Acc. Nr: A0047322 Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970, Vol 42, Nr 1, pp 71-75

STRENGTHENING OF THE SYNTHETIC PROCESSES IN THE RABBIT REGENERATING LIVER BY STIMULATING CO_2 FIXATION

G. I. Zhurbin, M. F. Guly, N. A. Slogny

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The effect was studied of the mixture of salts (sodium bicarbonate — 25 parts, magnesium sulphate — 5 parts, manganese sulphate and zinc sulphate — by 0.1 part) activating the processes of CO_2 fixation in animal organism on the synthetical processes in the dynamics of the rabbit liver regeneration with ablation of 80% of the organ mass after 10 days of feeding them on the mentioned salt mixture at a rate of 604 mg per 1 kg of live weight. Considerable intensification and acceleration of protein, lipid and glycogen synthesis are established.

The process of the initial liver weight restoration noticeably accelerates. The content of dry substances is increased by 6% in the regenerating liver of rabbits which were fed on the salt mixture.

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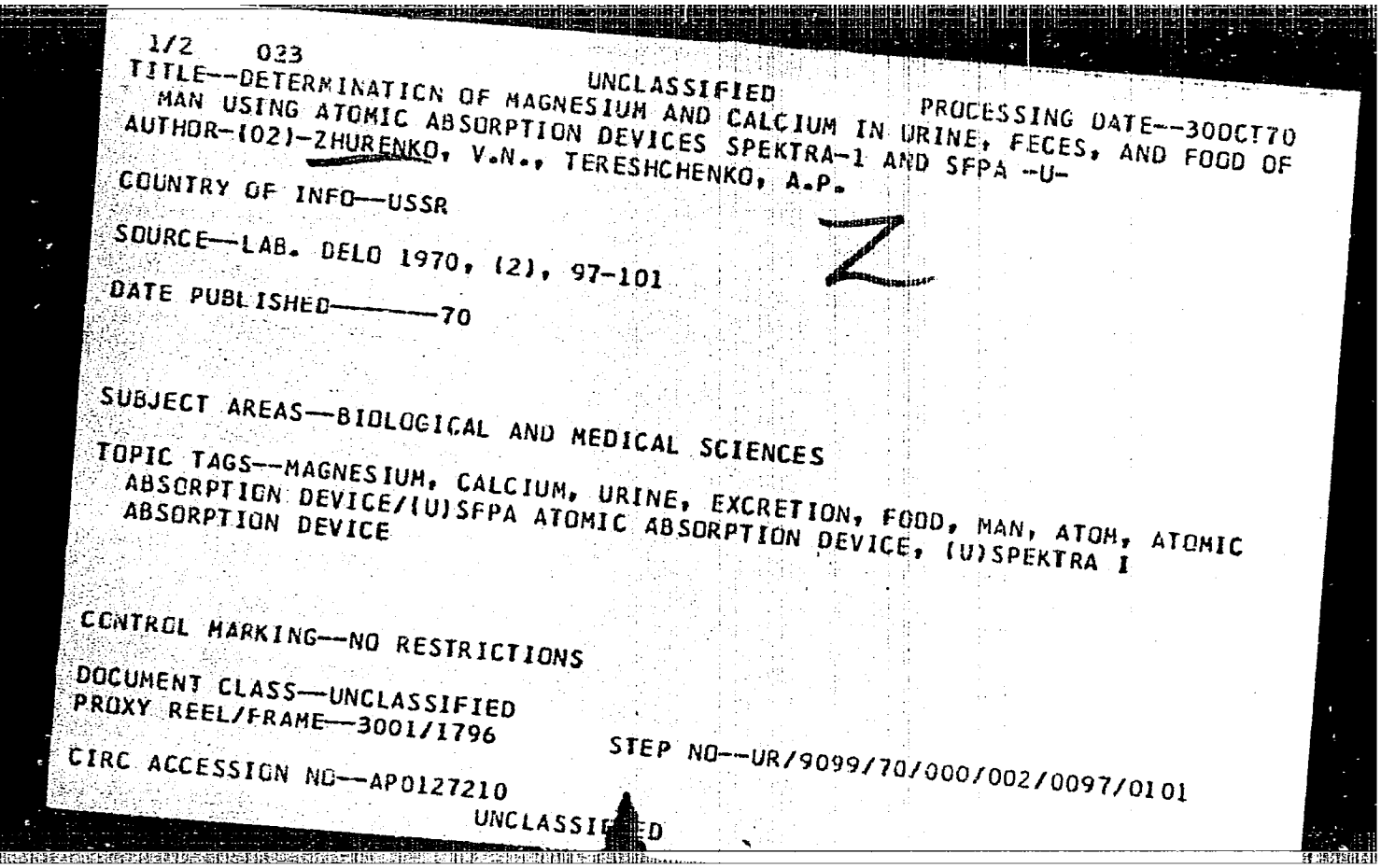
REEL/FRAME
19790843

42 2



1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DETERMINATION OF MAGNESIUM AND CALCIUM IN URINE, FECES, AND FOOD OF MAN USING ATOMIC ABSORPTION DEVICES SPEKTRA-1 AND SFPA --U-

AUTHOR-(02)-ZHURENKO, V.N., TERESHCHENKO, A.P.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (2), 97-101

DATE PUBLISHED----------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MAGNESIUM, CALCIUM, URINE, EXCRETION, FOOD, MAN, ATOM, ATOMIC ABSORPTION DEVICE/(U)SFPA ATOMIC ABSORPTION DEVICE, (U)SPEKTRA I ABSORPTION DEVICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1796 STEP NO--UR/9099/70/000/002/0097/0101

CIRC ACCESSION NO--AP0127210

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENTS OF MG AND CA IN URINE, FECES, AND FOOD WAS DETD. NACL AND KCL UP TO CONCN. OF 1 MG-ML DO NOT INFLUENCE THE RESULTS. CA INCREASES THE ATOMIC ABSORPTION OF MG. HNO SUB2 (SMALLER THAN OR EQUAL TO 3N), HCL (SMALLER THAN OR EQUAL TO 2.5N), AND PHOSPHORIC ACID (SMALLER THAN OR EQUAL TO 1N) INFLUENCED THE DETN. OF CA WHILE THEY HAD NO EFFECT ON THE DETN. OF MG.

FACILITY: INST. MED.-BIOL. PROBL., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AT0045123 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code: UR 0000

Z

63496y **Determination of copper, zinc, iron, cobalt, nickel, and manganese in biological specimens, using the atomic absorption instruments Spektr-1 and SFPA-1.** Zhurenko, V. N.; Tereshchenko, A. P.; Tokareva, L. N.; Sheveleva, R. E. *Mater. Rab. Soveshch. Vop. Krugovorota Veshchestv Zamknutoi Sist. Osn. Zhiznedeyatel. Nizshikh Organizmov, 5th* 1967 (Pub. 1969), 61–4 (Russ). In one-component solns., linear plots were obtained up to 10 μg/ml of the title elements. There were no changes in the presence of HCl, HNO_3, H_2SO_4 (up to 2*N*), H_3PO_4 (up to 0.02*N*), and NH_4^+ (up to 18 mg/ml). Decreased sensitivity was shown in the presence of sulfates in all cases, and in the presence of nitrates in the case of Co or Mn. Nitrates decreased the sensitivity of Fe and Zn dets, when a low-temp. flame was used. High concns. of Na^+ and K^+ increased the resonance-line absorption of all the elements studied, esp. in the range 230–60 nm. The effects of light intensity and slit width are described.

J. Prokes

80

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2

REEL/FRAME
19780023

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DETERMINATION OF THE COMPOSITION AND STABILITY CONSTANTS OF OXALATE COMPLEXES OF NIOBIUM AND TANTALUM BY A SOLUBILITY METHOD -U-

AUTHOR-(02)-ZHURENKOV, E.M., POBEZHIMOVSKAYA, O.N.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 105-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXALATE, COMPLEX COMPOUND, NIOBIUM COMPOUND, TANTALUM COMPOUND, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1205 STEP NO--UR/0186/70/012/001/0105/0112

CIRC ACCESSION NO--AP0128623

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128623

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TECHNIQUE OF SHVEDOV, ET AL. (1966) WAS USED TO STUDY NB AND TA COMPLEXES IN OXALIC ACID SOLNS. THE FOLLOWING COMPLEXES EXIST AT A PH BETWEEN MINUS 0.3 AND 0.56: H(NBO(C SUB2 O SUB4) SUB2), H(NBO(C SUB2 O SUB4) SUB3) (I), H(TAO(C SUB2 O SUB4) SUB2), AND H SUB3(TAO(C SUB2 O SUB4) SUB3) (II); IN ADDN., AT A NB CONCN. (IN THE SOLN.) OF 0.075 MOL. PER DM PRIME3, ABOUT 50PERCENT OF THE NB IS PRESENT AS A POLYNUCLEAR COMPLEX, PROBABLY H SUB2 (NB SUB2 O SUB2 (C SUB2 O SUB4) SUB4). THE TRIOXALATE COMPLEXES I AND II ARE STABLE ONLY AT PH GREATER THAN 0.1 AND THE OTHER COMPLEXES ARE PREDOMINANT AT LOWER PH; THE PARTIAL INSTABILITY CONSTS. OF I AND II (K SUBS) ARE 6.17 AND 5.91, RESP.

UNCLASSIFIED

USSR

UDC 621.398

ZHURIN, G.A.

"Linear [Telemechanical] Assemblies and Their Protection Against Damage During Thunderstorms"

V sb. Razrabotka inform.-logich. ustroystv s uchetom nekotor. kriteriyev optimal'nosti (Development of Information-Logic Devices with Allowance for Certain Optimality Criteria -- Collection of Works), Frunze, "Ilim," 1971, pp 73-87 (From RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A276 from summary)

Translation: The article considers linear telemechanical assemblies operating in the tonal range band off a remote power supply via overhead communication lines. Special attention is given to questions of protecting linear assemblies against damage during thunderstorms, and the results of experimental tests are indicated. Four illustrations. Bibliography with five titles.

1/1

USSR

UDC: 621.375.014

GORN, L. S., ZHURINA, L. S., KHAZANOV, B. I.

