2/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105158

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY WAS MADE OF THE EFFECT OF TEMP., EXTERNAL STATIC ELEC. FIELD, AND ILLUMINATION ON ABSORPTION OF LONGITUDINAL ULTRASOUND VIBRATIONS IN SBSI CRYSTALS AT TEMPS. NEAR THE 1ST ORDER PHASE TRANSITION (SIMILAR TO 20DEGREES). THE DEPENDENCE IS GIVEN OF THE ABSORPTION COEFF. OF ULTRASOUND ON THE MAGNITUDE OF EXTERNAL ELEC. FIELD AT INITIAL TEMP. OF 17DEGREES AND AN ELEC. FIELD INCREASING AT 0.4 KV-MIN. THE ABSORPTION COEFF. INCREASES WITH INCREASING FIELD, PASSES THROUGH A MAX. AND STARTING WITH A FIELD OF 5 KV-CM, DECREASES. ILLUMINATION IN THE PRESENCE AND ABSENCE OF AN ELEC. FIELD DECREASES ABSORPTION BY LESS THAN 15PERCENT IN THE FERROELEC. PHASE AND HAS LITTLE EFFECT IN THE PARAELEC. PHASE. FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 534.29

BELOSTOTSKIY, V. F., KASHEVSKAYA, O. N., and POLOTSKIY, I. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Dislocation Damping in Single Crystals of Molybdenum Irradiated by Ultrasound"

Kiev, Metallofizika, No 39, 1972, pp 54-57

Abstract: Dislocation damping in ultrasonically irradiated single crystals of molybdenum was investigated in relation to vibration amplitude, irradiation time, and annealing temperature. High-power ultrasonic oscillations with a frequency of 20 hz were used for irradiation. Measurements were made by the impulse method at a frequency of 10 Mhz. It was shown that with increased amplitude of oscillations the damping level increases but is substantially less than after plastic deformation, yielding a comparable dislocation density. On the other hand, in the irradiation of plastically deformed samples, damping is reduced. The increase in damping occurs in two temperature intervals--75-150 and 250-600°C, between which a peak is situated with a maximum at 210°C. The obtained results are discussed in the limits of the theory Cranato and Lucke. The conclusion is made that ultrasonic irradiation, along with increasing dislocation density, leads to blocking of later point defects more substantially than by plastic deformation. In this aspect, ultrasonic irradiation is analogous to the action of nuclear irradiation or low-temperature annealing. 3 figures, 10 bibliographic references.

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AA0040678

UR 0482

Soviet Inventions Illu: ;ion I Chemical, Derwent,

241570 ELECTRIC EROSION DEVICE for maching hard metals submerged in liquids was improved by providing an auxiliary generator to maintain a dynamic equilibrium during the breakdown and re-establishment of a protection layer of the machining electrode. The control elements of this generator are made in the form of an active or inductive and capacitive resistances and are connected in series with the rectifier current source.

18

AUTHORS: Livshits, A. L.; Roze, L. V.; Zingerman, A. S.; Kravets, A. T.; Sosenko, A. B.; Aronov, A. I.; and Polotskiy, V. Ye. (Eksperimental'nyy Nauchno - Issledovatel'skiy Institut Metallorezhushchikh Stankov i Zavod "V E F ")

19750284

AA0040678

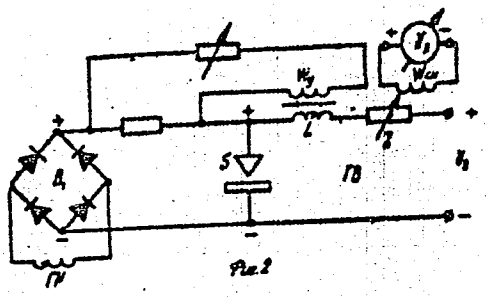

Fig. 2

30.3.64 as 891578/25-8. A.L.LIVSHITS et al.METAL CUTTING MACHINE TOOLS RES.INST. (8.9.69) Bul 14/18. 4.69. Class 21h. Int.Cl.H 05b.

19750285

AA0040642 POLOTSKIY V. YE. 3

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

241569 ELECTRO-MACHINE OF METALS by current pulses in a liquid medium containing carbon, according to the parent patent No. 196209, is improved by applying onto the working electrode, prior to the machining, a protective carbon-containing layer by pyrolysis of the liquid medium, which may be effected by heating the working surface of the electrode to 700-1000°C in an electric arc or furnace and, then, contacting it with the carbon-containing liquid medium. By this method, the durability of an electrode made e.g. of copper, is improved and the wearing of graphitized electrodes is reduced over the whole range of working conditions. The efficiency of the electrode is high.

