

REEL #37  
YEREMYAN, A.

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70  
 TITLE--BEFORE BEING SHIPPED TO THE TROPICS -U-  
 AUTHOR--YEREMYAN, A.  
 COUNTRY OF INFO--USSR  
 SOURCE--ZARYA VOSTOKA, JULY 14, 1970, P 4, COLS 5-7  
 DATE PUBLISHED--14JUL70  
 SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
 TOPIC TAGS--METAL CORROSION, AUTOMOBILE, TROPIC TEST/(U)GAS66 AUTOMOBILE,  
 (U)GAS53 AUTOMOBILE  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1996/1253 STEP NO--UR/9029/70/000/000/0004/0004  
 CIRC ACCESSION NO--AN0118302  
 UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0118302

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BEFORE BEING SHIPPED TO TROPICAL COUNTRIES, THE SOVIET MANUFACTURED PRODUCTS ARE TESTED BY THE CORROSION AND METALS PROTECTION LABORATORY OF THE INSTITUTE OF METALLURGY OF THE GEORGIAN ACADEMY OF SCIENCES IN BATUMI. FOUR OPEN AIR TEST STATIONS ARE MAINTAINED IN THE BATUMI, ZELENYY MYS, KOBULETI AND MOUNT TSISKARA. THE LABORATORY IS HEADED BY VLADIMIR KEMKHADZE, CANDIDATE OF CHEMICAL SCIENCES. FOR THE LAST 5 YEARS THE LABORATORY HAS BEEN DOING SOME RESEARCH FOR THE SEV (THE ECONOMIC AID ALLIANCE). SOME EXPERIMENTS ARE CONDUCTED JOINTLY WITH BATUMI SHIPBUILDERS. IN JUNE, AUTOMOBILES "GAS-53" AND "GAS-66" DESIGNED FOR THE TROPICS WERE TESTED. LABORATORY ASSOCIATE Z. KEMKHADZE, SENIOR ENGINEER G. DZHICHARADZE, AND SENIOR SCIENCE ASSOCIATE L. CHANTURAYA ARE MENTIONED.

UNCLASSIFIED

UDC 619:615.5-015:612.017.1

USSR

SAKANYAN, S. Sh., Professor, YEREMYAN, S. A., Candidate of Biological Sciences and PAVLENKO, M. M., Senior Laboratory Worker, Yerevan Zooveterinary Institute

"The Effect of Some Drugs on Immunological Reactions"

Moscow, Veterinariya, No 9, Sep 70, pp 50-51

Abstract: The effects of acriflavine, penicillin, phenoxymethylpenicillin, and tetracycline antibiotics (tetracycline, chlortetracycline, and oxytetracycline) on the formation of agglutinins after immunization were studied. Rabbits were immunized by subcutaneous injection of brucellosis vaccine (strain 19) in a dose of 2.5 billion cells. The effect of the drugs on the phagocytic activity of reticuloendothelial cells without immunization were also determined. Acriflavine was administered intravenously twice during the 3 days before immunization, at the time of immunization, or 15 days after immunization. The antibiotics were administered in single daily doses for 15 days, beginning 5 days before immunization, on the day of immunization, or 14-15 days after immunization. Penicillin was given intramuscularly; the other antibiotics were given per os. In a dose of 1 mg/kg, acriflavine stimulated formation of agglutinins when given before or soon after immunization, but had no effect 15 days after immunization. It did not affect phagocytic activity in this dose. Acriflavine

1/3

- 26 -

USSR

SAKANYAN, S. Sh., et al., Veterinariya, No 9, Sep 70, pp 50-51

in a dose of 5 mg/kg inhibited formation of agglutinins when administered before immunization and stimulated it when given after immunization. It stimulated the phagocytic activity in every case when given in this dose. Acriflavine in a dose of 10 mg/kg had no effect on the formation of agglutinins when given at the time of immunization, but increased the reactivity of the animals upon a second immunization. When administered before or after immunization in this dose, acriflavine inhibited the formation of agglutinins to a considerable extent, but had no effect on reactivity with respect to reimmunization. It inhibited the phagocytic activity in every instance. The tetracyclines in large (50 mg/kg) or, particularly small (10 or 15 mg/kg) doses stimulated the formation of agglutinins (with the exception of a large dose of oxytetracycline which had a depressing effect. Penicillin and phenoxymethylpenicillin in a dose of 5000 units/kg, irrespective of the time of administration, accelerated the formation of agglutinins during the first 10-20 days after immunization. Phenoxymethylpenicillin in a dose of 50,000 units/kg inhibited formation of agglutinins when given before immunization or beginning with the day of immunization, but had no effect when administered after immunization. Chlortetracycline and oxytetracycline in doses of 10 mg/kg stimulated phagocytic activity, but

2/3

USSR

SAKANYAN, S. Sh., et al., Veterinsriya, Vol 47, No 9, Sep 70, pp 50-51

inhibited it in a dose of 50 mg/kg. Tetracycline stimulated this activity in both doses. Beginning with a dose of 5,000 units/kg, penicillin inhibited the phagocytic activity, while phenoxymethylpenicillin stimulated it in the same dose. In a dose of 50,000 units/kg, phenoxymethylpenicillin inhibited phagocytic activity in a pronounced manner. The effects of antibiotics on the phagocytic activity of reticuloendothelial cells were somewhat altered when they were administered in combination with the vaccine.

3/3

- 27 -

USSR

UDC 616.8-009.87:612.12.1

PUKACH, I. P., Major, Medical Corps, and YEREM'YANIS, A. M., Honored Physician, Kazakh SSR, and Colonel, Medical Corps

"The Effects of Thermal Stress on Blood Cholinesterase Activity"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1973, p 64

Abstract: Blood cholinesterase activities were determined in the case of 30 males, 19-23 years of age. In the morning hours the mean body temperature was  $36.1^{\circ}$ , and cholinesterase activity was  $5.63 \pm 0.32 \mu\text{moles/ml}\cdot\text{min}$ . At a body temperature of  $37.6^{\circ}$  ( $38-38.3^{\circ}$  in some cases), the enzymatic activity fell to  $4.55 \pm 0.2 \mu\text{moles/ml}\cdot\text{min}$ . Thus, an increase in the body temperature of  $1.5^{\circ}$  was accompanied by a 19.2% decrease ( $1.08 \mu\text{moles/ml}\cdot\text{min}$ ) in blood cholinesterase activity. Physical exertion of a limited nature did not evoke significant changes in blood cholinesterase activity. Diurnal changes in blood cholinesterase activity may be regarded as reflecting the organisms adaptational changes.

1/1

USSR

531.787.001.24

SEKOYAN, S. S., ~~YEREMEYEV, A. YE.~~

"Use of Non-Linear Theory of Elasticity for Calculation of Deformations of Measuring System Elements in High Pressure Devices"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], pp 29-32 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.724 by M. I. M.)

Translation: Calculations are performed on the basis of the linear and non-linear theory of elasticity to determine the deformation of a cylinder and piston made of heat-treated high-strength steel under the influence of high pressure. The non-linear characteristics of steels used in the calculation were measured earlier by the US pulse method (see Izmeritel'naya Tekhnika, No. 7, 1966, p 10). It is shown that the difference between deformation values produced using the linear and non-linear theories is slight and can be considered in an investigation of deformation errors in high pressure measuring devices. The data produced can be useful in planning and investigation of measuring devices and high pressure installations: piston manometers, ball viscosimeters, piezometers, etc. One illustration, six biblio. refs.  
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2

USSR

UDC 677.494.745.32-96.004.14:661.183.123.2

ZGIBNEVA, Zh. A., GELLER, A. A., GELLER, B. E., POLOVNIKOVA, M. V.,  
YERESHCHENKO, A. G., and GHOMENKO, R. I., Tashkent Institute of Textiles  
and Light Industry

"Fibrous Cation Exchange Materials Based on Nitrona"

Moscow, Khimicheskiye Volokna, No 5, 1973, pp. 7-9

Abstract: The high chemical stability of the hydrocarbon chains of polyacrylonitrile and the high reactivity of the nitrile groups may be used to prepare ion exchange materials based on the polymers and copolymers of acrylonitrile fibers. The reaction is base catalyzed. Temperature and concentration were determined which would optimize the physical mechanical properties of the obtained fibers. The ion-exchange capacity ranged from 0.3 to 3 meq/g, the higher values generally occurring at high temperatures or high concentrations of NaOH. Intense chemical modification in the polymer chain occurred during the saponification process. These changes were examined using IR spectra and thermograms. The principal reaction path for the base saponification of the copolymer was the hydrolysis of the nitrile and the mixed-ester groups.

1/1

PROCESSING DATE--04DEC70

UNCLASSIFIED

1/2 . 020

TITLE--DYEING OF PROTEIN AND POLYAMIDE FIBERS -U-

AUTHOR--(04)-GELLER, B.E., YERESHCHENKO, A.G., STEPANTSOVA, N.P.,  
SHALAMOVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,064

REFERENCE--OTKRYTIYA, IZOBREY., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970 47

DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DYE, PROTEIN, POLYAMIDE RESIN, SYNTHETIC FIBER, CHEMICAL  
PATENT, POTASSIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0859

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

CIRC ACCESSION NO--AA0136293

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136293

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

ABSTRACT. PROTEIN AND POLYAMIDE FIBERS ARE DYED WITH AMINO CONTG. ACIDS AND BASIC DYES. AFTER DYEING, THE COLORATION IS STRENGTHENED AND STABILIZED BY TREATMENT IN A REDOX MEDIUM, I.E. A SOLN. CONTG. K PERSULFATE AND K METABISULFITE.

UNCLASSIFIED

USSR

YERESHKO, F. I., KONONENKO, A. F.

"Solution of a Game with Right First Move with Inaccurate Information on the Purpose of the Other Player"

Zh. Vychisl. Mat. i Mat. Fiz. [Journal of Computer Mathematics and Mathematical Physics], 1973, Vol 13, No 1, pp 217-221 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V487, by the authors).

Translation: One game is solved with non-opposite interests with fixed sequence of moves, under the condition that the first player does not precisely know the win function of the second player, but rather has information only on the limits of its change. Otherwise, the rules of the game studied are no different from the rules formulated in RZhMat, 1971, 12V778. The solution is produced for two limiting cases of mutual placement of intervals of change of minimax wins of the first player and his wins in the area where the interests are not completely opposite. For the general case, an estimate is made of the best guaranteed result.

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USSR

UDC: 518.9

YERESHKO, F. I.

"Solution of Some Minimax Problems for Equations of the Lanchester Type"

V sb. Kibernetiku -- na sluzhbu kommunizmu (Cybernetics to the Service of Communism--collection of works), T. 6, Moscow, "Energiya", 1971, pp 207-219 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V671)

Translation: Discrete minimax problems are formulated for equations of the Lanchester type for which guaranteed estimates of gain by the first player are introduced. A relation is established between these estimates, and the structure of optimum controls is studied. A. Lyapunov.

