA, JANUARY 18, 1970, P 4

ABSTRACT-- THE ARTICLE REVIEWS IN VERY POPULAR TERMS THE STATE OF THE LASER ART IN THE SOVIET UNION. IN THE SEARCH OF THE INFORMATION, THE AUTHOR VISITED ONE OF THE RESEARCH INSTITUTES OF THE MINISTRY OF ELECTRONIC INDUSTRY, U.S.S.R., WHOSE RESPONSIBILITY IS TO DEVELOP NEW LASER SYSTEMS. A PHOTOGRAPH IS ALSO GIVEN WHICH SHOWS CANDIDATE OF PHYSICAL-MATHEMATICAL SCIENCES YE. P. MARKIN OPERATING A GAS LASER AT THE LABORATORY OF QUANTUM RADIOPHYSICS OF THE PHYSICAL INSTITUTE IMENI LEBEDEV. IT IS CLAIMED THAT THIS LASER CAN BE USED TO DEVELOP AN AUTOMATIC PILOT.

EXPERIMENTS IN USING LASERS AS DRILLING TOOLS ARE CONDUCTED AT A PLANT OF ABRASIVES AND DIAMOND TOOLS IN ROSLAVL. A LASER TOOL, "KVANT-9", HAS RECENTLY BEEN INSTALLED AT THE PLANT.

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19571520

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AN0012626

LASER TELEPHONE LINES ARE OPERATING TODAY BETWEEN THE MOSCOW STATE UNIVERSITY AND THE CENTRAL TELEPHONE EXCHANG, MOSCOW AND KRASNOGORSK, AND YEREVAN AND BYURAKAN.

THE LABORATORY OF ACADEMICIAN N. G. BASOV HAS DEVELOPED SEMICONDUCTOR LASERS USED IN COMPUTER LOGICAL ELEMENTS.

THE LENINGRAD OPTICAL-MECHANICAL CORPORATION, "LOME", HAS PUT INTO SERIAL PRODUCTION LASER SYSTEMS TO BE USED BY CHEMISTS, PHYSICISTS, DOCTORS AND BIOLOGISTS.

19571521

USSR

VEDUTA, N. I., ZHURAVLEV, V. A.

"Optimization of the Structure of a Consumer Product by Distribution of Expenditures in Proportion to Equilibrium Prices"

Ekonomika i mat. metody [Economics and Mathematical Methods], 1973, 9, No 2, pp 298-309 (Translated from *Referativnyy Zhurnal - Kibernetika*, No 8, 1973, Abstract No 8 V533 from the introduction)

Translation: A dynamic model is constructed of the production of consumer products when equilibrium prices are available. The problem of conversion of increasing volume of production of consumer products to a structure optimal in some sense is solved. The asymptotic result produced for the model studied can be related to main-line theorems, except that the dependence of the output of consumer products is constructed in this case using differential equations. These equations contain control vector $k(t)$, free for selection at each moment in time, which has the sense of the vector of capital investments per unit of product produced at time t . Furthermore, the model includes the vector of cost of a unit of production $c(t)$, changing

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USSR

VEDUTA, N. I., ZHURAVLEV, V. A., *Ekonomika i mat. metody*, 1973, 9, No 2, pp 298-309

as a function of capital investments. It is proven that if capital investments are selected as a function of equilibrium prices of the product and its cost so that the summary expenditures for each product making up a set are at all times proportional to the equilibrium prices, the structure of the products produced and the optimal structure of consumption will converge.

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- 74 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--SELECTION FO THE METHOD AND TECHNIC OF RESECTION OF THE LIVER -U-

AUTHOR--(02)-SHAPKIN, V.S., ZHURAVLEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 59-63

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER, SURGERY, HYPOTHERMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0041

STEP NO--UR/0589/70/104/004/0059/0063

CIRC ACCESSION NO--APO105140

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105140

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF 137 HEPATECTOMIES INCLUDING 39 HEMIHEPATECTOMIES AND EXTENSIVE NEMIHEPATECTOMIES, 20 LOBECTOMIES, 41 BISEGMENT AND SEGMENTECTOMIES AND 37 ATYPICAL OPERATIONS IS GIVEN IN THE LIGHT OF SELECTION OF VARIOUS METHODS AND TECHNIQS OF RESECTION OF THE LIVER. ONLY EXTREMELY GRAVELY ILL PATIENTS WERE OPERATED UPON UNDER CONDITIONS OF HYPOTHERMIA WITH LIGATION OF THE HEPATIC PEDICLE. THE POSTOPERATIVE MORTALITY WAS 13.1 PERCENT (18 PATIENTS).