"DC Amplifiers for the Microampere and Nanoampere Range"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 105-107

Abstract: The article describes construction of DC amplifiers which use the 1UT221 integrated differential amplifier described by V. D. Kozlov (Pribory i Tekhnika Eksperimenta, 1971, No 1, p 144) as the input element. The proposed instruments can be used for measuring currents to 20 μA. Also described are DC amplifiers based on a combination of FET and discrete transistor for current measurements to 1 nA. Circuit diagrams are given for both types of DC amplifier. Two figures, bibliography of one title.

1/1

Acc. Nr: AP0048368 Abstracting Service: INTERNAT. AEROSPACE ABST. 5-70 Ref. Code: UR0293

9

A70-24315 # Study of the geoactive particles and photoelectrons by means of satellite 'Kosmos-261.' IV—Study of charged particles with a middle and high energy (Issledovanie geoaktivnykh korpuskul i fotoelektronov na sputnike 'Kosmos-261.' IV—Izmereniia zariazhennykh chastits srednikh i vysokikh energii). A. D. Bolíunova, A. D. Verevkin, Iu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isaeva, I. P. Karpinskii, R. A. Kovrazhkin, V. V. Temnyi, B. I. Khazanov, A. V. Shifrin, and F. K. Shuiskaia. *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 126-135. 7 refs. In Russian.

Descriptions of the scintillation spectrometers for measuring the electrons with energy ranging from 20 to 150 keV and more, protons with energy ranging from 0.30 to 9 MeV. A lead-screened Geiger counter for measuring the protons with energy above 60 MeV and rigid electrons is also described. The latitude-dependent intensity distribution of the intrusive electrons is determined together with the pitch distribution of the electron intensity in the auroral zone, and differential electron spectra. Z.W.

REEL/FRAME
19800076

L.S. ZHURINA

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Acc. Nr.: AP0042567 Ref. Code: UR0293

JPRS 50162

Measurements of Intermediate- and High-Energy Particles

(Abstract: "Measurements of Charged Particles of Intermediate and High Energies," by A. D. Bolyunova, A. D. Verevkin, Yu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isayeva, I. P. Karpinskiy, E. A. Kovrazhkin, V. V. Temnyy, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 126-135) [Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

This article describes the RIE-205 scintillation spectrometer for electrons of intermediate energies, the RIP-802 scintillation spectrometer for protons and the RIG-III lead-shielded Geiger counter. The RIE-205 instrument measured electrons in the ranges 20-45, 45-85, 85-120 and 120-150 keV and the total intensity of electrons with an energy greater than 150 keV (geometry factor $2 \cdot 10^{-3}$ cm^2·sterad). The RIP-802 instrument measured protons in the ranges 0.30-0.45, 0.45-0.70, 0.70-0.95 and 0.95-9 MeV with a geometry factor of $1.5 \cdot 10^{-2}$·sterad. The RIG-111 instrument measured

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Reel/Frame
19760545

protons with E > 50 MeV and hard electrons. In the radiation belts and auroral zones the instruments measured the fluxes and energy spectra of electrons and protons, their distribution by pitch angles and spatial-temporal characteristics. It was possible to determine the latitude variation of the intensity of injected electrons, the pitch distribution of intensity for auroral zone electrons and the differential electron spectra. For example, the electron fluxes measured with the RIE-205 spectrometer can be assigned to the following groups: a) trapped electrons in the inner zone ($L \leq 2.5$) were registered for the most part in the region near the Brazilian anomaly; their flux for an energy $E > 150$ keV attained 10^3 particles/cm^2·sec and was highly dependent on pitch angle; a pronounced maximum was observed for pitch angles 90°; b) trapped electrons in the outer zone $2.5 \leq L \leq 7$, also with a maximum intensity for pitch angles of 90°; in many cases quasitrapped particles were registered in the region of invariant coordinates $h_{min} \leq 100$ km with intensities up to $2 \cdot 10^6$ particles/cm^2·sec·sterad; c) sporadic hard electrons injected into the atmosphere in the middle latitudes; in these cases the mean energy was usually $\sim$100 keV and the particle flux attained 10^5 particles/cm^2·sec; d) electrons of intermediate and high energies injected into the atmosphere in the high latitudes; they are frequently observed near the auroral zone.

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ANODIC METHOXYLATION OF 1,3,BUTADIENE -U-

AUTHOR-(03)-ZHURINOV, A.ZH., MIRKIND, L.A., FIOSHIN, M.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 57-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYSIS, METHOXY COMPOUND, BUTADIENE, GAS CHROMATOGRAPHY, CHEMICAL REACTION MECHANISM, HEXENE, BUTENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0264 STEP NO--UR/0360/70/020/002/0057/0060

CIRC ACCESSION NO--AP0126036

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126036

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROLYSIS OF MECH,KOH,H SUB2 C:CHCH:CH SUB2 MIXT. GAVE A MIXT. OF 1,6,DIMETHOXY,2,VINYL,4,HEXENE, 1,HYDROXY 4,METHOXY,2,BUTENE, AND 1,8,DIMETHOXY,2,6,OCTADIENE. THE PRODUCTS WERE SEPD. AND IDENTIFIED BY GAS CHROMATOG. THE REACTION MECHANISM IS DISCUSSED. FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.791.75:621.397.13

VAYSBAND, YA. S., VOYTSEKHOVSKIY, A. B., ZHURISHKIN, A. P., Central Scientific Research Institute of Transportation Construction

"Television Scanning System for Automation Direction of the Electrode Along the Joint"

Kiev, Avtomaticheskaya Svarka, No 7, 1971, pp 49-52

Abstract: The television scanning system developed by the authors is described. It differs from the known systems [Dudenkov, Obmen opytom v radioelektronnoy proizvodstvo, No 7, Kiev, 1964; Demchenko, et al., Svarochnoye proizvodstvo, No 2, 1970 and Wall, et al., Welding Journal, No 9, 1969] both with respect to the principle of separation and processing of the information on the electrode position relative to the joint and their possibilities. When using the given scanning system it is possible automatically to guide both the tip of the welding unit and the end of the consumable electrode along the joint, and the welding process and position of the electrode can be observed remotely. The system developed for the Neptun automatic welding machine can be adapted to any machine designed for gas-blanketed welding of joints by a nonconsumable electrode. The operation of the device, its assembly, and technical specifications are discussed in detail. The results of testing the system demonstrated that it provides for automatic direction of the electrode along the joint with an

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USSR

VAYSBAND, YA. S., et al., Avtomaticheskaya Svarka, No 7, 1971, pp 49-52

accuracy no worse than 0.7 mm during single-pass welding of rectilinear and curvilinear joints without and with taper of the edges at speeds of 10-40 meters/hour.

2/2

USSR

UDC: 621.315.592

GLADKOV, P. S., ZHURKIN, B. G., and PENIN, N. A.

"High-Frequency Photoconductivity and Recombination Radiation of Pure Germanium Under Intense Optical Excitation and Low Temperatures"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1919-1923

Abstract: The high-frequency photoconductivity of pure germanium at a frequency of 10^{10} Hz and a line at 709 mev observed in the recombination radiation spectrum is experimentally investigated. A block diagram of the equipment is shown. The excitation source was a pulsed semiconductor laser, of GaAs operating at a wavelength of 0.84 microns, with an output power of 10-12 W in a pulse of 2 μs duration and a pulse repetition rate of 400 Hz. The specimen was illuminated by a light conductor of melted quartz, 4.2 mm in diameter, inside a standard 3-cm waveguide. A broad-band system with a strobic integrator was used to record the high-frequency conductivity of n-type germanium specimens with a specific resistance of 49 ohm·cm, attached directly to the lower end of the light conductor. Curves of the experimental results are

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USSR UDC: 621.315.592

GLADKOV, P. S., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1919-1923

given together with a reproduction of an oscillogram of the photoconductive pulse. It was found that the assumption that a sharp increase in conductivity can be produced by heating the specimen with a $10^{16}/cm^3$ concentration of unbalanced carriers is unjustified. The authors thank V. P. Aver'yanova for preparing the Ge specimens and P. G. Yeliseyev and V. P. Strakhov for supplying the GaAs laser.

2/2

USSR UDC 621.315.592

GLADKOV, P. S., GINODMAN, V. B., ZHURKIN, B. G., PENIN, N. A.

"Photodielectric Effect in Compensated p-Type Silicon"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 11, 1971, pp 2219-2221

Abstract: A study was made of the photodielectric effect caused by localized charge carriers in p-type silicon alloyed with zinc and phosphorus. Study of this material permitted observation of the photodielectric effect caused by the polarizability of the neutral phosphorus atoms arising from two causes: 1) the initial material had p-type conductivity and all the phosphorus atoms were ionized, that is, polarization of the small donor atoms (phosphorus) was absent; 2) inasmuch as the zinc in the silicon is a deep acceptor admixture, the polarizability of the zinc atoms could be neglected since the polarizability $\alpha \sim (E_i)^{-3}$, where E_i is the ionization energy of the admixed atoms. The experimental setup is described, and the results are discussed. The experimentally obtained value of the polarizability of the donor admixture of phosphorus in the silicon agrees well with the theoretical value of α_{theory} calculated by the formula presented in the paper by D'Altroy, et al. [Phys. Rev., No 103, 1671, 1956]. Under the assumption that the basic contribution to the

USSR

GLADKOV, P. S., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 11, 1971, pp 2219-2221

polarizability of the light donor admixture is made by an electron with an effective mass $m^*_{\perp} = 0.19\ m_0$, and the contribution of the electron with the mass $m^*_{\parallel} = 0.97\ m_0$ can be neglected. The calculations show that the electron with heavy mass gives a polarizability of $1.7 \cdot 10^{-20}$ cm^3 which is two orders less than the contribution to the polarizability by the light electron equal to $2.3 \cdot 10^{-18}$ cm^3. A graph is presented for the time dependence of the frequency shift of the oscillator used in the experiment after cessation of illumination. The decay curve is nonexponential, which is characteristic of the process of inter-admixture recombination.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DEPENDENCE OF HYPERFINE SPLITTING ON UNIAXIAL COMPRESSION IN THE EPR SPECTRUM OF PHOSPHORUS IN STRONGLY DOPED N SILICON -U-

AUTHOR-(04)-GINODMAN, V.B., GLADKOV, P.S., ZHURKIN, B.G., PENIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 325-8.