1/1

USSR

UDC 621.791.14:669.14.018.298.3

RUDAKOV, A. S., Engineer (Chelyabinsk Polytechnical Institute), GURFINK, B. I., KOBZEV, I. F., Engineers, and YERETNOVA, V. M., Engineer (Chelyabinsk Tractor Plant imeni V. I. Lenin)

"Friction Welding of Heat-Treated Type-45 Steel"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, p 51

Abstract: For some time, special socket wrenches have been manufactured by butt resistance welding of sockets of type-45 steel to a connecting rod of type-20 steel, followed by heat treatment. In order to make better use of equipment and improve heating and hardening modes, it has been suggested that the sockets be heat treated before being welded to the rod. The sockets are then friction-welded to the rod using a machine developed at the plant. This article presents the results of strength and structural testing of the metal in and around the joints thus produced. The properties are satisfactory.

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1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--THE TREATMENT OF OPEN ASSOCIATED INJURIES OF THE HAND AND FINGERS  
-U-  
AUTHOR--YERETSKAYA, M.F., KHARITONOV, R.O., YURYEV, P.V.  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP  
63-68  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PLASTIC SURGERY, ORTHOPEDIC SURGERY, MEDICAL CAST, PLASTER,  
PLASTIC  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1986/0636 STEP NO--UR/0589/70/104/003/0063/0069  
CIRC ACCESSION NO--AP0102622  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102622

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER THE STAGES OF TREATMENT, FREQUENCY OF COMPLICATIONS AND RESTORATION OF A PATIENT'S CAPACITY FOR WORK IN 125 PATIENTS WITH OPEN ASSOCIATED HAND INJURIES ARE ANALYSED. THE FREQUENCY OF COMPLICATIONS AFTER PRIMARY TREATMENT OF SUCH INJURIES MADE 46.4PERCENT. THE RESULTS OF TREATMENT WERE STUDIED IN 55 PATIENTS. THE CONCLUSION IS DRAWN ON THE NECESSITY OF REVEALING PATIENTS THAT NEED RECONSTRUCTIVE SURGERY ON THE HAND IN DUE COURSE. IN DESCRIBING THE TECHNIC AND OPTIMUM TERMS OF PHYSICAL THERAPY IN ASSOCIATED HAND INJURIES THE IDEA OF RATIONALITY TO SUBSTITUTE AT CERTAIN STAGES OF TREATMENT BULKY PLASTER SPLINTS IN SUCH PATIENTS BY SMALL PLASTIC SPLINTS IS EMPHASIZED. ALSO GREAT NECESSITY OF PHYSICAL LABOUR THERAPY IS STRESSED THAT RENDERS IT POSSIBLE TO RESTORE PROFESSIONAL SKILL WITH MAXIMUM USE OF ALL THE PRESERVED SEGMENTS OF THE INJURED HAND.

UNCLASSIFIED



USSR

UDC 621.355.8+621.762

YEREYSKAYA, G. P., DUNAYEVA, T. I., and SKALOZUBCV, M. F., Novocherkassk Polytechnic Institute

"Preparation and Study of Silver Powder with a Zirconium Additive, for Use as Material for the Positive Electrode of a Chemical Source of Electricity"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLIV, No 6, Jun 1971, pp 1272-1276

Abstract: The electrochemical properties and the utilization factor  $K_U$ , of the positive electrode of a primary chemical current source, depend not so much upon the choice of material (silver oxide, silver chloride, powdered silver) as upon structural features of the initial active mass, such as porosity, particle size, specific surface, and the like. The effect of various amounts of zirconium oxide additive on performance ( $K_U$ ), discharge density, and other factors, was studied. It was concluded that 0.6% zirconium additive in silver powder alters the properties of the latter, increasing the actual surface of the electrode, as well as its capacity when used in primary devices. It also tends to stabilize the structure of the electrode during cycling.

1/1

USSR

UDC 532.135.082

D'YACHENKO, B. P., YERFILOV, V. N., YEVSTAFI'YEV, G. D.

"Device for Measurement of Viscoelastic Properties of Liquids at Pressures up to 6000 kg/cm<sup>2</sup>"

Kontaktno-Gidrodinamich. Teoriya Smazki i Ee Prakt. Primeneniye v Tekhn. [The Contact-Hydrodynamic Theory of Lubrication and its Practical Application to Technology -- Collection of Works], Kuybyshev, 1972, pp 5-6 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.1184).

Translation: A vibration viscosimeter for simultaneous measurement of the attenuation decrement of the frequency of natural oscillations of a resonator loaded with a fluid in the frequency range from 10 to 300 KHz is briefly described. The sensor is a cylindrical torsional-oscillating quartz resonator, oscillations in which are excited by a series of rectangular pulses. The device measures the period of natural oscillations of the resonator up to the boundary of the oscillating mode with an error of less than 10<sup>-4</sup>.

1/1

USSR

UDC 621.397.62:535.67:621.317.799

YERGANZHIVYEV, N. A.

"Parameters of a Colorimetric Television Transmitter Determining the Measurement or Color Reproduction Accuracy"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 3), Leningrad, 1970, pp 51-55 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G215)

Translation: The relation between the levels of signals generated by the colorimetric sensor with defined parameters and radiation acting on it is determined. The scattering of the parameters of the sensor is analyzed. It is recommended that a system of tolerances on parameter scanning for a given measurement or color reproduction accuracy be developed.

1/1

USSR

AZIMOV, S. A. et al., IAN SSSR: Ser. Fiz., No 1, 1972, pp 173-174  
diffraction structure with a first maximum at  $\theta = 0^\circ$  for  $n_0$   
and  $n_1$  and a first maximum at  $\theta = 20^\circ$  for group  $n_2$ . The curves  
for  $n_1$  and  $n_2$  are antisymbatic. Three figures, bibliography  
of six titles.

Nuclear Physics

USSR

3

AZIMOV, S. A., ARIKHANOV, R., GULYAMOV, M., ISLAMOV, B. I.,  
FAYZULLAYEV, U. I., YERGASHOV, F., "Institute of  
Nuclear Physics, Academy of Sciences of the Uzbek SSR"  
UDC: 539.172  
"APPROVED FOR RELEASE: 09/01/2001" CIA-RDP86-00513R002203710001-5

"The Reaction  ${}^7\text{Li}(pn){}^7\text{Be}$  at  $E_p = 17.5$  MeV"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya,  
Vol 36, No 1, Jan 72, pp 173-174

Abstract: The neutron spectrum of the reaction  ${}^7\text{Li}(pn){}^7\text{Be}$  is  
studied on a proton beam in the U-150 cyclotron at the Insti-  
tute of Nuclear Physics at the Academy of Sciences of the  
Uzbek SSR, using a multichannel, fast-neutron, time-of-flight  
spectrometer. The measurements were made at a proton energy  
of 17.5 MeV. The experimental data enabled the authors to  
distinguish neutron groups  $n_0$  and  $n_1$  corresponding to the  
ground and excited states of  ${}^7\text{Be}$  ( $E^* = 0.43$  MeV). Differential  
cross sections of the reaction are presented, with formation  
of neutron groups corresponding to the ground and excited  
states ( $E^* = 0.43$  MeV and  $E^* = 4.55$  MeV). All curves have a

Water Treatment

UDC: 541.67

USSR

~~YERGIN, YIL V.~~, KOSTROVA, L.I., Bashkir State University imeni 40th Anniversary of October, Ufa, Ministry of Higher Education USSR

"Temperature Dependence of Magnetic Susceptibility of Water"

Moscow, Zhurnal Strukturnoy Khimii, Vol 11, No 1, 1970, pp 8-11

Abstract: According to the Van-Fleck theory of diamagnetism of polyatomic system, magnetic susceptibility measured experimentally can be represented in the form of the sum:

$$\chi = \chi_d + \chi_p = - \frac{Ne^2}{6mC^2} \sum_i r_i^2 + \frac{2}{3} N \sum_{l \neq k} \frac{(k/M_p/l)^2}{E_l - E_k}$$

where  $r_i$  = distance of the  $i$ -th electron from the nucleus, and  $k | M_H | l$  = nondiagonal matrix element of the magnetic moment operator in the field direction  $H$  relating the ground state  $k$  with the excited state  $l$ . The member  $\chi_d$  in this expression is determined by the Larmor precession of the electron shell in the magnetic field. It depends only on "mean dimensions" of the electron cloud of the molecule and is negative in sign ("pure" diamagnetism). To discover the nature of anomalies in the temperature dependence of magnetic susceptibility of water, the curves  $\chi(T)$  for water were compared with similar curves for carbon tetrachloride, benzene, and toluene ("normal" liquids). The purity of test liquids was evaluated from the

1/2

USSR

YERGIN, YU.V., et al, Zhurnal Strukturnoy Khimii, Vol 11, No 1, 1970, pp 8-11

coincidence of their main physicochemical properties with table data. Water samples had a specific electroconductivity of about  $10^{-6}$  ohm $^{-1}$ . cm $^{-1}$ . From the experimentally measured value of  $\chi$ , Larmor diamagnetism, which proved to be practically independent of temperature, and polarization paramagnetism, the value of which is determined by the nature of the interaction between water molecules, were isolated. It was shown that the anomalous pattern of the curve  $\chi(T)$  can be associated with structural features of water. This is evidenced on the curve of the temperature dependence of polarization diamagnetism. The percentage of broken hydrogen bonds in water is estimated from the discontinuity of this variable at the melting point. The authors thank Professors O. YA. SAMOYLOV and YA. G. DORFMAN for discussing the results of the work.

2/2

- 96 -

USSR

UDC 621.359.7

SHISHLYANNIKOV, L. A., SHOSTAK, F. T., YERGOZHIN, YE. YE.

"Results of the Operation of the Mointy Demineralization Electrodialysis Pilot Plant"

Vestn. AN KazSSR (Kazakh SSR Academy of Sciences Vestnik), No 2, 1972, pp 44-51  
(from RZh-Khimiya, No 12, Jun 72, Abstract No 12L276)

Translation: A study was made of the results of three years of operation of the Mointy demineralization electrodialysis station. An analysis of the operational characteristics of the MK-40-2s and MA-40-2s ion-exchange resin diaphragms is presented, and the technical-economic indexes of the station are given.

1/1

- 13 -

USSR

UDC 661.183.123.2/3:547.1'118

MUKHITDINOVA, B. A., YERGOZHIN, YE. YE., and RAFIKOV, S. R., Institute of Chemical Sciences, Acad. Sc. KazSSR, Institute of Chemistry, Bashkir Branch Acad. Sc. USSR

"Phosphorylated Redox Ionic Exchange Resins"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 974-976

Abstract: The starting polymers were obtained by condensation of the halo-methylated copolymers of styrene and divinylbenzene with quinone, naphthoquinone, anthraquinone, hydroquinone, pyrogallol, pyrocatechol, etc. in presence of 1-2%  $ZnCl_2$  in refluxing dioxane. Phosphorylation was carried out with  $PCl_3$  in presence of  $AlCl_3$  at  $70^\circ$  for 8 hrs; then the product was hydrolyzed and acidified with 25%  $HNO_3$ . To convert the cation exchange group into the  $H^+$ -form, the material was treated with 10%  $HCl$ . Two active groups were found by potentiometric titration with dissociation constants  $pK_1$  3.05 and  $pK_2$  6.25. IR spectra showed absorption bands in the area of  $P=O$  for the oxidized form, and  $C-O$ -phenols for the reduced forms. The new exchange resins showed good kinetic properties, increased mechanical strength, and chemical and thermal stability.

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- 35 -



USSR

UDC 621.359.7:629.1

SHISHLYANNIKOV, L. A., SHOSTAK, F. T., and YERGOZHIN, Ye. Ye.

