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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--COLORING OF MOLTEN GLASS -U-

AUTHOR--(05)-SEMENOV, M.N., AZAROVA, YE.M., PLAKSINA, A.M., TIMOSHENKO, I.V., GOROKHOVSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,025

REFERENCE--OTKRYTIYA, IZJIBRET., PROM. CBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, OPTIC PROPERTY, GLASS PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1802

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

CIRC ACCESSION NO--AA0132068

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOLTEN GLASS WAS MIXED WITH A METAL OR ALLOY MELT (INERT IN RELATION TO THE GLASS) HAVING A DIFFERENT D., AND CONTG. AN ADDITIVE OF METALS, THE IONS OF WHICH COLOR THE GLASS. FACILITY: SARATOV STATE SCIENTIFIC RESEARCH INSTITUTE OF GLASS.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

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ZALESOV, V. S., FRIDMAN, A. L., IVSHINA, T. N., IVSHIN, V. P., TARTAKOVSKIY, V. A., PLAKSINA, A. N., and BOLTIK, T. V.

"Synthesis and Study of the Physiological Activity of Organomercury Nitro Compounds. I. Analysis of the Molecular Complexes of bis-(Trinitromethyl)-mercury"

Izv. Yestestvennonauchn. in-ta pri Permsk. un-te (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 10, pp 159-168 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstract No 9 F1876 from the résumé)

Translation: Synthesized molecular complexes of bis-(trinitromethyl)-mercury with diethyl-N-nitrosamine, diethylsulfone, dimethylsulfoxide, tetrahydrofuran, dioxane, and hexamethylenetetramine were found to be lacking in neurotropic, anticonvulsive, and antitremor action in mice and rats but possessing weak antimicrobial activity (*E. coli*, staphylococci) and high toxicity for mice after intraperitoneal injection (LD₅₀ 14.8 to 24.5 mg/kg or peroral administration (55 to 124 mg/kg) and for rats after peroral administration (51.4 to 305 mg/kg). Two preparations at toxic doses manifested weak analgesic action.

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USSR

UDC: 621.382.22

PLAKSIY, V. T., SVETLICHNYY, V. M., and PERESYN'KO, O. A.

"Inertia of Point-Contact UHF Detectors of BiSb Alloy"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971,
pp 588-589

Abstract: In this brief communication, the thermal time constant characterizing the BiSb alloy point-contact detector is defined as the time required for establishing a steady-state temperature distribution of the crystal lattice in yielding or accepting UHF power. This time constant is found by solving the heat conduction equation of the BiSb device and getting an expression for the temperature distribution of an ideally thermoconducting sphere in a medium of specified thermal conductivity, density, and specific heat capacity. The time dependence of the crystal lattice temperature after the application of a particular level of UHF power is examined. The authors find that a detector made of Bi₉₀Sb₁₀, to which UHF power modulated by short rectangular pulses is applied, detects the video signal envelope of 100 ns duration without noticeable distortion of the pulse shape.

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USSR

UDC 621.396.669.8

DANILENKO, A. I. and PLAKSIYENKO, V. S.

"Device for Detecting Frequency-Modulated Radio Pulses in Noise"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 35, 1971, p 180

Abstract: This device contains two channels, one consisting of series-connected band filter, detector, and inverter, the other of band filter, detector, summer, differentiating circuit, and threshold device, with the second summer input connected to the output of the neighboring channel inverter. This device is distinguished by the connection of a level-controlling system between the band filter and the detector. The controlling inputs of this system are connected to the outputs of the two channel detectors, thus improving the noise immunity. The patent is claimed by the Taganrog Radio Engineering Institute.

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Receivers and Transmitters

USSR

UDC 621.396.275.4

DANILENKO, A. I. and PLAKSIYENKO, V. S.

"Improving the Reliability in Noncoherent Frequency Telegraphy Signal Reception"

Kiev, Izvestiya VUZ--Radioelektronika, vol. 14, No. 7, 1971, pp 790-794

Abstract: This paper analyzes a method of increasing the noise stability of a broad-band receiver based on the statistical processing of realizations of the signal obtained at the filter outputs. Such processing is impossible for a narrow-band receiver because of the correlation of the realization values by extension of a single communication element. The block diagram of the receiver for this method is given and discussed quantitatively under the limitations that the voltages at the outputs of the two linear detectors in the receiver are proportional to the mathematical expectation of the envelope processes at the detector inputs, and that the transfer factors of the receiver regulator blocks fall asymptotically to zero with an increase in the controlling voltages of each. Oscillograms are given of the signals obtained at the output of this receiver compared to the output signals of ordinary broad-band telegraph signal receivers.

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USSR

UDC: 621.397

KRIVOSHEYEV, M. I., PLAKSYUK, S. G., SHLAYN, A. I.

"A Device for Measuring Distortions of Television Test Signals"

USSR Author's Certificate No 263039, filed 2 Dec 68, published 1 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G109 P)

Translation: A device is proposed for measuring distortions of TV test signals (see RZh-Radiotekhnika, 1969, 10G1). To improve precision and provide for automatic measurement of both the total background noise and its additive and modulation components, a subtraction voltage module and four-input commutator are connected to the control module, and a signal divider is connected between the circuit for restoring the DC component and the control module.

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USSR

UDC: 621.317:621.397.132(088.8)

KRIVOSHEYEV, M. I., DVORKOVICH, V. P., PLAKSYUK, S. G., BOLOVINTSEV, Yu. M.

"A Device for Measuring the Parameters of Color Television Test Signals"

USSR Author's Certificate No 263699, filed 5 Aug 68, published 15 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G164 P)

Translation: This Author's Certificate introduces a device for measuring the parameters of color TV test signals. The device contains a control module, a subcarrier frequency reference signal oscillator, upper and lower frequency filters, and an analog-digital converter. For purposes of large-scale automation of measurements of the parameters of test signals coded in the SECAM, NTSC or PAL systems with simultaneous output of the results of measurements on different chromatic bands or in adjacent lines in digital form, the analog-digital converter is connected to the lower frequency filter through a module for analog processing of the brightness signal, and to the upper frequency filter through the module for analog processing of chrominance signal levels which is connected in parallel with a module for FM or PM conversion of the chrominance signal. The conversion module is controlled by a recognition circuit of the coding type.

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USSR

UDC 576.8.095.18:615.779.90

FLAKUNOV, V. K., and LOPATIK, M. D.

"Biochemical Foundations of the Resistance of Microorganisms to Antibiotics"

Uspekhi Mikrobiologii, pp 211-225

Abstract: This review is devoted to special features of the metabolism of antibiotic-resistant microorganisms. A classification of resistance on genetic and biochemical principles is proposed. Consideration is given to instances of resistance caused by antibiotic inactivity, changes in the permeability of bacterial cells, and by changes in intracellular metabolic processes. A separate section is devoted to phenotype resistance.

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UDC 576.851.25.2.095.4:615.779.9

USSR:

KOZYREVA, L. F., and PLAKUNOV, V. K. Biology and Soil Faculty and Chair of Microbiology, Moscow State University

"Reasons for the 'Residual' Growth of Staphylococcus aureus 209 in the Presence of 'Bacteriostatic' Concentrations of Antibiotics Which Inhibit Protein Synthesis"

Moscow, Mikrobiologiya, No 2, 1971, p 311-316

Abstract: The growth rate of Staphylococcus aureus 209, a strain normally sensitive to antibiotics, is 5 to 15% of the control in the presence of erythromycin, chlortetracycline, or levomycetin at concentrations (50 to 100 $\mu\text{g/ml}$) well above those normally regarded as "bacteriostatic." The "residual" growth is accompanied by an increase in the total number of living cells, biomass, and protein synthesis. Resistant mutants do not arise during growth nor are there any population shifts toward microbial cells less sensitive to antibiotics. Microbial populations are known to be heterogeneous and incubation with an antibiotic may stimulate the multiplication of slow-growing cells, in which the process of protein synthesis remains resistant to the antibiotic.

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USSR
MATHEMATICS

Differential & Integral Equations

USSR

UDC 517.9

PLAMENEVSKIY, B. A.

"On the Existence and Asymptotic Behavior of Solutions of Differential Equations With Unbounded Operator Coefficients in a Banach Space"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Matematicheskaya, Vol 36, No 6, Nov-Dec 72, pp 1348-1401

Abstract: The article, which is a continuation of previous articles by the author and V. G. MAZ'YA on the asymptotic behavior of solutions of differential equations in a Hilbert space and differential equations with operator coefficients, proves theorems on the existence and uniqueness of the solution of the equation

$$L(D)u \equiv D^l u(t) + \sum_{j=0}^{l-1} a_{l-j} D^j u(t) = f(t), \quad -\infty < t < +\infty, \quad D_t \equiv \frac{d}{dt}, \quad (1)$$

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USSR

PLAMENEVSKIY, B. A., Izvestiya Akademii Nauk SSSR, Seriya Matematicheskaya, Vol 36, No 6, Nov-Dec 72, pp 1348-1401

with unbounded operator coefficients in a Banach space. These theorems are used to derive asymptotic formulas, given $t \rightarrow +\infty$, for solutions of the equation with variable coefficients

$$L(t, D_t)u \equiv D_t^l u(t) + \sum_{j=0}^{l-1} a_{l-j}(t) D_t^j u(t) = 0, \quad t > T. \quad (2)$$

The author considers classes of equations (1), (2) such as occur in studying the behavior near the boundary of solutions of the Dirichlet problem for quasielliptic equations.

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- 1 -

USSR

PLAMENEVSKIY, B. A., Izvestiya Akademii Nauk SSSR, Seriya Matematicheskaya,
Vol 36, No 6, Nov-Dec 72, pp 1348-1401

Section 1 of the article describes operators which do not depend on t , defines the fundamental solution of operator $D_t - A$, and gives the simplest estimates for this solution. Section 2 proves a theorem on the boundedness of an integral operator. In both these sections the author largely follows M. A. YEVGRAFOV's working scheme. The theorem on the boundedness of an integral operator is used in Section 3 to prove the existence and uniqueness of the solution of equation (1) and the equation

$$D_t U(t) - AU(t) = F(t), \quad -\infty < t < +\infty, \quad (3)$$

Section 4 considers equation (2) with variable coefficients, which is reduced to the equivalent first-order system. This system is then "split." Section 5 contains fundamental lemmas, and Section 6 proves the asymptotic formula for solutions of system (3).

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UDC: None

USSR

PLAMENEVSKIY, B. A.