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SILICON SEMICONDUCTOR, ELECTRON PARAMAGNETIC RESONANCE, PHOSPHORUS, LINE SPLITTING, HYPERFINE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1868 STEP NO--UR/0449/70/004/002/0325/0328

CIRC ACCESSION NO--AP0118832

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE EFFECT WAS STUDIED IN 3 N SI SAMPLES WITH DIFFERENT DONOR CONCNS. (N SUBD EQUALS 3 TIMES 10 PRIME16, 2 TIMES 10 PRIME17, AND 5 TIMES 10 PRIME17-CM PRIME3) AT 4.2DEGREESK. COMPRESSION P EQUALS 26 KG-MM PRIME2 WAS APPLIED PERPENDICULAR TO THE (100) AXIS. THE PRESSURE DEPENDENCE OF THE MAGNITUDE OF HYPERFINE SPLITTING A IN SAMPLES WITH N SUBD EQUALS 3 TIMES 10 PRIME16-CM PRIME3 COINCIDES WITH THE THEORETICAL, WHILE THE SAME DEPENDENCES IN THE MORE STRONGLY DOPED SAMPLES LIE WELL ABOVE THE THEORETICAL. THE A PRESSURE DEPENDENCE IS CONSIDERED AND APPROPRIATE EXPRESSIONS ARE DERIVED SHOWING THAT THE SHIFT TO HIGHER A VALUES IS CONSISTENT WITH THE ANTIFERROMAGNETIC CHARACTER OF THE EXCHANGE INTERACTION OF THE P DOPANT. THE ENERGY OF EXCHANGE INTERACTION J IS DETD. EXPTL. AND THE DEPENDENCE OF J ON THE MEAN DISTANCE R BETWEEN DONOR ATOMS IS PLOTTED WITH PRESENT AND EARLIER DATA. THE EXPTL. POINTS LIE FAIRLY CLOSE TO THE THEORETICAL LINE CALCD. WITH J SUBO EQUALS 6.28 TIMES 10 PRIME14 HZ, A BOHR RADIUS ALPHA EQUALS 20.8 ANGSTROM; AND R EQUALS 0.69N SUBD PRIMENEGATIVEONE THIRD. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

BOBROV, A. YE., ZHURKIN, V. A.

"Minimizing the Functions of Multivalued Logic in a System Containing Cyclic Negation"

Minimizatsiya funktsiy mnogoznachnoy logiki v sisteme, soderzhashchey tsiklicheskoye otritsaniye (Minimizing the Functions of Multivalued Logic in a System Containing Cyclic Negation), Editorial Board of the Journal Avtomatika i vychisl. tekhn., Latvian SSR Academy of Sciences, Riga, 1972, 14 pp, 5-entry bibliography, manuscript at the All-Union Institute of Scientific and Technical Information, No 4294-72, Dep. 11 April 1972 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V430DEP)

No abstract

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USSR

UDC 541.183.24

NIKOLAYEV, A. V., BOGATYREV, V. L., ZHURKO, F. V., VULIKH, A. P., SOKOLOVA, S. I., LYUBMAN, N. YA., Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences of the USSR

"Ion Exchange Equilibrium Between Ionite Grains"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, 1971, No 1, pp 138-140

Abstract: Known formulas to determine the equilibrium state in the case of inter-grain affinity can be applied only if the inter-bond exchange by counterions takes place by the predominantly simple mechanism involved in direct contact between grain surfaces. If other factors besides contact play any considerable role (such as ionite hydrolysis), these must be considered as well, and be brought into the formula for equilibrium state. The authors derive empirically several formulas for ion exchange between ionite grains.

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USSR

UDC 541.127

NIKOLAYEV, A. V., Academician, BOGATYREV, V. L., and ZHURKO, F. V., Institute of Inorganic Chemistry, Siberian Department of the Academy of Sciences USSR, Novosibirsk

"Mechanism and Kinetics of Ion Exchange Between Ionite Grains"

Moscow, Doklady Akademii Nauk, SSSR, Vol 200, No 4, 1971, pp 885-889

Abstract: This study examines intergranular counterion exchange occurring only on direct contact of the swollen grains of ion exchangers in completely deionized water. An example is intergranular counterion exchange in the contact of monofunctional strongly ionized resins in such ionic forms where hydrolysis is practically ruled out. An electrochemical model of the exchange interaction of two ionite grains with the participation of electric double layers is given, and the principal factors influencing the exchange process rate are considered.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPARISON OF MONTHLY OBSERVED WOLF NUMBERS SMOOTHED BY MEANS OF THE MOVING AVERAGE OPERATOR AND THE WHITTAKER OPERATOR -U-

AUTHOR-(02)-ZHURKOV, L.V., MUZALEVSKIY, YU.S.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 357-374

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--AUTOCORRELATION FUNCTION, SUNSPOT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1771 STEP NO--UR/0033/70/047/002/0357/0374

CIRC ACCESSION NO--AP0125387

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125387

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS AIMED AT A MORE PRECISE FORMULATION OF THE PROBLEM OF ANALYZING THE MONTHLY VALUES OF THE ZURICH TIME SERIES OF WOLF NUMBERS. A METHOD OF EVALUATING THE MATHEMATICAL EXPECTATION OF THIS TIME SERIES WITH THE AID OF PROBABILITY SMOOTHING BY MEANS OF THE WHITTAKER OPERATOR IS PROPOSED. THE SPECTRAL DENSITY CURVE OF THE AUTOCORRELATION FUNCTION OF THE SEMIANNUAL VALUES OF THE SMOOTHED WOLF NUMBERS IS OBTAINED, TOGETHER WITH A HISTOGRAM OF THE DIFFERENTIAL DISTRIBUTION FUNCTION OF THE MONTHLY WOLF NUMBER VALUES. THE FREQUENCY CHARACTERISTICS OF THE WHITTAKER OPERATOR AND THE MOVING AVERAGE OPERATOR ARE COMPARED. FACILITY: GLAVNAIA ASTRONOMICHESKAIA OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

USSR

UDC 539.4.019.1-539.4.019.3

BETEKHTIN, V.I., ZHURKOV, S.N. (Leningrad), Physicotechnical Institute imeni A.F. Ioffe, Academy of Sciences, USSR

"The Time and Temperature Dependence of the Strength of Solids"

Kiev, Problemy Prochnosti, No 2, 1971, pp 39-44

Abstract: The article deals with data concerning the relationship of the tensile strength of solids to the time that the material remains in a loaded state, and to the temperature. It is shown that for perfect solids as well as for heterogeneous solids, regardless of the nature of their atomic bond, the indicated relationship is of a uniform nature. An analysis of the relationship indicates that the breakdown of solids is based upon a sequence of elementary acts of dissociation of the atomic bonds, the decisive part in which is played not by an external force, but by thermal fluctuations. 3 figures, 1 table, 43 bibliographic entries.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--USE OF MAGNETIC METALLOGRAPHY DURING A STUDY OF THE STRUCTURE OF DEFORMED AUSTENITIC STAINLESS STEELS -U-

AUTHOR-(03)-YEREMIN, N.I., ZHURGV, A.P., BARATS, N.K.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 189-91

DATE PUBLISHED-------70

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

TOPIC TAGS--AUSTENITIC STEEL, STAINLESS STEEL, METALLOGRAPHY, ALLOY DESIGNATION, PLASTIC DEFORMATION, MICROSCOPY, X RAY TECHNIQUE/(U)KH18N10T STAINLESS STEEL, (U)0KH18N10T STAINLESS STEEL, (U)000KH18N10T STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0344 STEP NO--UR/0032/70/036/002/0189/0191

CIRC ACCESSION NO--AP0113270

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FINELY DISPERSED, SMALL PARTICLES OF THE ALPHA SUB2 PHASE, FORMED IN AUSTENITIC STEELS BY PLASTIC DEFORMATION AT TEMPS. GREATER THAN M SUB3, CAN OFTEN BE STUDIED ONLY WITH DIFFICULTY BY CONVENTIONAL METALLOGRAPHIC OR X RAY METHODS, OWING TO THE SMALL SIZE AND AMT. OF THE PPTS. HOWEVER, THE FERROMAGNETIC ALPHA SUB2 PHASE CAN BE EXAMD. BY MAGNETIC METALLOGRAPHY. HERE THE ELECTROPOLISHED SPECIMENS ARE COVERED WITH A UNIFORM FILM OF CHEM. PREPD., COLLOIDAL, 1-DOMAIN MAGNETIC PARTICLES SUSPENDED IN AN AQ. SOLN. OF A SURFACE ACTIVE AGENT. GLYCEROL IS ADDED TO REDUCE EVAPN. AND IMPROVE THE OPTICAL PROPERTIES OF THE SUSPENSION. THEN THE SPECIMEN SURFACE IS WASHED TO REMOVE PARTICLES NOT ATTACHED MAGNETICALLY, AND EXAMD. OR PHOTOGRAPHED UNDER A METALLOGRAPHIC MICROSCOPE. THE METHOD WAS APPLIED IN STUDYING THE INCIDENCE AND DISTRIBUTION OF DEFORMATION MARTENSITE IN SPECIMENS OF GOST GRADE 000KH18N10T, 0KH18N10T, AND KH18N10T STEELS (WHICH DIFFERED IN THE DEGREE OF AUSTENITE STABILITY) SUBJECTED TO PLASTIC DEFORMATION AT VARIOUS TEMPS.

UNCLASSIFIED

USSR

UDC 669.721.372

BARANNIK, I. A., YASTREBOVA, Z. V., YEGOROV, A. P., ZHUROV, V. V., CHUKAL'SKIY, YE. N., BOGDANOV, A. P.

"Industrial Investigation of the Influence of Titanium Impurities on the Electrolysis of Magnesium Chloride"

Tsvetnye Metally, No 8, 1971, pp 40-42

Abstract: Results are presented from a chemical analysis of the presence of titanium in the raw material and products of electrolysis. Material balances with respect to titanium are calculated for several commercial electrolyzers. It is demonstrated that regardless of the content of fluorine in the electrolyte, the decrease in the yield of magnesium per current may reach 5-20% when lower titanium chlorides are added to the electrolyzer. The influence of metallic titanium is significantly weaker. On the basis of an analysis of results of commercial studies, necessary measures to combat the harmful influence of titanium on electrolysis are discussed.