30.3.64 as 891578/25-8 Add to 196209. A.L.LIVSHITS et alia. METAL-CUTTING MACHINES INST. et al.(28.8.69) Bul 14/18.4.69. Class 21h. Int.Cl.H 05b.

19750216

AA0040642

AUTHORS: Livshits, A. L.; Roze, L. V.; Zingerman, A. S.; Kravets, A. T.; Sosenko, A. B.; Aronov, A. I.; and Polotskiy, V. Ye.

Eksperimental'nyy Nauchno - Issledovatel'skiy Institut Metallorezhushchikh Stankov i Zavod "V E F"

19750217

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510007-2"

USSR UDC 617.711/.713-002-092.9-02:751.49

POLOTSKIY, YU. YE., VASSER, N. R., and DRAGUNSKAYA, YE. M., Institute of Experimental Medicine, Academy of Sciences USSR, and Institute of Epidemiology and Microbiology imeni Pasteur, Leningrad

"Experimental Keratoconjunctivitis Caused by Enteropathogenic E. coli (0124, 0143, 028a28c, 0136, 0144), the Agents of Dysentery-like Diseases in Adults and Children "

Moscow, Zhurnal Mikrobiolgii, Epidemiologii i Immunobiologii, No 12, 1971, pp 76-80

Abstract: Morphological study was conducted of the eyes of guinea pigs infected with cultures of pathogenic E. coli (0124, 0143, 028a28c, 0136, 0144) that cause dysentery-like diseases in adults and children as well as keratoconjunctivitis in guinea pigs. These bacilli differ in some respects from another group of E. coli (011, 055, 026, 0127, 0128, 044, 086, 0119, 0125, 0126, 020) which cause enterocolitis in young children but not keratoconjunctivitis in guinea pigs. Most of the 96 strains of microorganisms under study of induced a purulent keratoconjunctivitis within 48 hours of injection into the conjunctiva. Like Shigellae, these strains penetrated into the cytoplasm of the epithelial cells of the conjunctiva and cornea, where they produced and destroyed the cells. Infection of guinea pigs with avirulent strains resulted in a less pronounced and slower developing conjuctivitis and

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USSR

POLOTSKIY, YU. YE., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 76-80

keratitis. Infection with shigellae produced a more severe and persistent keratoconjunctivitis. These microbes are apparently more resistant to the phagocytic activity of polymorphonuclear leukocytes than the less virulent E.coli 0124, 0143, 028a28c, 0136, and 0144.

Acc. Nr: AP0051913 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 20-23

EXPERIMENTAL INTESTINAL INFECTION INDUCED BY ENTEROPATHOGENIC E. COLI O124:K72 — AN AGENT OF DYSENTERY-LIKE DISEASES OF ADULTS AND CHILDREN

Yu. Ye. Pokolskiy, N. R. Vasser

Institute of Experimental Medicine, Academy of Medical Sciences of the USSR, Leningrad

The data are reported on enteral infecting of fasted guinea pigs with enteropathogenic E. coli EEC O124, isolated from an adult patient during water outburst of dysentery-like disease — enterocolitis O124. Guinea pigs developed enterocolitis resulting in the death of a part of the animals. The authors found marked multiplication of EEC O124 in the jejunum, ileum and caecum. In the convalescent animals from the 2nd day after infection, the infecting agent began to leave the intestine. As evidenced from histological examination, the infection resembles experimental dysentery in the guinea pig. The process shows focal character and is associated with focal lesions of the epithelial layer of the jejunum, ileum and caecum, apparently resulting from multiplication of the microbes into epithelial cells. At the same time, less virulent, compared to Shigella, EEC O124 are more readily destroyed by polymorphonuclear leukocytes.

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19820396

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I/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GEOLOGICAL FACTORS AFFECTING THE NATURE OF GAS AND OIL DEPOSITS OF THE NORTHERN PART OF THE BAKU ARCHIPELAGO -U-
AUTHOR-(02)-POLOUDIN, G.A., KHALAFLI, E.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 3-5

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--PETROLEUM GEOLOGY, PETROLEUM DEPOSIT, NATURAL GAS, PETROLEUM PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0140 STEP NO--UR/0487/70/000/002/0003/0005

CIRC ACCESSION NO--AP0129396

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0129396
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME PHYS. AND CHEM. PROPERTIES OF CRUDE OIL AND NATURAL GAS ARE GIVEN. THE MAIN GEOL. FACTORS AFFECTING GAS OIL DISTRIBUTION IN THE TECTONIC ZONE OF SANGACHALY SEA LAKE BULLA ARE THE LITHOL. OF THE ENCLOSING AND OVERLYING ROCKS, BUT MOSTLY THE MUDDY VOLCANISM AND ASSOCD. TECTONIC FRACTURES AND FAULTS.