"Asymptotic Behavior of Solutions to General Boundary Value Problems for Quasi-Elliptical Equations in a Cylinder"

Moscow, Uspekhi Matematicheskikh Nauk, vol 27, No 6, 1972, pp 247-248

Abstract: This paper, reported at a meeting of the Moscow Mathematical Society, is a study of the asymptotic behavior, as $t \rightarrow +\infty$, of solutions to the following problem:

$$L(x, t; D_x, D_t)u \equiv D_t^{\frac{1}{2}}u(x, t) + \sum_{j=0}^{\frac{1}{2}-1} a_{\frac{1}{2}-j}(x, t; D_x) D_t^j u(x, t) = 0$$

$$(x, t) \in \Omega \times \mathbb{R}^1, D_t = \frac{1}{i} \frac{\partial}{\partial t}, D_x = \left(\frac{1}{i} \frac{\partial}{\partial x_1}, \dots, \frac{1}{i} \frac{\partial}{\partial x_n} \right)$$

$$B_j(x, t; D_x, D_t)u|_{\partial\Omega \times \mathbb{R}^1} \equiv \sum_{k=0}^{\frac{1}{2}-j} b_{jk}(x, t; D_x) D_t^k u|_{\partial\Omega \times \mathbb{R}^1} = 0,$$

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UDC: None

USSR

PLAMENEVSKIY, B. A., Uspekhi matematicheskikh nauk, vol 27, No 6, 1972, pp 247-248

where $t > T$, Ω is the limiting region of the n -dimensioned Euclidean space R^n with limits $d\Omega$; $a_j(x, t; D_x)$ and $b_{jk}(x, t; D_x)$ are differential operators in Ω . The boundary of the region and the operator coefficients are assumed sufficiently continuous. It is further assumed that the problem quoted above is quasi-elliptical; i.e., that the polynomial $\hat{L}(x, t; \xi, \lambda)$ does not vanish for $|\xi| + |\lambda| > 0$, and operators $\{L, B_j, j = 1, \dots, p\}$ are connected through the Shapiro-Lopatinskiy condition. The problem is compared with the boundary value problem with the parameter in Ω .

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- 5 -

Acc. Nr: **AP0044180**

Ref. Code: **UR9115**

PRIMARY SOURCE: **Ortopediya, Travmatologiya i Protezirovaniye,**
1970, Nr 1, pp 42-46

FUNCTIONAL APPARATUSES OF THE UPPER EXTREMITIES

E. T. Plamm and L. A. Savel'yev

The article is a review of functional apparatuses of the upper extremity. Various types of powered apparatuses with external sources of energy are analyzed. A classification and fields of application of control systems for powering devices are submitted. The expediency of utilization of the damaged extremity itself as the source of control signals is founded. This may be realized with help of bioelectrical control systems. The features of bioelectrical signals of paralyzed muscles and the difficulties of control organization with aid of such signals have been shown. The authors present a description and comparison of the control systems for powering the apparatus, one of which has been realized at the „Los Amigos“ Clinic (California, USA), and the other — at the Central Institute of Prosthetics and Prosthesis Construction. The actuality of construction of functional apparatuses with several pairs of controllable motions is emphasized.

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REEL/FRAME
19770665

USSR

UDC 616.988.6-078-093+576.856.63.093.35

NAGAYEVA, L. I., and PLAIDERE, E. M.

"A Study of Sensitivity of MS-1 Cells to Some Viral Strains

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 5, (274), 1970, pp 49-52

Abstract: MS-1 cells were obtained from a mouse tumor which retained its oncological characteristics after 84 passages. The sensitivity of this cell line to a series of viruses was tested.

It was found that MS-1 cells have a high degree of sensitivity to the following viruses which cause a marked cytopathic reaction, influenza A (strain WSN), vaccinia, and Sindbis virus.

MS-1 cells were insensitive to the following strains of viruses: influenza A -- Leningrad strain, influenza B -- Singapore, Tokyo and Johannesburg strains, ECHO (4,7,11,16), the virulent Radom strain, and vaccinal H strain of Newcastle disease virus, and the West Nile fever virus.

1/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--MECHANISM OF THE SEPARATION OF LIQUID SOLUTIONS DURING EVAPORATION
THROUGH POROUS MEMBRANES -U-

AUTHOR--(03)-VOLGIN, V.D., DYTNERSKIY, YU.I., PLANOVSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(2), 271-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POROSITY, CHEMICAL SEPARATION, EVAPORATION, ALIPHATIC ALCOHOL,
CELLULOSE RESIN, ACETATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3001/0140

STEP NO--UR/0455/70/004/002/0271/0275

CIRC ACCESSION NO--AP0125956

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 017

CIRC ACCESSION NO--AP0125956

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

ABSTRACT. THE CONC. PROFILES FOR 3 MODELS OF MEMBRANE SEPN. WITH HIGH PORE, CAPILLARY PORE AND POLYMER MEMBRANES ARE DISCUSSED. THE SEPN. MECHANISM OF WATER SOLNS. OF ME, ET, PR, BU, ISO-BU ALCS. AND OF ACETONE BY MEANS OF 2 DIFFERENT CELLULOSE ACETATE MEMBRANES WAS INVESTIGATED. THE DEPENDENCE OF THE EVAPN. RATE, THE SELECTIVITY, AND THE SEPN. COEFFS. ON THE MEMBRANE PRESSURES ARE GRAPHICALLY PRESENTED.

FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP 0045529

Abstracting Service: 4-70

Ref. Code:

UR0455

© BIOLOGICAL ABST

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80816v Kinetics of mass transfer during the fractional distillation of a methanol-ethanol-water mixture. Shefanovskaya, N. V.; Planovskii, A. N.; Orlov, B. N. (Mosk. Inst. Khim. Mashinostroyeniya, SSR). Teor. Osn. Khim. Tekhnol. 1970, 4(1), 56-62 (Russ). Mass transfer was studied during the fractional distn. of a MeOH-EtOH-H₂O mixt. on a 6-plate column, diam. 170 mm, at 1 atm. A thorough mixing of the liq. on 1 plate as well as the equil. between the liq. and the vapor at the phase interface were assumed. The mass-transfer coeff. (*k*) of an individual component did not depend on the concn. of other components. The inverse $1/k$ depended linearly on the inverse of the slope of the resp. distn. line. Slopes of this linear dependence were the same for all components and in the whole concn. range.

Karel A. Hlavaty

MT

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REEL/FRA
19780497

7

Food Technology

2

USSR

UDC 612.392.9:612.398.3-083

SLONIMSKIY, G. L., BRAUDO, Ye. Ye., YERTANOV, I. D., TOLSTOGUZOV, V. B.,
BONDAREVA, E. S., and PLASHCHINA, I. G., Laboratory of Physics of Polymers,
Institute of Elemento-Organic Compounds, Academy of Sciences USSR

"Susceptibility of Proteins in New Food Products to Attack by Proteolytic
Enzymes"

Moscow, Voprosy Pitaniya, No 6, 1970, pp 25-31

Abstract: The susceptibility of proteins in different kinds of synthetic caviar (based on casein, evaporated milk, etc.) and synthetic groats to attack by proteolytic enzymes of the gastrointestinal tract in vitro was compared with the susceptibility of the original protein mixtures used to make the caviar and groats. The susceptibility of proteins to attack by pepsin in all the kinds of caviar studied was higher than that of the proteins in the original mixture. The degree of trypsin and chymotrypsin proteolysis of the pepsin-digested proteins in the caviar was equal to or higher than the degree of proteolysis of the pepsin-digested original protein mixtures. The degree of pepsin proteolysis of proteins in the synthetic groats was equal to or lower than the degree of proteolysis of

USSR

SLONIMSKIY, G. L., et al, Voprosy Pitaniya, No 6, 1970, pp 25-31

the original protein mixtures. The degree of trypsin proteolysis of the pepsin-digested proteins in the groats was equal to the degree of proteolysis of the pepsin-digested original protein mixtures.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTROCHEMICAL FLUORINATION OF DIMETHYLANILINE,
DIMETHYLCYCLOHEXYLAMINE, AND N,N-DIMETHYLPENTAFLUOROANILINE -U-
AUTHOR-(05)-PLASHKIN, V.S., PUSHKINA, L.N., MERTSALOV, S.L., KOLLEGOV,
V.F., SOKOLOV, S.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1006-11
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORINATION, ANILINE, AROMATIC AMINE, NUCLEAR MAGNETIC
RESONANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1345 STEP NO--UR/0366/70/006/005/1006/1011
CIRC ACCESSION NO--AP0135019
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROCHEM. FLUORINATION OF THE TITLE COMPS. AT MINUS 20DEGREES GAVE IN ALL CASES CF SUB3 (CF SUB2) SUB5 N(CF SUB3) SUB2 AND N,N-DIMETHYLPERFLUOROCYCLOHEXYLAMINE. THE YIELDS AND RELATIVE AMTS. OF THESE COMPS. VARY WITH THE STARTING MATERIAL AND THE REACTION TIME. NMR SPECTRA OF THE PRODUCTS ARE DISCUSSED. FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.382

PLASKIY, V. T., ZAKHAROV, A. P., SVETLICHNYY, V. M., STAROSTENKO, V. V.

"High-Frequency Noises of a Metal-Semimetal Point Contact"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 657-659

Abstract: The relative noise temperature of the point contact formed by a tungsten point with rounding radius of a few microns and a single crystal specimen of bismuth antimonide is experimentally determined by measurements in the 3-cm band by using P5-10 low-level power meters. Analysis of the results shows that possible noise sources may be thermal noises of the internal resistance of the semimetal and of the contact itself, noises due to fluctuations in the thermoelectric voltage, and also noises due to non-uniform passage of the charge carriers through the potential barrier at the metal-semimetal interface.

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USSR

UDC: None

LUBENETS, V. D., PLASTININ, P. I., MOISEYENKO, L. A., and GRIGOROV, V. P.

"Rotor-Piston Compressor"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 33, 1972, p 77, Author's certificate No (11)357371

Abstract: The compressor contains a three-sided rotor with a cylindrical valve, turning inside a body with an epitrochoid inner surface. The rotor and its valve produce a step-wise cylindrical flow to increase the compressor's capacity. A diagram of the device is provided.

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USSR

GUBANOVA, O. I., LUNEV, V. V., PLASTININA, L. N., Moscow

"On Central Separation Zone in a Supersonic Underexpanded Jet Impinging Against a Wall"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No. 2, March-April, 1971, pp 135-138

Abstract: An experimental investigation of the interaction between the supersonic underexpanded jet and a wall normal to its axis has been conducted.

A central separation zone occurs when the distance from the nozzle to the wall is six times the nozzle exit radius. The pressure in this zone is lower than in the surrounding one.

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USSR

GUBANOVA, O.I., etal, Izvestiya Akademii Nauk SSR, Mekhanika Zhidkosti i Gaza, No 2, March-April 1971, pp 135-138

The experiments were conducted with the Mach number of 2.0 and the nozzle exit pressure equal to 2.85 times the ambient pressure.