"Performance Results of the Pilot Industrial Plant "Moıntı" Producing Fresh Water by Electrodialysis"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 44-51

Abstract: An analysis is presented of the effectiveness, maintenance cost, and reliability of a pilot plant built in the Kazakh SSR, and operated for three years, 1968-1971. The plant produces 160 m<sup>3</sup> water/day at a cost of 87 kopeks/m<sup>3</sup> of water. The fresh water obtained contained on the average: dry residue 1087 mg/liter, chlorides 215 mg/liter, sulfates 400 mg/liter, hardness of water 4.9 mg-equivalent, pH 6.5, as opposed to 3080, 620, 1200, 16.4, 7.5, respectively, in the initial water. The average consumption of energy was 2.2 K<sub>6</sub>W<sub>6</sub> H/m<sup>3</sup> water. Deposits on anion and cation exchange filters consisted mainly of Ca and Mg sulfates, and SiO<sub>2</sub>. The plant was capable of demineralizing cold water (8°) with high concentration of sulfates and sodium (up to 50% sulfates) with hardness up to 30 mg-equivalent/liter. It also produced concentrated water solutions with 8-10 g salts/liter, with hardness up to 90 mg-equivalent/liter. The water treatment was controlled 1/2

USSR

SHISHLYANNIKOV, L. A., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 44-51

by semiautomatic control equipment, and the salt concentration in water, by simple visual conductometric indicators and chemical water analysis. A detailed description of filters, their replacement procedures and maintenance is given, along with the evaluation of steels and other materials used in pumps and other equipment.

2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SYNTHESIS AND STUDY OF REDOX POLYMERS BASED ON CROSSLINKED  
CHLOROMETHYLATED STYRENE DIVINYLBENZENE COPOLYMERS -U-  
AUTHOR-(03)-YERGOZHIN, YE.YE., RAFIKOV, S.R., MUKHITDINOVA, B.A.  
COUNTRY OF INFO--USSR  
SOURCE--TR. INST. KHIM. NAUK. AKAD. NAUK KAZ. SSR 1970, 28, 62-72  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMER-CROSSLINKING, STYRENE, BUTADIENE, BENZENE, QUINONE,  
RESORCINOL, AMINE DERIVATIVE, HYDROQUINONE, POLYMER STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1098 STEP NO--UR/0000/70/028/000/0062/0072  
CIRC ACCESSION NO--AT0134784  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 018

CIRC ACCESSION NO--AT0134784

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

ABSTRACT. CROSSLINKED CHLOROMETHYLATED  
STYRENE DIVINYLBENZENE COPOLYMERS WERE CONDENSED WITH QUINONE,  
RESORCINOL, PYROGALLOL, CATECHOL, (NH SUB2) SUB2 C=S, ANTHRAQUINONE,  
P, (MEO) SUB2 C SUB6 H SUB4, AND HYDROQUINONE DIACETATE IN DIOXANE OR  
CLCH SUB2 CH SUB2 CL. THE POLYMERS PREPO. HAD A REDOX CAPACITY OF  
2.0-5.0 MEQ-G. THE STRUCTURE OF THE POLYMERS WAS DETERM.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF HALOMETHYLATED COPOLYMERS OF STYRENE AND DIVINYLBENZENE  
WITH QUINONES, DIHYDROXYBENZENES, AND THEIR DIALKYL ESTERS -U-  
AUTHOR--(03)--MUKHITDINOVA, B.A., YERGOZHIN, YE.YE., RAFIKOV, S.R.  
COUNTRY OF INFO--USSR  
SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 73-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HALOGENATED ORGANIC COMPOUND, COPOLYMER, STYRENE, QUINONE,  
HYDROXYL RADICAL, POLYMER CROSSLINKING, THERMAL STABILITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1102 STEP NO--UR/0000/70/028/000/0073/0077  
CIRC ACCESSION NO--AT0124757  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALOMETHYLATED STYRENE  
DIVINYLBENZENE COPOLYMERS (OBTAINED IN THE PRESENCE OF ZNCL SUB2 OR SNCL  
SUB4) WERE CONDENSED WITH QUINONES (I), C SUB6 H SUB4(OH)SUB2, AND  
DERIVS. THEREOF IN DIOXANE OR CLCH SUB2 CH SUB2 CL TO GIVE CROSSLINKED  
COPOLYMERS. THE CONDENSATION RATE AND D. P. WERE INVERSELY PROPORTIONAL  
TO THE CROSSLINK D. THE HIGHEST CONDENSATION RATE WAS OBSD. WITH BROMO  
AND IODOMETHYLATED COPOLYMERS. COPOLYMERS CONTG. I OR HYDROQUINONE  
EXHIBITED THE HIGHEST THERMAL STABILITY.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE—30OCT70  
TITLE—REDUCTION OF NITRO DERIVATIVES OF POLYSTYRENES AND THEIR COPOLYMERS  
—U—  
AUTHOR—(02)—YERGOZHIN, YE.YE., RAFIKOV, S.R.  
COUNTRY OF INFO—USSR  
SOURCE—TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 103-6  
DATE PUBLISHED—70  
SUBJECT AREAS—CHEMISTRY, MATERIALS  
TOPIC TAGS—CHEMICAL REDUCTION, ORGANIC NITRO COMPOUND, STYRENE,  
POLYSTYRENE RESIN, TIN, COPOLYMER, BUTADIENE, BENZENE, ION EXCHANGE  
RESIN, IR SPECTRUM  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAHE—2000/0692 STEP NO—UR/0000/70/028/000/0103/0106  
CIRC ACCESSION NO—AT0124364  
UNCLASSIFIED

2/2 059

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF NITRO DERIVS. OF POLYSTYRENE OR STYRENE DIVINYLBENZENE COPOLYMERS WITH SN PLUS HCL, SNCL SUB2 PLUS HCL, AQ. NA SUB2 S SUBX SOLN., OR FE PLUS HCL GAVE ONLY THE POLYMERS CONTG. NO, NHOH, AND NH SUB2 GROUPS. IR SPECTRA SHOWED THAT AZOXY, AZO, AND HYDRAZO GROUP CONTG. POLYMERS WERE NOT FORMED. THE INCREASE OF DIVINYLBENZENE GROUPS CONCN. IN THE COPOLYMERS FROM 2 TO 8PERCENT DECREASED THEIR ION EXCHANGE CAPACITY FROM 6.8 TO 5.0 MEQ-G.

UNCLASSIFIED



USSR

UDC 542.91:661.183.123.3

YERGOZHIN, E. E., RAFIKOV, S. R., IMANBEKOVA, S. M., ZHUBANOV, B. A.,  
Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR  
and the Institute of Chemistry of the Bashkir Branch of the USSR Academy of  
Sciences

"Synthesis of New Anion Exchange Resins Based on Polyethylenepolyamine and  
bis(chloromethyl)-diphenyloxide"

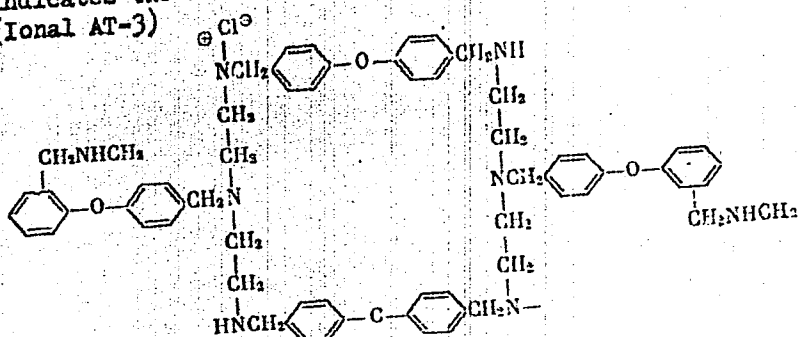
Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972,  
pp 2609-2612

Abstract: A study was made to synthesize anion exchange resins based on  
polyethylenepolyamine (PEPA) and bis(chloromethyl)diphenyl ether. The con-  
densation of 4,4-bis(chloromethyl)diphenyloxide with PEPA was first carried  
out at a reduced temperature (0-3°, 30-40 minutes) and then at 20-25° to  
gelatination. The gel formed was congealed in a dessicator at 70° for 20  
hours and at 120° for 30 hours. The anion exchange resin obtained was  
chushed, screened and separated into a fraction with grain sizes of 0.25-  
0.50 mm. The properties of the synthesized ion exchange resins depend to a  
significant degree on the mole ratio of the chloromethylated diphenyloxide  
and PEPA and also on their condensation conditions. Comparative data are  
1/2

USSR

YERGOZHIN, E. E., et al., Izvestiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972, pp 2609-2612

tabulated. The results of studying the chemical stability of the anion exchange resins with respect to HNO<sub>3</sub>, NaOH and H<sub>2</sub>O<sub>2</sub> solutions are tabulated. They indicate that Ional AT-3 appreciably simplifies the process of obtaining the ion exchange resin since it does away with the necessity for separating the isomers. Chemical analysis combined with the infrared spectra considering the mechanism of the interaction of aliphatic amines with chloromethylated aromatic hydrocarbons indicates the following structure of the synthesized anion exchange resin (Ional AT-3)



2/2

- 28 -

USSR

UDC 541.183,661.183.12

YERGOSHIN, YE. YE., BAKIROVA, R. KH., MUKHITDINOVA, B. A., RAFIKOV, S. R.,  
Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR  
and the Chemistry Institute of the Bashkir Branch of the USSR Academy of  
Sciences

"New Macroporous Electron-Ion Exchangers"

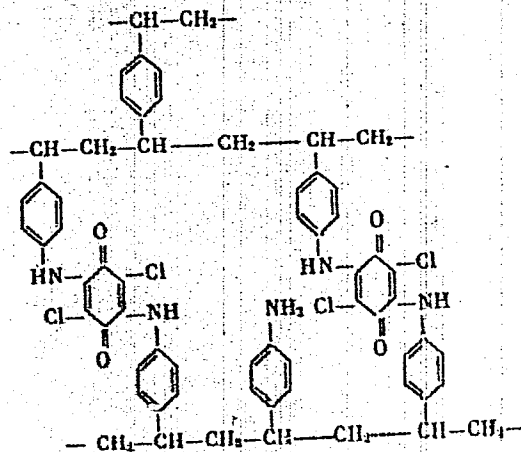
Moscow, Izvestiya Akademii Nauk SSSR - Seriya Khimicheskaya, No 11, 1972,  
pp 2607-2609

Abstract: The known reaction of condensation of aromatic and aliphatic diamines  
with quinone or chloranil leading to the formation of polyaninoquinones  
(A. A. Berlin, et al., USSR Author's Certificate No 129016, 1960; Byul. izobr.,  
No 11, 1960; Izv. AN SSR. Otd khim. n., 2260, 1959; Vysokomodekul. soyed.,  
No 1, 1643, 1959; L. A. Blyumefel'd, et al., Vysokomolekul. soyed., No 1,  
1647, 1959) with conjugate bonds in the macromolecule chains having increased  
heat resistance, magnetic susceptibility and complex-forming properties is  
used to synthesize new electron-ion exchangers. The macroporous weakly basic  
anion exchange resin Ionol ANP was used as the polyamine. The experimental  
procedure and results are described. The structure of the synthesized electron-  
ion exchanger is represented as follows:

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USSR

YERGOVIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2607-2609



The products of the interaction of Ional ANP with chloranil for 0.5, 1 and 10 hours contain 16, 90, 15, 20 and 14.93% Cl. This reduction in chlorine in the 2/3

USSR

YERGOSHIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya,  
No 11, 1972, pp 2607-2609

polymer can be explained by partial replacement of it by aceto groups. The  
formation of additional transverse bonds is confirmed by data from chemical  
analysis, infrared spectra and a reduction in the swelling of the synthesized  
redox ion exchange resin in dimethyl formamide.