UNCLASSIFIED

USSR UDC 621.376.5

POLOV, K. P., Gor'kiy Polytechnic Institute imeni A. A. Zhdanov

"Investigation of the Stability of Pulse Systems with Duration Modulation"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Priborostroyeniye, Vol XVI, No 3, 1971, pp 23-27

Abstract: A study is made of a system comprising a pulse duration element and a continuous linear section with lumped constants. The difference equation is derived permitting determination of the conditions sufficient for stability of the system by application of criteria found for nonlinear pulse-amplitude systems. However, it is noted that the frequency criteria more precisely consider the nature of the nonlinearity of the system and therefore define a broader stability range in cases where they are applicable.

The matrix equality describing the processes in the closed system in the absence of external disturbing effects is derived. It is demonstrated that it is easy to find the majorant of this matrix, the stability conditions of which define the sufficient conditions of stability of the investigated system.

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USSR

UDC 621.175.177:536.248.2

RYZHKOV, S. V. and POLOVETS, Yu. A.

"The Separating Capacity of a Vertical Smooth-Pipe Bundle in a Two-Phase Stream"

Tr. Nikolayev. Korablestroit. In-ta (Works of the Nikolayev Shipbuilding Institute), No 48, 1971, pp 63-69 (from Referativnyy Zhurnal, Turbostroyeniye, No 5, 1972, Abstract No 5.49.71)

Translation: An investigation is made of the separating capacity of four-space and eight-row smooth-pipe bundles 1000, 750, and 500 mm high, composed of pipes 12 mm in diameter in checkerboard position with relative transverse and longitudinal spacing of 1.833 and 1.042. The entrapment coefficient of a smooth-pipe bundle 1000 mm high equals 97.0% at a mainstream velocity of 5 meters per second. At higher air velocities (greater than 8 meters per second), decreasing the bundle height and increasing the number of pipes facilitates an increase of the entrapment coefficient. 3 figures. 4 references.

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USSR

UDC 510

POLOVIN, R. V.

"Dialectics of Chance"

Filos. probl. suchasn. pryrodozn. Mizhvid. nauk. zb. (Philosophical Problems in Modern Natural Science. Interdepartmental Collection of Scientific Works), 1971, vyp. 25, pp 37-43 (Ukrainian; Russian summary) (from RZh-Matematika, No 2, Feb 72, Abstract No 2A6 from author's summary)

Translation: Laplacian determinism is criticized, as well as idealism's incorrect interpretation of the concept of conditional probability. The relation between probability theory and probability logic is revealed.

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USSR

AKHIYEZER, A. I., and POLOVIN, R. V., Khar'kov State University

"A Theory of Thermodynamic Fluctuations in Nonlinear Systems"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Nov 73, pp 230-239

Abstract: The authors develop a method for determining the correlation functions of thermodynamic fluctuations in nonlinear systems. It is proved that of all the nonlinear parameters characterizing a system, the correlation properties are influenced only by those which determine reversible processes in the system. With respect to dissipative processes, the correlation functions depend only on the dissipative coefficients of a linearized system. In particular, the correlation functions of fluctuations of current and voltage of a C, R circuit are determined by the nonlinear capacitance and do not depend on the nonlinear resistance.

The article includes 27 equations and one figures. There are 16 references.

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- END -

CSO: 1862-W

UDC 533.916

USSR

POLOVIN, R. V., ROZHKOV, V. V.

"Markov Aspects of Stochastic Phenomena in a Plasma"

Kiev, Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 91-98

Abstract: This paper investigates the equations of motion of particles in a plasma in which the electric field is stochastic and may be externally applied or derived from particle collisions. Two types of collisions may occur: close or paired collisions and distant or Coulomb collisions. In this paper, the former is neglected, thus giving each charged particle the quality of a stochastic electric field. The distribution function in the solution of the equations of motion with a random electric field must satisfy the localness condition by uniquely determining the distribution of particles for all $t > 0$ when specified at the moment $t = 0$. In the case of stochastic differential equations of motion, the condition of localness is equivalent to the requirement that the solution be a Markov process. The authors note that although the numerical results of their approach coincide with those of B. I. Davydov, in the latter's book Fizika plazmy i problemy upravlyayemykh termoyadernykh reaktsiy (Plasma Physics and the

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USSR

UDC 533.916

POLOVIN, R. V. et al, Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 91-98

Problem of Controlled Thermonuclear Reactions) Part 1, 1958, 77, the two approaches themselves are essentially different. While Davydov did not take into account particle collisions, the present authors do.