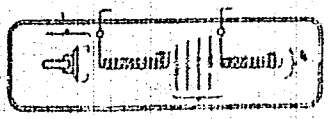
USSR UDC 621.385.6

ZHURZDIN, V. I.

"A Microwave Signal Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326664, Division H, filed 18 May 70, published 19 Jan 72, p 200

Translation: This Author's Certificate introduces a microwave signal converter which contains an electron gun, input and output decelerating systems and a collector. As a distinguishing feature of the patent, the sensitivity to the input signal and phase detection of the microwave signal are improved by introducing a wide-band system of dynodes, such as "louver" dynodes, between the decelerating systems.



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USSR UDC 616.833-001-003.93-085.357.814.32

VOYTKEVICH, A. A., and ZHUTAYEV, I. A., Laboratory of Radiation Neuroendocrinology, Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Effects of Adrenocortical Hormones on Posttraumatic Regeneration of Nerves"

Moscow, Problemy Endokrinologii, Vol 17, No 3, 1971, pp 76-79

Abstract: To study the effects of adrenocortocoids on the regeneration of nerves, the sciatic nerves of Wistar rats were severed aseptically, the wounds were closed, and tha animals were given daily doses of either hydrocortisone or desoxycorticosterone acetate (2 mg per 100 g body weight); control animals received no medication after surgery. Histological, neurohistological, and histochemical investigations performed 7 days revealed that while hydrocortisone inhibited regeneration, DOCA stimulated the process to the point that many axis cylinders growing from the central stump through the channel of the connective tissue sheath had penetrated the distal stump. The conclusion is made that DOCA promotes nerve regeneration by stimulating the activity of connective tissue cells which form bridges between the two cut ends of each nerve.

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USSR UDC 621.317.33.088

ZHUTOVSKIY, V. L.

"Analysis of the Errors of Transition Standard Measures of High Electrical Resistances"

Tr. metrol. in-tov SSSR (Works of the USSR Metrology Institute), 1971, No 115 (175), pp 10-18 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 10, Oct 71, Abstract No 10.32.1413)

Translation: The errors of transition standard measures of high electrical resistances are analyzed. Primary attention is given to analyzing the errors caused by leakage currents. The MSPG-1 to MSPG-7 and MSG type transition standard measures of high resistances built at the All-Union Scientific Research Institute of Metrology are described. There are 3 illustrations, 1 table and a 4-entry bibliography.

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UDC 621.791.85.03

USSR

NAZARENKO, O. K., ZHUVAZA, L. I., OBOLONSKIY, A. P., BARANOV, G. V., Institute of Electric Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences

"Cathode-Ray Unit with Programmed Control and Television Observation of the Welding Process"

Kiev, Avtomaticheskaya Svarka, No 7, 1971, pp 53-54

Abstract: A cathode-ray device of the U-342 type in which all the basic welding operations have been automated is described. The device was built at the Institute of Electric Welding imeni Ye. O. Paton. It permits preliminary and subsequent heat treatment of the products and welding of them. Five basic parameters of the operating conditions are recorded during the welding process: the beam current, the accelerating voltage, the current of the magnetic focusing system of the gun, the welding speed, and the vacuum in the welding chamber. The electric circuit of the device permits programming for automatic execution of three operations: preliminary treatment of the weld by a sharply focused low-power beam to remove contamination from the edges, welding by a sharply focused beam, and repeated welding by an unfocused beam of lower power with simultaneous transverse scanning of it with a frequency of 50 hertz. The device has been introduced into industrial use on automated lines.

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1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPARISON BETWEEN INTERPLANETARY MAGNETIC FIELD MEASUREMENTS OBTAINED BY THE SPACE STATIONS VENERA 4 AND MARINER 5 -U-

AUTHOR-(03)-DOLGINOV, SH.SH., YEROSHENKO, YE.G., ZHUZGOV, L.N.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIIA, VOL. 8, MAR.-APR. 1970, P. 290-297

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--SPACE MAGNETIC FIELD, INTERPLANETARY FIELD, MAGNETIC FIELD INTENSITY/(U)VENUS 4 VENUS PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1765 STEP NO--UR/0293/70/008/000/0290/0297

CIRC ACCESSION NO--AP0115594

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0115594
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THE FIELD MEASUREMENTS OBTAINED BY VENERA 4 AND MARINER 5 DURING THEIR SIMULTANEOUS FLIGHT TOWARD THE PLANET VENUS. THE COMPARISON CONFIRMS THE EXISTENCE OF A DISTINCT CORRELATION BETWEEN THE INTERPLANETARY FIELD INTENSITY AND THE GEOMAGNETIC ACTIVITY LEVEL AND 27 DAY SOLAR ACTIVITY CYCLE.

UNCLASSIFIED

ZHVALEV V.F.

Atmosphere Records. Source: JPRS 57025 19 Jan 73

SOME RESULTS OF RESEARCH BY THE COMPLEX ATMOSPHERIC ENERGETICS EXPERIMENT PROGRAM (1970-1972)

UDC 551.50(212.7)(575)

[Article by Corresponding Member of the USSR Academy of Sciences K. Ya. Kondrat'yev, Candidate of Physical and Mathematical Sciences O. M. Vasil'yev, Candidate of Geographic Sciences V. [illegible] Candidates of Physical and Mathematical Sciences [illegible] Main Geophysical Observatory imeni A. I. Voyeykov, Leningrad, and Ye. Ye. Fedorova, Main Administration of Hydrometeorological Service, Moscow]

[Text] Leningrad, Meteorologiya i Gidrologiya, No 11, 1972, submitted 5 June 1972, pp 3-13]

In this article a study was made of the basic results of the research by the CAENEX program performed during the period from October 1970 to March 1972. The complete radiation experiment was realized during the expeditions by the CAENEX program. It permitted the vertical radiation heat flux profiles in the atmosphere to be obtained, the real accuracy of certain theoretical procedures to be analyzed, the spectral divergence of the short-wave radiant heat flux to be obtained and on the basis of it, the effect of aerosols in the absorption of short-wave radiation to be estimated.

On the basis of the direct measurement data, the heat balance equation of the boundary layer was closed. Data are presented on the turbulent and radiation heat transfer in the ground and boundary layers.

The first results of the radiation experiment with continuous clouds in the atmosphere are described which permitted data to be obtained on the dependence of the spectral albedo of the clouds on their microstructure.

The prospects for research by the CAENEX program in the near future are discussed.

One of the subprograms carried out during the course of preparation for Implementing the Global Atmospheric Research Program (GARP) is the Complex Atmospheric Energetics Experiment (CAENEX) [8] pursuing the goal of the comprehensive study of the local energetics of the atmosphere and the energetic

1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--INTRAMOLECULAR SUBSTITUTION OF BARBITURIC ACIDS. IV. REACTIONS WITH HYDRAZINES AND HYDRAZIDES OF CARBOXYLIC ACIDS -U-

AUTHOR-(02)-VVEDENSKIY, V.M., ZHVALEYSKAYA, A.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 95-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--UV SPECTRUM, MOLECULAR INTERACTION, BARBITURATE, CARBOXYLIC ACID, HYDRAZINE COMPOUND, KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1379 STEP NO--UR/0409/70/000/001/0095/0096

CIRC ACCESSION NO--AP0054251

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0054251

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 0.01 MOLES BARBITURIC ACID, 0.02 MOLES H SUB2 NNH SUB2 .H USB2 O, AND 25 ML H SUB2 O HEATED ON A WATER BATH 2 HRS GAVE 79.4PERCENT I, M 230DEGREES (DIL. ETOH). SIMILARLY, THE FOLLOWING II WERE PREPD. (R PRIME1, R PRIME2, M.P., AND PERCENT YIELD GIVEN): PH, H, 250DEGREES, 45.9; PH, PH, 257DEGREES, 44.2; 2.4,(NO SUB2) SUB2 C SUB6 H SUB3, H, 205DEGREES, 43.3; BZ, H, 248DEGREES, 44.7, N-O SUB2 NC SUB6 H SUB4 CO, H, 260DEGREES, 18.5; GAMMA NC SUB5 H SUB4 CO, H, 250DEGREES, 21.2. ALSO PREPD. WAS 74PERCENT III (N EQUAL 0), M. 250DEGREES, AND 12.7PERCENT III (N EQUAL 4), M. 274DEGREES. UV MAX. IN ETOH ARE GIVEN.

UNCLASSIFIED

USSR

UDC 539.18

YUTSIS, A. P., NASHLENAS, E. P., ZHVIRBLIS, P. S.

"Generalized Theory of an Expanded Method for Calculating Complex Configurations of Atomic Electrons"

Lit. fiz. sb. (Lithuanian Physics Collection), 1972, Vol. 12, No. 2, pp 201-210 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D4)

Translation: A general theory of an expanded method for calculating atomic structures is given in which the use of radial orbitals based on a number equal to the number of electrons in the atom is used. Rules are given from the transition from the ordinary method to the expanded method in the theory of complex configurations. These rules consist of certain algorithms by which the radial integrals of the ordinary method are replaced by the same integrals of the expanded method. The given rules cover the overlapping integral and matrix elements of the operators connecting the different configurations. Authors abstract.

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USSR

UDC: 539.182

YUTSIS, A. P., NASHLENAS, E. P., and ZHVIRBLIS, P. S.

"Generalizing the Theory of the Extended Method for Computing Complex Atomic Electron Configurations"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, vol 12, No 2, 1972, pp 201-210

Abstract: Use of the extended method of computing complex atomic configurations involves the use of radial orbitals whose number is equal to that of equivalent shell electrons connected with the use of nonorthogonal radial orbitals. The purpose of this paper is to broaden the theory to cover the case in which the number of radial orbitals used is equal to the number of electrons in the configuration. For this purpose, the concept of a distribution matrix for a combination of single-electron coordinates between the shells is used; such a matrix is convenient for constructing phase multipliers for the wave function as well as in the expression for the matrix elements of the operators for any quantity. A method for setting up the antisymmetrical wave functions of individual shells is explained, and a rule for obtaining an expression for the overlapping integral and for the matrix elements of one- and two-electron operators is presented. The authors are

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UDC: 539.182

YUTSIS, A. P., et al, Litovskiy Fizicheskiy Sbornik, vol 12, No 2, 1972, pp 201-210

associated with the V. Kapsukas State University at Vil'nyus and with the Lithuanian Institute of Physics and Mathematics.

