

USSR

UDC 51.621.391

KALYADIN, N. I., TIKHONOV, G. A.

"The Relationship of Lattice and Boolean Functions"

Avtomat. Ustroystva Ucheta i Kontrolya [Automatic Accounting and Testing Devices
-- Collection of Works], No. 6, Izhevsk, 1970, pp 55-58 (Translated from Refera-
tivnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V486).

No Abstract.

1/1

USSR

UDC: 577.4

IPATOVA, E. N., KALYADIN, N. I., TIKHONOV, G. A.

"On the Problem of Constructing Filters in Calculating Boolean Functions"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Use of Computer Technology in Machine Building--collection of works), Izhevsk, 1971, pp 52-57 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V423)

[No abstract]

1/1

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USSR

UDC:621.762.04

TIKHONOV, G. F., PYRYALOV, L. A., SOROKIN, V. K., NIKOLAYEV, A. N.,
KHROMOV, V. G. and SHMELEV, L. S., Gor'kiy Polytechnical Institute

"Production and Properties of Porous Rolled Products"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 85-89

Abstract: The method of direct rolling of powders has been used to develop processes for producing porous sheets designed for use as permeable materials and fine filters. The properties of porous permeable rolled sheets made of stainless steel, titanium, nickel and nichrome are presented in tabular form. Studies performed have developed several types of filtering materials with nominal filtrations of 2, 5 and 10 μ .

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USSR

TIKHONOV, G. F., PYRYALOV, L. A.

UDC: 621.762.3:669.15(008.8)

"Method of Treatment of Powdered Material"

USSR Author's Certificate Number 341600, Filed 25/09/70, Published 7/07/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No
8G399P).

Translation: A method is presented for processing of powdered material, for example stainless steel powders, with solutions of inorganic compounds. In order to improve the technological properties of the powders, they are treated with an aqueous solution containing nitric acid and a halide salt of an alkali metal, then neutralized with a solution of caustic soda, washed with water and dried. The powders are treated with an aqueous solution containing $\leq 80\%$ nitric acid in 2-4% alkali metal halide.

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USSR

Instrumentation and Equipment

UDC: 621.762.002.5(088.8)

PAVLOVSKAYA, Ye. I., TIKHONOV, G. F., NIKOLAYEV, A. N., SHTUTMAN, B. A.,
KHRENOV, B. A., GORYACHEVA, Z. V.

"Device for Feeding of Powder into Rolls of a Rolling Mill"

USSR Author's Certificate Number 352685, Filed 8/06/70, Published 26.10/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No
8G450).

Translation: The device suggested contains a hopper and a feeder. In order
to increase the quality of the product produced, the feeder is made in the
form of a strip transporter connected through a drive to the rolls of a roll-
ing mill.

1/1

USSR

TIKHONOV, G. F., PYRYALOV, L. A., SIVOV, A. V.

UDC 621.762.4

"Application of Surface-Active Substances When Obtaining Porous Rolled Products"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 14-17 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G459)

Translation: On introducing surface-active substances, for example, machine oil and glycerine, into Fe, Cu, Ni, nichrome, stainless steel, and other powders, it becomes possible to roll a bimetallic strip from the powders differing sharply with respect to its properties whereas mixtures of different powders without surface-active substances give strips with very high bend after rolling with a difference in friction coefficients of these powders of more than 10-13%. The article contains 4 tables and a 4-entry bibliography.

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UDC 621.762.002.5

USSR

TIKHONOV, G. F., KHROMOV, V. G., VASIL'YEV, V. A.

"Application of the "UVD" All-Purpose Vacuum Dilatometer for Studying the Process of Sintering Cermet Materials"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 24-27 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G471)

Translation: Improvements in the structure of the UVD dilatometer have offered the possibility of regulating temperature, automatically printing out temperature marks when working with the "differential" method, changing the sizes of a specimen, and investigating the shrinkage kinetics of porous cermets materials in a wide range of process flow rates. Under certain conditions, it is possible to use the "differential" method of investigation with isothermal holding. There are 3 illustrations and a 2-entry bibliography.

1/1

Titanium

USSR

UDC 66.067.12

TIKHONOV, G. F., and SOROKIN, V. K., Gor'kiy Polytechnical Institute

"Production of Thin-Walled Tubular Filters From Porous Titanium Sheet"

Kiev, Poroshkovaya Metallurgiya, No 11, Nov 70, pp 97-99

Abstract: The technique of manufacturing tubular filters 57 mm in diameter and 700 mm long by the method of coiling titanium sheets with 40-45% porosity into a tube with subsequent welding or sizing of the longitudinal seam is considered. The filters trap particles of impurities less than 4 μ m in dimension.

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UDC 621.762

USSR

TIKHONOV, G. F., and SOROKIN, V. K., Gorkiy Polytechnical Institute

"Effect of Granulometric Composition on the Technological Properties of
Stainless Steel Powder"

Kiev, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 1-4

Abstract: A study was made of the effect of granulometric composition on the properties of powdered stainless steel. The initial material was powdered austenitic-type Kh18N15 nickel-chromium steel. The powder was separated into three fractions with particle sizes of 200-120 (large), 120-60 (medium), and less than 60 microns (fine). These fractions were used to produce mixtures of different granulometric composition. With increased content of medium and fine fractions the bulk weight of the dry granular material and the friability increased, while the degree of compacting decreased. The bulk weight of the dry powder and friability of the mixtures can decrease if the particles in the fine fraction do not locate in the interparticle pores of the basic coarse fraction.

Equilateral concentration triangles were used to depict the granulometric composition of the mixtures characterized by three variable fractions.

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USSR

TIKHONOV, G. F., and SOROKIN, V. K., Poroshkovaya Metallurgiya, No 1 (97),
Jan 71, pp 1-4

The effect of granulometric composition and particle shape on the technological properties of Kh18N15 stainless steel powder was also investigated. The particles were rolled in a ball mill for 24 hours to obtain round particles. Mixtures were made of particles from four fractions with particle sizes of 140-100, 100-60, 60-40, and less than 40 microns. The technological parameters for particles of different shape are compared in a table.

2/2

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--KINETICS AND MECHANISM OF THE CATALYTIC DIMERIZATION OF ACETYLENE.
IV. EFFECT OF TEMPERATURE ON THE REACTION RATE -U-
AUTHOR--(04)-SHESTAKOV, G.K., TIKHONOV, G.F., TEMKIN, O.N., FLID, R.M.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(3), 575-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL KINETICS, DIMERIZATION, ACETYLENE, CHEMICAL REACTION
RATE, TEMPERATURE DEPENDENCE, EQUILIBRIUM CONSTANT, ACTIVATION ENERGY,
CHLORINATION, HYDROGEN CYANIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605012/D02 STEP NO--UR/0195/70/011/003/0575/0578

CIRC ACCESSION NO--A0140284

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTREME DEPENDENCE OF RATE OF C SUB2 H SUB2 DIMERIZATION ON TEMP. WAS STUDIED. IN 50-95DEGREES REGION, ALL PARAMETERS OF KINETIC EQUATION OF C SUB2 H SUB2 DIMERIZATION CHANGE IN DIFFERENT WAYS AND THE EFFECTIVE RATE CONST. (K SUBEFF) AND ELEMENTARY STAGE EQUIL. CONST. (K SUBA) CHANGE WITH TEMP. ACCORDING TO THE EQUATIONS: $K_{SUBEFF} = 8.92 \times 10^{-3} \exp(30,500 - RT)$ MOLE L. PRIME NEGATIVE1 HR PRIME NEGATIVE1 ATM PRIME NEGATIVE2 AND $K_{SUBA} = 6.3 \times 10^{-11} \exp(16,800 - RT)$ ATM PRIME NEGATIVE1. THE NEG. VALUE OF ENERGIES OF ACTIVATION IN THESE EQUATIONS IS DISCUSSED AND AN ANALOGY IS GIVEN TO HYDROCYANATION AND HYDROCHLORINATION OF C SUB2 H SUB2 IN THE PRESENCE OF CU(I). FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.183

TIKHOMIROV, I. A., ~~TIKHONOV, G. S.~~, and GOFMAN, E. R., Tomsk Polytechnical Institute

"Swelling of the Cation Exchange Resin KU-2 in Alcohols and Aqueous Alcohol Solutions"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 5, May 72, pp 1202-1204

Abstract: It has been shown that addition of alcohol to water, with a concentration of less than 20 g per 100 g water, had no effect on the degree of swelling of ion exchange resin, since this insignificant content of alcohol in water changed but little its dielectric permeability. On the other hand, swelling of the ion exchange resin in alcohols and in alcohols to which small quantities of water were added differed considerably from the cation exchange resin swelling in water. This is explained by the fact that even though with low solubility of water in alcohol the dielectric permeability is changed, the degree of this change is too small to affect the swelling. In case of alcohols soluble in water, the degree of cation exchange resin swelling decreases sharply with increasing concentration of the alcohol.

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Thin Films

USSR

UDC 669.27.293.28:548.73

KOZYRSKIY, O. I., and TIKHONOV, L. V., Institute of Metal Physics, Academy of Sciences UkrSSR

"Crystal Structure Changes in Workhardened Surface Films of Tungsten, Niobium, and Molybdenum in Thermocyclic Treatment"

Kiev, Metallofizika, No 31, 1970, pp 117-121

Translation: The changes occurring in thermocyclic treatment under various temperature conditions in thin (on the order of 5 microns) surface films of tungsten, niobium, and molybdenum workhardened by grinding were studied by x-rays. The results were compared with the data previously obtained for metals with the face-centered cubic lattice. Bibliography: 10 entries, 4 illustrations.