3/3

1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--BUTYL SALICYLATE -U-  
AUTHOR--(04)-YERIKHOV, V.I., VIGDOROV, A.S., TOROCHESHNIKOVA, L.V.,  
GORBACHEVA, S.N.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 266,765  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, ESTERIFICATION, AZETROPE,  
SALICYLATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/1738 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AAG102004  
UNCLASSIFIED

272 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132004

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BU SALICYLATE (I) WAS PREPD. BY THE ESTERIFICATION OF SALICYCLIC ACID WITH EXCESS BUOH IN THE PRESENCE OF ACID CATALYSTS AT THE B.P. OF THE REACTION MIXT. AND BY THE SIMULTANEOUS DISTN. OF AN H<sub>2</sub>O-BUOH AZEOTROPE. THE SEPN. OF I WAS SIMPLIFIED BY VACUUM DISTG. AN AZEOTROPE OF I AND UNREACTED SALICYCLIC ACID WHICH WAS SEPD. BY CRYSTN. AND FILTRATION.

UNCLASSIFIED

USSR

UDC: 621.374.33(088.8)

YERILOV, Yu. V.

"A Pulse Synchronization Device"

USSR Author's Certificate No 267687, filed 19 Sep 68, published 5 Aug 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G255 P)

Translation: This Author's Certificate introduces a pulse synchronization device which contains a flip-flop, coincidence circuit and delay stage. To improve accuracy in tying the asynchronous pulses to pulses of the synchronization frequency, the device contains two inverters and two rectifier circuits. The output of the flip-flop is connected to the first input of the first rectifier circuit, and the output of this circuit is connected through an inverter to the first input of the second rectifier circuit. The second input of the second rectifier circuit is connected to the source of synchronizing pulses, and its output is connected through an inverter to the second input of the first rectifier circuit and to the first input of the coincidence circuit.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EXISTENCE OF METABORIC ACID IN THE HBO SUB2.NH SUB4 SUB2 SO SUB4.H  
SUB2 O SYSTEM AT 20 AND 35DEGREES. II -U-  
AUTHOR--(04)-BOCHKAREVA, I.V., YERIMBETOVA, I.D., KARAZHANOV, N.A.,  
BEREMZHANOV, B.A.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM., 1970, 20(1), 21-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--BORIC ACID, WATER, CRYSTALLIZATION, ISOTHERM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1507 STEP NO--UR/0360/70/020/001/0021/0025  
CIRC ACCESSION NO--AP0120288  
UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0120288

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. ISOTHERM OF THE TITLE SYSTEM CONSISTS OF 3 BRANCHES OF CRYSTN. OF WHICH ONE BELONGS TO H SUB3 BO SUB3, ANOTHER TO HBO SUB2, AND THE 3RD TO (NH SUB4) SUB2 SO SUB4; THERE ARE 2 ISOTHERMAL INVARIANT POINTS ON THE ISOTHERM. THE LIQ. PHASE OF THE 1ST ISOTHERMAL INVARIANT POINT CONTAINS (NH SUB4) SUB2 SO SUB4 14.81 AND B SUB2 O SUB3 4.85PERCENT, WHILE THE SOLID PHASE CONTAINS ORTHO AND METABORIC ACID. THE LIQ. PHASE OF THE 2ND ISOTHERMAL INVARIANT POINT CONTAINS (NH SUB4) SUB2 SO SUB4 38.95 AND B SUB2 O SUB3 5.06PERCENT, WHEREAS THE SOLID PHASE CONSISTS OF HBO SUB2 AND (NH SUB4) SUB2 SO SUB4. THE CRYSTN. OF H SUB3 BO SUB3 EXTENDS FROM 0 CONC. OF (NH SUB4) SUB2 SO SUB4 TO THE 1ST ISOTHERMAL INVARIANT POINT. THE CRYSTN. OF HBO SUB2 EXTENDS FROM THE POINT AT WHICH H SUB3 BO SUB3 CHANGES TO HBO SUB2 TO THE 2ND ISOTHERMAL INVARIANT POINT. THE CRYSTN. OF (NH SUB4) SUB2 SO SUB4 EXTENDS FROM 0 CONC. OF H SUB3 BO SUB3 TO ITS INTERSECTION WITH THE HBO SUB2 CRYSTN. BRANCH OF THE ISOTHERM. AT 20-35DEGREES, THE AMT. OF HBO SUB2 INCREASES WITH TEMP. THE CONC. OF (NH SUB4) SUB2 SO SUB4 AT WHICH HBO SUB2 IS STABLE AT 20DEGREES IS 22.40PERCENT AND AT 35DEGREES IT DROPS TO 14.81PERCENT.

FACILITY: KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

GOLOVACH, A. V., YERINA, A. M. and TROFIMOV, V. P.

"Criteria of Mathematical Statistics in Economic Studies"

Kriterii Matematicheskoy Statistiki v Ekonomicheskikh Issledovaniyakh [English version above], Moscow, Statistika Press, 1973, 136 pp (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V325K)

Translation: This book studies the general statements of the theory of testing of hypotheses, presents the characteristics of the basic statistical criteria and indicates the peculiarities of their application to social-economic studies. The classifications of criteria were based not on their mathematical properties, but rather on the following problems, solved using the criteria: testing of hypotheses concerning the basic parameters of a set, testing of hypotheses concerning distributions and testing of the existence of a relationship between characteristics. The appendices present tables of distribution functions and quantiles, as well as graphs of the power of criteria. The book is designed for economists, statisticians, teachers and students in economic schools and departments.

Annotation

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PRODUCTIVE CAPACITY OF GAS FIRED SMELTING FURNACES -U-  
AUTHOR--(02)--CHAPLYGIN, YU.V., YERINDV, A.YE.  
COUNTRY OF INFO--USSR  
SOURCE--GAZOV. PROM. 1970, 15(3), 30-4  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--SMELTING FURNACE, METAL PRODUCTION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0947 STEP NO--UR/0492/70/015/003/0030/0034  
CIRC ACCESSION NO--AP0121549  
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE PRODUCTIVE CAPACITY AND THE MEAN SP. PRODUCTIVE CAPACITY OF A PILOT PLANT FURNACE ON THE METAL CONTENT IN THE CHARGE, RATE OF HEATING, AND THE HEIGHT OF THE CHARGE, AND THE DEPENDENCE OF THE SP. HEAT YIELD ON THE CAPACITY WERE DETD. FACILITY: INST. GAZA, KIEV, USSR.

UNCLASSIFIED

1/2 032  
 TITLE--PLASMATIC IMPREGNATION OF CARDIAC MUSCLE CELLS IN ACUTE METABOLIC DISORDERS -U-  
 AUTHOR--(02)-TSELLARIUS, S.F., YERISKOVSKAYA, N.K. PROCESSING DATE--16OCT70  
 COUNTRY OF INFO--USSR  
 SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,  
 NR 5, PP 100-103  
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--ADRENALINE, WHITE RAT, MYOCARDIUM, HEART DISEASE, METABOLISM, ANTIBODY, INJURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY KEEL/FRAME--1998/0201

STEP NO--UR/0219/70/069/005/0100/0103

CIRC ACCESSION NO--AP0120899

UNCLASSIFIED

PROCESSING DATE--16OCT70

UNCLASSIFIED

2/2 032

CIRC ACCESSION NO--A0120899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON A MODEL OF ADRENALINE MYOCARDITIS INDUCED IN ALBINO RATS THE AUTHORS STUDIED THE BLOOD PLASMA IMPREGNATION OF FOCI OF MYOCARDIAL AFFECTION IN DIFFERENT TYPES OF METABOLIC DISORDERS BY MEANS OF COONS' TECHNIQUE OF LABELLED ANTIBODIES AND HISTOCHEMICAL REACTIONS, PAS AND ADAMS' FOR TRIPTOPHAN, AS WELL AS WITH THE AID OF POLARIZATION OPTIC AND PHASE CONTRAST METHODS OF MICROSCOPY. PLASMATIC IMPREGNATION WAS REVEALED IN SEVERE FORMS OF CONTRACTURE TYPE OF INJURY, BEGINNING FROM THE STAGE OF FRAGMENTATION OF MYOFIBRILS; AT EARLY PERIODS AFTER ADRENALINE INJECTION (ONE HOUR) NOT ALL SEGMENTS WITH FRAGMENTATION OF MYOFIBRILS UNDERGO PLASMATIC IMPREGNATION; CONSEQUENTLY, IT IS NOT THE CAUSE OF NECROBIOTIC CHANGES OF THE CELL. THE SECOND TYPE OF INJURY OF CARDIAC MUSCLE CELLS, MYOCYTOLYSIS, IS NEVER ATTENDED BY PLASMATIC IMPREGNATION. THIS CONFIRMS THE HYPOTHESIS ACCORDING TO WHICH IN CONTRACTURE INJURIES IN THE FIRST PLACE FUNCTIONS OF THE CELLULAR MEMBRANE SUFFER, WHEREAS MYOCYTOLYSIS IS ASSOCIATED WITH LYZOSOME EFFECT IN A PRESERVED CELLULAR MEMBRANE.

FACILITY: INSTITUTE OF PHYSIOLOGY OF THE SIBERIAN DEPARTMENT OF THE ACADEMY OF SCIENCES OF THE USSR, NOVOSIBIRSK.

UNCLASSIFIED

USSR

UDC 537.511.33:514.28

KOKOZEMO, I.D., VENTSEIY, V.L., VARENISOV, M.D., YERITSYAN, G.N., SEMENYUK, A.K., STARCHIK, M.I., KHIVRICH, V.I.

"Effect Of Certain Factors On The Processes Of Formation Of Radiation Defects In Silicon And Germanium During Gamma Irradiation"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minek, "Nauka i tekhn.," 1970, pp 22-44 (from RZh--Elektronika i yeye primeneniya, No 2, February 1971, Abstract No 2B26)

Translation: The kinetics are studied of the buildup of radiation defects in Si and n- and p-type Ge during Gamma irradiation. The effect of the charge state and temperature on the formation of recombination centers is considered as well as the effect of dosage, the intensity of Gamma irradiation, concentration, preliminary irradiation and other factors on the formation of radiation defects. 32 ref. V.B.