Photographs showing the flow patterns and the shock waves are presented, as well as the curves of the pressure distribution along the plate.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CONDITION OF THE RESORPTIVE FUNCTION OF THE SMALL INTESTINE IN
PEPTIC ULCER -U-
AUTHOR-(02)-PLASTININA, R.A., TRUSOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--SOV MED 33(3): 87-90. 1970
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALL INTESTINE, DUODENUM, RESORPTION, IODINE ISOTOPE, LESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605006/E11 STEP NO--UR/0344/70/033/003/0087/0090

CIRC ACCESSION NO--AT0139809

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0139809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESORPTIVE FUNCTION OF THE SMALL INTESTINE WAS STUDIED IN 339 PATIENTS WITH PEPTIC ULCER (INCLUDING 152 CASES OF GASTRIC AND 187 OF DUODENAL ULCER). A COMPLEX SET OF SPECIAL TEST WAS SET UP TO EVALUATE THE RESORPTIVE ABILITY, WHICH ENCOMPASSED POTASSIUM IODINE, ETHER ALCOHOL TESTS ALONG WITH THE USE OF THE I PRIME131 TAGGED TRIOLEATE GLYCERIN AND OLEIC ACID. INVESTIGATIONS SHOWED CERTAIN CHANGES TO TAKE PLACE IN THE RESORPTIVE PROPERTIES OF THE INTESTINE IN PEPTIC ULCER, THE MOST PRONOUNCED DISTURBANCES OF THE ABSORPTION BECOMING EVIDENT IN THE PRESENCE OF CONCOMITANT LESIONS OF THE LIVER AND THE PANCREAS. BY CONTRAST WITH PATIENTS SUFFERING FROM GASTRIC ULCER THOSE WITH DUODENAL ULCER EXHIBITED PATHOLOGICAL RESULTS OF THE TEST MORE FREQUENTLY. VERY VALUABLE INFORMATION ON RESORPTIVE PROPERTIES OF THE INTESTINE CAN BE OBTAINED BY USING AN ORIGINAL MODIFICATION OF THE POTASSIUM IODINE TEST WITH QUANTIFICATION OF THE ABSORBED TRACER. INSTITUTION OF I PRIME131 TAGGED TRIOLEATE GLYCERIN AND OLEIC ACID TESTS HELPS NOT ONLY TO DETECT CHANGES IN THE FAT ASSIMILATION, BUT ALSO TO ESTABLISH THE GENESIS OF STEATORRHEA. THE DERANGED ABSORPTION IN PEPTIC ULCER CAN BE TOTAL, WHEN THE RESULTS OF ALL TESTS TURN OUT TO BE PATHOLOGICAL. BUT MOST FREQUENTLY IT IS PARTIAL WITH ELECTIVELY UPSET RESORPTION, IN WHICH DEVIATIONS FROM THE NORMALCY ARE RECORDED IN 1 OR 2 FUNCTIONAL TESTS. FACILITY: DEP. HOSP. THER., IZHEVSK MED. INST., IZHEVSK, USSR.

UNCLASSIFIED

Plate, N.A.

178552277

UDC: 541.6

29 JAN 1971

CONFIGURATIONAL EFFECTS IN THE REACTIONS OF MACROMOLECULES

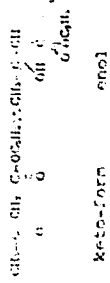
[Article by doctor of Chemical Sciences N.A. Plate, Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 40, No 11, November 1970, pp 86-89]

Characteristic of the contemporary trend of the development of the physical chemistry of high-molecular compounds is the examination of a number of customary concepts in the area of the kinetics and mechanism of polymerization processes and chemical reactions with the participation of macromolecules. Up to now macromolecules, macroradicals and macrolons have been regarded mainly as certain ideal systems, for the characterization of which the classical terms of ideal reactivity have been used. The customary concepts of organic chemistry and physical chemistry, which deal mainly with low-molecular compounds, have been automatically transferred to the chemical behavior of links and functional groups of a chain.

It has now become clear that such an approach is wrong, and because of that a need has arisen for the elaboration of a theory of the reactivity of macromolecules with consideration of all the distinctive features of the polymeric state of matter (qualitative and quantitative consideration of the real structure of the chain, its form in solution and its cross-linking under the reaction conditions). This also is important in accomplishing the directed chemical modification of polymeric materials and the creation of macromolecules with a prescribed distribution of units of various types, which is especially important in the synthesis of physiologically active polymers, macromolecular catalysts, polymers for medical purposes, etc.

A fundamental contribution to the development of that area of chemical science has been made by V. A. Kargin, and the results of the work of this school in that direction will be briefly reviewed in this article.

In characterizing the reactivity of the functional groups



True, for low-molecular ketonic ester the presence of a substituent in the alpha-position, as occurs in the intramolecular esterification of the poly-beta-ketonic ester, leads to reduction of the enolization constant.

At the same time, as follows from the data presented in low (see table), in the poly-beta-ketonic ester the trans-enol form with open OH group predominates in contrast with the cyclic cis-form with an intramolecular hydrogen bond.

Keto-enol tautomerism in macro-molecular poly-beta-ketonic ester

No. of the compound	Keto-form		Enol-form	
	Content, %	IR, cm ⁻¹	Content, %	IR, cm ⁻¹
7 Mucronol	27	1714	73	1625
8 Nopololpa	27	1714	73	1625
10 Mucron	27	1714	73	1625
11 Mucron	27	1714	73	1625
12 Mucron	27	1714	73	1625
13 Mucron	27	1714	73	1625

Key: 1 - solvent 2 - Enol, 3 - Enolization constant
 4 - trans-enol in enol fraction, 5 - poly-beta-ketonic ester
 6 - acetoacetic ester 7 - ethanol 8 - chloroform
 9 - benzene 10 - benzene 11 - ether 12 - carbon tetrachloride 13 - Practically completely alcohol

There are grounds for assuming that the fraction of the subchain ofmers leads in the given case to conformational differences of the realization of certain steric interactions in the polymeric molecule. In the presence of such trans-enolization the dissociation constant, that is, the ability of the ketonic ester, proves to be higher than that of the corresponding ester. For the poly-beta-ketonic ester, the enolization constant is 10⁴ and for acetoacetic ester, 10². It is obvious that under conditions of realization of similar conformational interactions of polymeric entities, in the present case by the

that as a result of the presence of the trans-former or other stable complex compounds form than in the case of 1,2-dicarbonyl substances. It has been found, for example, that the kinetic-kinetic constants of the stability of complex polybutadiene-ester with ions of copper and manganese are smaller by 1-5 orders of magnitude than the corresponding values for complex of acetylacetonone and acetocetic ester. In further study of other consequences of those phenomena it was made clear that the catalytic activity, for example in the initiation of polymerization in a number of cases, is higher than that of corresponding low-molecular substances; this, in particular, is connected with the lower strength of the coordination bonds with participation of macromolecular ligands. That the chain transfer process is one of the classical regions of physical organic chemistry. All this permits concluding that the principle of the "local reactivity" of polymeric molecules and the corresponding low-molecular substances, advanced 50 years ago, is far from being a wall.

A characteristic feature of polymerization and intramolecular reactions with the participation of polymers (in contrast with reactions of low-molecular analogs) is the dependence of the reactivity of a specific functional group or part of a molecule of the degree of conversion. In all stages of intramolecular conversions in the course, for example, of hydrolytic catalytic reaction, etc., the polymer is a product of variable chemical composition with different content of the initial, monomer A (from 100% to 0) and converted units B (from 0 to 100%). In that case, in different from the point of view of reactivity, the A units, if they form in ready converted units. The reaction rate in any stage will be determined already not by a simple rate constant but by three elementary constants and by the parameters of the monomer, which are at the center of the corresponding intramolecular interaction. Such a situation is impossible for low-molecular substances, for which the initial products can be separated from the end products in any stage of the conversion and where the reactivity of a given group in the molecule does not depend on the state of the molecule adjacent to it.

In the study of that region the primary task is the kinetic description of the "neighbor effect", that is, qualitative description of the distribution of units in the chain for a given set of reaction rate constants. The application of kinetic equations now worked out to concrete polymers and their analogs permits clarifying the distribution of units which have not reacted in any intermediate stage, and this is important for the prediction of the crystallizability of the polymer, the complex of its physical and mechanical properties, etc.

There also is another approach to analysis of "neighbor effect"

effect" -- modelling on a computer of the chemical reaction with a certain correlation of the rate constants and prediction of the degree of compositional heterogeneity of the mass in the course of polymer analog conversion. By means of the method of stable states (the Pontryagin method) we recently solved that problem for a number of model reactions taking place with self-acceleration (autoacceleration) and self-retardation. It was established that under conditions of autocatalysis in the absence of any complicating effects whatsoever connected with heterogeneity of branching, the reaction products for purely kinetic reasons always prove to be compositionally very heterogeneous. The maximum heterogeneity is achieved at about 60% conversion and rises sharply with decrease of the molecular weight of the polymer and with increase of the molecular polydispersity of the sample.

These results evidently have a relation to many effects observed in practice when anomalous behavior is noted, for example, of the products of hydrolysis of polymers on side groups, in spite of the apparently high value of the average rate of conversion.

Finally, reactions of chemical conversions of macromolecules with consideration of the above described three elementary components can be analyzed, in processes of the copolymerization of two monomers, as in both cases a model consisting of the two types of sites A and B is obtained. Kinetic analysis of those two apparently different processes shows that the structure of the chains in both cases can be described within the framework of one approach.

The contemporary stage of the study of chemical conversions of polymers is characterized by the creation of a distinctly defined front of investigations of the chemistry of macromolecules with consideration of the above-mentioned factors. It is a matter here of an attempt to describe the processes taking place with participation of the macromolecules and to give a quantitative characteristic of them, even if at the level at which it is possible at the present time to describe the region of radical polymerization.

Especially striking must be the conformational and conformational effects in reactions of the type macromolecule-macromolecule, where cooperative processes and complications connected with the role of exclusion of volume occur, which in a number of cases it is impossible to bring the reaction to 100% conversion, etc. Clarification of the chemical reactions in the case of macromolecule-macromolecule is of great importance for contemporary macromolecular chemistry. It is precisely there that the specifics of polymeric reactions are especially sharply expressed.

172 031 UNCLASSIFIED PROCESSING DATE--02OCT70
 TITLE--STRUCTURE AND PHASE TRANSITIONS IN LONG CHAIN CRYSTALLINE VINYL
 MONOMERS -U-
 AUTHOR-(03)-PETRUKHIN, B.S., SHIBAYEV, V.P., PLATE, N.A.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970 12(3) 687-91
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ACRYLATE, STEARIC ACID, ESTER, MONOMER, CHEMICAL SYNTHESIS, X
 RAY DIFFRACTION, IR SPECTRUM, CRYSTAL, PHASE TRANSITION
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0459/70/012/003/0687/0691
 PROXY REEL/FRAE--1992/0308
 CIRC ACCESSION NO--AP0111502
 UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. C SUB16-18 ALKYL ACRYLATES (I),
CETYL METHACRYLATE (II), AND VINYL STEARATE (III) WERE PREPD. BY METHODS
DESCRIBED EARLIER (S., ET AL., 1968). X RAY DIFFRACTOMETRY,
THERMOGRAPHY, AND IR SPECTROSCOPY SHOWED THAT THESE MONOMERS EXIST IN
SEVERAL CRYSTALLOGRAPHIC FORMS. I HAVE HEXAGONAL AND TRICLINIC
CRYSTALS, II IS TRICLINIC, AND III IS RHOMBIC. THE HEXAGONAL FORM OF I
IS STABLE TO SIMILAR TO 10DEGREES BELOW ITS M.P. ONLY WITH A C SUB17
ALKYL GROUP. OTHER I DURING STORAGE ARE TRANSFORMED INTO TRICLINIC
FORMS.