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USSR

UDC 548.4

GONTAREVA, R. G. and TIKHONOV, L. V., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Stabilization of Nickel Structure by Repeated Thermocyclic Treatment and Isothermal Annealing"

Kiev, Metallofizika, No 39, 1972, pp 65-69

Abstract: The effect of preliminary treatment, consisting of periodic alternation of thermocyclic treatment and steady-state annealings on the stability of nickel structure for subsequent multi-step thermal cycles, was investigated by the topographic method of Berg and Barrett and by the metallographic method of selective etching. It was shown that preliminary thermocyclic treatment provides a more stable structure than steady-state high-temperature annealing. Preliminary treatment, involving alternation of TCT and annealing, better stabilizes the dislocation structure of nickel samples for service under conditions of rigid thermal stresses. 7 figures, 3 bibliographic references.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOME SPECIFIC CHARACTERISTICS OF HUMAN ENERGY CONSUMPTION DURING
THE SIMULATION OF MODIFIED GRAVITATION -U-
AUTHOR--(04)-YEREMIN, A.V., STEPANTSOV, V.I., SOKOLOV, V.I., TIKHONOV, M.A.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
41-45
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GRAVITATION EFFECT, MEDICAL EXPERIMENT, HUMAN PHYSIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1967 STEP NO--UR/0453/70/004/000/0041/0045
CIRC ACCESSION NO--AP0120610
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120610

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE ENERGY CONSUMPTION IN 4 MALE SUBJECTS DURING THE WALKING AT 4-4.5 KM-H AND RUNNING AT 9-9.5 KM-H ON A 'RUNNING LANE' WITH CONTROLLED MOTION. THE FORCE OF GRAVITY WAS MODIFIED DURING THE EXPERIMENTS BY RUBBER SHOCK ABSORBERS ATTACHED TO A GIRDLE ON THE SUBJECT AND PULLING DOWN TO THE PLANE OF THE LANE, OR BY CHANGING HIS POSITION WITH RESPECT TO THE FORCE OF GRAVITY VECTOR ON A SPECIAL 'PSEUDOGRAVITATION' STAND. IT IS FOUND THAT WALKING AND RUNNING REQUIRE MORE ENERGY IN A SUPINE POSITION THAN IN A VERTICAL POSITION EVEN WHEN THE LOADS ALONG THE HORIZONTAL AXIS OF THE BODY ARE EQUAL.

UNCLASSIFIED

TIKHONOV, M. K.

MEDICINE

J. 84/18
VOYENNO-MEDITSINSKIY ZHURNAL, NO. 1, 1970, PP. 50-52
DIAGNOSTIC SIGNIFICANCE OF ELECTROGASTROGRAPHY
IN GASTRIC ALIMENT

M. K. Tikhonov, Major of Med. Serv.

62815

Among the ailments of the GI tract, an important place belongs to chronic gastritis and functional disorders of the stomach. A complex examination for precise diagnosis of these ailments by many different methods were suggested. In studying the functional state of the stomach, the character of its secretory and motor activity is of great importance.

The aim of this article is the study of gastric motor function in patients suffering from chronic gastritis and from functional disorder of the stomach and also the comparison of the abdominal findings with the clinical manifestations of the ailment. The EGG (electrogastrography) record was made with the aid of the EGG-3 apparatus 30 minutes before a test meal (150 g white bread and a glass of sweet tea) during 40 minutes. The active electrode was placed upon the pylorus was determined and marked at radiography of the stomach in a recumbent position of the patient. The second electrode was placed on the lower third of the right leg, and the third (with grounding) upon the left leg. In women, the skin was treated with alcohol. Gucose pads were wetted with a 1% solution of sodium chloride.

One hundred and seven men were examined in the 20-25 year age group. Among them 72 had chronic gastritis, 35 had functional gastric trouble. For differential diagnosis of the ailments, in addition to clinical and laboratory findings, results of gastroscopy and gastrobiology were used. The duration of ailments was from 6 years to 8 years. The control group included 20 practically healthy men in the same age group.

At the interpretation of EGG, the existing classifications of electrogram types were used (Molodtsov, 1962; Krasnikov, 1953). The results of examinations are in Table 1.

Table 1

Type of EGG	Diagnosis		TOTAL
	Functional disorder of stomach	Chronic gastritis	
Hypokinetic	21	21	42
Normokinetic	17	3	20
Hypokinetic	2	1	3
TOTAL	35	27	62

From the data of Table 1 it is evident that the majority of patients who had functional gastric trouble with maintenance and elevation of p... majority of gastric...

Acc. Nr: **AP0051905**

Ref. Code: **UR0475**

PRIMARY SOURCE: **Vrachebnoye Delo**, 1970, Nr 2, pp 21-23

**MORPHOLOGICAL CHARACTERISTICS OF THE GASTRIC MUCOSA
IN PATIENTS WITH CHRONIC GASTRITIS**

M. K. Tikhonov and L. M. Artyev (Leningrad)

The morphological changes of the gastric mucosa have been studied in 127 patients with chronic gastritis and gastric functional disorders. All patients were young aged.

Gastric mucosa changes were most frequent and marked in chronic gastritis with secretory insufficiency.

Gastritis with normal and increased secretion showed mainly manifestations of superficial gastritis.

Aspiration biopsy of the stomach enabled to detect glandular forms of cancer in the preclinical period.

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REEL/F
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19820388

LF2 039 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INVESTIGATION OF DISSIPATIVE PONDEROMOTIVE EFFECTS OF
ELECTROMAGNETIC RADIATION -U-
AUTHOR-(03)-BRAGINSKIY, V.B., MANUKIN, A.B., TIKHONOV, N.YU.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1549-1552
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTROMAGNETIC RADIATION, MECHANICAL VIBRATION, ULTRAHIGH
FREQUENCY, ELECTROMAGNETIC FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0011 STEP NO--UR/0056/70/058/005/1549/1552
CIRC ACCESSION NO---AP0127661
UNCLASSIFIED

2/2 039

CIRC ACCESSION NO--AP0127661

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPERIMENT IS DESCRIBED IN WHICH VARIATION OF THE MECHANICAL VIBRATION DECUREMENT OF THE MOVABLE HALL OF AN ULTRAHIGH FREQUENCY CAVITY IS OBSERVED IN THE PRESENCE OF A POWERFUL ELECTROMAGNETIC FIELD IN THE CAVITY (ELECTROMAGNETIC DAMPING EFFECT). THE COEFFICIENT OF ELECTROMAGNETIC DAMPING INTRODUCED INTO THE MECHANICAL OSCILLATOR AFFECTS THE MAGNITUDE AND SIGN DEPENDING ON HOW THE CAVITY IS TUNED. THE MEASURED VALUES OF THE DAMPING COEFFICIENT SATISFACTORILY AGREE WITH THE THEORETICAL ESTIMATES. FACILITY: MOSKOVSKIY GOSUDARSTVENNYY UNIVERSITET.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--LEVEL OF ESSENTIAL AMINO ACIDS IN POTATO TUBERS IN RELATION TO THE
LEVEL OF MINERAL FEEDING -U-
AUTHOR--(02)-TIKHONOV, N.I., BYCHKOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1969, 7(12), 885-7
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MINERAL FERTILIZER, AMINO ACID, AGRICULTURE CROP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0519 STEP NO--UR/0394/70/007/012/0885/0887
CIRC ACCESSION NO--AP0126267
UNCLASSIFIED

2/2 003

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126267

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE EFFECT OF PROLONGED APPLICATIONS OF N-P-K FERTILIZERS AND MANURE ON THE COMPN. OF ESSENTIAL AMINO ACIDS IN POTATO TUBERS AND ON THE BIOL. VALUE OF THE NITROGENOUS COMPS. THE YIELD OF POTATOES AND THE LEVELS OF PROTEIN AND FREE AND BOUND AMINO ACIDS WAS INCREASED. THE CONTENT OF EACH INDIVIDUAL ESSENTIAL AMINO ACID IN THE TUBERS WAS INCREASED BY FERTILIZATION. THE BIOL. VALUE OF THE NONPROTEIN FRACTION OF THE POTATO TUBERS WAS LOW. THE BIOL. VALUE OF THE TOTAL PROTEIN IN THE POTATO UNDER THE VARIANT N-P-K PLUS MANURE WAS LOWER THAN IN THE CONTROL, BUT YIELD OF PROTEIN PER HECTARE WAS 3 FOLD GREATER.

UNCLASSIFIED

USSR

UDC 669.71.053.4.094

TIKHONOV, N. N. YASHENIN, P. V., BENESLAVSKIY, S. I., and BYKOV, A. B.

"Solubility of Aluminum Hydroxide from Bauxites of Various Mineralogical Types in Alkaline-Aluminate Solutions"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrodn. prom-sti
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 35-42 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G139)

Translation: The solubility of $Al(OH)_3$ from hydrargillite and bemite bauxites in alkaline-aluminate solutions was studied under conditions close to industrial. The solubility of natural hydrargillite and bemite differs somewhat from the solubility of these minerals obtained under artificial conditions. There is some variation of solubility as a function of the perfection of the crystals within the limits of the same crystalline modification. Approximate values of the calculated modulus are presented for leaching of hydrargillite and bemite bauxites under various conditions. 1 illustration, 4 tables, and 8 bibliographic references.

1/1

USSR

UDC 621.438(088.8)

KLENIN, YU. P. and TIKHONOV, N. T., Kuybyshev Aviation Institute

"Unit for Testing Turbine Machines"

USSR Author's Certificate No 334502, filed 16 Sept 69, published 6 Oct 1972 (from RZh-34. Aviatsionnyye i Raketnyye Dvigateli, No 4, Apr 73, Abstract No 4.34.90 P)

Translation: A unit is patented for testing turbine machines, for example micro-turbines containing a brake in the form of an air supercharger and a moment measuring unit. In order to increase reliability, the supercharger is placed in a housing which is hooked up to the moment measuring unit with air inlet and outlet branch pipes in an axial direction. The unit differs from others in that the brake shaft is set in bearings with gas lubrication. Original article: 3 illus. Resume.

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USSR

UDC 621.438:536

KLENIN, YU. P., NATALEVICH, A. S., TIKHONOV, N. T.

"Comparison of the Characteristics of Radial and Radial-Axial Centripetal Micro-turbines"

Tr. Kuybyshev aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 366-377 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.73)

Translation: Problems of determining the regions of the regime parameters ($\pi U_1/\epsilon C_{ad}$, ρ) in which the application of radial or radial-axial microturbines

is economically feasible are discussed. It is shown that the basic criterion for comparing the economy of these microturbines is the ratio of the power at the periphery of the wheel to the flow of gas Mu/G . Computational relationships were obtained in relative parameters for analyzing the effect of regime parameters on the basic geometric relationships of the turbines and establishing the regions for their suitable application. 6 ill., 1 ref. Resume.

Acc. Nr.:

AM0044554

Ref. Code: UR0000

Tikhonov, O.N.

The Solution of Problems on the Automation of Enrichment Processes and Metallurgy (Resheniye zadach po avtomatizatsii protsessov obogashcheniya i metallurgii) Leningrad. Nedra. 1969. 430 pp. (Kay)

TABLE OF CONTENTS:

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Reel/Frame

19771200

18

AM0044554

The problems in the book cover the theoretical sections of the courses in automatic measurement and principles of automation and the automation of production processes. It is a textbook for students specializing in "Enrichment of Useful Minerals", "Metallurgy of Non-Ferrous, Rare and Radio-active Metals", "Automation and Complex Mechanization of the Metallurgical Industry".