1/1



1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SYNTHESIS OF VINYL FORMATE IN A FLUIDIZED CATALYST BED -U-  
AUTHOR--(04)-AKOPYAN, A.YE., BOYADZHYAN, V.K., YERITSYAN, V.K., OVSEPYAN,  
S.S.  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(2), 193-9  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--VINYL COMPOUND, FORMIC ACID, CARBOXYLIC ACID ESTER, FLUIDIZED  
BED, CATALYTIC ORGANIC SYNTHESIS, ACETYLENE, ACETATE, ALDEHYDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1862 STEP NO--UR/0316/70/023/002/0193/0199  
CIRC ACCESSION NO--AP0123650  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 009

CIRC ACCESSION NO--AP0123650

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

ABSTRACT. THE SYNTHESIS OF VINYL FORMATE (I) FROM ACETYLENE AND FORMIC ACID IN THE VAPOR PHASE OVER FLUIDIZED ZN AND CO CATALYSTS WAS EXAMD. IN A CONTINUOUS REACTOR (1969). THE ORDER OF CATALYST ACTIVITY WAS: CO FORMATE IS LESS THAN ZN FORMATE IS LESS THAN NIXT. 1:1 OF BOTH (IN ALL CASES ON ACTIVATED C SUPPORT). THE OPTIMUM TEMP. FOR MAX. YIELD OF I AND MIN. BY PRODUCTS (ACETALDEHYDE, VINYL ACETATE, CROTONALDEHYDE) WAS 180DEGREES, AND THE OPTIMUM RATIO II-III WAS 3.5:1. FACILITY: EREVAN. QTD. NAUCH. ISSLED. INST. POLIM. PLASTMASS, EREVAN, USSR.

UNCLASSIFIED

TITLE--THE EMPLOYMENT OF CYCLOPROPANE CONTAINING MIXTURES FOR ANESTHESIA  
UNCLASSIFIED  
PROCESSING DATE--17JUL70

-U-  
AUTHOR--SHABANOV, A.N., YELSHANSKIY, V.I., YERIVANTSEV, N.A., TRETYAKOVA,  
V.I.  
COUNTRY OF INFO--USSR

SOURCE--KPIFUREIYA, 1970, NR 1, PP 74-79

DATE PUBLISHED-----70

22  
3  
27

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, CYCLOPROPANE, OXYGEN, HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1977/1710

STEP NO--UR/C531/70/JC0/001/CC74/C079

CIRC ACCESSION NO--APCC44855  
UNCLASSIFIED

Acc. Nr: AP 0044855

Ref. Code: UR 0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1, pp 74-79

THE EMPLOYMENT OF CYCLOPROPANE-CONTAINING MIXTURES FOR ANESTHESIA

Shabanov, A. N.; Yelshanskiy, V. I.; Yerivantsev, N. A.; Tretyakova, V. I.

The authors carried out 184 anesthetics with cyclopropane-oxygen and nitrous-oxide-cyclopropane-oxygen (in different proportions) mixtures in aged and senile patients during operations on abdominal organs and on the extremities. Before, during and after anesthesia the authors studied the function of the cardiovascular system, the state of respiration and gas exchange, function of the liver and kidneys, and glucocorticoid metabolism. Clinical observations and the results of investigations made it possible to arrive at the following conclusions: 1) there were no absolute contraindications to the use of modern cyclopropane anesthesia in the referred to patients; 2) high arterial hypertension and renal insufficiency are relative contraindications; 3) combined nitrous-oxide-cyclopropane-oxygen anesthesia is the most rational technique.

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REEL/FRAME  
19771710

1/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70  
 TITLE--FORMATION OF CHARGED AND EXCITED PARTICLES IN COLLISIONS BETWEEN  
 NOBLE GAS IONS OR ATOMS AND HYDROGEN MOLECULES -U-  
 AUTHOR--(05)-POLYAKOVA, G.N., GUSEV, V.A., YERKA, V.F., FOGEL, YA.M., ZATS,  
 A.V.  
 COUNTRY OF INFO--USSR  
 SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
 NR 4, PP 1186-1196  
 DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITATION CROSS SECTION, PARTICLE COLLISION, GAS IONIZATION,  
HYDROGEN, EMISSION SPECTRUM, INERT GAS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/1485

STEP NO--UR/0056/70/058/004/1186/1196

CIRC ACCESSION NO--AP0106241

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106241

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE CROSS SECTIONS FOR H SUB2 PRIME POSITIVE AND H PRIME POSITIVE PRODUCTION IN COLLISIONS BETWEEN 3-40KEV HE, NE AND AR IONS OR ATOMS AND H SUB2 MOLECULES ARE MEASURED BY THE MASS SPECTROMETER TECHNIQUE. THE EFFECTIVE CROSS SECTIONS FOR THE H SUBALPHA AND H SUBBETA EXCITED LINES OF THE BALMER HYDROGEN SERIES AND FOR SOME SPECTRAL LINES OF HE, NE AND AR ATOMS AND IONS ARISING IN COLLISIONS BETWEEN 0.1-30 KEV ATOMS AND IONS OF THE SAME NOBLE GASES AND H SUB2 MOLECULES ARE MEASURED BY THE MASS SPECTROSCOPIC TECHNIQUE. THE RESULTS OF THE MEASUREMENTS SHOW THAT MANY SIGMA (UPSILON) CURVES (SIGMA IS THE EFFECTIVE CROSS SECTION FOR A CERTAIN COLLISION PROCESS AND UPSILON IS THE RELATIVE VELOCITY OF THE COLLIDING PARTICLES) EXHIBIT PEAKS IN THE REGION OF SMALL IMPINGING PARTICLE ENERGIES. THE PEAKS CANNOT BE EXPLAINED ON THE BASIS OF THE MASSEY ADIABATIC CONDITION. POSSIBLE CAUSES OF THE PEAKS ARE DISCUSSED.  
FACILITY: FIZIKO-TEKHNICHESKIY INSTITUT AN UKRAINSKOY SSR.

UNCLASSIFIED

USSR

YERKHOV, M.I.

"Theory of Limiting Equilibrium of Dynamically Loaded Bodies"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 2, Mar-Apr 71, pp 26-32

Abstract: An analysis was made of the limiting equilibrium of a dynamically-loaded rigid-plastic body under varying movement, load conditions, and geometry. The method of extreme principles of dynamics was used to relate inertial forces, approximate values of acceleration, and corresponding values of displacement. Relations were established for the components of tension tensor, acceleration vector, velocity vector, deformation-velocity tensor, surface-loading vector, tension equilibrium, and body density, volume, and surface. The resulting formulas provide upper and lower limits for carrying capability for shells, and upper and lower limits of bowing. The poles of tension, in practical cases, must be checked against fluidity conditions. The specific configuration of specimen geometry must also be considered to determine maximum and minimum levels of bowing.

1/1

- 104 -

1:2 008 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CORRELATION AND INTERACTION OF THE BASIC PHENOMENA OF INDUSTRIAL  
COKING -U-  
AUTHOR--YERKIN, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--KOKS KHIM. 1970, (5), 20-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--COKE, INDUSTRIAL PRODUCTION, COAL, PHYSICAL CHEMISTRY PROPERTY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0969 STEP NO--UR/0068/70/000/005/0020/0024  
CIRC ACCESSION NO--AP0131554  
UNCLASSIFIED



2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COKING BEGAN IN THE PLASTIC COAL LAYER WITH EVOLUTION OF GASES WHICH MOVED INWARD AND OUTWARD THROUGH THE SHELL TOWARD THE CENTER OF THE COAL CHARGE AND THE HEATED WALLS, TO A DEGREE WHICH DEPENDED ON THE SHELL PROPERTIES AND SHRINKAGE PROPERTIES OF THE SEMICOKE ADJACENT TO THE OUTER SHELL AND RESULTED IN PULSED REPLACEMENT OF SEMICOKE LAYERS BY COAL. GAS EVOLUTION WAS MAX. AT THE MOMENT OF ENCOUNTER OF THE 2 COKING LAYERS, BUT WAS HIGHER THAN EXPECTED AFTER THE MAX. BECAUSE OF GAS FORMATION FROM LIQ. COKING PRODUCTS. CROSS SECTIONAL SHRINKAGE LAGGED VERTICAL SHRINKAGE OF THE COKE CAKE, WHICH WAS PRESSED TOWARD THE WALLS BY THE EXPANSION PRESSURE. THE COAL WAS COMPACTED TO A GREATER EXTENT THAN WAS POSSIBLE MECH., AND WAS DISPLACED TOWARD THE BOTTOM OF THE HEATING CHAMBER. THUS, THE D. OF THE CHARGE AND THE HEATING OF THE COKE CAKE BECAME MORE UNIFORM.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.781

CHERKASOVA, Ye. M., PRYANISHNIKOVA, N. T., BOGATKOV, S. V., and  
YERKOMAYSHVILI, G. S., Moscow Institute of Fine Chemical Technology  
Imeni M. V. Lomonosov, Institute of Pharmacology and Chemotherapy,  
Academy of Medical Sciences, USSR

"Advance in the Chemistry of Anesthetics (1961-1971 Decade)"

Moscow, Uspekhi Khimii, Vol 42, No 10, Oct 73, pp 1892-1919

Abstract: A review with 411 references covering the more important studies on the chemistry of anesthetics in the past decade. Anesthetics represented by various classes of organic compounds are discussed: esters of aminoalcohols, aminoamides, aminoacid amides, aminoketones, and other mono-functional representatives. The structure-activity relationship is stressed. Considerable coverage is given to the literature data on the mechanism of action.

1/1

1/2 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--CONDITIONS FOR THE USE OF CARBOXYL CONTAINING LATEX SKD-1 DURING THE PREPARATION OF SYNTHETIC LEATHER -U-

AUTHOR--(05)-YERKOVA, L.N., BERESNEV, V.N., MARTINSON, J.K., KOZHUROVA, T.S., KHIMICH, D.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 418-22

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBOXYLATE RUBBER, LEATHER, RUBBER ADHESIVE, HYDROGEN BONDING/(U)SKD1 SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REFL/FAME--1992/0337

STEP NO--UR/0080/70/043/002/0418/0422

CIRC ACCESSION NO--AP0111531

UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0111531

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAUSES FOR INCREASED RIGIDITY OF ARTIFICIAL LEATHER (I) BONDED WITH SKD-1 LATEX (II) WERE STUDIED. THE RIGIDITY OF I INCREASED WITH THE CHARGE CARRIED BY THE CATION OF THE COAGULATING ELECTROLYTE (MOST RIGID I WAS OBTAINED WHEN II WAS COAGULATED WITH AL SUB2(SO SUB4)SUB3), AND AT HIGH PH (AT PH 4.5 THE RIGIDITY WAS 10,000-5,000 G)., PRESUMABLY DUE TO THE COPPTN. OF II WITH AL(OH)SUB3. RIGID POLYMERS RESULTED FOLLOWING COAGULATION WITH NAACL (AT HIGH PH), APPARENTLY DUE TO THE FORMATION OF H BONDS BETWEEN THE OH AND THE CO SUB2 H GROUPS OF II. LEAST RIGID I WERE OBTAINED AT PH IS LESS THAN 4.5 AND WITH NAACL COAGULANT.