UNCLASSIFIED

USSR

UDC: 541.49:541.6

DAVYDOVA, S. L., ~~PLATE, N. A.~~, KARGIN, V. A., deceased

"Synthesis and Chemical Conversions of Metal-Containing Macromolecules"

Moscow, Uspekhi Khimii, Vol 39, No 12, Dec 70, pp 2256-2286

Abstract: The article is a survey covering the most important papers on synthesis and chemical conversions of metal-containing polymers of various types. In this review, the term metal-containing polymer compounds means organometallic polymers with organic principal chains in which there is a direct carbon-metal bond (regardless of the type of metal), salt-like compounds, particularly those with macromolecule-oxygen-metal bonds, and also complex polymer compounds which contain coordination bonded atoms of 3d-transition metals. Where possible, the reactivities of the metal-containing macromolecules and their low-molecular analogs are compared. The survey mentions unsuccessful attempts at synthesizing metal-containing macromolecules and their conversion products; papers in which the authors assumed synthesis of these compounds from the change in color of the reaction mixture alone. The article contains the following sections: 1. Introduction; 2. Organometallic polymers -- derivatives of metals of groups I, II and III. Use of lithium-containing polymers for initiating polymerization and synthesizing polyfunctional polymers;
1/2

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DAVYDOVA, S. L., et al., Uspekhi Khimii, Vol 39, No 12, Dec 70, pp 2256-2286

3. Organometal polymers -- derivatives of heavy metals. Metallized polymers and stabilization; 4. Complexes of transition metals with macromolecular ligands: a. reactions with participation of the metal-ligand bond; b. reactions of the coordinated macromolecule; 5. Factors which determine the properties of various types of polymer-metal chemical bond; 6. Peculiarities of chemical conversions of metal-containing macromolecules due to their polymer nature.

2/2

USSR

UDC 541.64:678.86

PLATE, N. A., MAL'TSEV, V. V., Institute of Petrochemical Synthesis
Imeni A. V. Topchiyev, Moscow, Academy of Sciences USSR

"Peculiarities of the Interaction of Butyllithium with Organotin
Derivatives During the Polymerization of Triethylvinyltin"

Moscow, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1533-
1537

Abstract: A rapid transformation takes place during polymerization of triethylvinyltin (TEVT) in the presence of $n\text{-C}_4\text{H}_9\text{Li}$ after introduction of the organolithium initiator into the system. Among the peculiarities of the reaction are: low yields in the homopolymer, extremely slow polymerization rates, low molecular weights of the products formed, and deceleration of the reaction. The authors found that the $n\text{-C}_4\text{H}_9\text{Li}$ catalyst loses its activity as polymerization initiator because it forms a complex with the organotin groups of the TEVT macroanions. This fact was confirmed by gamma-resonance spectroscopy, according to which the stability of complexes with $n\text{-C}_4\text{H}_9\text{Li}$ increases considerably when one compares the TEVT monomer

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PLATE, N. A., et al, Vysokomolekulyarnyye Soyedineniya 12, No 7,
1970, pp 1533-1537

with the corresponding polymer. The data obtained indicate the possible existence of systems containing free monomer which can be anionically polymerized, the complexed anionic initiator, and active anionic centers, but no polymerization takes place.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PREPARATION OF SOME POLY,KETO ESTERS -U-
AUTHOR--(04)-DAVYDOVA, S., BARABANOV, V.A., DOBROVOLSKAYA, N.V., PLATE,
N.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 475-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--KETONE, ESTER, COMPLEX COMPOUND, POLYMER, PHENOL, ACETIC
ACID, TAUTOMERISM, SODIUM COMPOUND, POTASSIUM COMPOUND, LIGAND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1184 STEP NO--UR/0062/70/000/002/0475/0476
CIRC ACCESSION NO--AP0120031

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120031

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXALOACETIC (I), TEREPHTHALOYLDIACETIC, AND TEREPHTHALOYLBIS(ACETOACETIC) ACIDS WERE CONDENSED WITH DIOLS SUCH AS HEXANEDIOL, BISPHENOL A, ETC. EITHER IN A MELT OR IN MEPH OR C SUB6, H SUB6 TO GIVE POLYMERS POLYESTERS WHICH WERE SOL. IN POLAR SOLVENTS, CAPABLE OF KETO ENOL TAUTOMERISM, AND ABLE TO FORM TRANSITION METAL COMPLEXES. THE COMPLEX FORMATION OCCURRED ONLY VIA THE NA OR K DERIVS. OF THE I POLYMERIC LIGANDS, WHILE THOSE FROM II FORMED COMPLEXES READILY BY A PREVIOUSLY REPORTED ROUTE (DAVYDOV, ET AL., 1968). FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

PLATE N.A.

c. Nr. ATO100197 - Abstracting Service:
- CHEMICAL ABST.

Ref. Code

6-70

4R 0020

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- 111589k Highly elastic deformation of 1,4-butanediol dimethacrylate-hexyl methacrylate copolymer. Kargin, V. A.; Khalikov, D. Kh.; Shibaev, V. P.; Plate, N. A.; Lemanovskaya, A. F. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). Dokl. Akad. Nauk SSSR 1970, 190(2), 376-9 [Phys. Chem] (Russ). An attempt was made to det. the values of the individual terms of the elastic stretching force $f = (\partial H / \partial \lambda)_{P,T} - T(\partial S / \partial \lambda)_{P,T} = (\partial H / \partial \lambda)_{P,T} + T(\partial f / \partial T)_{P,\lambda}$ where λ = the degree of stretching, H = enthalpy, S = entropy, P = stress, and T = abs. temp.; as well as f_e/f , where f_e = the energy component of f , for 1,4-butanediol dimethacrylate-hexyl methacrylate copolymer (I). The stress relaxation and thermoelastic properties of I films (30 x 5 x 1 mm) were measured with a special dynamometer (M. E. Misyurevich, 1969). The f was almost identical at high and low temps. This, together with the absence of residual deformation, indicated the complete reversibility of the highly elastic deformation. However, despite the fact that $(\partial f / \partial T)_{P,\lambda}$ for I at $\lambda > 1.10$ was pos., f was not directly proportional to T . DBJR -

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REEL/FRA
19841579

Acc. Nr. **AP0048842**

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code
U R 0 4 5 9

90929y Effect of the flexibility of the main chain on the structure of crystalline polymers and copolymers with long side branches. Shibaev, V. P.; Petrukhin, B. S.; Plate, N. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 140-8 (Russ). X-ray diffractometric data, thermogravimetry, and detns. of m.p., entropy (ΔS) and enthalpy (ΔH) of melting show that in atactic or isotactic title polymers (I) the character of the side chain packing is detd. by the flexibility of the main chain. Poly(vinyl stearate), poly(*n*-heptadecyl acrylate), poly(*n*-octadecyl acrylate), and poly(hexadecyl acrylate) have relatively high m.p., ΔS , ΔH , and 2-layer side chain packing. Poly(hexadecyl methacrylate) and hexadecyl acrylate-iso-Pr acrylate copolymer have relatively low m.p., ΔS , ΔH , and single-layer side chain packing. All I have hexagonal crystal structure. CPJR

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19800609

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Acc. No. **A70041738**

Abstracting Service: **4-70**
CHEMICAL ABST.

Ref. Code:
UR 0459

P

79518t Ionic copolymerization of triethyl(vinyl)tin with styrene. Mal'tsev, V. V.; Plate, N. A. (Inst. Neftekhim. Sin. im. Topchieva, Moscow, USSR). ~~Vysokomol. Soedin., Ser. A~~ 1970, 12(1), 182-5 (Russ). $\text{CH}_2=\text{CHSnEt}_3$ (I) was copolymd. with styrene (II) in the presence of Na-naphthalene complex or BuLi in C_6H_6 . The reactivity ratios of II and I were 25 ± 0.5 and 0.006 ± 0.0005 , resp. The yield of copolymer was lower in the presence of tetrahydrofuran, apparently due to complex formation. I could not be polymd. or copolymd. with II in the presence of cationic catalysts such as AlCl_3 or TiCl_4 . The electron-accepting effect of the Sn atom on the π electrons of the vinyl group apparently outweighs the electron-donating effect of the SnEt_3 group.

DEJR

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19751615

7

USSR

UDC 576.851.71.097.2.083.3

DYUYSALIYEVA, R. G., TARASEVICH, I. V., and PLOTNIKOVA, I. E., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Preparation of Antigen from Rickettsia tsutsugamushi Grown in Tissue Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 101-103

Abstract: Soluble antigen was obtained from R. tsutsugamushi (Gilliam and B-15 strains) cultured in a monolayer of L cells and primary trypsinized chick fibroblasts. Three days after formation of the monolayer, the medium was removed and the culture inoculated with a suspension of egg yolk infected with rickettsia. The culture was then left for 2 hours or overnight at 37°C. The suspension containing rickettsia was removed and the culture covered with medium 199. As soon as the first signs of degeneration of the monolayer appeared, the cells were removed mechanically and centrifuged for 1 hour until all rickettsia and cells settled. The supernatant was removed, and the precipitate was used as starting material to prepare the antigen. The specificity of this antigen was determined from the results of a complement-fixation test.

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USSR

DZHIDZHOYEV, M. S., KOROLEV, V. V., MARKOV, V. N., PLATONENKO, V. G., and KHOKHLOV, R. V., Physics Department, Moscow State University imeni M. V. Lomonosov

"Detonation Gas-Dynamic Laser"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 2, 20 Jul 71, pp 73-76

Abstract: This article describes a new type of gas-dynamic laser in which the solid material is detonated to obtain the initial high-temperature gas mixture. Previously the high-temperature mixture was obtained in the gas-dynamic lasers by the passage of shock waves in the gas media and by heating with an electric arc or by igniting the initial gases. The use of detonation of the solid material permits varying the initial pressure and temperature of the gas mixture in a wide range and also substantially simplifying and reducing the dimensions of the experimental set-up. Figure 1 shows a schematic of the experimental set-up; Figure 2 is an oscillogram of the impulse of generation, 500 μ sec/unit; and Figure 3 shows the output energy. The authors state that by using liquid nitrogen in the described set-up, they can experimentally place the initial material in the reaction volume. By the use of other materials

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DZHIDZHONYEV, M. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 2, 20 Jul 71, pp 73-76

the experiments can be theoretically conducted at room temperatures. The article contains 3 figures and 10 bibliographic entries.