UNCLASSIFIED

USSR

UDC 621.3.029.6+613.646]:616-022.9

ZHURAVLEV, V. A.

"Combined Effect of a Microwave Field and Unfavorable Microclimate on the Organism"

Moscow, Voenno-Meditsinskiy Zhurnal, No 3, 1973, pp 64-67

Abstract: A study was made to establish the complex effect of microwaves of nonthermal intensities and combinations of individual factors of the microclimate encountered under real conditions. The studies were performed on young female rats. Data are presented for the control group and the group subjected to the effects those microwaves and the unfavorable microclimate indicating that the combination leads to expressed functional shifts in the organism of the animals and also to an increase in the degree of dystrophic alterations of certain organs. This is indicated by an increase in the erythrocytes and hemoglobin and a sharp reduction in the catalase activity and blood viscosity. When examining the reproduction function, the number of offspring of the rats receiving the combination treatment was appreciably lower than in those only subjected to microwaves and those subjected to neither effect.

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Acc. Nr:

AT0102940

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0148

113225g Determination of the temperature field of the working wall of a crystallizer. Zhuravlev, V. A.; Kitaev, E. M.; Skvortsov, A. A. (Gor'k. Politekh. Inst., Gorki, USSR). *Izv. Vyssh. Ucheb. Zaved., Chern. Met.* 1970, 13(1), 163-8 (Russ). Math. (A) and elec. analog (B) methods were developed for calcg. and measuring temp. profiles of internally water-cooled crystallizer walls. Isothermal lines (90-120°) detd. by A and B showed good agreement for a crystallizer model (with a shallow water channel over 70% of its surface) operating at a heat flow (q) = 680,000 kcal/m² hr, heat-transfer coeff. (α) = 25,000 kcal/m² hr degree, thermal cond. (λ) = 320 kcal/m hr degree. The math. equation can be used to calc. q values from known crystallizer wall temps.

DPJR J MC

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19861006

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UDC 621.391.19

ZHURAVLEV, V. F., KIRKOROV, N. I., and MOROZ, S. M., Minsk Radio Engineering
Institute

"Method of Forming Similarity Measures in Pattern Recognition"

USSR Authors' Certificate No 363105, Cl. G 06k 9/00, filed 9 Mar 71, pub-
lished 20 Dec 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy,
Tovarnyye Znaki, No 3, 1973, p 101)

Abstract: The method.-- based on the conversion of physical characteristics
into electric signals, a comparison of them with reference signals, and the
accumulation of the difference signals obtained from a comparison of them
with a threshold signal--- is unique in that to reduce the recognition error
probability, after the signals are compared with the reference signals, the
difference signals are compared with each other, the resultant signals of
the excess are summed according to the K-th attribute for the reference sig-
nals of each class, and the resultant sums are accumulated for a subsequent
comparison of them with the threshold signal.

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USSR

ZHURAVLEV, V. F. (Moscow)

UDC 531.1

"The Movement of a Free Gyroscope in the Presence of Internal Disturbances"

Moscow, Mekhanika Tverdogo Tela, No 5, 1973, pp 14-21

Abstract: A study is made of the movement of a free gyroscope, the rotor of which rotates in elastic, nonideal ball bearings. This gyroscope has eight degrees of freedom: six of them are possessed by the rotor with respect to the inner ring, and each of the rings has a degree of freedom. Equations are obtained for the vibration of the gyroscope, and formulas are derived for the frequencies of the free oscillations of the gyroscope; the "drift" of the gyroscope, determined by the imperfection of the bearings, is computed.