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USSR UDC 612.281.223.11

KOCHERGA, D. O. and ZHYGAYLO, T. L., Laboratory of Respiratory Regulation, Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences, Ukrainian SSR, Kiev

"Effect of Hypercapnia on Electrical Discharges of the Bulbar Respiratory Neurons and Neuromotor Units of the Respiratory Muscles"

Kiev, Fiziologicheskiy Zhurnal, No 5, 1972, pp 636-643

Abstract: Changes in impulse activity of both inspiratory and expiratory neuron populations and of neuromotor units of the respiratory muscles were studied in anesthetized cats breathing a gaseous mixture containing 6% carbon dioxide. Respiration was intensified at the level of the bulbar respiratory center because of the increase in frequency and number of impulses in volleys of both inspiratory and expiratory neurons. At the level of the efferent link, the respiratory muscles, respiration was intensified mainly by the mobilization of previously inactive neuromotor units and, to some extent, by a slight increase in the frequency of discharge of the functioning neuromotor units. A comparison of the responses of the bulbar respiratory neurons with the neuromotor units of the respiratory muscles during hypercapnia indicates that an increase in frequency of neuron discharges is essential for activating new functional units.

ZIBINA, E. A.

JPRS 55178

14 February 1972

SOVIET BLOC

1/4 F68 72

UDC 616.988.75-078.73:576.8.073.4

ACCURACY OF EXPRESS DIAGNOSIS OF INFLUENZA BY THE FLUORESCENT ANTIBODY PROCEDURE

[Article by L. Ye. Kamfarin, G.M. Mozhorova, Yu. M. Borshchevskiy, E.A. Zibina, N.A. Nadvodeva, Yu.G. Ivannikov, and T.N. Golubeva, All-Union Scientific Research Institute of Influenza, USSR Ministry of Health; Moscow, Voprosy Virusologii, No 6, 1971, submitted 30 November 1970, pp 718-721]

The first reported in 1956 the application of the fluorescent antibody method to diagnose influenza in humans [6]. Since then much attention has been given to the study of that question.

In the present paper an attempt is made to make clear the accuracy of the immunofluorescent method of diagnosis of influenza in comparison with the possibilities of serological diagnosis.

Materials and Methods

The methods of making preparations of fluorescent antibodies and the procedure of immunoluminescent analysis have already been described [1,2,4].

As was shown by Buck and Gart [5], the accuracy of a diagnostic method is composed of its sensitivity S_1 and its specificity S_2. Sensitivity is the probability of making a correct diagnosis in a patient, and specificity is the probability of rejection of disease in a healthy person or a patient with another disease.

A study of the accuracy of the serological method of influenza diagnosis has been made on a group of volunteers on an experimental clinical model of influenza. In that case only those inoculated volunteers who gave a distinct clinical reaction were taken into consideration [1].

The accuracy of the immunofluorescent method was evaluated in the diagnosis of diseases during an epidemic of influenza in parallel with the indicated serological methods. In that case the sensitivity S_1 and specificity S_2

USSR UDC: 621.315.592

ZIBOROV, A. I., BEZBORODOVA, V. M., and KIREYEV, P. S.

"$Cd_xHg_{1-x}Se$ Photosensitivity Spectra"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2045-2047

Abstract: This brief communication provides the results of experiments designed to investigate the photosensitivity spectra of $Cd_xHg_{1-x}Se$ compounds made by the Bridgman method in a vertical oven. Formation of the solid solutions of cubic structure for values of x up to 0.8 was roentgenographically confirmed, and the measurements made were subject to an average error of $\pm 2.5\%$. A description of the preparation procedure for the specimens is given; their photosensitivity spectra were obtained with a device using the IKS-21 spectrometer, narrow-band amplifier U-2-6, and synchronous detector SD-1. The spectra were shifted to the long-wave side with increasing mercury content of the solution; at the same time, the bandwidth increased and the photosensitivity dropped with increasing shadow conductivity. Curves are plotted for the maximum spectral distribution energy as a function of the specimen composition at 77^0 K, and for other obtained results.

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USSR

UDC: 621.317.75

AKULOV, Yu. V., ZIBOROV, S. R., KLIMOV, V. P., KRASNOV, L. M., MARIGODOV, V. K.

"A Two-Frequency Sweep Generator for Measuring Amplitude-Frequency and Phase-Frequency Characteristics in a Frequency Band"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 123-125 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A390)

Translation: The article describes one of the basic modules of an instrument for measuring amplitude-frequency and phase-frequency characteristics. A two-frequency sweep generator with a sweep band from 5 to 50 MHz is designed on the principle of frequency conversion. The complete block diagram of the two-frequency sweep generator is given with enumeration of all modules. The sweep generator is based on two quartz-crystal resonators on a frequency of 57 MHz excited on the fifth mechanical harmonic and used in two corresponding quartz-crystal oscillators. In addition to the frequencies generated by these two oscillators, their beat frequency (difference frequency) is also used. The two-frequency sweep generator was used as

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USSR

AKULOV, Yu. V. et al., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, pp 123-125

the oscillator module in the above-mentioned instrument for measuring amplitude-frequency and phase-frequency characteristics by the frequency transfer method, giving a phase measurement precision to 3°. One illustration. E. L.

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USSR UDC: 621.317.75

AKULOV, Yu. V., ZIBOROV, S. R., KLIMOV, V. P., KRASNOV, L. M., MARIGODOV, V. K.

"Some Problems in Measuring the Amplitude-Frequency and Phase-Frequency Characteristics of Quadripoles"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Meesurements. Vol. 2), Novosibirsk, 1970, pp 67-70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A393)

Translation: The authors point out fundamental difficulties and formulate requirements which must be imposed when designing wide-band two-frequency sweep generators and mixers which are the principal component parts of instruments for measuring the amplitude-frequency and phase-frequency characteristics of quadripoles. A block diagram is given together with a description of the operation of an instrument designed by the authors for measureing the phase-frequency and amplitude-frequency characteristics in the 5-50 MHz range. The instrument has a phase measurement limit of ±90° and a trans-

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USSR

AKULOV, YU. V., et al, Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, 1970, pp 67-70

mission ratio limit of 10 DB. A serially produced F2-1 instrument is used as the low-frequency phase meter in the indicator section. The error in phase measurement is no greater than 2° over the entire working frequency range. E. L.

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Acc. Nr: AP0049034 Ref. Code: UR0607

PRIMARY SOURCE: Vestnik Otorinolaringologii, 1970, Nr /, PP 67-71

THE EFFECTIVENESS OF DIFFERENT MODES OF THERAPY IN PATIENTS WITH FIRST AND SECOND STAGES OF LARYNGEAL CANCER

L. I. Ziborova (Moscow)

The author observed 249 patients suffering from laryngeal cancer of early stages for periods ranging from 3 to 13 years after treatment. Telegammatherapy was performed in 97 patients, X-ray therapy — in 61 and partial resections (with preliminary irradiation and without it) — in 91 cases. The effectiveness of all types of treatment was estimated depending on the detailed localization of the tumor and age of the patient. There was noted a relation between the efficacy of radium therapy and age of the patient, in partial resections such a relation was not observed. The effectiveness of treatment was greater in tumors of the vocal fold not involving the commissure, and lower — in tumors of the atrium.

The fate of patients was followed up after failures of primary radium and surgical treatment. The survival rate was greater in the group of patients subjected to partial surgical resections. The efficacy of telegammatherapy is somewhat higher than that of X-ray treatment. A complete primary course of irradiation therapy is recommended only in cancer of the vocal folds. In other localizations the author recommends the method of partial surgical resections. The author emphasizes the necessity of half-dose irradiation limitation in the absence of a noticable effect for the purpose of partial surgical resections.

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REEL/FRAME
19800818

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USSR

UDC: 533.6.07

GORLIN, S. M., KHUDYAKOV, G. Ye., ZIBOROVA, S. P., TIMOSHUK, L. T.

"Effect Which Initial Flow Turbulence Has on Flow Around Solids and Their Characteristics"

V sb. Nauchn. konferentsiya. In-t mikhan. MGU. Tezisy dokl. (Scientific Conference. Institute of Mechanics of Moscow State University. Summaries of the Reports--collection of works), Moscow, 1970, pp 22-23 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B504)

Translation: Data are given from studies of the effect which initial flow turbulence ε_0 has on streamline flow and on the aerodynamic characteristics of various solids. The research was done in a subsonic wind tunnel with $\varepsilon_0 = 0.2$-10%. It is shown that: 1) the lift coefficient of the wing and the model is critically dependent on the parameter ε_0; 2) the initial flow turbulence has a considerable effect on the critical Reynolds number for rounded, poorly streamlined bodies; 3) for poorly streamlined solids with sharp edges, as ε_0 increases as a consequence of the change in nature of the burbling zone, there is first an increase, and then stabilization

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USSR

GORLIN, S. M., et al, V sb. Nauchn. konferentsiya. In-t mikhan. MGU. Tezisy dokl., Moscow, 1970, pp 22-23 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B504)

or a reduction in the drag c_x for the solid which exceed in magnitude the changes in c_x due to the Reynolds number. Mention is made of the leveling effect which a deflector has on the aerodynamic drag of poorly streamlined solids for various values of ε_0. The authors discuss the effect of ε_0 on parameters of oncoming flow close to local terrain, city skylines, etc. B. I. Bakum.

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USSR

UDC 621.391.1

ZIGANGIROV, K. Sh.

"Sequential Transmission From A Source With Variable Rate"

Moscow, Problemy Peredachi Informatsii, Vol 7, No 2, 1971, pp 114-118.

Abstract: The author analyzes the problem of transmission of a sequence of discrete independent random quantities x_j, generated by a source of messages at discrete, random, independent time intervals t_j, through a binary, balanced channel. It is assumed that both the values of x_j and t_j carry information. The article studies coding and decoding of these information sequences using a convolution coder and sequential decoder.

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USSR UDC: 621.391.13

ZIGANGIROV, K. Sh.

"Upper Bounds of Probability of Error for Channels With Feedback"

Problemy Peredachi Informatsii, No 2, 1970, pp 87-92

Abstract: Upper bounds are obtained for the attainable error probability for unit transmission over binary balanced and gaussian channels with feedback.