2/2

- 63 -

1/2 038 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--GN CONTROL OF CHEMICAL REACTIONS BY RESONANCE PHOTO ACTION ON THE
MOLECULES -U-
AUTHOR--(03)--ARTAMONOVA, N.D., PLATONENKO, V.I., KHCKHLOV, R.V.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2195-2201
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CHEMICAL REACTION, CHEMICAL REACTION KINETICS, CHEMICAL
REACTION RATE, CHEMICAL REACTION MECHANISM, IR LASER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1694

STEP NO--UR/0056/70/058/006/2195/2201

CIRC ACCESSION NO--AP0120406

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0120406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY IS CONSIDERED OF CARRYING OUT CHEMICAL REACTIONS IN A GIVEN DIRECTION BY RESONANCE APPLICATION OF INFRARED LASER RADIATION TO A CHOSEN VIBRATIONAL DEGREE OF FREEDOM OF THE MOLECULAR SYSTEM. SUCH AN ACTION LEADS TO WEAKENING OF THE CHOSEN BOND AND TO A SHARP GROWTH OF THE RATE OF REACTIONS INVOLVING BREAKING OF THE BOND. IT IS SHOWN THAT IN ORDER TO REALIZE THIS POSSIBILITY RADIATION SOURCES WITH REAL PARAMETERS ARE REQUIRED.
FACILITY: MOSKOVSKIY GOS. UNIV. IM. M. V. LOMONOSOVA.

UNCLASSIFIED

USSR

UDC 576.8.093

KAUROV, B. S., PLATONENKOVA, L. S., ZHARIKOVA, G. G., and RUBIN, A. B.,
Moscow State University

"Study of Low-Intensity Luminescence of Some Microorganisms"

Moscow, Biologicheskiye Nauki, No 7, 1971, pp 102-105

Abstract: Luminescence was studied in a wide variety of bacteria: those capable of growing through fermentation or respiration, obligate and facultative aerobes and anaerobes, containing and not containing cytochromes, e.g., *Clostridium butyricum*, *Pseudomonas aeruginosa*, *Ps. fluorescens*, *Bacillus subtilis*, and others. Spontaneous luminescence was observed only in *B. brevis* var. G. B. R, S, P⁺, and P⁻ forms, *B. subtilis*, *B. cereus*, *B. mycoides*, *B. mesentericus*, *B. megatherium*, and *E. coli*, i.e., aerobes that contain cytochromes and are ammonifiers. The intensity of luminescence is 110 imp/sec. The luminescence lies in the region of 420 to 520 nit with a peak at 480 nit. The culture fluid (centrifugate) is responsible for the phenomenon rather than the cells.

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- 11 -

USSR

UDC 621.172.62-408.3

(3)

PASHKOV, P. O., YAVOR, A. A., SAVCHENKOV, E. A., KOTOV, N. V., SKLYAROV, N. M., MIKHEYEV, A. A., and PLATONOV, A. A., Volograd Polytechnic Institute, All Union Scientific Research Institute of Aviation Materials

"Properties of High-Strength Clad Sheet Steel in Tension"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 37-40

Abstract: Specimens of VKS-1 steel, 1.5 mm thick, clad with the corrosion-resistant KhN78T (EI435) alloy, 13-15% of sheet thickness, were tested for mechanical properties by the method: axial tension - static bending - biaxial tension - tensile fracture (crack sensitivity). The investigation results indicate that VKS-1 clad steel possesses higher strength and plasticity in comparison with steel without cladding and higher resistance to rupture. The strength of VKS-1 steel in biaxial tension comes up to maximum values; besides, the strength in axial tension is 20-25% higher than the strength of homogeneous VKS-1 steel. The application of electroslag remelting contributes to increased plasticity under tension for high-strength clad steel, but to a smaller degree than for homogeneous steel. Three figures, two tables, seven bibliographic references.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--OPTIMUM PROPERTIES OF A ONE PARAMETER ORBITAL CORRECTION OF A
SPACECRAFT -U-
AUTHOR--(02)-PLATONOV, A.K., KAZAKOVA, R.K. P
COUNTRY OF INFO--USSR, FRANCE
SOURCE--3RD IFAC SYMPOSIUM ON SPACE CONTROL, TOULOUSE, FRANCE, MARCH 1970,
(SL:2561)
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, SPACE TECHNOLOGY
TOPIC TAGS--ORBIT CORRECTION, ERROR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1924

STEP NO--FR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0138789

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 013

CIRC ACCESSION NO--AT0138789

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

ABSTRACT. THE REPORT DEALS WITH THE CHARACTERISTICS OF A ONE PARAMETER ORBITAL CORRECTION AS SOON AS WITH THE EFFECT OF ERRORS OF THE MAGNITUDE AND DIRECTION OF THE CORRECTION IMPULSE TO THE PARAMETERS OF A FLIGHT ORBIT OF A SPACECRAFT. THE MAGNITUDE AND DIRECTION OF THE CORRECTION IMPULSE WHICH PROVIDES MINIMUM EFFECT OF THE ERRORS IN THE ACCOMPLISHMENT OF CORRECTION ARE DETERMINED.

A CRITERION FOR CORRESPONDENCE OF THE OPTIMUM IMPULSE MAGNITUDE CORRECTION TO THE OPTIMUM ERROR EFFECT CORRECTION IS GIVEN. AS AN EXAMPLE THE CHARACTERISTICS OF THE SATELLITE PERIOD CORRECTION AND THE CHARACTERISTICS OF THE CORRECTION OF THE SPACECRAFT RETURN ORBIT PERIGEE ARE CONSIDERED.

FACILITY: SENIOR RESEARCH WORKER INSTITUTE OF APPLIED MATHEMATICS, ACADEMY OF SCIENCES, USSR. FACILITY: RESEARCH WORKER INSTITUTE OF APPLIED MATHEMATICS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

1/2 - 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE OPTIMAL PROPERTIES OF THE SINGLE PARAMETRIC ORBIT CORRECTION OF
A SPACE VEHICLE -U-
AUTHOR--(02)-PLATONOV, A.K., KAZAKOV, R.K.
COUNTRY OF INFO--USSR
SOURCE--AUTOMATIC CONTROL IN SPACE, 3RD I F A C SYMPOSIUM, TOULOUSE,
FRANCE, MARCH 2ND-6TH, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--SPACE TECHNOLOGY
TOPIC TAGS--ORBIT CORRECTION, EARTH SATELLITE ORBIT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1279 STEP NO--FR/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AT0131735
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0131735

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DEALS WITH THE CHARACTERISTICS OF A SINGLE PARAMETRIC ORBIT CORRECTION. THE INFLUENCE OF CORRECTIONAL IMPULSE ERRORS ON THE PARAMETERS OF THE SPACE VEHICLE ORBIT IS DISCUSSED. THE VALUE AND DIRECTION OF THE CORRECTIONAL IMPULSE WHICH ARE OPTIMAL WITH RESPECT TO THE INFLUENCE OF THE IMPULSE ERRORS ARE DETERMINED. CRITERIA OF CONGRUENCE FOR CORRECTION WHICH IS OPTIMAL BY IMPULSE VALUE AND OPTIMAL CORRECTION BY THE INFLUENCE OF THE IMPULSE ERRORS ARE DEDUCED. FOR EXAMPLE, THE CHARACTERISTICS OF AN EARTH SATELLITE REVOLUTION PERIOD OPTIMAL CORRECTION AND KENLER'S PERIGEE OPTIMAL CORRECTION ARE CONSIDERED.

UNCLASSIFIED

173 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OPTICAL AND MOESSBAUER SPECTRA OF IRON IN TOURMALINES -U-

AUTHOR--(05)--MARFUMIN, A.S., MKRTCHYAN, A.R., NADZHARYAN, G.N., NYUSSIK,
YA.M., PLATONOV, A.N.

COUNTRY OF INFO--~~USSR~~

SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (2), 146-50

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ABSORPTION BAND SPECTRUM, IRON, ALUMINUM SILICATE MINERAL,
CRYSTAL, MOSSBAUER SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1541

STEP NO--UR/0011/70/000/002/0146/0150

AIRC ACCESSION NO--AP0125168

UNCLASSIFIED

2/3 016

UNCLASSIFIED

PROCESSING DATE--300C170

CIRC ACCESSION NO--AP0125168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO ABSORPTION BANDS OF VARIOUS INTENSITY IN THE VISIBLE (13,000-15,000 CM PRIME NEGATIVE1) AND IR (8500-9500 CM PRIME NEGATIVE1) REGIONS WERE OBSD. IN GREEN TOURMALINE CRYSTALS. THE OPTICAL ABSORPTION SPECTRA WERE INTERPRETED BY ASSUMING THAT IONS OF FE PRIME2 POSITIVE ARE SITUATED MOSTLY IN MG OCTAHEDRONS WITH LOCAL SYMMETRY OF APPROX. D SUB4H. MEANINGFUL DIFFERENCES WERE OBSD. IN POLARIZED SPECTRA OF BLACK TOURMALINES. THE SPECTRA ALONG OMEGA (ORDINARY RAY) WERE CHARACTERIZED BY A WIDE ABSORPTION BAND AT SIMILAR TO 12,000 CM PRIME NEGATIVE1 WHEREAS SPECTRA ALONG EPSILON (EXTRAORDINARY RAY) WERE SIMILAR TO ABSORPTION SPECTRA OF GREEN TOURMALINES. IN ADDN. A DIFFUSE BAND AT 18,000 CM PRIME NEGATIVE1 WAS OBSD. IN SPECTRA OF THE BLACK CRYSTALS. THE ABSORPTION BAND AT SIMILAR TO 12,000 CM PRIME NEGATIVE1 IS RELATED TO THE PRIMES A SUB1G YIELDS PRIMES D SUB2G TRANSITION, THE ONLY ALLOWED ONE FOR FE PRIME2 POSITIVE IN A TRIGONAL FIELD. THIS INDICATED THAT A PART OF FE PRIME2 POSITIVE IN THE HIGH FE BLACK TOURMALINES ENTERS INTO THE AL OCTAHEDRONS WITH LOCAL SYMMETRY OF SIMILAR TO C SUB3V. THE MG OCTAHEDRONS ARE THE OTHER POSSIBLE POSITIONS OF FE IN BLACK TOURMALINES AS INDICATED BY THE SIMILAR CHARACTER OF THE OPTICAL SPECTRA ALONG EPSILON IN BLACK AND GREEN CRYSTALS. MOESSBAUER SPECTRA OF PRIMES7 FE IN TOURMALINES INDICATED THAT FE PRIME2 POSITIVE OCCUPY IN BLACK TOURMALINES 2 NONEQUIV. OCTAHEDRON POSITIONS DIFFERING NOTICEABLY FROM EACH OTHER IN PARAMETERS OF MOESSBAUER SPECTRA. BOTH POSITIONS ARE SIMILAR TO THOSE OF FE PRIME2 POSITIVE IN GREEN TOURMALINES.