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19771201

USSR

UDC 577.4

IGNAT'YEVA, T. T., SMIRNITSKAYA, V. N., ~~TIKHONOV, V. I.~~

"Utilization of the Standard Simplex Method Program for Optimizing the Distribution of the Quarterly Production Program by the Uniformity Criterion"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Economic Engineering Institute), 1972, vyp. 91, pp 20-27 (from RZh-Kibernetika, No 7, July 72, Abstract No 7V544)

No abstract

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USSR

UDC 621.316.722.1(088.8)

KOMAROV, V.A., ~~TIKHONOV, V.I.~~, KHRISTIANOV, A.S. (N.-i. radiotekhn. in-t--
Scientific-Research Institute Of Radio Engineering)

"Low-Voltage Regulator"

USSR Author's Certificate No 305465, filed 3 Nov 69, published 13 July 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B469P)

Translation: A regulator is developed for the power supply of microelectronic consumers and tunnel semiconductor diodes. It has a relaxation generator filled with a tunnel semiconductor diode and an inductance. The pulses of the high-frequency generator are amplified by a two-stage amplifier and are fed to the control circuit of a regulating transistor, which is switched over into the cutoff region. The transistor in question is connected across commutating semiconductor diodes to the circuit of the primary windings of the transformer of the network, and consequently during blocking of the transistors the collector current is reduced, the currents in the primary windings of the 3-phase transformer are decreased, and the output voltage of the regulator is reduced. During this the oscillations of the generator are stopped and the collector current of the regulating transistor increases which is accompanied by an increase of the voltage at the rectifier output. Subsequently, the processes in the regulator are repeated. 1 ill. V.Sh.

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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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USSR

UDC 681.2.087.92

BABAYEV, R.M., TIKHONOV, V.I., KLYSTOVSKAYA, M.D., DMITRIYEVA, L.Ye.

"A Semiconductor Hall emf Pickup"

USSR Author's Certificate No 241546, Filed 9 Mar 67, Published 3 Mar 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A109P)

Translation: This Author's Certificate introduces a semiconductor Hall emf pickup. To improve the temperature stability of its basic characteristics -- for instance, the voltage transmission coefficient -- the pickup is based on a solid solution of $In_{1-x}Ga_xAs$, where $x = 0.15-0.20$. V.M.

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USSR

UDC 621.382.5

ZVYAGINA, E. N., OSTROVSKIY, G. I., TIKHONOV, V. I., KILIPENKO, V. V.,
CHERNYAVSKIY, V. V.

"Study of Contact Resistances in Thermoelectric Materials"

V sb. Nizkotemperaturn. termoelektrich. materialy (Low-Temperature Thermo-
electric Materials -- Collection of Works), Kisinev, 1970, pp 44-47 (from
RZh--Elektronika i yeye primenneiye, No 5, 1971, Abstract No 5B187)

Translation: A method is proposed for measurement of the contact resistances of
thermopiles, based on an increase of the number of switching layers in the
specimen. In contrast to the sonde-type, the proposed method has great
sensitivity, gives good reproducibility of results ($\sim 4\%$, whereas the sonde
type is as much as 20% [sic]) and makes it possible to measure contact re-
sistance in a wide range of temperature. 2 ill. 4 ref. Author's Abstract.

1/1

1/2 026
UNCLASSIFIED
TITLE--NONLINEAR OPTIMAL FILTRATION AND QUASI COHERENT RECEPTION OF
SIGNALS --U- PROCESSING DATE--09OCT70
AUTHOR--TIKHONOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--KIEV, IZVESTIYA VUZOV SSSR RADIOELEKTRONIKA, VDL 13, NO 2, 1970,
PP 152-170
DATE PUBLISHED--70
SUBJECT AREAS--MATHEMATICAL SCIENCES, ELECTRONICS AND ELECTRICAL ENGR.,
NAVIGATION
TOPIC TAGS--FILTRATION, SIGNAL RECEPTION, RADIO ENGINEERING, WHITE NOISE,
DIFFERENTIAL EQUATION, VECTOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/1466 STEP NO--UR/0452/70/013/002/0152/0170
CIRC ACCESSION NO--AP0110951
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--090CT70

2/2 026

CIRC ACCESSION NO--AP0110951

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

ABSTRACT. THE BASIC PURPOSE OF THIS ARTICLE IS TO SHOW THAT IT IS POSSIBLE TO USE THE THEORY OF NONLINEAR OPTIMAL FILTRATION FOR SOLVING VARIOUS RADIO ENGINEERING PROBLEMS. NO MATHEMATICAL DERIVATIONS ARE GIVEN, BUT THERE IS A BRIEF FORMULATION OF THE BASIC METHODOLOGICAL POSITION OF THIS THEORY FOR THE SIGNAL PARAMETERS. THE FUNDAMENTAL RELATIONSHIPS ARE PRESENTED, AND THE APPLICATION OF AN APPROXIMATE METHOD FOR SOLVING THE NONLINEAR FILTRATION EQUATIONS IS INDICATED. IN THE CALCULATIONS, THE STATISTICAL CHARACTERISTICS OF THE WHITE NOISE CONTAINING THE SIGNAL ARE ASSUMED KNOWN. THE SIGNAL IS POSITED AS A FUNCTION OF TIME AND OF A MULTI-DIMENSIONAL VECTOR WITH COMPONENTS REPRESENTING RANDOM PROCESSES, THE PARAMETERS ON WHICH THE USEFUL SIGNAL DEPENDS. IT IS ASSUMED THAT THE FORM OF THE SCALAR SIGNAL AS A FUNCTION OF TIME IS KNOWN, AND THAT THE VECTOR IS A MARKOV PROCESS EACH COMPONENT OF WHICH IS DESCRIBED BY A GIVEN A PRIORI STOCHASTIC DIFFERENTIAL EQUATION. THE METHODS DEVELOPED BY THE AUTHOR ARE APPLIED TO A SIGNAL WITH AMPLITUDE AND PHASE MODULATION. FINAL RESULTS FOR A SIGNAL WITH AMPLITUDE AND FREQUENCY MODULATION ARE ALSO PRESENTED. DISCRETE SIGNALS, SUCH AS THE BINARY SIGNALS USED IN THE TRANSMISSION OF DIGITAL INFORMATION, ARE ALSO EXAMINED.

UNCLASSIFIED

USSR

UDC 621:396.621.38

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TIKHONOV, V. I.

"Nonlinear Optimal Filtration and Quasi-Coherent Reception of Signals"

Kiev, Izvestiya Vuzov SSSR-Radioelektronika, Vol 13, No 2, 1970, pp 152-170

Abstract: The basic purpose of this article is to show that it is possible to use the theory of nonlinear optimal filtration for solving various radio engineering problems. No mathematical derivations are given, but there is a brief formulation of the basic methodological position of this theory for the signal parameters, the fundamental relationships are presented, and the application of an approximate method for solving the nonlinear filtration equations is indicated. In the calculations, the statistical characteristics of the white noise containing the signal are assumed known. The signal is posited as a function of time and of a multi-dimensional vector with components representing random processes, the parameters on which the useful signal depends. It is assumed that the form of the scalar signal as a function of time is known, and that the vector is a Markov process each component of which is described by a given a priori stochastic differential equation.
1/2

USSR

TIKHONOV, V. I., Izvestiya Vuzov SSSR-Radioelektronika, Vol 13, No 2, 1970,
pp 152-170

The methods developed by the author are applied to a signal with amplitude and phase modulation. Final results for a signal with amplitude and frequency modulation are also presented. Discrete signals, such as the binary signals used in the transmission of digital information, are also examined.

2/2

172 005 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--IMMUNOGENETIC STUDY OF HETEROZIS DURING USE OF BOARS WITH VARIOUS
INBREEDING COEFFICIENTS -U-
AUTHOR--(03)-TIKHONOV, V.N., BURLAK, Z.K., SRUEGA, A.A.
COUNTRY OF INFO--USSR
SOURCE--SEL'SKOKHOZ BIOL 5(1): 64-73. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--AGRICULTURE
TOPIC TAGS--ANIMAL HUSBANDRY, ANIMAL GENETICS, HOG, ANIMAL REPRODUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3067/0297 STEP NO--UR/9062/70/005/001/0064/0073
CIRC ACCESSION NO--AP0135792
UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135792

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF THE DEVELOPMENT AND USE OF INBRED SIRES TO OBTAIN THE HETEROSIS EFFECT UNDER THE IMMUNOGENETIC CONTROL WAS STUDIED BY THE METHOD OF THE REPEATED FERTILIZATION OF INBRED AND OUTBRED SOWS WITH THE MIXTURE OF SEMEN FROM BOARS WITH DIFFERENT HOMOZYGOCITY COEFFICIENTS. THE DECIPHERING OF THE ORIGIN BASED ON BLOOD GROUPS SHOWED THAT THE USE OF INBRED BOARS WHICH WERE OR WERE NOT RELATIVES FOR SOWS TO INSEMINATE BOTH OUTBRED AND INBRED FEMALES RESULTED IN THE HIGHER PERCENTAGE OF DEAD PIGS FROM RELATIVE BOARS. THE DEGREE OF INBREEDING GREATLY AFFECTS THE EMBRYONAL MORTALITY AND LOSS OF PIGS AT THE EARLY POSTNATAL PERIOD. THE INCREASE OF THE COEFFICIENT OF THE HOMOZYGOCITY OF SWINES IN THE PROCESS OF THE DEVELOPMENT OF INBRED LINES SHOULD NOT EXCEED 50PERCENT (AFTER RIGHT). IN CONTRAST TO CORSESSES OF INBRED LINES TOPCROSSING CAN BE USED IN SWINE BREEDING TO OBTAIN THE HETEROSIS EFFECT. FACILITY: INST. CYTOL. GENET., SIB. BR. ACADE. SCI. USSR, NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHROMATOGRAPHIC STUDY OF FATTY ACIDS OF THE BLOOD SERUM DURING
CIRCULATORY INSUFFICIENCY -U-
AUTHOR--(02)-TIKHONOV, V.P., NIKOLSKAYA, O.N.
COUNTRY OF INFO--USSR
SOURCE--KARDIOLOGIYA 10(1): 115-119, ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD CIRCULATION, BLOOD SERUM, HEART DISEASE, FATTY ACID,
ATHEROSCLEROSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0541 STEP NO--UR/0495/70/010/001/0115/0119
CIRC ACCESSION NO--AP0131164
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131164
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN 110 PATIENTS WITH RHEUMATIC FEVER AND ATHEROSCLEROSIS THE BLOOD SERUM FATTY ACIDS WERE DETERMINED IN ORDER TO STUDY THE INFLUENCE OF HEART FAILURE ON THEIR CONTENT. IN ATHEROSCLEROSIS THERE WAS A SHARP INCREASE IN THE CONTENT OF SATURATED FATTY ACIDS. IN RHEUMATIC FEVER THE LEVEL OF SATURATED FATTY ACIDS INCREASED INSIGNIFICANTLY, MAINLY AT THE EXPENSE OF MYRISTIC ACID. DEVELOPING CARDIAC INSUFFICIENCY CAUSED A STATISTICALLY SIGNIFICANT REDUCTION OF THE CONTENT OF NONSATURATED FATTY ACIDS IN BOTH GROUPS OF PATIENTS. PARTICULARLY SHARP WAS THE DECREASE OF OLIC ACID, RARELY LINOLENIC ACID. THE QUANTITY OF SATURATED FATTY ACIDS IN CIRCULATORY INSUFFICIENCY OF II-B-III STAGES ALSO MODERATELY DECREASED IN COMPARISON WITH THE CONTENT IN PATIENTS WITHOUT MARKED CIRCULATORY INSUFFICIENCY. THE CONTENT OF PALMITIC ACID OFTEN DECREASED. SUCH AN ALTERATION IN THE COMPOSITION OF BLOOD SERUM FATTY ACIDS IS UNFAVORABLE FOR THE NORMAL ENERGETIC AND PLASTIC REQUIREMENTS OF THE MYOCARDIUM. FACILITY:
 DEP. THER., VOLGOGRAD MED. INST., VOLGOGRAD, USSR.