UNCLASSIFIED

1/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--INTERACTION OF LATEXES WITH COLLAGEN AND FIBER. II. EFFECT OF SOME FACTORS ON THE INTERACTION OF CARBOXYL CONTAINING AND NITRILE LATEXES

AUTHOR--(02)--KARLINA, G.A., YERKOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 412-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COLLAGEN, LATEX, NITRILE RUBBER, CARBOXYLATE RUBBER, SURFACE ACTIVE AGENT, SORPTION, STERIC HINDRANCE/(U)SKD1 RUBBER, (U)SKN40 NITRILE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1464

STEP NO--UR/0080/70/043/002/0412/0417

CIRC ACCESSION NO--AP0116901

UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0116901

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAPACITY OF COLLAGEN (I) TO ADSORB SKD-1 (III) OR SKN-40 (III) LATEXES WAS STUDIED IN THE PRESENCE OF NEKAL (IV) AND BUNEGAL (V) (A NONIONIC SURFACTANT). INCREASED IV CONTENT IN II LATEX BROUGHT ABOUT HIGHER SORPTION, REACHING A MAX. WHEN THE DEGREE OF SATN. OF II GLOBULES WITH IV WAS 60-70PERCENT, AND THEN DECLINING TO A CONST. VALUE. INTRODUCTION OF V INTO II ALSO INCREASED THE SORPTION CAPACITY TO II, BUT TO A LESSER DEGREE THAN DID IV. ADDN. OF V TO III LATEX (0.0732 MILLIMOLE-G III) CAUSED A SIGNIFICANT DECREASE IN SORPTION CAPACITY, PRESUMABLY DUE TO ITS SEDIMENTATION ON THE POLYMER GLOBULES AND PARTIALLY ON I, WHICH LED TO A SIGNIFICATN STERIC HINDRANCE IN THE REACTION OF I WITH III GLOBULES. THE SORPTION CAPACITY OF III INCREASED WITH TEMP. AND WAS HIGHER THAN THAT OF II.

UNCLASSIFIED

USSR

UDC: 621.375.82

YERMACHENKO, V. M.

"Determining the Spectral Width of a Working Transition According to the Lamb Shift"

Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works), No 1(13), "Sov. radio", 1973, pp 134-135 (from RZh-Fizika, No 8, Aug 73, abstract No 8D1002 by the author)

Translation: An expression is found which gives the Lamb shift in laser emission power while simultaneously accounting for depolarizing collisions and resonance radiation capture. It is shown that the spectral line width is less than the value found without regard to these effects. A method is proposed for evaluating the degree of capture and the radiation width corresponding to transition from the excited state to the ground state. Bibliography of 7 titles.

1/1

USSR

UDC 621.378.335

VDOVIN, YU.A., GUBIN, M.A., YERMACHENKO, V.M., PROTSENKO, YE.D.

"Mode Competition At  $\bar{3}_{s2} \rightarrow \bar{3}_{p4}$  Neon Transition In A Laser With Methane Absorption Cell"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 105-107

Abstract: Previous papers of which Gubin and Protsenko were coauthors reported on the obtainment of contrasting peaks of power and frequency stabilization in a helium-neon generator at the junction  $\bar{3}_{s2} \rightarrow \bar{3}_{p4}$  ( $\lambda = 3.39$  micron) with a methane absorption cell. The high degree of contrast and contraction were obtained by virtue of the use of the effect of competition of axial modes arranged symmetrically with reference to the amplification line. The present paper studies the behavior of the intensity of one of the modes in a two-mode laser with an absorption cell and an orthogonal polarization of modes. The contrast, the width and position of the resonance peak of power relative to the center of the absorption line are determined. 4 ref. Received by editors, 1 Dec 1971.

1/1

- 77 -



USSR

UDC 612.275.1

MUSTAFIN, K. S., YERMACHKOVA, N. N., and TURGUNBAYEV, K., Chair of Faculty Therapy, Kirgiz State Medical Institute, Division of Pathomorphology, Institute of Experimental Morphology imeni A. I. Natishvili, Academy of Sciences Georgian SSR, and Oshskaya Oblast' Hospital

"Morphological Manifestations of Heart Hypertrophy at a High Altitude"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 71, pp 37-40

Abstract: Morphological changes in the heart of guinea pigs kept for periods of 3-90 days at an elevation of 3,200 m above sea level were studied. On the 3d to 15th day structural and histochemical changes developed in the myocardium that were associated with hypertrophy of the tissue. These changes were accompanied by formation of necrotic sections. Necrotic changes leading to an overdevelopment of connective tissue reached a maximum on the 15th day and decreased towards the 30th day. The content of glycogen and ribonucleoproteins in the myocardium increased. While under normal conditions the content of glycogen and ribonucleoproteins in the right ventricle is much lower than in the left, adaptation to high altitude resulted in an increase of the content of the sum of these substances in the right ventricle, so that it sometimes was greater than in the left. The hypertrophy of the myocardium was most pronounced in the

1/2

USSR

MUSTAFIN, K. S., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 71, pp 37-40

right ventricle. The morphological changes observed in the myocardium tissue were essentially the same on the 90th as on the 45-60 th days, except that they were somewhat less pronounced in the later stage. While sojourn at the high altitude produced initial damage to the myocardium, this damage gradually decreased after the 15th day. The changes observed indicated adaptation of myocardial function to the hypoxia associated with the high altitude, but this adaptation was incomplete, because some damage to tissue remained even on the 90th day.

2/2

- 63 -

YERMAK, V. D.

"The Problem of Information Models of Systems of Interaction of Man and Computer During the Performance of Creative Tasks"

Avtomatiz. Proektir. v Elektronike. Resp. Mezhdved. Nauch. Tekhn. sb. [Automation of Planning in Electronics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1971, pp 87-93, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V583 by the author).

Translation: The peculiarities are studied of a system of creative interaction between man and computer. It is pointed out that the primary peculiarity of this system is the interaction of man only with the mathematical model of the process being studied, which is invariant relative to time. The specifics of information models of "creative" systems are studied. An attempt is undertaken to find an approach to the construction of information models of creative interaction systems between man and computer. 12 Biblio. Refs.

1/1

Information Theory

USSR

UDC 681.327.21.22.621.385.832

YERMAK, V.D.

"Ergonomic Requirements for 'CRT and Light Pencil' Input-Output Devices"

Avtomatiz. Proyektir. v Elektronike. Resp. Mezhd. Nauchno-Tekhn. Sb. [Automation of Planning in Electronics. Republic Interdepartmental Scientific and Technical Collection], No. 1, 1970, pp 33-38 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 48529 from the resume).

Translation: The peculiarities of realization of an information model, perception of information, and performance of control actions by man using the "CRT and light pencil" are studied. Devices of this type have a number of advantages over other man-machine system devices, particularly in the stage of realization of control actions. Based on known results of psychological studies and experiments, requirements are developed for the most important parameters of visual information on the screen of a CRT. Certain characteristics of motion of the human arm are presented; these must be considered in developing the input of control actions using the "light pencil (pen)." 8 biblio refs.

1/1

USSR

UDC: 533.6.011

YERMAK, Yu. N., NEYLAND, V. Ya.

"Effect of Viscosity on Departure of a Shock Wave in the Case of Hypersonic Flow Around a Cylinder"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1971, 2, No 6, pp 41-47 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B315)

Translation: The authors study the influence of viscosity and thermal conductivity on departure of a shock wave from the surface of a circular cylinder in a hypersonic flow of viscous gas for the case of vortex interaction between the boundary layer and the inviscid shock layer. It is shown that in contrast to the case of vortex interaction on a sphere, the viscosity and thermal conductivity in the given case have a strong influence on the departure of the shock wave since the better part of the thickness of the shock layer is taken up by a region of slow viscous flow lying near the surface of the body. Resumé.

1/1

- 10 -

YERMAK, Yu. N.

RIN / R.160 / S. MKV '73  
Dec 72

38

Yermak, Yu. N. and V. Ya. Neyland. The effect of viscosity upon shock wave detachment during flow around a cylinder by a hypersonic stream. Uchenyye zapiski Tsentral'nogo aero-gidrodinamicheskogo instituta, v. 2, no. 6, 1971, 41-47. (RZhMekh, 5/72, #50315)

An investigation is made of the effect of viscosity and thermal conductivity upon detachment of the shock wave from the surface of a circular cylinder in a hypersonic stream of viscous gas, with vertical interaction of the boundary layer with the nonviscous shock layer. It is shown that in distinction from the case of vertical interaction on a sphere, viscosity and thermal conductivity exert a strong influence in this case upon detachment of the shock wave, since the greatest part of the shock-layer thickness consists of a region of slow viscous flow, lying near the surface of the body.

USSR

UDC 533.916

BAKAY, A. S., ~~YERMAKOV, A. I.~~, NAZAROV, N. I.

"Study of Low-Frequency Oscillations on the Basis of Amplitude Modulation of Ultrahigh-Frequency Radiation From a Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb.  
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 40-47 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G191)

Translation: It is shown that radiation from a plasma at the frequency  $\omega_{ep}$  (where  $\omega_{ep}$  is the electron plasma frequency), that appears upon the injection of an electron beam into a plasma in which a fast magnetosonic wave is excited, appears as a consequence of the nonlinear interaction of Langmuir and fast magnetosonic waves. Oscillations in plasma density lead not only to transformation of Langmuir waves into transverse waves but also to amplitude modulation of these waves. A study of amplitude modulation of ultrahigh-frequency radiation from the plasma at a frequency on the order of  $\omega_{ep}$  makes it possible to determine the spectrum of low-frequency oscillations of the plasma (their frequency is considerably less than the electron

1/2

USSR

BAKAY, A. S., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza.  
Resp. mezhved. sb., 1972, No. 3, pp 40-47

plasma frequency). In addition, one can evaluate the amplitude of low-frequency oscillations in the system on the basis of the depth of the amplitude modulation of the ultrahigh-frequency radiation.

2/2

- 47 -



USSR

UDC 533.95

BAKAY, A. S., YERMAKOV, A. I., and NAZAROV, N. I., Physicotechnical Institute, Academy of Sciences Ukrainian SSR, Khar'kov

"Study of Low-Frequency Plasma Oscillations by Amplitude Modulation of Microwave Radiation"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 12-18

Abstract: If, along with electronic Langmuir waves excited by the beam in a plasma-beam system waves propagate in the plasma whose frequencies are much less than the electronic plasma frequency, the Langmuir waves may be transformed into transverse waves with frequencies close to the electronic plasma frequency. The effective transformation of the Langmuir into transverse waves will take place on low-frequency waves which strongly disturb the plasma density. The plasma density fluctuations result not only in the transformation of the Langmuir into transverse waves but also in amplitude modulation of these waves. The Langmuir wave amplitudes and, together with them, the amplitude of the UHF emis- 1/2

- 46 -

USSR

UDC 547.834.4:543.51

YERMAKOV, A. I., SHEYNKER, Yu. N., MIKHLINA, YE. YE., YANINA, A. D.,  
YAKHONTOV, L. N., and KOSTYANOVSKIY, R. G., All-Union Scientific Research  
Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Mass Spectra of Some 3-Substituted Benzo/b/quinuclidines. III"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 825-832

Abstract: The mass spectra of 3-methoxycarbonyl-, 3-ethoxycarbonyl-, 3-(2-dimethylaminoethoxy)carbonyl-, 3-amino-, 3-hydroxymethyl-, 3-chloro-3-methoxycarbonyl-, 3-chloro-3-ethoxycarbonyl-, and 3-chloro-3-cyanobenzo-/b/quinuclidine were studied. The results indicated that fragmentation of these compounds by electron impact took place over the formation of an open molecular ion that generally resulted upon cleavage of the bridge group containing the substituent or substituents. The C-Cl group had the weakest bond in the molecular ions derived from the disubstituted compounds - hence,  $C^{\circ}$  readily split off from the Cl-Ch-X group (X=COOR, CN) with the formation of a =CH - X group.