UNCLASSIFIED

373 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

IRC ACCESSION NO--AP0125168

ABSTRACT/EXTRACT--COMPARISON OF THE DATA ON OPTICAL AND MOESSBAUER SPECTRA OF NATURAL TOURMALINES SHOWS THAT MOST OF THE FE IN GREEN TOURMALINES IS IN A SINGLE OCTAHEDRAL POSITION WITH TETRAGONAL DISTORTION (MG,OCTAHEDRONS). FE IS PRESENT IN BLACK TOURMALINES IN 2 OCTAHEDRAL POSITIONS WITH TETRAGONAL (MG,OCTAHEDRONS) AND TRIGONAL DISTORTIONS (AL,OCTAHEDRONS). THE AMT. OF FE IN AL,OCTAHEDRONS OF BLACK TOURMALINES IS MUCH HIGHER THAN IN THE GREEN VARIETIES. THIS EXPLAINS THE DIFFERENCES IN THE OPTICAL ABSORPTION SPECTRA OF DIFFERENTLY COLORED CRYSTALS. FACILITY: INST. GEOL. RUD. MESTGROZH., PETOGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 016

TITLE--THE EFFECT OF GROWTH CONDITIONS OF THERMOGENESIS IN CANDIDA TROPICALIS -U- UNCLASSIFIED PROCESSING DATE--23OCT70

AUTHOR--(03)-PLATONOV, A.L., POZMOGOVA, I.N., LOGINOVA, L.G.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 47-54

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, FUNGUS, GLUCOSE, CULTURE MEDIUM, NITROGEN, PHOSPHORUS, CALORIMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0484

STEP NO--UR/0220/70/039/001/0047/0054

CIRC ACCESSION NO--AP0117720

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0117720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. YEAST GROWTH WAS ACCOMPLISHED WITH AN INTENSIVE HEAT OUTPUT WHICH WAS REGISTERED JUST AFTER CELL INOCULATION IN THE CHAMBER OF MICROCALORIMETER. DURING THE FIRST SIX HOURS OF THE YEAST GROWTH THE BULK OF ENERGY (60-70PERCENT), RELEASED AS A RESULT OF GLUCOSE OXIDATION BY THE CULTURE, WAS CONTAINED IN THE PRODUCTS OF GLUCOSE INCOMPLETE OXIDATION. THERMOGENESIS DECREASED DURING THE YEAST GROWTH ON MEDIA WITHOUT A NITROGEN OR PHOSPHORUS SOURCE. HOWEVER, RECALCULATION OF THE ENERGY RELEASED AS HEAT PER 1 MG OF UTILIZED GLUCOSE HAS SHOWN THAT IT WAS 1.5-2 TIMES HIGHER THAN IN THE CASE OF THE YEAST GROWTH ON THE COMPLETE MEDIUM. HENCE, UNCOUPLING BETWEEN THE RATE OF ENERGY ACCUMULATION AND THE YEAST GROWTH TOOK PLACE ON THE MEDIUM WITHOUT N OR P. INTENSIVE AERATION DURING THE YEAST GROWTH ON THE PHOSPHORUSLESS MEDIUM RESULTED IN AN INCREASE OF GLUCOSE UTILIZATION, BIOMASS YIELD AND THERMOGENESIS. THE VALUE OF ENERGY COEFFICIENT REMAINED THE SAME UP TO A CERTAIN LIMIT OF AERATION; IF IT BECAME HIGHER THE ENERGY COEFFICIENT DECREASED, PROBABLY, DUE TO A FALL PH PHOSPHORUS CONTENT DOWN TO PHYSIOLOGICAL THRESHOLD CONCENTRATION.

UNCLASSIFIED

USSR

UDC 8.74

GLUSHKOV, V. M., DOVGYALLO, A. M., PLATONOV, B. A., YUSHCHENKO, YE. L.

"Standard Dialog Training System Training System Pedagog with the Avtor Service Mode for Teaching Programming Languages. Part 1"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 82-97 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V475)

Translation: A standard program training system Pedagog is described. The system is designed to teach programming languages in the dialog mode. The Pedagog training system performs the following functions with respect to training control: it makes the assignments to the trainee to which he must respond (which is realized by indicating the assignment coordinates in a special aid with the assignment); it receives and analyzes the trainee answers to the assignment; it gives the trainee the possibility of correcting the responses input to the computer memory from an individual device (teletype); it gives assistance to the trainee on request, indicating where the materials are located for the given assignment in the text; it offers the possibility to the trainee of repeating the assignment; it returns the answers to the assignment
1/2

USSR

GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 82-97

from the memory to the trainee on his request or automatically if on completion of the correction of the answers he halts the operation of the system; it insures adaptation to the trainee, giving information on the errors in the answers at different levels of detail, helping him at the same time detect errors and simultaneously adapting to the capabilities of the user; it collects statistics on the course of the training process with respect to each user; it insures mastery by the user of the training material on a guaranteed level without allowing the user to carry out the next assignment to obtaining a direct response to the present one from it. In addition, the system executes the functions connected with the specific nature of the training process by applying a digital computer with time sharing operating in the dialog mode as the instructor. These basically are functions aimed at maintaining contact between the trainee and the computer: the information about what external systems devices must be used by the trainee at the defined points in time; the information about which operations it should perform on the external devices, what operators of the operation training language and in what cases it must be input; holding recording dialog with the trainee in which the system receives certain data from the user for its subsequent identification in the system; the control of the dialog with user in the training process (or in the process of joint solution of the training problem). There is 1 illustration and a 7-entry bibliography.

2/2

USSR

UDC 8.74

GLUSHKOV, V. M., DOVGYALLO, A. M., PLATONOV, B. A., YUSHCHENKO, YE. L.

"Standard Pedagog Dialog Training System with the Avtor Service Mode for Teaching Programming Languages. Part 2"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 98-110 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V476)

Translation: A study was made of the basic characteristics of the Pedagog training system with the Avtor service mode for teaching programming languages. All of the software for the training system is divided into two parts: general including the training process control program and the program for interpreting the input operator; a special program including the programs defining the correct response to the system assignment (reactors) and the service files. Data is stored in the files on the basis of which the training process is controlled and the files also include data relating the control programs to the training material. The system is designed to teach the CGBOL language to one student in the dialog mode (the DD-3 dispatcher of the Dnepr-2 digital computer offers the possibility of paralleling the training process for several trainees).
1/3

USSR

GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir. Kiev-Alushta, 1972, pp 98-110

The system programs are organized by the modular principle. The functioning of the module programs does not depend on their allocation in the common memory which permits changes to be introduced into the system. The volume of the system modules is on the average 100-140 instructions, and the information exchange between the modules is realized via the dynamic memory in the base register field. The Avtor mode of the training system is designed for correcting the service information files. It is noted that the specific nature of organization of the training system in which the general and special sections are clearly separated permits changing the operation of the system by correcting only the service information. These changes can, in particular, pertain to the sequence of assignments to the training, and in connection with this, the training algorithm and also the training subject. For the Avtor mode a special language has been created which permits correction of all the files of the special section of the training system. The presence of such possibilities in the training system permits efficient variation of the training process, dropping of the necessary and incorrect assignments, insertion of new ones, introduction of new assignment sequences, provision of new auxiliary material, and so on. It is possible to use the Avtor mode both after accumulating certain statistics on the course of the training process and directly during the course

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USSR

GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem program-
mir., Kiev-Alushta, 1972, pp 98-110

of training. The programs in the Avtor mode are designed for operation in the dialog mode. The basic device for the Avtor dialog is teletype. The operators of the Avtor language input from teletype are recognized by the Monitor program which then transfers control to the corresponding programs -- interpreter -- which performs all the operations given in the operator. After processing, these programs return control to the Monitor program which goes to the state of waiting for the next message from the user. The operators of the Avtor mode are divided with respect to purpose into two groups: the operators for printing the file contents, the operators for correcting the files. Illustrative examples are presented for the Dnepr-2 training system. The bibliography has 8 entries.

3/3

81

USSR

UDC: 681.3

DOVGYALLO, A. M., NIKITIN, A. I., PLATONOV, B. A., SEMDTYUK, V. P.,
YUSHCHENKO, Ye. L.

"On One Approach to Developing a System of Instruction in Programming
Languages on a Digital Computer Base"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of
Digital Computers for the Teaching of Programming--collection of works),
Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7v780)

[No abstract]

1/1

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USSR

UDC 8.74

PLATONOV, B. A.

"First Queue of a Selective Dialogue Training System Based on the Dnepr-21 Digital Computer"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science -- collection of works), Kiev, 1971, pp 201-206 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V628)

Translation: The training dialogue system has the following specifications:

1. The programs for controlling the training process are constructed on the basis of selective algorithms.
2. The system operates in three modes -- training, teacher (this mode has a large intersection with the author mode) and author.
3. It is the subordinate problem of the DD-3 dispatcher of the Dnepr-21.
4. Its peripheral devices are among the standard equipment and are the Dnepr-21 systems devices: the T-63 teletype, the photographic input, the punch output and the alphanumeric printer.

The first stage of the system is designed to study the COBOL programming language.

1/1

1/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--LIFE OF A QUARTZITE CRUCIBLE FOR A 12 METRIC TON INDUCTION FURNACE

-U-

AUTHOR--(C5)--KAYBICHEVA, M.N., PLATONOV, B.P., PLATONOV, YU.B., BERKOVSKIY, I.M., ROPATOVSKIY, M.I.

COUNTRY OF INFO--USSR

SOURCE--LITEINCE PROIZVOD. 1970, (4), 33-6

DATE PUBLISHED-----70

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

TOPIC TAGS--INDUCTION FURNACE, QUARTZ, THERMAL STABILITY, MAGNESIUM OXIDE, CALCIUM OXIDE, IRON OXIDE, ALUMINUM OXIDE, SILICON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1932

STEP NO--UR/0128/70/000/004/0033/0036

CIRC ACCESSION NO--AP0132194

UNCLASSIFIED

2/2 G22

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132194
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO QUARTZITES FOR MAKING
 INDUCTION FURNACE CRUCIBLES WERE COMPARED AS TO THEIR ENDURANCE,
 FRIABILITY, AND HEAT RESISTANCE: DOMESTIC AND SWEDISH, WHOSE COMPS.
 WERE SiO₂ SUB2 98.10, 97.34, AL SUB2 O SUB3 0.59, 0.95, FE SUB2 O SUB3
 0.31, 0.26, CaO 0.79, 0.26, MgO MINUS, 0.03, AND M SUB2 O (METAL OXIDES)
 MINUS, 0.24, LOSS ON IGNITION 0.10, 0.46 WT. PERCENT, RESP. THE
 CRUCIBLES MADE FROM THE DOMESTIC QUARTZITE WERE MORE FRIABLE AFTER
 HEATING FOR 2 HR AT 1450 DEGREES THAN THE SWEDISH CRUCIBLES, (PROBABLY
 BECAUSE THE DOMESTIC QUARTZITE HAD MORE SiO₂), AND THE D. WAS 2.530
 AND 2.360 G-CM PRIME3, RESP. THE ADDN. OF 1.0-2.0 PERCENT OF B SUB2 O
 SUB3 DECREASED THE D. TO 2.459, AND 2.330 G-CM PRIME3, RESP. THE
 CRUCIBLES WITHSTOOD 321 AND 309 MELTINGS, RESP.