UNCLASSIFIED

1/2 025
UNCLASSIFIED ✓ PROCESSING DATE--09OCT70
TITLE--CONTENT AND TYPES OF HAPTOGLOBIN IN THE BLOOD SERUM OF PATIENTS
WITH RHEUMATISM -U-
AUTHOR--TIKHONOV, V.P.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 106-110
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD SERUM, RHEUMATIC DISEASE, ELECTROPHORESIS, CIRCULATORY
SYSTEM DISEASE, OXIDASE, BETA GLOBULIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0942 STEP NO--UR/0504/70/042/004/0106/0110
CIRC ACCESSION NO--AP0109099
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN STUDYING THE TAPES OF HAPTOGLOBIN IN 205 INHABITANTS OF VOLGUGRAD IN 180 PATIENTS WITH RHEUMATISM (USING ELECTROPHORESIS ON A 5PERCENT POLYACRYLAMIDE GELL) NO DIFFERENCE IN THEIR DISTRIBUTION WAS REVEALED. WITH HIGH ACTIVITY OF THE PROCESS (II-II STAGE) AN INCREASE IN HAPTOGLOBIN LEVEL AND WITH A LETHAL COURSE OF THE DISEASE, ITS DROPT IN A NUMBER OF CASES) WERE OBSERVED. THE APPEARANCE OF TYPE HP PRIMEO WAS NOTED IN PATIENTS WITH ACUTE CIRCULATORY INSUFFICIENCY (IIB-II DEGREE). THIS IS A TEMPORARY CONDITION WHICH CEASES WITH THE IMPROVEMENT OF THE PATIENTS' STATE. THE AUTHORS OBSERVED THE APPEARANCE OF BAND X GIVING A PEROXIDASE REACTION AND FINDING ITSELF IN THE AREA OF BETA SUB2 GLOBULINS IN PATIENTS WITH CIRCULATORY INSUFFICIENCY OF THE III DEGREE. FACILITY: KAFEDRA PROPEDEVTICHESKOY TERAPII AND PROBLEMNAYA LABORATORIYA PO REVMAZMU PRI KAFEDRE GOSPITAL'NOY TERAPII VOLGOGRAДСKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

TIKHONOV, V.V.

MEDICINE

SPS 530116 N.Y. Tikhonov
5 MAY 71

Tikhonov, V.V.

INTERNATIONAL SYMPOSIUM ON "THE HISTORY OF THE SCIENCE OF MINERAL RESOURCES"

Article by Doctor of Geological and Mineralogical Sciences V.V. Tikhonov, Moscow, VESTNIK AKADEMII NAUK SSSR, Russian, No 2, February 1971, pp 117-119

An international symposium on the theme "The history of the science of mineral resources" was held on 14-20 September 1970 in Bad Nauheim (East Germany). It was conducted in accordance with a letter from October 1967 by the International Committee for the History of Geological Sciences (IHGES), which includes the representatives of 20 countries, including the USSR. Preparations for the symposium were handled by the Freie Bergbau-Akademie, the German Academy of Sciences in Berlin, and the National Committee of Geological Sciences of East Germany. Participating in the symposium were over 100 specialists from 21 countries, which was undoubtedly stimulated by the urgency of that theme, connected with the problem of comprehensive study of the geology of mineral raw material.

Very great interest was aroused by reports on the development of genetic ideas. Thus, in the report of L. Bauman (East Germany), devoted to the evolution of the concept of "endogenic ore formation", were shown the changes which that concept has undergone in the history of the development of the science of mineral resources from the 15th-17th centuries to the 20th century, when there was a noticeable growth of attention to magmatic processes and tectonic processes and they began to be more and more taken into consideration in the working out of the latest petrological theories. Questions in keeping with that were suggested upon in the report of Ye. A. and R. O. Radziewicz (USSR), devoted to the analysis of certain tendencies in the development of the science of mineral resources. The authors of the report think that the progress of geophysics and geochemistry gives the possibility of more and more confidently speaking about the leading role of the deep substance arising from the mantle, and the formation of metallic

USSR

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BELOV, K. P., NIKITIN, S. A., TALALAYEVA, YE. V., CHERNIKOVA, L. A.,
KUDRYAVTSEVA, T. V., ~~TIKHONOV, V. V.~~ and IVANOVSKIY, V. I., Moscow State
University

"Determination of the Exchange Interaction of Ferrite-Gadolinium Garnet
Sublattices Based on the Magnetocaloric Effect"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61, No 3,
Sep 71, pp 1101-1105

Abstract: Ferrite-rare earth garnets $R_3Fe_5O_{12}$ have a trisublattice magnetic structure. In the majority of cases within the framework of molecular field theory it is possible to examine such ferrite-garnets as having a bisublattice structure. In this case both a and d iron sublattices are examined as a single Fe_{a-d} -sublattice, in the effective exchange field of which are found rare earth ions. The author determined the effective exchange field acting on the R^{3+} ions from the side of the Fe^{3+} ions. Based on the measurement data of the magnetocaloric effect, the susceptibility of the paraprocess, and the specific heat in the region of the temperature of compensation, the authors determined the exchange field in the garnet structure. The measurements showed that for the $Gd_3Fe_5O_{12}$ garnet the field

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USSR

BELOV, K. P., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki,
Vol 61, No 3, Sep 71, pp 1101-1105

$H_{2eff} = 258$ kOe, and for $Gd_3Ga_{0.3}Fe_{4.7}O_{12}$ the field $H_{2eff} = 232$ kOe,
which is 10% less than for the gadolinium garnet. The article contains
1 illustration and 6 bibliographic entries.

UDC: 621.375.82

USSR

TIKHONOV, Ye. A. and SHPAK, M. T.

"Experimental Investigation of Pulse Lasers Using Organic Dye Solutions for the Spectral Range of 7100-11000 Å"

Kiev, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Nauk. dumka," No 6, 1972, pp 48-71 (from RZh--Fizika, No 4, 1973, Abstract No 4D1219)

Translation: Experimental and theoretical investigations are made of the energy, time, and spectral characteristics of lasers using organic dye solutions in the spectral range of 7100-11000 Å. A formulation is given of the basic requirements of the active medium -- dye + solvent -- and a group of organic dyes of the cyanide class is proposed for effective oscillation in the spectral region indicated. The effect of the resonator length and pumping distribution uniformity on the energy effectiveness of the laser is investigated, and several resonator configurations are proposed on this basis for realizing the maximum efficiency of the system. The effect of the spectral position of the monochromatic pumping lines on the oscillation efficiency is investigated. It is shown

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USSR

TIKHONOV, Ye. A. and SHPAK, M. T., V sb. Kvant. elektronika, No 6, 1972, pp 48-71

that a reduction in the efficiency of oscillation is caused by the absorption from the excited singlet state, the probability of which increases with an increase in detuning, $\Delta\nu = \nu_{\max} - \nu_n$, where ν_{\max} is the maximum of the fundamental absorption band. The time characteristics of the radiation of the laser using an organic dye solution are described. It is shown that in longitudinal excitation, the pumping and oscillation pulses are similar; in the case of large losses and at the threshold, the oscillation pulse of the dye solution is substantially shortened. The fundamental laws of behavior for the average oscillation frequency are investigated as functions of the losses, the active-center concentration, and the position of the pumping frequency relative to the purely electronic transition frequency. Bibliography of 23. Authors' abstract

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- 39 -

USSR

UDC: 621.375.82

TIKHONOV, Ye. A. and SHPAK, M. T.

"Experimental Investigation of Pulse Lasers Using Organic Dye Solutions for the Spectral Range of 7100-11000 Å"

Kiev, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Nauk. dumka," No 6, 1972, pp 48-71 (from RZh--Fizika, No 4, 1973; Abstract No 4D1219)

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USSR

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pp 48-71

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- 39 -

USSR

UDC: 621.375.82

TIKHONOV, Ye. A. and SHPAK, M. T.

"Experimental Investigation of Pulse Lasers Using Organic Dye Solutions for the Spectral Range of 7100-11000 Å"

Kiev, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Nauk. dumka," No 6, 1972, pp 48-71 (from RZh--Fizika, No 4, 1973, Abstract No 4D1219)

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USSR

TIKHONOV, Ye. A. and SHEPAK, M. T., V sb. Kvant. elektronika, No 6, 1972, pp 48-71

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- 39 -

USSR

UDC: 535.373.3

ASLANIDI, Ye. B., TIKHONOV, Ye. A., and SHPAK, M. T.

"The Quenching Mechanism of Fluorescent Organic Dye Solutions in Two-Photon Excitation"

Leningrad, Optika i Spektroskopiya, December 1972, pp 1105-1108

Abstract: A description is given of experiments to determine the mechanism of fluorescence quenching in organic dye solutions under two-photon excitation from a ruby laser. Three dyes of the xan-thene group were used in the experiments; their solutions have a quantum fluorescence output of approximately unity, and the spectral position of their maximum long-wave absorption band corresponds approximately to resonance for two-photon absorption of a neodymium laser radiation. Curves plotted for the intensity of the fluorescence as a function of change in excitation power are found to deviate from the square law, and seven causes are listed and explained for this deviation. The diagram of the experimental setup is reproduced along with a textual explanation. It was found that the radiation intensity of the solution is strengthened at the fundamental frequency, thus confirming the presence of a phenomenon of forced emission at this frequency.

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- 63 -

USSR

UDC: 535.373.2

DYADYUSHA, G. G., PRZHONSKAYA, O. V., TIKHONOV, Ye. A., and
SHPAK, M. T.