1/1

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203710001-5"

BAKAY, A. S., et al., Ukrainskiy Fizicheskij Zhurnal, Vol 16, No  
1, Jan 71, pp 12-18

sion from the plasma prove to be modulated low-frequency oscillations, so that a study of the amplitude modulation of the UHF emission from the plasma at close-to-electron-plasma frequencies makes it possible to judge the low-frequency oscillation spectrum of the plasma. An experimental study of wave transformation and interaction in a plasma-beam system was carried out on a device consisting of a solenoid, discharge tube, exciting coil, diamagnetic probe, microwave circuit, magnetic probe, x-radiation detector, Faraday cylinder, electrostatic analyzer, and electron gun. A comparison of the depths of amplitude modulation of the UHF emission on the frequency of a fast magneto-sound wave whose amplitude is known and on the frequency of ion-sound oscillations makes it possible to valuate the amplitude of the latter.

2/2

USSR

UDC: 532.526

YEROSHENKO, V. M., YERMAKOV, A. L., KLIMOV, A. A., MOTULEVICH, V. P.,  
TERENT'YEV, Yu. N.

"Influence of Strong Injection on Stability of Flow and Transition to  
Turbulent Flow"

Teplofiz. Svoystva i Gazodinamika Vysokotemperatur. Sred. [Heat Physical  
Properties and Gas Dynamics of High Temperature Media -- Collection of Works],  
Moscow, Nauka Press, 1972, pp 56-64 (Translated from Referativnyy Zhurnal  
Mekhanika, No 12, 1972, Abstract No 12B782, by the authors)

Translation: Some general conclusions from the theory of stability using the  
method of small oscillations are studied. The use of the interferometric  
method for visualization of the area of loss of stability and the transition  
to the turbulent mode is analyzed. The data of interference measurements are  
used to determine such parameters as wavelength, frequency of development and  
phase velocity of a periodically excited motion. Quantitative data are pre-  
sented on the dependence of the point of loss of stability and critical  
Reynolds number on injection parameter. It is established that with a given  
range of injection parameter, the flow is stabilized. The dependence of the  
wave number of an unstable periodic excited motion on critical Reynolds  
number and injection parameter is analyzed. The flow mode when the transition  
1/2

USSR

Yeroshenko, V. M., Yermakov, A. L., Klimov, A. A., Motulevich, V. P.,  
Terent'yev, Yu. N., *Teplofiz. Svoystva i Gazodinamika Vy sokotemperatur. Sred.*,  
Moscow, Nauka Press, 1972, pp 56-64.

to the turbulent mode is realized through a loss of stability due to reinforce-  
ment of small oscillations and the Taylor mechanism related to penetration of  
the turbulence of the external flow into the mixing zone is studied.

2/2

USSR

UDC 532.526.4

YERMAKOV, A. L., YEROSHENKO, V. M., KLIMOV, A. A., MOTULEVICH, V. P., and THERENT'EV, Yu. N.

"Experimental Investigation of the Structure of a Turbulent Boundary Layer During the Injection of Helium"

Moscow, Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 60-67

Abstract: The method for protecting the surfaces of various structure elements, based upon the transverse delivery of a substance into the boundary layer, is popular in view of its great effectiveness. In some applications, it becomes necessary to decrease heat fluxes to the surface by a factor of several multiples of 10, and to force the mainstream away from the wall to such an extent that its concentration on the surface be negligibly small. This is realized by means of strong injection. Considerable results have recently been obtained with the use of numerical methods for calculating the interaction of a laminar stream of gas with a body during the intensive delivery of a mass from the surface. Comparison of the results of numerical calculation yields good with experimental values.

1/2

USSR

YERMAKOV, A. L., et al., Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 60-67

The present work represents a continuation of experimental research on the structure of a turbulent boundary layer during injection through a porous plate. The results of an experimental investigation of the structure of a turbulent boundary layer on a porous plate during the injection of helium are presented. The influence of the injection parameter upon the averaged and pulsation distribution of velocities and concentrations in the layer is analyzed. The sequence of the process of forcing the mainstream away is described, and the displacement parameter is given. 7 figures. 9 references.

2/2

- 18 -

USSR

YEROSHENKO, V. M., YERMAKOV, A. L., KLIMOV, A. A., MOTULEVICH, V. P., TERENT'-  
YEV, YU. N., Moscow

"Experimental Study of the Effect of Intense Blowing of Various Gases on a  
Turbulent Boundary Layer"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-  
February 1971, pp 162-167

Abstract: This article contains the results of an experimental study of the  
effect of blowing of various gases (air, CO<sub>2</sub>) on the turbulent boundary layer  
of a flat plate. The deformation sequence of the average velocity and concen-  
tration distributions of the turbulent boundary layer which occurs on variation  
of the blowing parameter in a broad range is investigated. The increase in  
thickness of the laminar sublayer during blowing without turbulization and an  
increase in the physical thickness of the boundary layer are detected. The  
experiments were performed on a gas dynamic unit with a Mach-Zender interfero-  
meter type IT-14. For the study the blowing parameter  $F = (\rho v)_w / (\rho u)_e$  where  
w refers to the conditions at the wall and e, to conditions at the edge of the  
boundary layer. All the experiments were performed under isothermal conditions  
1/3

USSR

YEROSHENKO, V. M., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-February 1971, pp 162-167

with a zero longitudinal pressure gradient. The flow was essentially subsonic.

The experiments refute the widespread published opinion that blowing of a gas into a turbulent boundary layer turbulizes the laminar sublayer. This obviously does not always occur and depends on the size of the pores of the penetrable surface. The investigated two stages of deformation of the velocity and concentration profiles (boundary layer and jet type) are separated by an intermediate stage of deformation characterized by constant values of the velocity and concentration gradients along the entire zone of mixing both near the wall and in the core. By analyzing the curves representing the dimensionless velocity and concentration profiles as functions of the carbon dioxide gas blowing parameter it can be stated that the dissimilarity of the velocity and concentration profiles in the presence of weak blowing of carbon dioxide gas is caused by the presence of a density profile across the boundary layer --  $\rho_w/\rho_e = 1.5$ . It is pointed out that if this is so it is indifferent how the density profile is created (for example, it can be obtained

2/3



USSR

YEROSHENKO, V. M., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-February 1971, pp 162-167

with uniform blowing but in the presence of heat exchange). It is also interesting to note that the concentration profiles in the presence of weak blowing of carbon dioxide gas are also deformed by power laws.

3/3

USSR

UDC 533.601.34

YERMAKOV, A. L., YEROSHENKO, V. M., KLIMOV, A. A., MOTULEVICH, V. P., and  
TERENT'YEV, Yu. N.

"Experimental Investigation of Flow Stability During Intensive Injection"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6,  
Nov-Dec 72, pp 114-123

Abstract: Results are presented of an experimental investigation of the loss of flow stability in boundary layers forced aside by injection. The experiments did not confirm the widely held opinion concerning the strong destabilizing influence of injection. Moreover, a flow-stabilization effect is noted when injection intensity is increased; this effect originates due to a decrease in the value of velocity shear in the zone of intensive viscous interaction. A semiempirical formula is obtained for determining the critical Reynolds number at the point of loss of stability. Consideration is given to the development of disturbances, and a correspondence is shown between the experimental data and calculations by the method of small vibrations for an ideal fluid. An analysis is made of the transition to turbulence through stability loss due to the selective intensification of small vibrations and, simultaneously, to the penetration of turbulent

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USSR

YERMAKOV, A. L., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6, Nov-Dec 72, pp 114-123

disturbances of the external stream into the shear zone. The high flow stability in shear layers forced aside by injection is explained by the stabilizing influence of the elastic gaseous medium over which they develop. Nine figures, eight references.

2/2

- 2 -

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--THIN LAYER CHROMATOGRAPHY OF PRECIOUS ELEMENTS. SEPARATION OF  
CHLORIDE COMPLEXES OF PRECIOUS METALS BY PARTITION CHROMATOGRAPHY -U-  
AUTHOR-(03)-VOLYNETS, M.P., YERMAKOV, A.N., NIKITINA, L.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 294-300

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THIN LAYER CHROMATOGRAPHY, PLATINUM, PALLADIUM, RHODIUM, GOLD,  
IRIDIUM, COMPLEX COMPOUND, CHEMICAL SEPARATION, COBALT, COPPER, IRON,  
NICKEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0917

STEP NO--UR/0075/70/025/002/0294/0300

CIRC ACCESSION NO--AP0113752

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 015

CIRC ACCESSION NO--AP0113752

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

ABSTRACT. THIN LAYER CHROMATOG. CAN BE USED SUCCESSFULLY FOR THE RAPID SEPN. OF TRACE AMTS. OF PRECIOUS METALS. MULTICOMPONENT MIXTS. CONTG. PT, PD, RH, IR, AND AU CAN BE SEPD. INTO 3 OR 4 GROUPS BY A PARTITION CHROMATOGRAPHIC METHOD ON SILICA GEL BY USING BU SUB3 PD SUB4, ME SUB2 CO, CYCLOHEXANE, AND MECJET AS MOBILE SOLVENTS. MAX. DIFFERENCES IN THE R SUBF EXIST IN 4N HCL WHEN USING BU SUB3 PD SUB4, IN 6N HCL WHEN USING CYCLOHEXANE, IN 2N HCL WHEN USING ME SUB2 CO, AND IN 2-4N HCL WHEN USING MECJET. THE SEPN. OF NONPRECIOUS METALS (CU, CO, FE, NI) IS POSSIBLE UNDER THE SAME CONDITIONS AS FOR PT METALS. TRACE AMTS. OF AU, PT, AND PD CAN BE DETD. DIRECTLY BY REFLECTANCE DENSITOMETRY WITH A RELATIVE STD. DEVIATION OF 2.9, 18.5, AND 10.2PERCENT, RESP.

FACILITY: INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

S/O19/61/000/020/038/093

A152/A126

9,6000

AUTHOR: Yermakov, A. N.

TITLE: Method of measuring the conductance of ferromagnetic materials

PERIODICAL: Byulleten' izobreteniy, no. 20, 1961, 33

TEXT: Class 21e, 3710, no. 141947 (723057/24 of March 23, 1961). A method of measuring the conductance of ferromagnetic materials based on the measurement of the complex resistance of a coil being coaxial with the sample or superposed upon the latter and is connected into one of the arms of an A.C. bridge, differing from others in that in order to improve the accuracy of measurements for compensating the effects of magnetic permeability and the sample's geometrical dimensions, two additional coils superposed upon the sample provide information on the sample's dimensions and magnetic permeability; this information is transformed into variations of frequencies of a HF and a LF generator, whose voltages are used together with a subtractive circuit for compensating the main coil's signal component produced by the factors being compensated.

Card 1/1

USSR

UDC 632.951:633.32

BESHKUROV, V. P., YERMAKOV, A. V., Lipetsk Experimental Station

"Effectiveness of Insecticides against Clover Seedlings Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 12, Dec 70, pp 31-33

Abstract: The effect of various preparations on seedling pests has been reported: on the clover seed cater weevil, sweet clover weevil, various types of aphids, and on useful insects. Maximal harvest of clover seedlings could be obtained under conditions prevailing in Lipetsk region when the seedlings were treated with sevane and dipterex. Sevane and dipterex were effective against pests with oral gnawing apparatus and not effective against aphids; on the other hand, carbophos, trichlorometaphos-3, and hexachloran destroyed the aphids but were inactive against pests with oral gnawing apparatus. It was found that the most effective was the use of vophatox against the complex of clover seedling pests.