USSR

UDC: 537.567+537.569

DEMUTSKIY, V. P., POLOVIN, R. V., Khar'kov State University imeni A. M. Gor'kiy, Physicctechnical Institute, Academy of Sciences of the UkrSSR, Khar'kov

"Concerning Ionization-Recombination Oscillations"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 9, Sep 71, pp 1554-1556

Abstract: The authors discuss small ionization-recombination oscillations of a gas discharge close to the equilibrium state. They consider traps into which fast molecular ions are injected with dissociation into atomic ions captured by the trap and into which neutral particles are injected. It is shown that the injection mode is always stable for fast molecular ions as well as for fast neutral particles. The authors thank A. I. Akhiyezer for constructive criticism. Bibliography of ten titles.

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UDC: 533.9

USSR

AKHIYEZER, A. I., POLOVIN, R. V., Physicotechnical Institute, Academy of Sciences of the Ukrainian SSR, Khar'kov

"Oscillation Profile of the Shock Wave in a Plasma"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 9, Sep 71, pp 1467-1472

Abstract: The question of the oscillation structure of a shock wave in a plasma was first taken up by R. Z. Sagdeyev ("Problems of Plasma Theory", a collection of works, No 4, Moscow, Atomizdat, 1964, p 20), who considered only one mechanism of energy dissipation -- friction between the electron and ion components of the plasma. In this paper the authors investigate the way in which other mechanisms of dissipation (principally the internal friction of each of the plasma components) affect the shock wave oscillation structure. It is shown that if the internal friction in the plasma components exceeds the friction between the components, there is an appreciable change in the shock wave structure as considered here when compared with the case considered by Sagdeyev. One figure, bibliography of four titles.

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USSR

UDC 533.9

DEMUTSKIY, V. P., and POLOVIN, R. V., Physico-Technical Institute, Academy of Sciences, Ukrainian SSR, Kharkov

"Stability of a Relativistic Beam in Lattice-Type Electric and Magnetic Fields"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 8, Aug 71, pp 1379-1380

Abstract: The condition of instability of an electron beam in a given medium is that the velocity of the beam must exceed the velocity of the electromagnetic waves in the medium. The authors examine a modification of this in the relativistic case. They define the situation in which the motion of the electrons along the z-axis is stationary and under what conditions such a state of the beam is unstable. The problem is simplified by assuming that the charge and flow of the beam are compensated by the charge and flow of sufficiently heavy ions that do not participate in the high-frequency oscillations. To avoid the complication of studying the boundary conditions, the authors assume the medium and the beam to be infinite. The authors base their mathematics on the Maxwell equations and the equation of motion of an electron; they then linearize the equation obtained and, assuming the solution to have the form of a plane monochromatic wave, they obtain a dispersion

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USSR

DEMUTSKIY, V. P., and POLOVIN, R. V., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 8, Aug 71, pp 1379-1380

equation connecting ω and k. Ultimately the authors determine that allowance of the relativistic effects has no influence on the instability of the conditions proposed. However, when the energy of the electrons increases, the increment in growth of oscillations and wavelength representing the maximal increment are decreased. The article contains 1 bibliographic entry.

USSR

UDC 533.916

POLOVIN, R. V., ROZHKOV, V. V.

"Mathematical Problems of Stochastic Processes in Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 67-69 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G200)

Translation: It is shown that the partial differential equations with random characteristics describing stochastic processes in a plasma should be replaced by determinate equations for the distribution functions. The latter, as a rule, belong to the parabolic type.

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USSR

KORNEYCHUK, N. P.; POLOVINA, A. I. (Dnepropetrovsk State University, Kommunarsk Mining and Metallurgical Institute)

"Approximation of Continuous Functions by Algebraic Polynomials"

Kiev, Ukrainskiy Matematicheskiy Zhurnal; May-June, 1972; pp 328-40

ABSTRACT: Let H_ω be a class of functions $f(x)$ continuous in the interval $[-1, 1]$ the modulus of continuity of which — i.e., the quantity

$$\omega(f; t) = \sup_{|x''-x'|\le t} |f(x'')-f(x')| \quad (x'', x' \in [-1, 1]),$$

does not exceed a given modulus of continuity $\omega = \omega(t)$.

For any $f(x) \in H_\omega$ there exists a sequence of algebraic polynomials $\{P_n(f; x)\}$ of degree $n = 1, 2, 3, \ldots$ such that

$$|f(x) - P_{n-1}(f; x)| \le \theta\omega\left(\frac{\pi}{n}\sqrt{1-x^2}\right) + o\left(\omega\left(\frac{1}{n}\right)\right),$$

where $1/2 \le \theta \le 1$, uniformly with respect to $x \in [-1, 1]$ for $n \to \infty$. For a convex continuity $\theta = 1/2$.