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1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--HYDRODYNAMICS OF A GAS LIQUID REACTION VESSEL WITH A FLUIDIZED BED OF SOLIDS -U-

AUTHOR-(03)-YERMAKOVA, A., ZIGANSHIN, G.K., SLINKO, M.G.

COUNTRY OF INFO--USSR

SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(1), 95-101

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUIDIZED BED, HYDRODYNAMICS, PRESSURE GRADIENT, SOLID STATE, FLUID PHASE, AIR FLOW, HEPTANE, GLYCEROL, GLASS SURFACE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0124 STEP NO--UR/0455/70/004/001/0095/0101

CIRC ACCESSION NO--AP0103804

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0103804
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPTL. RESULTS OF THE HYDRODYNAMIC STUDY OF A 3 PHASE FLUIDIZED BED (TFB) GAS LIQ. SOLID ARE PROCESSED FROM THE POINT OF VIEW THAT THE WHOLE SYSTEM IS A SYNTHESIS OF 1 SIMPLE SYSTEMS: A GAS LIQ. FOAM AND A LIQ. SOLID FLUIDIZED BED. THE MEASUREMENTS WERE PERFORMED UNDER THE FOLLOWING CONDITIONS: SOLID PHASE GLASS BALLS DIAM. 0.6-2.0 MM; SYSTEMS WATER AIR, WATER SOLNS. OF GLYCEROL AIR, N HEPTANE AIR; DIAM. OF THE APP. 100 AND 200 MM, VELOCITIES OF THE GAS AND LIQ. 0.0-62, AND 0.0-10 CM PER SEC, RESP., ON THE FREE CROSS SECTION. THE BEHAVIOR OF THE TFB WAS OBSD. VISUALLY AND THE FOLLOWING QUANTITIES WERE RECORDED: THE BIGINNING OF THE FLUIDIZATION IN THE 2 PHASE SYSTEM LIQ. SOLID, THE BEGINNINGS OF THE NONHOMOGENEOUS AND HOMOGENEOUS FLUIDIZATION IN THE TFB, THE GAS CONTENT AND THE PRESSURE DROP OF THE TFB. THE MATH. TREATMENT OF THE CURVES CHARACTERIZING THE AREAS OF HOMOGENEOUS FLUIDIZATION IN TFB AND THE EQUATION FOR CALCG. THE PRESSURE DROP OF THE TFB ARE PRESENTED.
FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.317.7.087.92-932

ZIGBERMAN, D. I., Central Scientific Research Institute for Design and Planning of Equipment for the Cellulose and Paper Industry

"An Integrating Module for a Digital Regulator"

USSR Author's Certificate No 251650, filed 24 Nov 67, published 25 Feb 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A158 P)

Translation: This Author's Certificate introduces an integrating module for a digital regulator: for instance, a DC motor speed regulator. The device contains two AND circuits and a NOR circuit, a reversible register, a distributor, and a device for determining the sign of the difference between two pulse trains. To simplify the integrating module and improve its operational reliability, the author proposes a structural scheme for connecting the elements of the device. One illustration. N. S.

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ZIGEL, F. Yu.

NASA TT F-700

THE MINOR PLANETS

By F. Yu. Zigel'

Translation of "Malyye Planety."
"Nauka" Press, Moscow, 1969

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

For sale by the National Technical Information Service, Springfield, Virginia 22151
$3.00

May 1972

Acc. Nr.: AN0047731

Ref. Code: UR0567

JPRS 50052

Popular Science Book on Space Sciences

(Abstract: "Recreational Cosmonautics," by F. Zigel', Moscow, Knizhnoye Obozreniye, 6 February 1970, p. 4)

The latest addition to the popular science series Zanimatel'naya Nauka (Recreational Science) is the small book Zanimatel'naya Kosmonavtika (Recreational Space Science). The author is F. Yu. Zigel', Docent at the Moscow Aviation Institute. The book evidently ranges over every aspect of space science "yesterday, today and tomorrow." Among the subjects considered are: transformation of mankind into a space civilization, radio communication with other rational beings in the universe, quasars, pulsars and other unusual sources of radio emission. The author reviews his own book in this article and mentions at random three subjects which are included: 1) spaceships could be launched without rockets by building a tower with elevator which is 40,000 km high, enabling vehicles to enter orbit by centrifugal force; 2) libration earth satellites could be placed at the two points of stable equilibrium in the earth-moon system, at the so-called triangular libration points situated in the plane of the lunar orbit and together with the earth and moon forming the vertices of two equilateral triangles; artificial bodies placed at these points would

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maintain a constant position relative to the earth and moon and could be used as astrophysical observatories or as refueling points; 3) a "solar sail" can be used as the most effective means for reaching the most distant planets, and more quickly than by vehicles propelled by other means.

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USSR

UDC 669.14.018.298'24'25:621.17

GUSEYNOV, R. K., and ZIKEYEV, V. N., Central Scientific Research Institute of Ferrous Metallurgy

"Medium-Carbon Structural Steels with Increased Strength and Ductility, Alloyed with 9% Ni and 4% Co"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 49-54

Abstract: The strength properties of steel NR9-4-X (Soviet designation), developed and patented by the Republic Steel Corp., containing 9% Ni, 4% Co, and X% C (where X is the carbon content in hundredths of a percent) were studied for their applications under conditions of complex-stress state, dynamic loads, and low and cryogenic temperatures. This steel has good tensile and impact strength properties which equal or surpass 18-8 maraging steels. For carbon contents between 0.25 and 0.40%, both tensile and yield strengths are directly proportional to carbon content (strengths increase with increased carbon content). Impact strength drops slowly with increased carbon content. The recommended heat treatments are given for grades NR9-4-25, NR9-4-30 and Nr9-4-45 with tables and graphs showing the temperatures at which bainite is formed and the change of impact strength resulting from the formation of tempered martensite and

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203810020-3"

USSR

GUSEYNOV, R. K., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 49-54

bainite. The best method of producing this steel is vacuum-degassing in the ladle or vacuum-arc remelting using carbon as the deoxidizing agent rather than aluminum and silicon. Eleven figures, six tables, 25 bibliographic references.

2/2

UDC 620.17:669.14.018.6

USSR

GULYAYEV, A. P., ZIKEYEV, V. N., and GUSEYNOV, R. K., Central Scientific Research Institute of Ferrous Metallurgy

"Mechanical Properties of Different High-Strength Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 38-41

Abstract: The advantages of medium-carbon structural steel 30N9K4 (4.3% Co) were studied and its properties compared to other steels. Comparisons were made by heat treating the steel under study and steels 28Kh3SNMVFA and N18K8M3T to a tensile strength of 165 kgf/mm^2 (the heat treatment being different for each steel), heat treating steels 30N9K4, 18Kh2N4VA, and 28Kh3SNMVFA to maximum strength, and heat-treating steels 30N9K4, 38KhN3MA, and 40KhNMA to a tensile strength of 95 kgf/mm^2. Of particular interest was determining if steel 30N9K4 possessed the best combination of tensile strength and impact strength. For the given tensile strengths, steel 30N9K4 had the best impact strength of the steels heat treated to maximum strength, the best impact strength, between -180 and -80° C, of the steels heat treated to 165 kgf/mm^2, but was surpassed by steel 18Kh2N4VA when heat treated to 95 kgf/mm^2. One figure, two tables, ten bibliographic references.

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USSR UDC 669.017.1:539.56.001.5

ZIKEYEV, V. N., SKOTNIKOV, V. V., GULYAYEV, A. P., ABAKOV, V. T., and YELIZAROV, B. I.

"Study of Properties of Types 18KhNMFA and 18KhN1MFA Commercially Produced Experimental Steels"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 207-214

Translation: It is demonstrated that the production, rolling, and heat treatment of types 18KhNMFA and 18KhN1MFA steels under industrial conditions cause no difficulties.

The experimental steels are superior in mechanical properties to type 15KhGNTA steel, used for important parts of motor vehicle engines. They have high brittle rupture resistance and hardenability. 2 figures; 3 tables.

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UDC 620.17:669.14.018.298

USSR

DOGADAYEVA, V. A., GULYAYEV, A. P., ZIKEYEV, V. N., and FILIPPYCHEVA, M. M., Central Scientific Research Institute of Ferrous Metallurgy

"The Properties of 18Kh2N4VA Steel Made by Various Methods"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 2-5

Abstract: This work presents a study of the properties of 18Kh2N4VA steel, melted in an open induction furnace with magnesite lining and after vacuum arc and cathode ray remelting. The vacuum arc remelting was performed on metal made by the open inducation method, while cathode ray remelting was performed on metal produced in a vacuum induction furnace. The steel produced by vacuum induction melting with subsequent cathode ray remelting had reduced contents of oxygen and nitrogen, sulfur, tin, arsenic, antimony, and nonmetallic inclusions. The vacuum-arc remelted steel contained lower contents of oxide and sulphide nonmetallic inclusions than ordinary steel. The pure steels have a higher tendency toward grain growth, increasing with higher temperatures. The impact toughness of the vacuum induction + cathode ray remelted steel is approximately 2-3 times higher, although the

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USSR

DOGADAYEVA, V. A., et al, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 2-5

cold brittleness threshold is the same for both types of steel. The increase in impact toughness upon remelting results from an increase in the work of crack development.

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USSR

UDC 629.114.4:669.14.018.298.2

GULYAEV, A.P., Dr. of Technical Sciences; ZIKEEV, V.N., Candidate of Techn. Sciences; SKOTNIKOV, V.V., Candidate of Techn. Sciences; KALININ, A.T., Cand. of Techn. Sciences; PROKOF'EVA, I.I., Cand. of Techn. Sciences., and Yelizarov, B.I.

"New Carburizing Steels for Engine Parts of High-Load Capacity Vehicles"

Moscow, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

Abstract: Results are presented of an investigation of physical and mechanical properties of the 18KhNMFA and 18KhN1MFA steels obtained in electric furnace of 5-ton capacity and rolled into rods 90 and 110-mm in diameter, and intended for manufacturing the transmission box items. The kinetics of austenite transformation at isothermic and continuous cooling, hardenability, brittleness, mechanical properties of steels in carburized and uncarburized state after hardening at 920-950°C in oil and annealing at 180-200° were studied. The results presented in tabular and graphical form, such as chemical composition, critical points, austenite transformation curves, show two distinct zones of transformation, a ferrite-perlite and a bainite transformations, while the austenite stability in the 18KhN1MFA steel is higher than in the 18KhNMFA steel. The microstructures of both steels are similar. The brittleness was evaluated by the cold shorteness threshold position, determined by the

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USSR

GULYAEV, A.P., et al, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

fracture aspect during serial tests. Both steels satisfy the requirement $T_{50} < -50^{0}$. The comparative tests of various items made of these and other steels, carried out on test stands, confirmed the higher quality of the KI8KhNMFA steels over the 15KhGNTA steels.