1/1

USSR

UDC: 669.24:538.248

~~YERMAKOV, A. Ye., IVANOV, O. A., SHUR, Ya. S., GRECHISHKIN, R. M., IVANOVA, G. V.,~~ Institute of Physics of Metals, UNTs, Academy of Sciences of the USSR, Ural State University imeni V. I. Lenin

"Magnetic Properties of Single-Crystal Nickel Powders"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 558-563

Abstract: The authors investigate the magnetic properties of nickel single crystal spherical particles as a function of diameter from 22 to 320 nm. It is shown that as particle size increases, the coercive force and residual induction first increase, then decrease after reaching a maximum. The magnetic structure goes through three stages with an increase in particle size from 22 to 320 nm: superparamagnetic, monodomain and polydomain. The authors thank M. Ya. GEN for procedural guidance in making the particles.

1/1



USSR

UDC 669.24.538.221

IVANOV, O. A., YERMAKOV, A. YE., and SHUR, YA. S., Institute of Metal Physics, Ural National Center of the Academy of Sciences USSR, and Ural State University imeni A. M. Gor'kiy

"Temperature Dependence of Magnetic Properties of Fine Singlecrystal Nickel Powders"

Sverdlovsk, Fizika Metallov i Metallovedeniya, Vol 33, No 4, Apr 72, pp 752-757

Abstract: The effect of magnetostatic interaction on magnetic properties has been evaluated on the basis of a study of the temperature dependence of magnetic properties of fine nickel powders. The investigation included magnetic structures from superparamagnetic to nearly multidomain structures in the 220 to 3200 Å interval. It was found that for the over 300°K temperature range the magnetic properties of powders are basically determined by the chain-like alignment of particles which results in an anisotropy of the demagnetizing field. At temperatures below 300°K, in addition to the indicated anisotropy, the magnetic properties are essentially affected by the magnetocrystalline anisotropy. A possible mechanism of the remagnetization of such chain-like structures is discussed. A drop of the residual  
1/2

USSR

IVANOV, O. A., et al., Fizika Metallov i Metallovedeniya, Vol 33, No 4,  
Apr 72, pp 752-757

magnetization with the temperature is observed for pseudosuperparamagnetic particles and particles with maximum coercivity at  $T \gtrsim 300^{\circ}\text{K}$ , this drop being effected by the appearance of the superparamagnetic phase. Apparently, The same sources cause the anomalous shape of the temperature curve of coercivity with the decreasing size of particles. Six illustrations, four formulas, twelve bibliographic references.

2/2

- 63 -

USSR

UDC 669.76:538.221

YERMAKOV, A. Ye., IVANOV, O. A., and SHUR, Ya. S., Institute of Physics of Metals, Ural National Center of the Academy of Sciences USSR, and Ural State University imeni A. M. Gor'kiy

"Rotational Hysteresis in Single Crystal Nickel Powders"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1182-1187

Abstract: A study was made of the temperature dependence of rotational hysteresis in single-crystal nickel powders with 220-3200 Å particle diameters. The magnetic properties of nickel powders were found to be related to the effective constant of magnetic anisotropy produced by magnetic interaction of particles. The remagnetization mechanism of nickel powders for 300 and 450 °K remains constant, but the magnetic anisotropy constant for these temperatures takes values of  $5 \cdot 10^4$  erg/cm<sup>3</sup> and zero, respectively. The type of remagnetization in nickel powders with particle sizes of  $d \leq 1100$  Å can be qualitatively explained by approximation of the "twisting" and the chain models of spheres. In powders with  $d > 1100$  Å particle sizes, the character of remagnetization is more complex. The exchange anisotropy, dependent on the presence of NiO, was found to have no effect on magnetic properties. Five figures, fourteen bibliographic references.

1/1

- 24 -

USSR

550.838.002.56:538.523

VEDENEV, M. A., DROZHZHINA, V. I., YERMAKOV, A. YE.

"Irreversible Hysteresis Phenomena in Ferrite Core Probes"

Geofiz. Apparatura [Geophysical Apparatus -- Collection of Works], No. 41, Leningrad, Nedra Press, 1969, pp 36-47 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.1359, unsigned)

Translation: It is shown that at comparatively low excitation current frequencies, the value of hysteresis drift  $H_K$  with a fixed value of relative field amplitude of the excitation field  $N = H_M/H_{MO}$  is practically independent of the geometric dimensions of the cores ( $H_{MO}$  is the amplitude of a field of optimal sensitivity). The dependence of ratio  $H_K/H_{KM}$  on  $H_H$  produced with an interaction between the cores of the ferrite probe and without an interaction with identical degree of overexcitation  $n$  remains approximately the same. There is a statistical spread of quantity  $H_K$ ; for one group of cores, manufactured from the same melt and subjected to the same heat treatment, hysteresis zero drifts differing by approximately an order of magnitude can be expected. Of the three materials investigated, the most favorable material from the standpoint of hysteresis

1/2

VEDENEV, M. A., et al, Geofiz. Apparatura, No. 41, Nedra Press, 1969, pp 36-47

zero drift is type 79NMA. Increasing the excitation field frequency within certain limits causes a slight increase in  $H_K$ ; as the frequency increases, the function  $H_K(f)$  is linear. Two tables, six illustrations, five biblio. refs.

2/2

127

USSR

UDC: 621.378.325

BALASHOV, I. F., BEREZIN, B. G., and YERMAKOV, B. A.

"Peculiarities in the Generation of Monopulse Radiation With Non-Instantaneous Switching of the Laser Resonator"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 2, 1972, pp 385-390

Abstract: "Instantaneous switching" is defined as a type of laser operation in which the time interval for switching in the resonator is less than the interval required for development of the oscillation to produce maximum monopulse radiation. For obtaining optimal energy characteristics as well as stabilization of the monopulse energy with variations in pumping energy, however, non-instantaneous switching is sometimes desirable. In this paper, the peculiarities of non-instantaneous switching are theoretically and experimentally investigated when the switching is done by an optical-mechanical gate which varies the Q of the resonator. The energy of the monopulse radiation is obtained as a function of the pumping energy for a given type of loss variation from known equations. The experimental part of the work involved the use of a ruby laser and a laser using KGSS-46-2 glass; the effect of displacing the resonator mirror during oscillation development was determined through fast switching by a Kerr gate. The authors

1/2

USSR

UDC: 621.378.325

BALASHOV, I. F. et al, Zhurnal tekhnicheskoy fiziki, No 2, 1972,  
pp 385-390

thank V. A. Berenberg, V. V. Blagoveshchenskiy, and V. A. Telenkevich for their participation in the experiments.

2/2

- 51 -

USSR

UDC 536.212

FRIDLENDER, B. A., NESHFOR, V. S., YERMAKOV, B. G., SONOLOV, V. V., State Institute of Applied Chemistry, Leningrad

"Temperature and Heat Conductivity of Pyrolytic Titanium and Niobium Carbides and Titanium Nitride at High Temperature"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 24, No 2, Feb 73, pp 294-296.

Abstract: Results are presented from measurement of the temperature conductivity and calculation of heat conductivity of monolithic specimens of  $TiC_{0.94}$ ,  $NbC_{0.77}$  and  $TiN_{0.94}$ , produced by chemical gas-phase deposition, in the temperature range from 1500 to 2200-2400°C. The specimens of titanium and niobium carbide had large-crystal columnar dendritic micro-structure, the long axes of the crystals oriented perpendicular to the surface of deposition. The specimens of titanium nitride had similar micro-structure, but were not dendritic. The temperature and heat conductivities of  $TiC$  and  $NbC$  are significantly lower than that of  $TiN$ , resulting from the significantly lower electrical conductivity of the carbides and the correspondingly lower contribution of electron heat transport, with similar contributions of lattice heat transport.

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USSR

UDC 621.762.001:669.296\*784+295\*784

DAVYDOV, V. S., YERMAKOV, B. G., and SOKOLOV, V. V.

"Technique of Producing, and Certain Properties of Pyrolytic Carbides of Zirconium and Titanium"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 20-23 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G374 by authors)

Translation: An investigation is made of the conditions under which dense deposits, homogeneous in composition, of titanium and zirconium carbides are produced by the method of precipitation from a gaseous mixture. Optimum conditions are worked out for the processes of carbide precipitation from the gaseous phase containing vapor of a higher metal chloride, methane, and H<sub>2</sub>. The authors consider the effect of various process parameters (temperature, composition of gaseous phase, consumption of vapor-and-gas mixture) on precipitation rate, structure, and chemical composition of the resultant carbides. Three illustrations. Two tables. Bibliography with five titles.

1/1

- 25 -

USSR

UDC 621.396.69:621.318

PETROVA, I. I., YERMAKOV, B. N.

"On Peculiarities of the Behavior of  $\text{Co}_2\text{Be}_3\text{Fe}_{24}\text{O}_{41}$  Over a Broad Temperature Range"

Elektron. tekhnika. Nauchno-tekhn. sb. Ferrit. tekhn. (Electronic Technology. Scientific and Technical Collection. Ferrite Technology), 1970, vyp. 1 (23), pp 86-89 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V41)

Translation: The authors study initial permeability  $\mu_0$  as a function of temperature in the interval from  $-196$  to  $+420^\circ\text{C}$  in grain-oriented specimens of  $\text{Co}_2\text{Be}_3\text{Fe}_{24}\text{O}_{41}$ . It is shown that the temperature dependence of the energy of crystallographic anisotropy has a decisive effect on the behavior of  $\mu_0(t)$  curves. Pronounced temperature hysteresis is observed in specimens which contain a considerable number of bivalent iron cations. Resumé.

1/1

- 92 -

USSR

UDC 548.4:548.74

YERMAKOV, G. A., NADGORNYY, E. M.

"The Effect of Light on Dislocation Mobility in Gamma-Irradiated Alkali Halide Crystals"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya (News of the Academy of Sciences USSR, Physics Series), Vol 35, No 7, 1971, pp 1422-1424

Abstract: The subsonic mobility of dislocations in alkali halide crystals is highly sensitive to crystal structure and highly dependent on the state and distribution of point defects. Study of mobility processes thus yields information on the states and the distribution of defects after irradiation and explains certain light and heat-induced changes related to the centers.

The effect of light on the rate of individual screw dislocations is studied in gamma-irradiated KCl and NaCl crystals. The effect of light on the motion of dislocations is called dislocation of photomobility. The ratio of dark mobility to light mobility for both crystals depends exponentially on shear stress (the ratio decreases as stress increases).

1/2

USSR

YERMAKOV, G. A. et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 7, 1971, pp 1422-1424

The effect is observed only in colored crystals and depends on temperature and the intensity and spectral composition of the incident light, reaching maximum under monochromatic light in the F-band. Irradiation seems to change the F-centers into stronger retarding centers in the immediate vicinity of dislocations. The authors speculate on the nature of these centers.

Orig. art. has 2 figs. and 7 refs.

2/2

- 120 -