There are four bibliographic references.

POLOVINA, I. P.

JPRS 55936

9 May 1972

CLOUD, FOG MODIFICATION

Excerpts from Russian-language book by I. P. Polovina: Vozdaystviya na Vnutrimassovyye Oblaka Sloistykh Form, 1971, Hydrometeorology Publishing House, Leningrad, signed to press 22 April 1971, 215 pages, UDC 551.509.6.

CONTENTS

UDC 551.509.6

Section 1. Temperature Threshold of Dry Ice's Effective Action

The use of dry ice as a reagent for the dissipation of clouds and fog and also for causing artificial precipitation is possible under certain temperature conditions. This is connected with the fact that the number of crystal nuclei forming on introduction of the dry ice into a certain space (effectiveness of CO_2 action) depends appreciably on the temperature of the environment.

Kampe, Weickmann and Kelly [229], studying the temperature dependence of dry ice's effectiveness in a refrigerating room, established that the number of developing crystalline nuclei decreases with an increase in temperature. Even at a temperature of -4.0°, it is less by two orders than at a temperature of -10.0°. As a result of this, the -4.0° temperature was also adopted by us as the temperature threshold for the dry ice's effective action.

Under natural conditions, the effectiveness of the dry ice's action should be evaluated in connection with the solution of that actual problem which the researcher has raised, e.g. the dissipation of a cloud or the causing of precipitation. Until recently, the information on the question of the upper temperature cutoff for the effective action of CO_2 was contradictory. Thus the effect of dry ice's action under natural conditions was also recorded at temperature of about -3.0° [229]. Soulage [262] indicates the manifestation of CO_2's effect in supercooled fog

MODIFICATION OF INTRAMASS CLOUDS AND FOGS FOR THEIR DISSIPATION

The conduct of operations on the dissipation of clouds and fogs over areas of several thousand square kilometers is of great scientific and practical interest. As is known, the radiation balance of the underlying surface is determined to a considerable extent by the presence of a cloud cover. As a result of dissipating clouds over large areas, we disrupt the radiation balance typical for the conditions of cloudy weather. In its turn, this can lead to a variation in the pattern of certain meteorological elements in the surface layer (temperature of air and soil, precurs). Consequently, the dissipation of clouds can be regarded as an active experiment for the purpose of evaluating the possibility of controlling weather conditions over large areas.

The conduct of experiments on dissipating clouds and fogs in large areas has great importance for studying the conditions of restoring them after artificial dissipation. For estimating the possible quantity of artificial precipitation over large areas, it is necessary to determine the conditions when the clouds are restored and to estimate the time during which the clouds become completely recovered. Information concerning the recovery time of clouds is necessary for a proper selection of the distances between the modification zones. Based on data concerning the water supplies of clouds, the values for the coefficient of execution (application) of water reserves with consideration of the recovery time of clouds, we can compute the amount of artificial precipitation over large territories. We should note that a study of the conditions for restoring the frontal clouds is one of the basic questions in the problem of modifying these clouds.

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PURIFICATION OF NATURAL GAS USING THE VORTEX EFFECT -U-

AUTHOR-(05)-LEYTES, I.L., SEMENOV, V.P., POLOVINKIN, V.A., LURYE, B.I., TAGINTSEV, B.G.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 345-50

DATE PUBLISHED-------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--NATURAL GAS, CHEMICAL SEPARATION, VORTEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1734 STEP NO--UR/0064/70/046/005/0345/0350

CIRC ACCESSION NO--AP0138707

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138707

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTS OF LENGTH-HEIGHT RATIOS IN A JET VORTEX INTAKE OF 200 MM PRIME2 CROSS SECTION AND INPUT-OUTPUT PRESSURE RATIOS BETA EQUALS P SUB2-P SUB4 ON THE COOLING EFFECT AND THE DEGREE OF REMOVAL OF C SUB6 POSITIVE HYDROCARBONS FROM NATURAL GAS WERE STUDIED. COOLING OF THE STARTING GAS BY THE COLD STREAM ISSUING FROM THE VORTEX WAS MAX. AT MU VALUES (0.7-0.9) WHICH DECREASED AS BETA INCREASED. AT MU EQUALS 0.75 AND BETA EQUALS E.R, THE HIGHEST DELTA T SUB1-4 (74DEGREES) WAS OBSD. COOLING BY BOTH THE COLD STREAM AND VORTEX WERE LOWER, THE HIGHER THE CONTENT OF IMPURITIES TO BE CONDENSED. C SUB6-8 HYDROCARBON CONTENT IN GAS ISSUING AT 4-9 ATM AND INITIALLY CONTG. 15 G-M PRIME3 C SUB6-8 HYDROCARBONS DROPPED FROM TO 12.7, 8.7, 4.1, 3.9, 2.9, AND 0.8 AS THE TEMP. OF THE COLD STREAM 0DEGREES TO MINUS 9DEGREES, MINUS 10DEGREES TO MINUS 19DEGREES, MINUS 20DEGREES TO MINUS 29DEGREES, MINUS 30DEGREES TO MINUS 39DEGREES, MINUS 40DEGREES TO MINUS 49DEGREES, AND MINUS 50DEGREES TO MINUS 60DEGREES.