2/2

USSR

UDC 616.932-078

ZIKRAN, Z. I., and TKACHENKO, L. N., Zaporozhskaya Oblast Sanitary Epidemiological Station

"Laboratory Diagnosis of Cholera (For Assistance to the Practicing Physician)"

Moscow, Laboratornoye Delo, No 8, 1971, pp 510-511

Abstract: In the preliminary diagnosis of cholera previously used, considerable importance was attached to the determination of microbial motility and the immobilization of vibrios by means of a specific agglutinating serum. We utilized the visual method of determining microbial motility in a crushed drop examined under a microscope with a darkfield condenser. A common Abbe condenser may be used in the absence of a darkfield condenser.

To obtain a drop of the material of specific dimensions a special loop with three spirals was devised. The loop has a diameter of 0:5-0.6 cm. The drop is then placed on an ordinary slide and covered with a cover glass 18 x 18 mm in size.

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USSR

ZIL'BAN, M. S.

"Cosmonaut V. N. Kubasov at the Institute of Electric Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 70, p 78

Abstract: A brief account is given of the reception given to cosmonaut V. N. KUBASOV by the collective body of the Institute of Electric Welding imeni Ye. O. Paton. In his opening statement, Academician B. YE. PATON greeted and congratulated Kubasov on being the first welder-cosmonaut. He pointed out that further steps in mastering space will not be possible without the use of welding and that the study of a very complex problem related to the behavior of fused metal under weightlessness and space vacuum conditions, which faced Soviet scientists and designers, was successfully carried out, thanks to the courage of the cosmonauts. In his address, Kubasov discussed many features of his flight and experiments conducted on "Soyuz-6" in October 1969.

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1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PROTEIN AND LIPID BIOSYNTHESIS IN RABBIT KIDNEYS AND SPLEEN AFTER PARTIAL HEPATECTOMY AND EFFECT OF SODIUM BICARBONATE AND BIVALENT
AUTHOR-(03)-ZHURBIN, G.I., GULIY, M.F., STOHNIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 3, PP 325-328

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY, SPLEEN, SURGERY, PROTEIN, LIPID, BIOSYNTHESIS, CARBON ISOTOPE, CHEMICAL LABELLING, MAGNESIUM COMPOUND, MANGANESE COMPOUND, ZINC COMPOUND, TISSUE REGENERATION, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605043/E01 STEP NO--UR/0300/70/042/003/0325/0328

CIRC ACCESSION NO--AP0142903
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USSR

ZIL'BAN, M.S.

"Assembly of the Scientific Community Dedicated to the Centennial of the Birth of Ye. O. Paton"

Kiev, Avtomaticheskaya Svarka, No 5, May 70, pp 76-78

Abstract: On 5 March 1970, scientists, engineers, technicians, students, workers, and guests from all over the USSR gathered in the great hall of the Kiev Conservatory in honor of the centennial of the birth of Ye. O. Paton, the renowned bridge builder and welding specialist. At this assembly, several papers were presented tracing the life, activities, and accomplishments of the famous scientist. D.A. Dudko, corresponding member of the Academy of Sciences of the Ukrainian SSR, devoted his speech to the life and activities of Ye. O. Paton. G.A. Nikolayev (Doctor of Technical Sciences, Professor) praised Paton's moral and ethical traits. S.A. Il'yasevich (Doctor of Technical Sciences, Professor) stressed Paton's great contribution to welding science and technology. S.K. Zvegintsev (Leningrad Kirovskiy Plant) mentioned Paton's contribution to the production of tanks and self-propelled armored vehicles by use of automatic submerged arc welding. I.Yu. Barenboym (Head of Bridge-Building Trust No 1) mentioned Paton's achievements in the design and construction of welded bridges, particularly the bridge across the Dnieper in Kiev. Others commending Paton's achievements and contributions to the national economy on this occasion were P.S. Pogrebnyak (Academician of the

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USSR

ZIL'BAN, M.S., Avtomaticheskaya Svarka, No 5, May 70, pp 76-78

Ukrainian Academy of Sciences), I.M. Zal'tsman (Hero of Socialist Labor), P.I. Sevbo (Candidate of Technical Sciences), and V.S. Guzev ("Dneprospetsstal' plant). I.P. Kazanets (Minister of Ferrous Metallurgy USSR), in his telegram, remarked that "progress in the field of welding is inseparably bound with the name of Yevgeniy Oskarovich Paton, creator of the Soviet school of welders."

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USSR UDC 613(075.8)

ZIL'BER, D. A., (DECEASED), LOGINOVA, R. A., NOVIKOVA, I. M., OLEKHNOVICH, A. I., OSTROVSKIY, M. M., and RAZUMOVSKIY, M. D.,

Gigiyena (Hygiene), Moscow, "Meditsina," 1970, 384 pp

Translation: Annotation: This textbook has been compiled for students of pharmaceutical institutes and pharmaceutical faculties of medical institutes in accordance with the hygiene teaching program, It contains materials corresponding to the nature of their future work. Such materials concern problems of hygiene in pharmacies, labor hygiene in galenical and chemicopharmaceutical enterprises, foundations of epidemiology and organization of antiepidemic measures, and sanitary education.

The indicated subjects are completely lacking in hygiene textbooks issued for students of therapeutic, sanitary, and other faculties of medical institutes.

Some facets of general hygiene are elucidated also in this textbook without which it is impossible for students to learn certain hygienic problems which are specific for them as future specialist pharmacists.

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ZIL'BER, D. A., et al., Gigiyean, Moscow, "Meditsina," 1970, 384 pp

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ZIL'BER, D. A., et al., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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ZIL'BER, D. A., et al., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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ZIL'BER, D. A., et al., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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ZIL'BER, D. A., et al., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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ZIL'BER, D. A., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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USSR

ZIL'BER, D. A., et al., Gigiyena, Moscow, "Meditsina," 1970, 384 pp

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USSR

UDC 577.1:547.965:577.15:612.744

ZIL'BER, M. L., and ROGOZKIN, V. A., Leningrad Scientific Research Institute of Physical Education

"Effect of an Amino Acid Mixture on the Activity of DNA-Dependent RNA-Polymerase in the Nuclei of Rat Skeletal Muscles and Liver During Muscular Activity"

Kiev, Ukrayin'skiy Biokhimichnyy Zhurnal, Vol 44, No 5, Sep/Oct 72, pp 580-582

Abstract: The hypothesis that balanced amino acids administered during muscular activity promote RNA synthesis was tested on male white rats. Balanced mixtures of D- and L-amino acids were administered to rats prior to forced swimming activity. One-time experiments showed that nuclear RNA-polymerase activity increased while the rats were at rest, more so in skeletal muscles than in the liver. The sharp drop in RNA-polymerase activity expected during exercise in normal conditions was prevented. After 10 daily trials with regular amino acid administration the RNA-polymerase activity not only stabilized but increased as well during exercise, indicating a cumulative, adaptive effect of the amino acids. The cytoplasm was shown to be the major element governing the action of amino acids on the enzyme. Thus intensification of RNA biosynthesis in skeletal muscles with amino acid mixtures is possible.
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Biophysics

USSR

UDC 547.953.2

ZILBER, YU. A., DUBUR, G. YA., KUMSAR, K. K., and VELENA, A. KH., Order of Labor Red Banner, Institute of Organic Synthesis, Academy of Sciences, Latvian SSR

"The Effect of Antioxidants on the Peroxidation of Bimolecular Phospholipid Membranes"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 6(287), 1971, pp 80-82

Abstract: A study was made of possibilities of protecting biological membranes with synthetic peroxidation inhibitors from the adverse effect of oxidation. Protection from oxidation ensures preservation of the structure and function of the membranes and regulates their permeability and enzymatic reactions. Lecithin was used to prepare phospholipid micelles. Micelles were prepared from purified lecithin in 0.15 M KCL solution (15 mg lecithin per ml), shaken mechanically for 30 minutes, and left overnight at 4°C. All changes in the concentration of dissolved oxygen were determined by the polarographic method in a glass-cell with a rotating platinum electrode, at 45°C,

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USSR

ZILBER, YU. A., et al., Izvestiya Akademii Nauk Latviyskoy SSR, No 6(287), 1971, pp 80-82

and recorded on EPP-093 automatic recorder. Hemoglobin in a concentration of $2 \cdot 10^{-5}$M was used as catalyst for the oxidizing processes. Antioxidants were 2,6-di-(tert-butyl)-4-methylphenol (1) and 2,2,4-trimethyl-1,2-dihydroquinoline (2). The results showed that phospholipid micelles in the presence of hemoglobin catalyst utilize oxygen intensively. The compound (1) in concentration of 1^{-5}M inhibits the utilization of oxygen two times, and the compound (2) -- almost four times.

2/2

USSR

UDC 513.88:513.83

ZIL'BERBERG, N. I., and ZHIGULEV, L. A.

"On the Theory of Cones in F-Spaces"

Uch. zap. Leningr. gos. ped. in-t im. A. I. Gertsena (Scientific Notes of the Leningrad State Pedagogical Institute imeni A. I. Hertzen), No 464, 1970, pp 161-166 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B663, by L. Labsker)

Translation: Following the terminology of M. G. Kreyn and M. A. Rutman (Uspekhi matem. nauk [Advances in Mathematical Sciences], Vol 3, No 1, 1948, pp 3-95) and M. A. Krasnosel'skiy (Referativnyy Zhurnal -- Matematika, 1963, Abstract No 8B422K), the authors give definitions of a cone, solid cone, circular cone, and right circular cone in an F-space and prove several statements about these that are similar to statements in Banach space.