UNCLASSIFIED

USSR

UDC 537.521.7:621.315.61

ODYNETS, L. L., PLATONOV, F. S., PROKOPCHUK, Ye. M.

"Electrical Breakdown of Oxide Films on Aluminum"

Moscow, Radiotekhnika i Elektronika, Vol 26, No 9, Sep 71, pp 1739-1740

Abstract: The authors studied the electrical breakdown of Al_2O_3 films made by anodizing 99.996% pure aluminum in an aqueous solution of boric acid (30 grams per liter) and sodium tetraborate (0.05 gram per liter) at 70°C. Films 140-5600 Å thick were studied. The experiments were conducted in a vacuum of $5 \cdot 10^{-5}$ - 10^{-6} mm Hg at temperatures of -180 - +300°C. It was found that the electric strength of the films decreases with a rise in temperature. The electric field strength at breakdown of the film is asymmetric for opposite polarities, but this asymmetry decreases at temperatures in excess of 200°C. At comparatively low temperatures, an abrupt increase in the electric strength is observed for films thinner than about 2000 Å. This effect is not observed at 300°C. The experimental results show that breakdown of anodized films at moderately high temperatures is due to impact ionization by electrons.

1/1

USSR

UDC: 621.317.3(088.8)

KARAUJ'NIK, M. Ye., MAKEYEV, V. I., ALEKSANDROV, A. F., LEBEDEV, B. M.,
METELITSIN, I. V., PLATONOV, F. V., FEDIN, V. F.

"A Device for Measuring the Electrical Parameters of Piezoelectric Resonators"

USSR Author's Certificate No 264547, filed 5 Jul 68, published 17 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A315 P)

Translation: It is pointed out that conventional devices for measuring the electrical parameters of piezoelectric resonators do not allow for direct measurement of piezoelectric current. In the proposed device there is a special coil with an auxiliary indicator whose scale is graduated in piezoelectric current values. The resonator to be tested is placed inside the coil. E. L.

1/1

USSR

UDC 611.85

LAPAYEV, E. V. and PLATONOV, N. B.

"Experimental and Mathematical Analysis of the Effect of Rotary Acceleration on the Vestibular Apparatus"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, 1973, pp 357-363

Abstract: Mathematical calculations showed that normal and rotary accelerations act on the vestibular apparatus during curvilinear motion. The relative magnitude of the rotary moment, which is derived from the difference in the radii of rotation of the opposite sides of the semicircular canal, was found to be the main factor involved in the mechanism of stimulation of the capula and endolymph. The mathematical calculations were confirmed by 45 experiments performed on rabbits. With an increase in the radius of curvilinear motion, a decrease in the rotary moment rather than an increase in the centrifugal force plays the major role in the mechanisms of inhibition of the nystagmic reaction.

1/1

USSR

UDC: 621.374.5(088.8)

Vasil'yev, N. I., YEFREMOV, P. A., PLATONOV, O. T.

"A Delay Line"

USSR Author's Certificate No 267682, filed 2 Feb 68, published 5 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G318 P)

Translation: This Author's Certificate introduces a delay line made up of L-shaped links containing an inductance and capacitance connected in series with taps from each link. To provide continuous control of delay without introducing nonhomogeneities into the line, bronze discs are soldered to the leads, acting as one plate of a multisection capacitor which is completed by a movable grounded plate.

1/1

USSR

UDC: 8.74

SALIMOV, A. KH., MASLOV, Yu. S., PLATONOV, I. N.

"Tie-in of the 'Konsul-254' Electric Printer for Alphanumeric Data Output"

V sb. Chisl. metody v tekhn.-ekon. zadachakh (Numerical Methods in Technical and Economic Problems--collection of works), Kazan', Kazan' University, 1971, pp 138-141 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V966)

Translation: It is pointed out that in resolving and translating programs written in ALGOL-60 (or any other language) on the M-20 computer, the need arises for output of alphanumeric information. The construction of a device for matching the "Konsul-254" electric printer to the M-20 computer and some modifications in the M-20 are described. V. Alekperov.

1/1

USSR

PLATONOV, K. K.

Problemy Sposobrostei (Problems of Aptitude) Moscow, 1972, 312 pp

Translation: This book is devoted to problems which are urgent both on account of the need for theoretical elaboration, and in connection with the practicalities of profession selection, the determination of professional aptitude, and the job orientation of students. Using a large body of factual material, the author describes the history of the problem of aptitude, the conflict among existing trends, and the theory of estimating aptitude as it concerns various professions. He considers the problem of aptitude in connection with the concept of the personality, understood as an integral but variable structure which includes abilities as properties not only predetermined genetically but also elicited and shaped within the course of concrete activity.

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USSR

PLATONOV, K. K., Problemy Sposobrostey, 1972, 312 pp

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USSR

PLATONOV, K. K., *Problemy Sposobrostei*, 1972, 312 pp

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USSR

PLATONOV, K. K., Problemy Sposobrostei, 1972, 312 pp

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USSR

PLATONOV, K. K., Problemy Sposobrostey, 1972, 312 pp

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5/5

USSR

UDC: 611.85:613.693

SOLODOVNIK, F.A., VOROBYEV, L.M., PLATONOV, N.B.

"The Direction of Inertial Shift of Endolymph in Semicircular Canals During Rotation of a Man with Head Movements in the Frontal Plane"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, May/Jun 70, pp 337-347

Abstract: The horizontal and vertical components of nystagmic reactions were recorded in the course of rotation when movements of the subject's head were in the frontal plane. A theoretical analysis was conducted of the origin of Coriolis forces in the semicircular canals, and the direction of inertial shift of the endolymph was estimated, which corresponds with the direction of the nystagmic reaction. When a man rotates his head from the left shoulder to the right, the movement incites ampulopetal flow in the anterior semicircular canals, and ampulofugal flow of endolymph in the posterior semicircular canals. The movement of the head from the right shoulder to the left causes ampulofugal flow in the anterior and ampulopetal flow of endolymph in the posterior semicircular canals. Rotation to the left causes flow of endolymph in the opposite direction. When the head is raised the endolymph in the horizontal semicircular canals shifts in the opposite direction of rotation; and when the head is tilted, the endolymph shifts in the direction of rotation.

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1/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT71

TITLE--DIRECTIONAL INERT SHIFT OF ENDOLYMPH IN SEMICIRCULAR CANALS IN THE COURSE OF MAN'S ROTATION PROVIDING THE SUBJECTS MOVEMENT OF THE HEAD

AUTHOR--(03)--SGLODOVNIK, F.A., VOROBYEV, L.M., PLATONOV, N.B.

P

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3, PP 337-347

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VESTIBULAR APPARATUS, ROTATION, HUMAN PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1385

STEP NO--UR/0216/70/000/003/0337/0347

CIRC ACCESSION NO--AP0126925

UNCLASSIFIED

2/2 030

CIRC ACCESSION NO—A0126925
ABSTRACT/EXTRACT—(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE HORIZONTAL AND VERTICAL COMPONENTS OF NYSTAGMIC REACTIONS WERE REGISTERED IN THE COURSE OF MAN'S ROTATION PROVIDING THE MOVEMENT OF THE SUBJECTS HEAD IS IN THE FRONTAL PLANE. THE AUTHORS CARRIED OUT A THEORETICAL ANALYSIS OF THE ORIGIN OF CORIOLIS FORCES IN SEMICIRCULAR CANALS AND ESTIMATED THE DIRECTION OF THE INERT SHIFT OF THE ENDOLYMPH, WHICH CORRESPONDS THE DIRECTION OF NYSTAGMIC REACTION. WHEN MAN ROTATES RIGHTWARD HIS HEADS MOVEMENT FROM THE LEFT SHOULDER TO THE RIGHT ONE INCITES AMPULOPETAL FLOW IN THE ANTERIOR SEMICIRCULAR CANALS AND AMPULOFUGAL GLOW OF ENDOLYMPH IN THE POSTERIOR ONES. THE HEADS MOVEMENT FORM THE RIGHT SHOULDER TO THE LEFT ONE CAUSES AMPULOFUGAL FLOW IN THE ANTERIOR SEMICIRCULAR CANALS AND AMPULOPETAL FLOW OF ENDOLYMPH IN THE POSTERIOR ONES. ROTATION IN THE LEFTWARD DIRECTION CAUSES AN ENDOLYMPH FLOW IN AN OPPOSITE DIRECTION. WHEN THE HEAD IS RAISED THE ENDOLYMPH OF THE HORIZONTAL SEMICIRCULARS CANALS SHIFTS IN AN OPPOSITE DIRECTION OF THE ROTATION OF THE TESTING SET UP AND WHEN THE HEAD IS TILTED THE ENDOLYMPH SHIFTS IN THE DIRECTION OF THE ROTATION.

UNCLASSIFIED

Acc. Nr: AP0047315

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Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichnyi Zhurnal, 1970,
Vol 42, Nr 1, pp 16-19

**TRANSPORT INTO CYTOPLASM OF NUCLEAR DNA SIMILAR TO RNA
IN THE PROCESS OF LIVER REGENERATION
AND CHEMICAL HEPATOCANCEROGENESIS**

O. M. Platonov, V. P. Korotkoruchko, A. S. Polishchuk, V. G. Pinchuk

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev,
Institute of Experimental and Clinical Oncology, Ministry of Public Health,
Ukrainian SSR, Kiev

Summary

The transfer of nuclear RNA into the liver cytoplasm in normal rats was studied 24 hrs after partial hepatectomy and in the process of chemical hepatocancerogenesis by the method of hybridization of nuclear RNA (D-RNA-1 and D-RNA-2) with DNA at the presence of non-labelled RNA.

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REEL/FRAME
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It is shown that in all the cases D-RNA-1 is presented in cytoplasm by a considerable amount of the hybridizable kinds of RNA.
The cytoplasmic RNA of the rat normal liver is a weak competitor for D-RNA-2 for corresponding cytrones of DNA.
In the process of regeneration and hepatocancerogenesis there observed a considerable amount of RNA capable of competing with D-RNA-2 for places on DNA.