UNCLASSIFIED

UDC: 621.315.592

USSR

KRAVCHENKO, A. F., KRIGER, E. D., MOROZOV, B. V., POLOVINKIN, V. G., and SKOK, E. M., Institute of Semiconductor Physics, Siberian Department, Acad. Sci. USSR, Novosibirsk

"Nernst-Ettingshausen Effects in n-GaAs in the Phonon Drag Region"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972, pp 1150-1151

Abstract: This paper is based on an earlier article written by some of the authors named above and published in the same journal (5, 1971, p 1608) reporting observation of the phonon drag effect of the thermo-emf in n-type GaAs. The present brief communication presents curves of the Nernst-Ettingshausen effects, longitudinal and transverse, as functions of temperature. The measurements made for plotting the curves were conducted in weak magnetic fields. A sharp rise in the effects below 200° K is noticeable in the curves; this is attributable to the drag effect. In the mathematical analysis, an expression is derived for the contribution of the phonon drag to the coefficient of the transverse N-E effect. The authors, associated with the Novosibirsk Institute of Semiconductor Physics, conclude that the relaxation time of long-wave phonons is independent of the wave vector and that the electrons are dragged by the acoustic phonons through the deformation potential.

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UDC 517.51

USSR

POLOVINKIN, V. I.

"Some Questions in the Theory of Weighting Cubature Formulas"

Moscow, Sibirskiy Matematicheskiy Zhurnal, Vol 12, No 1, Jan-Feb 71, pp 177-196

Abstract: A series of articles by S. L. SOBOLEV studied cubature formulas in classes $L_2^{(m)}(E_n)$ in the case of a constant weight and bounded region of integration. The present article generalizes SOBOLEV's results for the case of square-integrable weighting functions, determining, in particular, interpolation operators with a regular boundary layer and proving that the interpolation cubature formulas corresponding to them are asymptotically optimal if the weight belongs to L_2. For the case of such a weighting function cubature formulas are studied which are constructed by the partition of the region of integration Ω into subregions Ω_i

USSR

POLOVINKIN, V. I., Sibirskiy Matematicheskiy Zhurnal, Vol 12, No 1, Jan-Feb 71, pp 177-196

and by calculating Ω_i integrals by means of interpolation formulas with nodes at the lattice points corresponding to the given weight and Ω_i. Also considered is the problem of the optimum rate of convergence of cubature formulas with nodes at the lattice points for the case in which it is not assumed that the weight must belong to L_2. An example is given of a weighting function for which formulas with such nodes do not give the optimum order of decrease in the norms of error functionals $L_2^{(m)*}$ in (E_n) with an increase in the number of nodes. A number of the results of the present article were published without detailed proofs in a previous article by the author.

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USSR

POLOVINKIN, V. I., Sibirskiy Matematicheskiy Zhurnal, Vol 12, No 1, Jan-Feb 71, pp 177-196

The author thanks his scientific adviser S. L. SOBOLEV for his interest in the work.

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USSR

UDC 541.183.24

GRIBANOVA, I. N., KHOL'KINA, I. D., POLOVINKIN, YU. N., and NIKOLAYEV, A. V., Institute of Inorganic Chemistry, Siberian Branch, Academy of Sciences USSR

"The Radiation-Chemical, Chemical, and Mechanical Stability of Porous Organophosphorus Cation Exchangers"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1752-1755

Abstract: The stability of organophosphorus cation-exchange resins derived from styrene-divinylbenzene copolymers ("phosphone" resins) under the action of gamma-rays during irradiation in H_2O, 2N HNO_3, and air was studied. Changes in the adsorption capacity for Na^+ and UO_2^{++} upon irradiation and in other properties were determined. The radiation stability of the porous resins was higher than that of the non-porus. It increased with increasing degrees of cross-linking. The higher stability of porous resins, which had a higher content of divinylbenzene, was due to greater possibilities of structurization counteracting decomposition during irradiation. The porous resins also had a higher resistance to the action of acids (5N HNO_3 and 5N H_2SO_4) in tests continued for 1.5-3 mos.
1/2

USSR

GRIBANOVA, I. N., et al., Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1752-1755

The detachment of active groups took place mainly by cleavage of C-C, not C-P bonds. The mechanical strength of the resins, which was determined by grinding tests, depended on the density of cross-linking and the thickness of walls between pores. The data obtained on the resins are tabulated in relation to the content of divinyl-benzene in the resins and the amount of iso-octane used in their synthesis. The authors thank N. YR. BUYANOVA for her assistance in the experiments.