1/1

USSR UDC 620.193.43

CHUKREYEV, N. YA., VOROB'YEVA, N. P., ZIL'BERBERG, V. G., and KARPINOS, D. M., Academy of Sciences UkrSSR, Institute of General and Inorganic Chemistry, Institute of Problems of Material Science

"On the Resistance of Al_2O_3 Coatings on Nickel, Molybdenum, and Titanium in Melted LiCl-KCl Eutectic"

Moscow, Zashchita Metallov, Vol 19, No 2, Mar-Apr 73, pp 195-196

Abstract: The corrosion resistance in melted LiCl-KCl eutectic of Al_2O_3 coatings (200 μ m thick, 12-15% porosity), applied in argon on wire specimens of Ni, Mo, and Ti, was investigated. In comparison with unprotected Ni-, Mo-, and Ti-specimens, the coating decreased the corrosion by 2.3-2.4 times at 400° and by more than 3-6 times at 500°; at the same time, aluminum oxide dissolved at rates of $8.0 \cdot 10^{-5}$ and $1.3 \cdot 10^{-4}$ g/cm^2 hr, respectively. The unprotected Ni-specimens corroded at 400° at the rate of $3.6 \cdot 10^{-4}$ and at 500° at the rate of $3.6 \cdot 10^{-3}$ g/cm^2 hr. The corresponding values for Mo are $5.4 \cdot 10^{-4}$ and $7.7 \cdot 10^{-4}$ and $4.6 \cdot 10^{-4}$ and $9.2 \cdot 10^{-4}$ g/cm^2 hr for Ti. The aluminum oxide coating on Ti proved to be non-resistant. Plasma oxide coatings can be applied to protect metals against corrosion under conditions of melted salts. A further increase of corrosion resistance would probably result by increasing the plasma flux temperature and by decreasing the coating porosity.

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USSR UDC 621.793.75

KARPINOS, D. M., ZIL'BERGBERG, V. G., and SHARIVKER, S. YU., Institute of Problems of Material Science, Ukrainian SSR Academy of Sciences

"Plasma Spraying With Submersion of the Nozzle In Water"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 95-96

Abstract: A description is given of a method of plasma spraying involving submersion of the nozzle and the article being sprayed in water during spraying. This method prevents oxidation of the sprayed powder, using zirconium carbide as an example, and allows the spraying distance to be shortened to 25-30 mm while increasing the costing density.

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UDC: 621.793.5

USSR

ZIL'BERBARD, M. I. (deceased), ALEKSEYEV, S. N., GRISHKO, A. G., and STRUGOVA, Yu. N., Scientific Research Institute of Concrete and Reinforced Concrete

"Corrosion Resistance of Zinc-Aluminum Coatings Obtained From Melts"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 621-622

Abstract: The object of this study was the corrosion resistance of zinc-aluminum coatings under atmospheric conditions in alkali media imitating conditions of corrosion in concrete. The base material was 08 kp cold-rolled steel after recrystallization annealing in a bell furnace and temper rolling. The surface preparation technology comprised degreasing with gasoline and a magnesium oxide paste followed by washing with cold water, etching in hydrochloric acid (150-170 g/l), rinsing with cold water, pickling in a mixture of H_2SO_4 (150 g/l) and HCl (50 g/l) for 10 seconds, rinsing with running water, fluxing by dipping in an aqueous solution (g/l) of $ZnCl_2$ 614, NH_4Cl 76, OP-7 1-2; temperature of the solution

1/2

USSR

ZIL'BERFARB, M. I. (deceased), et al, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 621-622

60-80°C, holding time 10 seconds, drying for 1 minute at 180-250°C; dipping the specimens in a zinc melt containing 0.2-5% aluminum; holding time in the melt 20 seconds, melt temperature 450°C. The coating thickness was measured by the increase in weight. The testing in a sulfur dioxide chamber was conducted at about 100% humidity at 60° C. SO_2 concentration was varied from 0 to 60 mg/m^3. The higher corrosion resistance of coatings with an increased aluminum content in either a sodium chloride solution, tap, or distilled water is explained by the lower solubility of aluminum compounds formed on corrosion as compared to that of zinc compounds.

USSR

UDC 669.715'782:620.186

KUZNETSOV, G. M., ROTENBERG, V. A., GERSHMAN, G. B., KHRUSHCHOVA, K. M., and ZIL'BERG, Yu. Ya., State Union Scientific Research Tractor Institute; Moscow Institute of Steel and Alloys

"Methods and Theories of the Modification of Hypereutectic Silumins"

V sb. Modifitsir. siluminov (Modification of Silumins -- Collection of Works), Kiev, 1970, pp 5-19 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1746 by I. NABATOVA)

Translation: The authors consider in detail substances creating the effect of modification of hypereutectic Silumins and methods of introducing them. Modifiers of primary Si are P, copper phosphide (eutectic), reaction mixtures "alphosite," "phoral," a mixture of 52% Li_3PO_4 + 40% Al + 8% P, a mixture of Al_3PO_4 + $Mg_2P_2O_7$ + ethane C_2Cl_6 + copper phosphide, polytetrafluoroethylene + P + AlP; Be, Cu, Ag, Zn, Cd, Hg, Se, Te, Ca, Cd, Ge, Tl, S, P, and Na, as well as a mixture of eutectic Silumin with Al shavings in combination with Na, break up the Si and the eutectic simultaneously. The following hypothesis explaining the modification mechanism are discussed: 1) formation of nuclei of the AlP type; 2) connection with Al-Si-modifying-element phase diagrams; 1/2

UDC 621.771.23

USSR

GRUDEV, A. P., ZIL'BERG, Yu. V., and BONDARENKO, V. A., Dnepropetrovsk Metallurgical Institute

"Effect of the Metal's Temperature on the Coefficient of Friction in Cold Rolling"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp 80-81

Abstract: Earlier papers dealing with friction in cold rolling have failed to take into account the role of the temperature factor, although the temperature of the metal sometimes rises to 250-300° C, which drastically affects the properties of lubricants. This study discusses the effect of the metal's temperature on the friction factor in cold rolling within 20-250° C. The lubricants were castor and spindle oils. The experiment involved specimens of 08 kp work-hardened steel rolled on a duo mill on hardened steel rolls 191.1 mm in diameter at a reduction in area of 10%. The effectiveness of lubricants was found to be greatly affected by the temperature of the metal being rolled. The extent to which the friction factor was affected by temperature appears to depend on the viscosity of

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USSR

GRUDEV, A. P., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp 80-81

the lubricant. The increase in the friction factor with the temperature of the metal is due to the decrease in the layer of lubricant in the area of deformation.

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USSR UDC 541.122.2

ZIL'BERGLEYT, B. I., and YATSENKO, S. P., Institute of Chemistry, Ural Branch of the Academy of Sciences USSR

"Reactive Diffusion in Liquid Alloys Al-Ga"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 5, May 70, pp 1303-1307

Abstract: An improved method is described for the study of reactive diffusion in liquid metallic alloys which eliminates the effect of capillary walls on transport processes in the liquid alloy. By means of this method the reactive diffusion in the liquid system Al-Ga was investigated and it was determined that a close relationship exists between the determined value of the coefficient of heterodiffusion and the diameter of the capillary. A method is proposed for the determination of partial coefficients of component diffusion from the results obtained in studying heterodiffusion. The temperature function of partial coefficient of diffusion agrees with the conclusions of the fluctuation theory of self-diffusion in liquid metals.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--FABRICATION OF LARGE SCALE PARTS BY VACUUM MOLDING -U-

AUTHOR-(03)-SHILKIN, O.D., SVIRINA, R.D., ZILBERLEY, B.P.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 60

DATE PUBLISHED--------70

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

TOPIC TAGS--PLASTIC FABRICATION, POLYSTYRENE RESIN, TEXTILE INDUSTRY MACHINERY/(U)UP IE POLYSTYRENE RESIN, (U)ATPR120 WEAVING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0580 STEP NO--UR/0191/70/000/003/0060/0060

CIRC ACCESSION NO--AP0119498

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203810020-3"

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0119498
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FENCES FOR A WEAVING MACHINE ATPR-120 WERE MANUFD. FROM HIGH IMPACT POLYSTYRENE UP-IE (I) BY VACUUM MOLDING. MOLDED I SHEETS (3.8-4.0 MM THICK) WERE SUCESSFULLY TESTED IN INDUSTRY.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANTIOXIDANT FCH16 -U-

AUTHOR--ZILBERMAN, A.G.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 1-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--PHENOL, COAL, VACUUM DISTILLATION, FUEL ADDITIVE, DIESEL FUEL, GASOLINE, ANTIOXIDANT ADDITIVE/(U)FCH16 FULE ANTIOXIDANT ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

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UNCLASSIFIED

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CIRC ACCESSION NO--AP0118490

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXTRACTIVE PHENOLS FORM CHEREMKHOVO COALS, VACUUM DISTD. TO REMOVE THE HEAVY RESIDUE, GAVE AN ADDITIVE FOR MOTOR FUELS. FCH-16 AHD HIGHER EFFICIENCY THAN OTHER COM. ADDITIVES, INHIBITING THE FORMATION OF GUM AND RESIDUES IN MOTOR GASOLINE, TRACTOR, REACTIVE, AND DIESEL FUELS, CONTG. COMPONENTS OF THERMAL OR CATALYTIC CRACKING.

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"Additional Energy Losses Through Periodical Unsteadiness of the Flow in Rotor Blades of Turbine Stages"

Moscow, Teploenergetika, No 10, Oct 73, pp 55-59

Abstract: The quantitative coupling of additional unsteady profile losses of energy in rotor blades with normal operation turbine stage parameters was experimentally investigated on stage models with more than twenty combinations of nozzle and rotor lattices of various types. A complex of factors affecting the change of profile energy losses in rotor lattices was analyzed. Based on generalized experimental data, a functional dependence of additional unsteady profile losses in rotor lattices ($\Delta\zeta_r$) on a derived criterion of unsteadiness (Y) is suggested. The

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function $\Delta\zeta_r=F(Y)$ for all investigated stages is shown with and without accounting for deviations from the calculated regime. The additional losses increase essentially (from ~0 to ~7.5 %) within the limits $0.4\cdot10^{-2}<Y<1.2\cdot10^{-2}$ and remain practically constant at further increase of Y. The derived functional dependence encompasses typical cases of stages of modern stationary turbines in the zone of moderate hub ratios. Two figures, one table, fifteen formulas, fourteen bibliographic references.

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