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USSR

PLATONOV, P. N., Doctor of Technical Sciences, TRIBEL'GORN, E. V., Candidate of Technical Sciences, BOGDANOV, B. K., Engineer

"Methods of Changing Over to Automatic Control of Continuous Mass Production Systems"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 9, 1970, pp 16-19

Abstract: An analysis of continuous mass production systems in various sectors of the national economy conducted at the Odessa Technological Institute imeni M. V. Lomonosov made it possible to isolate the general functional singularities of various segments of the systems and to reduce them to eight types. The classification of segments of the continuous mass production system and the principles of setting up a dispatcher automated control system on this basis comprised of standard general-purpose modules were taken up at the Third All-Union Conference on Automatic Control. The analysis was based on the example of a modular dispatcher automated control system for the most complex production line segment requiring sixteen modules. Further studies showed that the number of modules required for realization of this segment can be reduced to ten. It is shown that further automation of continuous mass production systems should be based on a transition from dispatcher automated control to operatorless programmed

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PLATONOV, P. N., et al, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 9, 1970, pp 16-19

control. This will require analysis of the dispatcher's functions for purposes of algorithmic description, classification of the dispatcher's functions, and a description of the information which must be stored. A simple formula is found for the optimum control system from the standpoint of cost. It is shown that the function of route analysis can be handled by an automatic device without extensive modification of the dispatcher control system.

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UDC 666.189.211

KOLESOV, YU. I., MALASHKINA, T. G., and PLATONOV, R. I., All-Union Scientific-
Research Institute of Glass Plastics and Glass Fibers

"The Effect of Certain Technological Factors on the Degree of Volatilization of
 B_2O_3 in the Melting of Non-Alkaline Alumoborosilicate Glass for the Production
of Fiberglass"

Moscow, Steklo i Keramika, No 5, May 70, pp 19-22

Abstract: The volatility of B_2O_3 was studied during melting of alumoborosilicate
glass E in three types of vat ovens: regenerative, recuperative, and direct heat
gas-electric oven. It was determined that maximum volatilization of B_2O_3 -- 70-
90% -- is observed at the stage of the vitrification of the furnace charge. In
the gas-electric oven the loss of B_2O_3 in the light zone is several-fold higher
than in gas ovens. To lower the losses of B_2O_3 it is proposed that the period of
glass formation be shortened by increasing the temperature at the point of the
furnace charge loading and that boron anhydride be added to the furnace charge
in the form of calcium boride. The increase in the mass exchange between the
depth and surface layers of the glass forming material in the oven results in
higher losses of B_2O_3 .

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UDC: 612.(075.5)

PARFENOV, V. A., PLATONOV, V. N., and PLATONOV, S. N., Chair of Swimming, Problem Scientific Research Laboratory of High Training Loads, State Institute of Physical Culture, Kiev

"A Barochamber-Treadband for Tests in an Altered External Environment"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 1, 1971, pp 140-143

Abstract: A barochamber with a capacity of 100 liters has been designed which is totally enclosed and made of transparent plastic. The purpose of the chamber is study of the functional state of small laboratory animals that walk or run at various speeds. The chamber can be filled with a gas mixture containing O_2 , CO_2 , He, and N_2 in the desired ratios. The pressure in the chamber can be varied in the 0.5-1.5² at pange and the concentration of negative air (gas) ions in it in the range of $10^7 - 10^5 / cm^3$. An endless moving band is contained in the chamber, the velocity of the motion of which can be varied in 36 steps from 0.2 to 2.5 m/sec. The animals of a group placed into the chamber run on the vertically moving band in the direction of its motion until they reach an electrically

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USSR

UDC 616.2-036.11-022.14

IL'YENKO, V. I., PLATONOV, V. G., GORDON, M. A., ANTONOV, V. S., BELYAYEVA, N. M. and ANTIPOVA, M. R., All-Union Scientific Research Institute of Influenza, Ministry of Public Health USSR, Leningrad

"Frequency of Development of Associated Infections Accompanying Acute Respiratory Diseases"

Moscow, Voprosy Virusologii, No 1, 1973, pp 82-86

Abstract: Incidence and characteristics of multiple infections were studied among 4,256 patients with clinically diagnosed influenza or acute respiratory disease. Out of 40% of these, for which the etiology had been established, 12.6% had associated infections, the percentage being somewhat higher for hospitalized than for ambulatory patients, but no seasonal variation was found. Analysis of the incidence of associated infections with respect to disease caused by particular pathogens indicated that most (41.7%) associated infections occurred among patients with para-influenza type 2 and least (12%) with influenza type B. Most associated infections (82%) were caused by influenza virus, particularly during epidemics. When influenza virus was not involved, Mycoplasma pneumoniae was encountered most frequently (56.7%). Such multiple infections were normally found to produce more severe symptoms.

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PARFENOV, V. A., et al, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 1, 1971, pp 140-143

charged gate suspended from the top at the point at which the band, which is propelled by an electric motor, turns downwards over a shaft. Under the effect of the electric shock from the gate, the animals turn back on the band, unless they are so tired that they cannot make the required effort; they then pass through the gate and fall into a lower compartment of the chamber. The chamber has been used in preliminary research on the effects of gas mixtures with different ratios of O₂ : N₂ partial pressures on the performance of animals at various intensities² of effort and also on the type and duration of restoration processes that followed physical loads to which the animals were subjected.

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UDC 621.391.82:621.396.62:621.376.32:621.317.743

MANUKYAN, S. G., KHRULEVA, N. S., PLATONOV, V. I.

"Statistical Characteristics of Noise from Regular Sources When Receiving an AM Type Signal Superimposed on an FM Carrier"

Uch. zap. Gorkovsk. un-t (Scientific Notes of Gorkiy University), 1970, vyp. 105, pp 31-32 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A107)

Translation: The effect of interfering signals on a receiver in communication systems with an FM-carrier is of the nature of short pulses. This arises from the fact that the heterodyne follows the frequency variation of the useful signal only, and the effects of the interfering signals are exhibited only in the time intervals when the frequency components of the active spectrum of the signal and noise coincide. To determine the distribution law of instantaneous values of the noise at the receiver output, experimental research was performed. By statistical processing of the output voltage oscillograms for two types of modulating voltage (noise vibration in the 250-3,500 hertz frequency band and sinusoidal oscillation with a frequency of two kilohertz), the distribution curves for the instantaneous values of the noise were obtained. For the first type of modulating voltage, the distribution law obtained is close to normal, and for the second type of modulating voltage, the

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USSR

UDC: 531.383

PLATONOV, V. K., SOSENEV, S. I., and SHAYDENKO, A. Ya.

"Double-Gyroscopic, Triaxial Stabilizer With Gyrocompass Effect"

Leningrad, Priborostroyeniye, No 1, 1972, pp 89-93

Abstract: The description is given of a device designed to solve the problem of stabilizing gravimetric and magnetometric geophysical instruments relative to a horizontal coordinate system with geographically oriented axes. These instruments are for use in a gondola towed by a ship for the purpose of investigating the gravitational and magnetic fields of the earth. The device was developed by the Hydrological Instrument Department of the Tula Polytechnical Institute, with which the authors are associated, in collaboration with the Institute of Terrestrial Magnetism, Ionosphere, and Radio Propagation, of the USSR Academy of Sciences (IZMIR AN SSSR) and the Naval Gravimetry Division of the All-Union Scientific Research Institute of Land and Sea (VNIIMORGEO). The gyrostabilizer consists of a basic Cardan suspension with two astatic gyroscopes in its frame; these gyroscopes are the sensing elements of the stabilizer indicator system. There is also a small Cardan suspension for the instrument to be stabilized. A diagram of the system is given and its theory of operation worked out.

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MANUKYAN, S. G., et al., Uch. zap. Gorkovsk. un-t (Scientific Notes of Gorkiy University), 1970, vyp. 105, pp 31-32 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A107)

deviation from the normal law is more significant. The greatest variance from normal distribution is observed for values close to zero.

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USSR

UDC: 612.(075.5)

PARFENOV, V. A., ~~PLATONOV, V. N.~~, and PLATONOV, S. N., Chair of Swimming, Problem Scientific Research Laboratory of High Training Loads, State Institute of Physical Culture, Kiev

"A Barochamber-Treadband for Tests in an Altered External Environment"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 1, 1971, pp 140-143

Abstract: A barochamber with a capacity of 100 liters has been designed which is totally enclosed and made of transparent plastic. The purpose of the chamber is study of the functional state of small laboratory animals that walk or run at various speeds. The chamber can be filled with a gas mixture containing O_2 , CO_2 , He, and N_2 in the desired ratios. The pressure in the chamber can be varied in the 0.5-1.5² at pange and the concentration of negative air (gas) ions in it in the range of $10^3 - 10^6 / cm^3$. An endless moving band is contained in the chamber, the velocity of the motion of which can be varied in 36 steps from 0.2 to 2.5 m/sec. The animals of a group placed into the chamber run on the vertically moving band in the direction of its motion until they reach an electrically

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PARFENOV, V. A., et al, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova,
Vol 57, No 1, 1971, pp 140-143

charged gate suspended from the top at the point at which the band, which is propelled by an electric motor, turns downwards over a shaft. Under the effect of the electric shock from the gate, the animals turn back on the band, unless they are so tired that they cannot make the required effort; they then pass through the gate and fall into a lower compartment of the chamber. The chamber has been used in preliminary research on the effects of gas mixtures with different ratios of O_2 : N_2 partial pressures on the performance of animals at various intensities of effort and also on the type and duration of restoration processes that followed physical loads to which the animals were subjected.

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USSR

UDC 513.6

PLATONOV, V. P., Academician of the Academy of Sciences Belorussian SSR, and
YANCHEVSKIY, V. I., Institute of Mathematics, Academy of Sciences Belorussian
SSR, and Belorussian State University imeni V. I. Lenin, Minsk

"The Structure of Unitary Groups and the Commutant of a Simple Algebra Over
Global Fields"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 541-544

Abstract: Let V be an n -dimensional linear space (right) over a finite-dimensional body D . ϕ is a nondegenerate skew-hermitian form on $V \times V$ with respect to some involutory antiautomorphism $j: d \rightarrow \bar{d}$ of the body D . $S = \{d \in D \mid \bar{d} = d\}$ is a subset of symmetric elements of D . If K is the center of D , then $\dim_K D = m^2$ and it is assumed that $k = K \cap S \neq K$: i.e., j is an involution of the second kind. In the case of $\text{char } K = 2$, as usual, it is considered that

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PLATONOV, V. P., and YANCHEVSKIY, V. I., Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 541-544

$$\forall v \in V \quad \exists \lambda(v) \in D: \Phi(v, v) = \lambda(v) - \overline{\lambda(v)}.$$

$U(\phi)$ is the unitary group of form ϕ ; $TU(\phi)$ is a subgroup of $U(\phi)$ generated by transvections. $GL(n, D)$ is a full linear group over D ; $SL(n, D)$ is a subgroup of elements with a reduced norm equal to one. $SU(\phi) = SL(n, D) \cap U(\phi)$. It is assumed that index $\phi > 0$.

The known hypothesis about the groups $SL(n, D)$ and $SU(\phi)$, contained in the Kneser-Tits general hypothesis about simply-connected algebraic groups, is as follows: the groups $SL(n, D)$, $n > 1$, and $SU(\phi)$ are generated by transvections, or (what is equivalent) the factors of these groups along the center are simple abstract groups. The hypothesis for $SL(n, D)$ is equivalent to

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