"Investigating the Laws of Radiation Transitions from the Second
Excitation Singlet State of Dye Molecules"

Moscow, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5,
1972, pp 945-950

Abstract: This paper is based on an earlier article written by the authors named above and published in the Journal of Experimental and Theoretical Physics (ZhETF, 14, 330, 1971). The earlier article announced the discovery of intense shortwave radiation from molecular solutions of cyanine dyes, which was interpreted as radiation from the second electron-state excitation $^1S_2 \rightarrow ^1S_0$, and showed experimentally that this radiation is not connected with photochemical transformations or the presence of contaminants. In the present paper, the authors clarify the laws of shortwave fluorescence by investigating two homologous cyanine dye molecules. In the first, oscillation of the π electron system is possible in two mutually perpendicular directions, along the axis of symmetry and at right angles to it; the second type is characterized by a much greater linearity of oscillation of the π electron system. The results of experimentation with both

USSR

UDC: 535.373.2

DYADYUSHA, G. G., et al, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5, 1972, pp 945-950

molecules, excited by the mercury lamp type DRSh-250 with excitation wavelengths of 313, 366, and 405 nm, are given. Information regarding the mutual positioning of absorption and radiation oscillators of the molecules was obtained by investigating the polarization spectra. It is concluded that since the second excitation triplet state cannot be higher than the second singlet state, it is probably either in resonance or close to it.

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- 33 -

1/2 043

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--SUPERLUMINESCENT EMISSION OF LIGHT FROM ORGANIC DYE SOLUTIONS -U-

AUTHOR--(02)-TIKHONOV, YE.A., SHPAK, M.T.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 344-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--DYE, LUMINESCENCE, RUBY LASER, LASER RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/2203

STEP NO--UR/0185/70/015/002/0344/0347

CIRC ACCESSION NO--AP0125783

UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125783

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

ABSTRACT. THE EMISSION PROPERTIES OF IO
PRIME NEGATIVES M SOLNS. OF 1,1PRIME, DIMETHYLINDOLETRICARBOCYANINE
IODIDE IN GLYCEROL AT 300DEGREE SK WAS STUDIED. EXCITATION WAS EFFECTED
WITH A PULSED RUBY LASER POLARIZED LINEARLY. THE RELATION BETWEEN THE
EXCITATION SPECTRA AND THE EMISSION SPECTRA IS DISCUSSED. COHERENCE OF
THE EMISSION WAS DETD. BY YOUNG'S METHOD. FACILITY: INST. FIZ.,
KIEV, USSR.

UNCLASSIFIED

USSR

SHPAK, M. T., Corresponding Member of the Academy of Sciences Ukrainian SSR,
and ~~TIKHONOV, YE. O.~~ Candidate of Physicomathematical Sciences

"The Study of Nonlinear Phenomena in Organic Dye Solutions and Their Use for
the Creation of Highly Efficient Frequency-Tunable Lasers"

Kiev, Visnyk Akademii Nauk Ukrain's'koj RSR, No 11, Nov. 71, pp 9-18

Abstract: Studies on the physics of organic dye solution lasers were begun
at the Institute of Physics, Academy of Sciences Ukrainian SSR, in 1966,
based on the use of passive dye-solution Q-switches. The work has been done
in conjunction with the Institute of Organic Chemistry, Academy of Sciences
Ukrainian SSR, which has supplied various types of cyanine dyes for experi-
ments. The principal results of these studies are as follows:

A theoretical and experimental study was made of the mechanism for
light intensification and generation by solutions of complex organic mole-
cules, and optimal conditions were found for development of the generation

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USSR

SHPAK, M. T., and TIKHONOV, YE. O., *Visnyk Akademii Nauk Ukrain's'koi RSR*, No 11, Nov 71, pp 9-18

process on singlet-singlet electron-vibrational transitions of these molecules. A number of resonance-induced nonlinear effects in organic dye solutions were found and studied for the first time; viz., superluminescence, resonance induction of Rayleigh scattering and Raman effect, the effect of a solution with intensive Raman effect bands on the generation process and spectrum. Highly effective organic dyes were found which permit fine-frequency-tuning generation in the visible and near infrared wavelength range by varying the composition of the active molecules and their concentration in solutions and by the use of selective cavity elements. Recently the authors have been studying the possibility of employing complex organic compounds in the crystal phase for the second-harmonic generation of ruby and neodymium lasers. An intensive harmonic is found to be generated by triphenylmethane, diphenylmethane, anthraquinone, and some cyanine dyes.

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- 70 -

USSR

UDC 621.391.2

ALEKSEYEV, V. A., ANTONETS, M. A., GATELYUK, E. D., ZHIVORA, P. S., IVANOV,
B. S., KRYUKOV, A. YE., ~~TIKHONOV, YU. A.~~, YANKAVTSEV, M. V.

"Interference Correlometer using a Digital Computer"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 332-339

Abstract: Specific problems connected with the construction of a correlation detection system in which the receivers are located at a distance excluding the possibility of direct coupling with the correlator are discussed. The problems of constructing the interference correlometer with recording of the investigated signals at each point on magnetic tapes and calculation of the correlation function on a digital computer are considered. The peculiarities of calculating the correlation function connected with the application of superheterodyne receivers are noted, and results are presented from laboratory checking of the system. Satisfactory coincidence of the experimental and theoretical results was obtained. For $10 \text{ kilohertz} < F < 75 \text{ kilohertz}$ and $T = 30 \text{ seconds}$, the correlation gain of the developed system $Q \approx 1000$. The investigated system can also be used for autocorrelation and cross correlation analysis of processes represented by electric signals and for spectral analysis of signals represented in analog form for multilevel quantization at a digital computer input.

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Исследование, Ю.П.

SO: JPRS 59279
14 June 73

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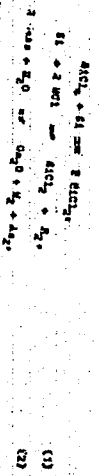
UTILIZATION OF THE SANDWICH METHOD TO OBTAIN EPITAXIAL LAYERS OF SEMICONDUCTING MATERIALS

И.И. Семенов, И.И. Аверина

Article by A. S. Korotkov, Yu. D. Chistyakov, Yu. N. Tikhonov, Novosibirsk, Институт Физики Полупроводников, Новосибирск, Новосибирская область, 1909, pp 33-41

In this paper a study was made of obtaining epitaxial layers of (1) Si, GaAs and also heteroepitaxial layers of GaAs-Ga using the sandwich method

As the transport agent for transporting the silicon we used SiCl₄ vapor and for the GaAs transport, the H₂O + H₂ system. The reactions regulating the transport process in this case are:



The thermodynamic and kinetic analysis of the reactions (1) and (2) which are considered [2-4] defining in the silicon transport process, performed by us in reference [5] demonstrated the significant lack of correspondence of the calculated and experimental values. In order to explain this and a number of other anomalous phenomena noted during the transport, we proposed a mechanism of charge transfer into account the nature of the physico-chemical interaction of the carrier substrate with the environment and assuming the presence of a liquid phase of defined composition on the surface of the plates.

Experimental Apparatus and Procedure

In order to obtain the epitaxial layers of gallium arsenide, a device was used with infrared heating. The heating by infrared lights lowers the amount of admixture entering the reaction zone from the elements of the apparatus since these elements are at a lower temperature than the elements of the epitaxial process. The low inertia of the infrared heaters permits us to achieve the given process temperature in two or three minutes after switching the lamps on.

A70048078

Abstracting Service:

Ref. Code:

INTERNAT. AEROSPACE ABST 570 210057

A70-25122 #... Criteria for modeling the force exerted by a supersonic jet on an obstacle (O kriteriakh modelirovaniia silovogo vozdeistviia sverkhzvukovoi strui na pregradu), M. V. Sushchikh, V. I. Pogorelov, and D. E. Tikhonov-Bugrov (Mekhanicheskii Institut, Leningrad, USSR), *Sbornik Tekhnicheskoi Fiziki*, vol. 40, Feb. 1970, p. 395-397. In Russian.

Analysis of the parameters which define the force exerted by a jet on a target. These dimensionless parameters are determined with the aid of Sedov's (1954) dimensional analysis. It is shown that for a practical range of variation of the dimensionless parameters, the ratio of the axial force acting on the target to the nozzle thrust remains constant, and that it is independent of the number of nozzles. This result is verified experimentally, using air and argon jets.

V.P.

LD

REEL/FRAME
19791767

21

TIKHONOVA, A.A.

JPRS 59308
6-73

XIV-5. RELATION BETWEEN THE GROWTH MECHANISM AND THE TYPE OF LATTICE DEFECTS IN THE GERMINATION LAYERS

[Article by A.A. Tikhonova; Novozhiletskii, III. Sbornik na Progressan Sotza 1 (Sbornik na Progressan Sotza 1, Stipeniye i Plinok, Krasnodar, 12-17 June 1972, p 107)]

In the out-of-equilibrium layers of formation condensed from a molecular beam in a vacuum, the growth surface morphology depends on the actual structure. The growth parameters among which the crystallization temperature plays the decisive role.

For a detailed investigation of the growth surface morphology data were obtained on the characteristic features of the growth mechanism, the conditions of formation and stability of the lamellar growth mechanism. A study was made of the actual structure of the layers by the means of selected electron diffraction, transmission electron microscopy and x-ray diffraction. Studies were made of monocrystalline layers deposited in the crystallization temperature range from 450 to 920° C.

The laws of variation of the types of structural defects are discussed under the assumption that the growth mechanism of the layers is determined by the surface kinetics.

USSR

UDC 577.472:614+577.391

GUS'KOVA, V. N., BRACINA, A. N., ZASEDATELEV, A. A., IL'IN, B. N., KUPRIYANOVA, V. M., MASHNEVA, N. I., RODIONOVA, L. F., SUKAL'SKAYA, S. Ya., and TIKHONOVA, A. I., Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Effect of a Mixture of Uranium Fission Products on Sanitary Conditions and Hydrobionts in Weakly Mineralized Bodies of Fresh Water"

Kiev, Gidrobiologicheskii Zhurnal, Vol 6, No 4, Jul/Aug 70, pp 5-11

Abstract: Pollution of water with two mixtures of radionuclides (mixture I, 52% rare earth radioisotopes and 20% alkali earth elements; mixture II, 40% rare earth radioisotopes and approximately 34% zirconium 95 and niobium 95) at concentrations ranging from $2.0 \cdot 10^{-7}$ to $1.0 \cdot 10^{-5}$ curie/liter was studied. The substances did not affect the sanitary conditions or the hydrobionts studied (E. coli, protococcal algae, Infusoria, duckweed). Biochemical oxygen demand and development of saprophytic mycoflora were inhibited only at concentrations above $1.0 \cdot 10^{-3}$ curie/liter. The rate of accumulation decreased from the lowest link (microorganisms) to the highest (fish). Adverse effects of the radioisotopes on developing fish spawn varied with the stage of 1/2

USSR

GUS'KOVA, V. N., et al, *Gidrobiologicheskiy Zhurnal*, Vol 6, No 4, Jul/Aug 70,
pp 5-11

development. Effects were evident in the early stages of embryogenesis at a
concentration of $1 \cdot 10^{-5}$ curie/liter and in later stages at $1.0 \cdot 10^{-3}$ curie/
liter.