2 figures. 5 references.

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USSR

UDC 621.373.826:550.3 3

GERMAN, A. I., SHULYAKOVSKIY, G. Ye., CHAYANOVA, E. A., GULYAYEV, G. A., ZHURAVLEV, V. F., ZAKATOVA, T. M., and KINYAZ'KIN, V. V.

"Investigating the Effect of the Atmosphere on the Propagation of Coherent Radiation With the Wavelength of $\lambda = 10.6$ Microns"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 179-183 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D381)

Translation: Results are given of experiments on the determination of the coefficient of attenuation in coherent measurements (wave of 10.6 microns) as it passes over the uniform ground surface in a range of about 8 km. The radiation source was a stabilized laser on an OKG-15 base, operating in single mode with an output power of 1.2-1.5 W. The radiation was modulated with a 1080 Hz frequency. A diagram of the relative angular distribution of the radiation was given, which permitted the divergence angle of the radiation and the zone of maximum signal level to be determined. All

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USSR

GERMAN, A. I., et al., V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl., "Nauka," 1972, pp 179-183

further measurements were made in this zone. The value of the attenuation factor is within the limits of $0.05-0.08 \text{ km}^{-1}$ for clear weather, in the interval of $0.08-0.2 \text{ km}^{-1}$ for light fog and drizzles, and in the range of $0.5-0.6 \text{ km}^{-1}$ for heavy downpours. The proposed method for relative measurements of the attenuation factor gives a measurement error one-half that obtained in the absolute method.

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TITLE--BIOLOGICAL ACTION AND DISTRIBUTION OF TRITIUM OXIDE IN A DOG -U- PROCESSING DATE--04DEC70
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ABSTRACT. TRITIUM OXIDE (T SUB2 O) INTRODUCED I.P. IN 0.15 AND 0.3 MCI-G DOSES TO DOGS CAUSED ACUTE RADIATION SICKNESS WITH MARKED HEMORRHAGIC SYNDROME AND IRRITATION OF THE CENTRAL NERVOUS SYTEM. HISTOL. EXAMN. OF THE CEREBRUM REVEALED DIFFUSE TOXIC DAMAGE OF NEURONS AND OF NEUROGLIA. THESE EFFECTS ARE DIFFERENT FROM THOSE CAUSED BY EQUAL DOSES OF IONIZING RADIATION FROM AN EXTERNAL SOURCE. DISTRIBUTION OF T SEEMED TO BE UNIFORM THROUGHOUT ALL ORGANS INCLUDING THE BRAIN TISSUE. THIS RENDERS POSSIBLE THE DETN. OF IRRADN. DOSES AND OF THE KINETICS OF T SUB2 O ELIMINATION BASED ON CHANGES IN THE BLOOD LEVEL.
FACILITY: INST. BIOFIZ., MOSCOW, USSR.

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UDC 534.014

ZHURAVLEV, V. F.

"Statistical Evaluations of the Overall Level of the Axial Vibration of Gyro Motors"

Moscow, Mashinovedeniye, No 6, Nov-Dec 72, pp 21-24

Abstract: There is derived the relationship between the quality of the surfaces of a bearing, determined by some of their statistical characteristics, and the overall level of axial vibration. Considered as the model of a gyro motor is an absolutely rigid rotor rotating in geometrically nonideal ball bearings, assembled with axial tightness. This relationship permits determination of the limits within which lies the value of the overall level of vibration of the gyro motor when the quality of the rolling surfaces of its bearings is given. Since all the values linked by the relationship are subject to control in production, this relationship permits the overall vibration level of the gyro motor to be estimated prior to its manufacture, namely in the planning stage. 1 references.

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UDC 621.391:519.2

ZHURAVLEV, V. I., BONCH-BRUYEVICH, A. M.

"Noiseproofness of the Quasisynchronous Method of Receiving Signals with Pseudonoise Modulation"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 13-17 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A31)

Translation: This article contains an analysis of the joint effect of accuracy of operation of time and phase synchronization channels with active matched filtration of signals with pseudonoise modulation. There are two illustrations and a three-entry bibliography.

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