2/2

Welding

USSR

UDC: 621.791.052:669.295:620.192.4

KRECHETOV, A. D., SINDYUKAYEV, N. P. (Engineers) and POLOVYUKINA, T. P.

"Structure and Properties of a Welded Joint of VT6S Titanium Alloy"

Moscow, Svarochnoye proizvodstvo, No 1, Jan 72, pp 21-22

Abstract: The central purpose of this study was the structure and properties of a welded joint of VT6S titanium alloy made by various welding techniques including continuous arc welding, indirect pulsed arc welding,and two-sided pulsed arc welding. The microstructure of the weld metal is identical in all three methods and comprises α+α'-phases. The grain size in the transition zone is the same in all welds. However, two-sided pulsed arc welding shows a finer grain in the center of the weld than the other two welding methods. The microhardness of the weld metal is almost identical in all cases and amounts to 329-358 kg/mm^2. The strength of welds produced by two-sided pulsed arc welding is 92-96% of that of the base metal. The bend angle is nearly identical in all cases and is slightly higher than the minimum permissible for the base metal. Pulsed arc welding appears to improve the forming, structure,and properties of welds of VT6S titanium

1/2

USSR

KRECHETOV, A. D. (Engineer), et al, Svarochnoye proizvodstvo, No 1, Jan 72, pp 21-22

alloy. The best over-all results were obtained with two-sided pulsed arc welding. (3 illustrations, 2 tables, 3 bibliographic references).

2/2

USSR

UDC 621.374.44

PILIPETS, Yu. G., POLOVKOV, I. V.

"Varactor Frequency Multipliers Based on Strip Transmission Lines for Semiconductor Multiplier-Amplifier Circuits in the SHF Band"

V sb. Poluprovodn. pribory i ikh primenenive (Semiconductor Devices and Their Application--collection of works), Vyp. 23, Moscow, "Sov. radio", 1970, pp 145-171 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D27)

Translation: Recommendations are given on the construction of multiplier-amplifier circuits based on transistors and varactors. The singularities of calculating and designing varactor frequency multipliers based on strip lines are considered. Practical multiplier circuits are described, and the results of experimental studies of these circuits are given. Multipliers based on flat lines have parameters close to those of multipliers based on cavity circuits, but have considerable advantages over the latter with respect to technological and operational characteristics, and have smaller weight and overall dimensions. Excitation of parasitic oscillations in the multiplier is considered. The results of an experimental investigation of the spectral composition of the output signal of the multipliers are presented, and typical levels of undesirable harmonics, combination components, and components due to parasitic emission are given. Bibliography of five titles. Authors' abstract.

1/1

USSR

UDC 669.71.053.4.094(088.8)

BORZENKO, V. V., ABRAMOV, V. YA., POLOVNIKOV, B. A.

"Discharge Unit"

USSR Author's Certificate No 276025, Filed 11 Jun 69, Published 6 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G146P)

Translation: A design is proposed for an unloading device for a tubular leacher made in the form of a single-or double-bucket elevator. To lower the removal of thin fractions of sludge with solution, the elevator bucket is equipped with a cylindrical chute, and a partition is installed in front of the bucket which does not reach to the bottom of the elevator barrel. There are 2 illustrations.

1/1

UDC: 51

USSR

BRANOVITSKAYA, S. V., GORACHEV, V. A., LOPATIN, A. P., POLOVNIKOV, V. S.

"Analysis of Technological Algorithms"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), Kiev, 1971, pp 71-93 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V584)

[No abstract]

1/1

USSR

UDC 677.494.745.32-96.004.14:661.183.123.2

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

"Fibrous Cation Exchange Materials Based on Nitrona"

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

Abstract: The high chemical stability of the hydrocarbon chains of polyacrylonitrile and the high reactivity of the nitrile groups may be used to prepare ion exchange materials based on the polymers and copolymers of acrylonitrile fibers. The reaction is base catalyzed. Temperature and concentration were determined which would optimize the physical mechanical properties of the obtained fibers. The ion-exchange capacity ranged from 0.3 to 3 meq/g, the higher values generally occurring at high temperatures or high concentrations of NaOH. Intense chemical modification in the polymer chain occurred during the saponification process. These changes were examined using IR spectra and thermograms. The principal reaction path for the base saponification of the copolymer was the hydrolysis of the nitrile and the mixed-ester groups.
1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF POLYETHYLENE OXIDE ON THE SAPONIMCATION OF PRIMARY CELLULOSE ACETATES -U-