2/2

USSR

UDC 669.293.5.784.018.44.621.785

TIKHONOVA, G. S., MEL'NIKOVA, L. V., ZHELEZNYAK, O. N., KONOVALOV, S. V.

"Structure and Mechanical Properties of Alloys of Niobium With Carbon as Functions of Heat Treatment"

Nauchn. Tr. N-i. i Proyechn. In-t Redko met. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 50-56. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I737 by the authors).

Translation: The alloy 5VMTs with 0.05% C is heterogeneous in its structure. The mechanical properties of the sheet material at high temperatures depend on the phase composition, resulting from the heat treatment mode. 2 figs; 3 tables; 4 biblio refs.

1/1

USSR

UDC 541.515:547.785.1

TIKHONOVA, L. G., TANASEYCHUK, B. S., and LOGINOV, V. S., Mordavsk State
University Imeni N. P. Ogarev, Saransk

"Investigation in the Area of Nitrogen-Containing Heterocyclic Free Radicals.
XIX. 2-Aryl-4,5-(p-bromophenyl)imidazoly radicals and Their Dimers"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 73, pp 96-98

Abstract: Dimers of 2-aryl-4,5-di(p-bromophenyl)imidazoly radicals have been synthesized and the relationship between the rate of dissociation of the dimers into radicals and the nature of substituents in the 2-phenyl ring has been investigated. The effect of the substituents on the rate of dimer dissociation can be described by Hammett's equation. The presence of bromine atoms in p-positions of the 4- and 5-phenyl rings increases the contribution of the mesomeric component to the stabilization of the transition state of the dimer dissociation process in comparison to bis(triphenylimidazoly radicals).

1/1

ATCO45326

Abstracting Service:
CHEMICAL ABST.

Ref. Code
UR0020

90910k Isomerization of active centers in the anionic polymerization of vinyltrimethylgermane. Namerkin, N. S.; Durgarvan, S. G.; Tikhonova, I. I.; Filippova, V. G. (Inst. Neftekhim. Sin. im. Pechieva, Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 114-117 [Chem] (Russ). $\text{Me}_3\text{GeCH:CH}_2$ (I) polymd. slowly in heptane in the presence of BuLi at 35-45°. Thus, after 1150 hr at 3.41 mole/l. I concn. and 0.01 mole/l. BuLi concn., only 57% conversion was obsd. After an initial induction period, the polymn. rate was proportional to I concn. and the square root of the initiator concn. Addn. of butadiene to the reaction system after 300 hr did not cause it to polymerize, indicating the low activity of the I carbanions. The polymer chain growth is apparently complicated by deactivation of the active centers by a hydride transfer from the end of the growing chain to give LiH. This was confirmed by observation of C=C absorptions in the ir spectra of the polymer, and by Br uptake corresponding to 2.2% double bonds.

DBJR

LD

4

REEL/FRAME
19780250

7

USSR

UDC 577.153

BRESTKIN, A. P., ROZENGART, E. V., SOBOLEVA, I. N., KHROMOV-BORISOV, N. V.,
INDEMBON, M. L., TIKHONOVA, L. N., AEDUVAKHAEV, A. A., and TOREMURATOV, K.,
Institute of Evolutionary Physiology and Biochemistry imeni I. H. Sechenova,
Academy of Sciences USSR, Institute of Experimental Medicine, Academy of
Medical Sciences USSR, Leningrad, and Tashkent State University imeni V. I.
Lenin

"Unproductive Bonding of Cholinesterase Substrate"

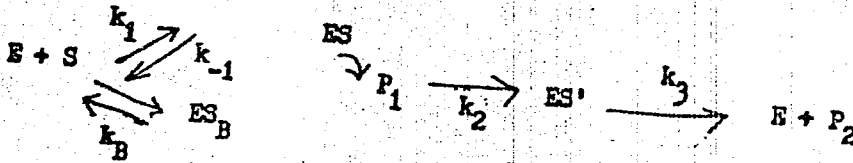
Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 717-720

Abstract: Experiments have shown that the rate-limiting step in the Michaelis-Menton substrate reaction is the acylation or deacylation rather than the initial formation of the Michaelis complex. The specificity of the cholinesterase is also determined by the latter steps in the reaction and it is only the L optical isomer of acetyl- β -methylcholine which is hydrolyzed by the acetylcholinesterase. The D isomer is an inhibitor at it is adsorbed on the active sites but not subsequently removed. The system can be generalized as follows;

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USSR

BRESTKIN, A. P., et al., Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 717-720



where E is the enzyme; S, the substrate; ES, the Michaelis complex; ES', the acylating enzyme; ES_B, the unproductive complex; and P₁ and P₂, the products of the reaction - alcohols and acids. The general implications of differences in the relative magnitudes of k₁, k₋₁, k₂, k₃, and k_B are presented. Actual data are given for five substrates.

2/2

USSR

UDC 611.8:534.612.1

ALEKSANDROV, L. N., DYSKIN, YE. A., ZLATISKAYA, N. N., KONKIN, I. F., DEV, I. D., ~~TIKHONOVA, L. P.~~, FILATOV, A. I., and SHADRINA, N. S., Department of Normal Anatomy, Military-Medical Academy imeni S. M. Kirov

"Condition of Some Nerve Structures After Exposure to Powerful Shock Waves" Leningrad, Arkhiv Anatomii, Gistologii i Imbriologii, No 10, 1971, pp 12-20

Abstract: Cats were exposed to a powerful shock wave with an excess pressure of 0.1 to 10 kg/cm² lasting about 0.1 sec. The effect was not lethal and after the experiment the animals were externally indistinguishable from normal cats. They were sacrificed at various times during the 30 days following exposure to the shock wave and the nerves in the walls of the vena cava, digestive organs, dura and pia mater of the brain and spinal cord, pancreas, and thyroid were histologically examined. The medullated fibers and preterminal portions of the receptors underwent the most distinct changes. The axial cylinders were swollen and the contours uneven. Along the course of the fibers were solitary or multiple varicosities. These reactive changes were largely reversible. However, some of the nerve elements proved to be quite resistant to the shock wave, notably the nonmedullated fibers, some afferent structures (e.g., diffuse receptors), and encapsulated cell bodies.

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MIKHONOVA, L. P.

SPAS 15341
6 Mar 70

ORIGINAL RESEARCH

UDC: 611.839.014.477
THE CONDITION OF NEURONS IN THE AUTONOMOUS NERVOUS SYSTEM GANGLIA FOLLOWING EXPOSURE TO G FORCES

[Article by Ye. A. Dyakin and L. P. Mikhonova, Chair of Normal Anatomy (headed by Professor Ye. A. Dyakin), Military Medical Academy imeni S. M. Kirov, Leningrad, *Archiy Anatomi. Gistologii i Embriologii, Russian*, No. 11, 1971, submitted 8 January 1971, pp 31-36]

The problem of gravitational stress [G forces] and its effect on organs and tissues of the organism is drawing increasing attention of morphologists.

After the many comprehensive morphological works describing the vascular bed following hypergravitation, researchers turned their attention to the anatomical changes arising with this stress factor in the nervous system. The timeliness of such investigations was due to the fact that, as shown by physiologists, disturbances resulting from stimulation of the nervous system play an important part in the mechanism of the effect of accelerations on the organism (V. I. Babushkin, V. B. Malkin, V. V. Usachev, 1956; A. S. Bater, 1962; A. K. Kotovskaya, S. I. Lobashkov, P. M. Sidorov, S. M. Simpura, G. P. Khlebunikov, 1962; B. M. Savin, 1963, 1964, 1970, and others). For this reason, along with the theory that interprets the effect of accelerations primarily due to hemodynamic disturbances, more recently an important place is given to concepts that attribute primary importance to nervous system disturbances (B. M. Savin and Z. K. Sul'zko-Samuylo, 1954).

It must, however, be noted that, unlike the vascular bed, there has not been comprehensive investigation of the condition of the nervous system following hypergravitation.

Among the investigations dealing with this matter, we must mention the works of V. P. Kurkovskiy (1953, 1954), B. S. Glushkov (1963), D. I. Medvedev (1964), T. G. Oganesyan (1965). More recently, studies have been made of the changes arising under the influence of longitudinal and lateral accelerations in the nervous system of vessels under the guidance of Professor S. S. Mikhaylov (V. K.

AT0050274

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

UR0020

104556p Properties and hydrolytic stability of platinum-nitrosoacidotetraamine complexes. Stetsenko, A. I.; Kisileva, V. M.; Tikhonova, L. S. (Leningrad. Tekhnol. Inst. im. Lenseveta, Leningrad, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190 (2), 363-5 [Chem] (Russ). The title compds. hydrolyze at $20 \pm 1^\circ$ according to the following equation: $[PtL_4(NO)X]^{2+} + H_2O \rightleftharpoons [PtL_4]^{2+} + HNO_2 + H^+ + X^-$, where $X = Cl^-, HSO_4^-$, and NO_2^- and $L_4 = (en)_2, (NH_2)_4, (MeNH_2)_4, (MeNH_2)_2(NH_2)_2$. The equil. was not greatly affected by the change of L_4 groups except the $(en)_2$ complex had an equil. const. $1/10$ those of the other complexes. The anions had a great effect on the stability: $[Pt(en)_2(NO)Cl]^{2+}$ ($K = 5.4 \times 10^{-3}$) $>$ $[Pt(NH_2)_4(NO)Cl]^{2+}$ ($K = 3.4 \times 10^{-3}$) $>$ $[Pt(NH_2)_4(NO)HSO_4]^{2+}$ ($K = 1.7 \times 10^{-3}$) $>$ $[Pt(NH_2)_4(NO)NO_2]^{2+}$ ($K = 1.0 \times 10^{-3}$). The electron absorption max. of the different compd. are given.

P. L. Maxfield

1/1

REEL/FRA
19810204

7 nt

TITLE--PRODUCTION OF PISTON RINGS FROM FKN7 AND FKN14 MATERIALS FOR HIGH PRESSURE COMPRESSORS -U-
AUTHOR--TIKHONOVA, M.S.

UNCLASSIFIED

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (2), 28

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PROPULSION AND FUELS, MATERIALS
TOPIC TAGS--ENGINE PISTON, METAL RING, GRAPHITE, HIGH PRESSURE COMPRESSOR, DURABILITY, GLASS FIBER, LUBRICATION/(U)2RK15220 COMPRESSOR, (U)FKN7 RING, (U)FKN14 GASKET SEALANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1548

STEP NO--UR/0314/70/000/002/0028/0028

CIRC ACCESSION NO--AP0118531

UNCLASSIFIED

2/2 057

CIRC ACCESSION NO--AP0118531

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEALING RINGS FOR HIGH PRESSURE COMPRESSORS WERE MANUFD. FROM FKN-7 SEALANT (COMPOSED OF FUDROPLAST (I) 72, GRAPHITE (II) 21, AND MOS SUB2 7PERCENT) AND FKN-14 SEALANT (COMPOSED OF I 65, II 20, MOS SUB2 5, AND CHOPPED LGASS FIBER 10PERCENT). LONG TERM TESTS IN A 2 RK-1.5-220 COMPRESSOR (UNDER N AND WITHOUT LUBRICATION) INDICATED THAT THE DURABILITY OF FKN-7 RINGS IN 2 TESTING STAGES WAS 50,000 AND 4000 HR AND THE DURABILITY OF FKN-14 GASKETS WAS 6000 AND 3100 HR.

UNCLASSIFIED

USSR

UDC 581.19:632.952

TIKHONOVA, N. A., POZNANSKAYA, N. L. RUSAKOVA, V. A., IVANOVA, S. N.,
FADEYEV, Yu. N., IVANCHENKO, Yu. N., SHVETSOV-SHILOVSKIY, N. I., MEL'NIKOV, N. N.
and ZHIL'TSOVA, G. I., All Union Scientific Research Institute of Chemical
Plant Protection, Moscow, and the All-Union Scientific Research Institute of
Phytopathology, Moscow

"Studies of the Fungicidal Activities of Certain Benzoxazoline Derivatives"

Leningrad, Makologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 450-451

Abstract: Evaluations were made of the fungicidal effects of N-carbalkoxy-,
N-carbalkenyloxy-, N-carbaryloxy-, N-carbamoyl-, and N-aminomethyl-
derivatives of benzoxazoline-2 and its substituted compounds on the agents
of wheat rust *Puccinia triticina* and *P. graminis* f. *tritici*, potato blight
agent *Phytophthora infestans*, and the conidia of *Alternaria solani* and
Botrytis cinerea. These compounds showed the most pronounced fungicidal
effects at a concentration of 0.1% against the wheat rust agents, and somewhat
less effect against potato blight. They are practically inactive at a con-
centration of 0.005% in vitro. As a rule, introduction of halogens into the

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USSR

TIKHONOVA, N. A., et al., Mikologiya i Fitopatologiya, Vol 7, No 5, 1973,
pp 450-451

benzene ring reduced fungicidal activity. The results showed that derivatives
of benzoxazoline may be effective fungicidal agents.

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- 85 -

USSR

UDC 612.824.612.85

TIKHONOVA, N. A., Leningrad Medical Institute imeni I. P. Pavlov

"Effect of Anesthesia of Different Depths on the Response of the Acoustic Cortex Blood Vessels to Sound Stimulation"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 8, 1972, pp 1201-1206

Abstract: In anesthetized adult cats exposed to sounds ranging from 100 to 15,000 Hz, the type and intensity of the cerebrovascular to the stimuli is mainly a function of the depth of anesthesia. Deep anesthesia results in dilatation while moderate or light anesthesia elicits constriction. Sounds at frequencies of 1000 to 8000 Hz produce both types of responses, dilatation and constriction, whereas sounds of 10,000 and 15,000 Hz result only in constriction or no reaction at all regardless of the depth of anesthesia.

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- 72 -

1/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70
ACID WATER SYSTEM AT

TITLE--PHASE EQUILIBRIUM IN A VINYL ACETATE
ATMOSPHERIC PRESSURE -U-
AUTHOR--(04)-TIKHONOVA, N.K., TIMOFEYEV, V.S., SERAFIMOV, L.A., TOLKACHEVA,
N.L.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 175-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, VINYL COMPOUND, ACETATE, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0791

STEP NO--UR/0153/70/013/002/0175/0177

CIRC ACCESSION NO--AT0132889

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIL. COMPNS. IN THE 2 LIQ. PHASE REGION AND ALONG THE BINODAL SOLY. CURVE FOR THE TERNARY SYSTEM VINYL ACETATE HOAC-H SUB2 O ARE GIVEN FOR 13 POINTS AT 20DEGREES, AND FOR 11 POINTS AT THE B.P., AND A TERNARY ISOTHERMAL ISOBARIC DIAGRAM IS PRESENTED. VAPOR LIQ. EQUIL. AND B.P.S. ARE ALSO GIVEN FOR 27 TERNARY MIXTS. AT ATM. PRESSURE. THE SYSTEM IS DEFINED AS TYPE 4ALPHA CLASS I ACCORDING TO THE CLASSIFICATION METHOD OF GURIKOVA, AND THE CONC. TRIANGLE IS SEPD. INTO 2 RECTIFICATION REGIONS. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

028
UNCLASSIFIED
TITLE--DISTRIBUTION OF THE LOCAL FLOW RATE OF A GAS IN APPARATUS WITH A
SHORT CONTACT ZONE -U- PROCESSING DATE--30OCT70
AUTHOR--TIKHONOVA, N.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 56-7
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATHEMATICAL SCIENCES
TOPIC TAGS--GAS FLOW, NORMAL DISTRIBUTION, STATISTIC DISTRIBUTION,
LABORATORY EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0920 STEP NO--UR/0064/70/046/001/0056/0057
CIRC ACCESSION NO--AP0107449
UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0107449

UNCLASSIFIED

PROCESSING DATE--000CT70

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

ABSTRACT. THE GAS VELOCITY AT THE EXIT FROM RELATIVELY THIN (I.E., WITH A LARGE DIAM. TO HEIGHT RATIO) COLUMN PACKING LAYERS SHOWS GREAT LOCAL VARIATIONS; THOSE VARIATIONS ARE COMPLETELY RANDOM AND THEIR DISTRIBUTION SATISFIES THE NORMAL STATISTICAL DISTRIBUTION EQUATION. THE VARIATIONS BECOME LESS PRONOUNCED WITH INCREASING RESISTANCE OF THE LAYER; A VIRTUALLY CONST. RESIDENCE TIME OF THE GAS PARTICLES IN THE LAYER (E.G., IN CATALYTIC REACTIONS) MAY BE ACHIEVED BY INTRODUCING AN ADDNL. RESISTANCE TO THE GAS FLOW IN THE COLUMN IN FRONT OF THE LAYER.

UNCLASSIFIED

USSR

IDC 577.150.6

TROFIMENKO, N. M., TIKHONOVA, N. P., KUBLITSKAYA, M. A., and RYABTSEVA, N. A.

"Strains of Botrytis cinerea, Pathogens of Gray Mold of Grapes, and Producers of Enzymes of the Pectinase Complex"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 4, 1971, pp 41-44

Abstract: In connection with a study of gray mold (Botrytis rot) of grapes in the Crimea, five strains of Botrytis cinerea were isolated from infected grapes. These strains differed in morphological, physiological, and biochemical characteristics. Two of the strains isolated (Nos 20 and 30), which infected grapes most frequently, had a high pectinolytic activity. This activity was preserved during artificial cultivation of the fungus on a medium based on sugarbeet pulp. After the culture fluid derived from strains Nos 20 and 30 had been separated by filtration, an enzyme preparation with a high pectinolytic activity was isolated by precipitation with alcohol or ammonium sulfate. The preparation also had some proteolytic activity and expedited the hydrolysis of cellulose. Tests in the wine-making industry indicated that the enzyme preparation, which acted on the skin of grapes, increased the yield of juice (by 2-4%), of tanning

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USSR

TROFIMENKO, N. M., et al., Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 4, 1971, pp 41-44

substances and dyes (by 30-50%), and of some other products derived from grapes. The results of the tests showed that enzymes derived from *Botrytis cinerea* can be used to advantage in the wine-making and grape juice (fruit juice) industries.

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17

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF CHLORPROPAMIDE ON THE SENSITIVITY OF RATS TO THE
DIABETOGENIC ACTION OF ALLOXAN --U--
AUTHOR--~~TYKHONOVA~~, N.YE.
COUNTRY OF INFO--USSR
SOURCE--PROBL. ENDOKRINOL. 1970, 16(2), 95-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIABETES MELLITUS, MEDICAL EXPERIMENT, DRUG EFFECT,
CHLORINATED ORGANIC COMPOUND, AMIDE, ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0258 STEP NO--UR/0502/70/016/002/0095/0095
CIRC ACCESSION NO--AF0117510
UNCLASSIFIED

PROCESSING DATE--16OCT70

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0117510

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

ABSTRACT. CHLORPROPAMIDE ADMINISTERED TO RATS AT 100 MG-KG THROUGH A STOMACH PROBE PRIOR TO ALLOXAN INJECTION (190 MG-KG S.C.) CHANGED THE CHARACTER OF ALLOXAN TRIPHASIC REACTION DURING THE 1ST 24 HR AND ELIMINATED THE HYPOGLYCEMIC PHASE. CHLORPROPAMIDE POTENTIATED THE ALLOXAN DIABETOGENIC ACTION AND INCREASED BOTH THE FREQUENCY AND SEVERITY OF THE DISEASE. THE INCIDENCE OF DIABETES WAS HIGHER IN RATS RECEIVING PROTAMINE INSULIN (5 UNITS-KG S.C.) DAILY FOR 3 DAYS BEFORE ALLOXAN AND LOWER IN THOSE WITH PRELIMINARY ADMINISTRATION OF GLUCOSE (4 G-KG THROUGH A STOMACH PROBE). THE POTENTIATING ACTION OF CHLORPROPAMIDE AND PROTAMINE INSULIN SEEMS TO OCCUR AT THE LEVEL OF BETA CELL MEMBRANES AND INVOLVES INCREASED PERMEABILITY AND DECREASED CONTENT OF SH CONTG. ENZYMES WHICH BIND AND INACTIVATE ALLOXAN.

FACILITY: OTD. ENDOKRINOL., INST. AKUSH. GINEKOL., LENINGRAD, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PAINT AND VARNISH COATINGS APPLIED BY ELECTRODEPOSITION -U-

AUTHOR--(05)-TIKHONOVA, R.M., TSYRLIN, M.I., ZHURAVLEV, 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/FRAE--3007/0773

STEP NO--UR/0113/70/036/004/0039/0041

CIRC ACCESSION NO--AP0136210

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 025

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

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THERMAL BREAKDOWN OF SULFUR POLYCHLOROPRENES -U-
AUTHOR--(04)-TAMARKIN, V.F., DEGTEVA, T.G., TIKHONOVA, S.V., KUZMINSKIY,
A.S.
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DISULFIDE/(U)NATRIT A POLYCHLOROPRENE RUBBER
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UNCLASSIFIED

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PROCESSING DATE--23OCT70

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

ABSTRACT. THE HEATING IN VACUO OF NAIRIT A (S-CONTG. POLYCHLOROPRENE) (I) IS EQUIV. TO ITS THERMOMECH. DESTRUCTION, SUCH AS DURING ROLLING. IT CAUSES EVOLUTION OF CS SUB2, COS, AND CO SUB2 DUE TO BREAKING UP OF I POLYSULFIDE BRIDGES AND THE INTERACTION OF THE RADICALS FORMED WITH O. IN THE 110-50DEGREES RANGE, THE ACTIVATION ENERGY OF I GEL BREAKING IS SIMILAR TO 15 KCAL-MOLE. THE GEL FRACTION CONTENT OF I DECREASES DURING HEATING; AT FIRST IT RAPIDLY INCREASES DUE TO THE FORMATION OF A NEW GEL FRACTION. THE PRESECNE OF ALK. SUBSTANCES IN I INCREASES THE RATE OF GEL DECOMP. THE DECOMP. OF I MACROMOLS. IS ACCELERATED BY THIURAM AS SHOWN BY THE INCREASE CO SUB2 AND COS EVOLUTION IN ITS PRESENCE. FACILITY: NAUCH.-ISSLED. INST. REZIN. PROM., MOSCOW, USSR.

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USSR

UDC 621.762:669.018.5(088.8)

SAMSONOV, G. V., DUBOVIK, T. V., KUTSENOK, T. G., KEYLOV, V. D., ~~TIKHONOVA, V. F.~~

"Cermat Material"

USSR Author's Certificate No 309967, filed 24 Mar 70, published 29 Sep 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G420P)

Translation: A cermet material based on Al nitride is proposed for the manufacture of ignitron igniters of welding machines and converters. In order to decrease the ignition power and stabilize the electric parameters, 35-70% TiC is introduced into the material.

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USSR

UDC 621.387.253

SAMSONOV, G.V., DUBOVIK, T.V., KUTSENOK, T.G., ~~TEKHONIKI, V.E.~~, ANTOKHIN, R.G.
[In-t problem materialovedeniya AN SSSR--Institute Of The Problems Of Material
Study, AS, USSR]

"Material For Production Of Semiconductor Igniters For Ionic Rectifiers"

USSR Author's Certificate No 274240, Filed 9 June 69, published 24 Sept 70 (from
RZh--Elektronika i yeye prizeneniye, No 3, March 1971, Abstract No 3A185)

Translation: Igniters for ionic rectifiers [ventil'], produced from a material,
in the composition of which boron nitride and boron carbide enter, have a high
ignition power and unstable parameters of current and voltage in the operating
procedure. With the object of an increase of the stability of the parameters
and a decrease of the ignition power, it is proposed to introduce niobium oxide
into the material of the igniters, while the components mentioned above are
taken in the following percentage ratio: boron nitride, 40-60; boron carbide, 20-
40; and niobium oxide, 10-30. The method of manufacturing the igniters from
the proposed materials involves hot pressing of a mixture of boron carbide,
boron nitride, and niobium oxide powders in graphite molds at $T = 1900-2000^{\circ} C$,
pressure 20 kg/cm², and exposure time 2 min. The characteristics of the igniters
are presented. V.M.

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USSR

UDC 669.721.5'5'296:620.193.4

TIMONOVA, H. A., AL'TMAN, M. B., TIKHONOVA, V. V., GERASIMOVA, M. N., TOKIYAKOVA, G. S., LASHKO, N. F., MOROZOVA, G. I.

"Effect of the Composition and Structure of Alloys of the Mg-Zn-Zr System on their Corrosion and Electrochemical Behavior"

V sb Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 136-140 (from Rzh-Metallur-giya, No 4, Apr 72, Abstract 41700)

Translation: A study was made of the effect of Zn on the structure and corrosion behavior of alloys of the Mg-Zn system and the Mg-Zn-Zr system with a Zn content of up to 20%; the effect of heat treatment leading to a change in the phase composition and in the quantity and shape of the segregations of intermetallide compounds on the corrosion strength of the alloys of the Mg-Zn-Zr system was also studied. The variation of corrosion resistance of the alloys is explained by the formation of cathode phases with different electrochemical properties and variation of their number and form of segregation. The increase in corrosion resistance with the introduction of Zr into the alloys of the Mg-Zn system is primarily connected with a decrease in the Fe admixture in the alloys. Six illustrations, one table, and a 6-entry bibliography.

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USSR

UDC 669.15-196:[62-762:621.165]

DOROSHENKO, N. P., KIRIYEVSKIY, B. A., and TIKHONOVICH, V. I., Engineers

"New Materials for Feed Pump Slit Seal Parts"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 70, pp 24-25

Abstract: The Institute of Casting Problems of the Academy of Sciences, Ukrainian SSR has studied the problem of creation of a material corresponding to the operational requirements of delivery pumps for slit seal parts. These studies have indicated that the most promising material is chromium cast iron. In cooperation with the Ukrainian Scientific Research Institute for Hydraulic Machinery, the Institute has developed a new modified chromium cast iron in which the carbide lattice is broken up by modifiers during treatment of the liquid melted cast iron, thus decreasing the quantity of primary carbides and their dimensions. The modifier, located primarily on the grain boundaries, prevents diffusion of chromium from the grains, so that the content of chromium in the matrix increases to at least 10.26%. Laboratory and test stand studies have shown that this cast iron has improved operational qualities, wear resistance, antifriction properties, and resistance to scarring and seizing.

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USSR

UDC: 621.374.5(088.8)

DYUKOV, L. V., TABAKOV, G. A., BARANOV, A. N., TIKHONOVICH, V. V.

"A Device for Correcting the Flat Section of a Pulse"

USSR Author's Certificate No 266829, filed 3 June 69, published 2 July 70
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G302 P)

Translation: This Author's Certificate introduces a device for correcting the flat section of a power modulator pulse. The device consists of a controllable resistance (e. g. a lamp) connected in series or parallel with the load, an amplifier in a feedback circuit, a comparison element, and a reference voltage source. To reduce losses in the regulator and ensure zero-lag action of the device, the comparison element and reference voltage source are made in the form of a capacitor and electronic switch in a series circuit which is connected in parallel with the load resistance. The common point between capacitor and switch is connected to the high-resistance input of the feedback amplifier.

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USSR

UDC 620.193.5

MOVCHAN, B. A., KUZ'MIN, G. S., MOCHALOVA, T. F., KARATYSH, V. V., TIKHONOVSKIY, A. L., and YAGUPOL'SKAYA, L. N., Academy of Sciences Ukrainian SSR, Institute of Electric Welding imeni Ye. O. Paton, Perm' Polytechnical Institute

"Corrosion of Nickel of Varying Purity in Gaseous Hydrogen Fluoride"

Moscow, Zashchita Metallov, Vol 7, No 1, Jan-Feb 71, pp 32-34

Abstract: A study was made of the behavior in gaseous hydrogen fluoride of commercially pure nickel NP-2A and ultrapure nickel refined by the electron-beam method in vacuum. A specially designed apparatus was used for the experiments, consisting of two communicating nickel ovens connected with a chemical absorber. Experiments lasting up to 120 hours were carried out at 550° and an HF pressure of 20 atm. The results indicate that the corrosion resistance of the ultrapure nickel in gaseous HF is five times higher than that of nickel NP-2A. The electron-beam re-

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USSR

MOVCHAN, B. A., et al., Zashchita Metallov, Vol 7, No 1, Jan-Feb
71, pp 32-34

finned nickel shows no intercrystalline corrosion. Consequently,
nickel refined by the electron-beam method is recommended for
the manufacture of nickel equipment. The electron-beam refining
of nickel is also economically advantageous.

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USSR

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UDC 622.33-52:681.3

SHOYKHET, L. A., MALITSKIY, I. A., TIKHONRUK, V. F., BAZHENOV, A. N.
and KOZLOV, A. V.

"Control System for Mines Using Computer Equipment"

Avtomatika i Tekhn. Kibernet. Na Shakhtakh i Rudnikakh (Automation and Engineering Cybernetics in Mines -- Collection of Works) pp 5-7, Kiev, Tekhnika Press, 1969 (from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A565 by G.K.)

Translation: On the basis of a study of an installation flow of information and analysis of interrelationships involved, tables are composed which present data on the volume of information and paths through which it flows, results of processing, etc. Control algorithms are developed for individual processes, and an algorithmic evaluation of control problems which was used in the selection of computer equipment and development of structural plans for the system is presented. Three variants of structural plans for mine control, depending on the degree and location of information processing, are suggested. Two illustrations; one table; one bibliography.

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Public Health, Hygiene and Sanitation

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USSR

UDC 614.484:615.285.7]:614.72

TUNIK, A. I., ANANOVSKIY, L. N., PRAVE, V. Ye., TIKHOTSKAYA, A. N.,
DERNITSYNA, Ye. A., and MINKINA, T. A., Moscow Municipal Disinfection
Station

"Hygienic Evaluation of the Air in Places Treated With Chlorophos"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 17-20

Abstract: Analysis of 250 air samples in a special experimental chamber and of air samples from well-ventilated places in cafes, hostels, hospitals, and restaurants showed that 3 hours after treatment with a 5% water solution of the organophosphorus insecticide chlorophos, the air contained no more than 0.5 mg/m³ of the compound (maximum permissible concentration). With very poor ventilation it took as long as 24 hours before the concentration of the insecticide dropped to the permissible level. The external temperature was an important factor. When the outdoor and indoor temperatures differed considerably and the windows were open, all traces of chlorophos disappeared within one hour of treatment.

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USSR

UDC 621.382.323-416:546.48'231

KARPOVICH, I. A., TIKHOV, S. V.

"Relaxation Phenomena in Film Field Triodes caused by Migration Ion Polarization in the Dielectric Film"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 381-385

Abstract: A study was made of the increasing relaxation of the field effect in film field triodes based on CdSe films caused by the phenomenon of migration ion polarization in the SiO_x and GeO_x dielectric films. A number of laws characterizing the relation of the relaxation time to the temperature and magnitude of the polarizing voltage were established. The values of the activation energy, concentration and mobility of the migrating ions were determined, and their nature was established.

The fact that high temperature polarization is determined by migration of Na ions in the dielectric films is indicated in that this phenomenon is observed only in structures with activated CdSe films and it disappears if NaCl is excluded from the activating powder. Strong asymmetry of the $\sigma(t)$ function during high temperature polarization arises from the fact that the Na ions are concentrated near the interface of the dielectric and semiconductor. The activation energy of high temperature polarization $E_t^0 = 1.4-1.5$ electron
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