AUTHOR-(02)-GELLER, B.E., POLOVNIKOVA, M.V.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 22-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER, ETHYLENE OXIDE, CELLULOSE RESIN, ACETATE, SAPONIFICATION, REACTION KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0672 STEP NO--UR/0191/70/000/002/0022/0023

CIRC ACCESSION NO--AP0119580

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF ACIDIC SAPON. OF PRIMARY CELLULOSE ACETATES (I) IN ACOH SOLNS. WAS STUDIED IN THE PRESENCE OF POLY(ETHYLENE OXIDE) (II) OF MOL. WT. 4500, ADDN. OF 5PERCENT II INTO I SOLNS. GAVE INCREASED STRUCTURAL HOMOGENEITY AND WAS CONDUCIVE TO THE PREPN. OF CHEM. HOMOGENEOUS SECONDARY I. SECONDARY I, SAPOND. IN THE PRESENCE OF II, WERE MORE SOL. IN ME SUB2 CO AND EXHIBITED GREATER TRANSPARENCY AND FILTERABILITY.

UNCLASSIFIED

USSR UDC 541.124:541.57:541.49:547.514.72:546.72

NESMEYANOV, A. N., MAKAROVA, L. G., and POLOVYANYUK, I. V., Institute for Organic Elemental Compounds, Academy of Sciences USSR

"The Influence of the Nature of the Phosphorus Ligand on the Character of Interaction Between the Central Atom and the Surrounding Ligands in σ-Aryl Cyclopentadienyliron Carbonyl Complexes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 607-609

Abstract: During the study of the characteristics of σ-aryl cyclopentadienyliron carbonyl complexes, we examined the influence of the nature of the phosphorus ligand on the character of the interaction of the iron atom with the carbonyl and σ-aryl ligands. To do this, a series of fluorophenyl complexes of the type $C_5H_5Fe(CO)(L)C_6H_4F$-m,p were synthesized where L = $(C_6H_5)_3$, $P(OC_6H_5)_3$, and CO. The IR and nmr spectra were made. In the IR spectra $\nu_{C\equiv O}$ for the meta form is 1927; 1957; 1963 and 2018 for the above "L" series; and for the para form, 1925; 1949; 1961 and 2015. The nmr spectra of F^{19} showed δ vales of +4.47, +4.29, +2.35 for the meta form and +13.84, +13.10, and +10.95 for the para form. The carbonyl group can act as a donor through both induction and resonance. The aryl groups, however, participate only through induction. 1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF THE REACTION CONDITIONS ON THE INTERACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH PHOSPHINES AND PHOSPHITES -U-

AUTHOR-(03)-NESMEYANOV, A.N., MAKAROVA, L.G., POLOVYANYUK, I.V.

COUNTRY OF INFO--USSR

SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(3), 707-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOIRON COMPOUND, PHOSPHITE, ORGANIC PHOSPHORUS COMPOUND, PHOTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0615 STEP NO--NE/0000/70/022/003/0707/0712

CIRC ACCESSION NO--AP0119527

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119527
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH PR SUB3 IN BENZENE IS INDEPENDENT OF THE NAUTRE OF ARYL GROUP AND THE PHOSPHINE, BUT DEPENDS ON THE REACTION CONDITIONS; THE PHOTOCHEM. REACTION GIVES C SUB5 H SUB5 FE(CO)(PR SUB3)AR, AND THE THERMAL C SUB5 H SUB5 FE(CO)(PR SUB3)COAR. THE REACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH P(OPH) SUB3 IS AGAIN INDEPENDENT OF THE NATURE OF THE ARYL GROUP BUT DEPENDS ON THE REACTION CONDITIONS.
FACILITY: INST. ORG. ELEM. COMPD., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 619:615.92:636.51

POLOZ, D. D., Candidate of Veterinary Sciences, and TRONDINA, G. A., All-Union Institute of Experimental Veterinary Medicine

"Distribution of Methylinitrophos in Chicken Tissues and Dynamics of Excretion in Acute Poisoning"

Moscow, Veterinariya, No 1, 1972, pp 73-74

Abstract: The pesticide methylintrophos is less toxic to warm-blooded animals than other organophosphorus compounds because it is hydrolyzed in their tissues more quickly than in insect tissues. Injection of chickens with 300 to 600 mg/kg of methylinitrophos resulted in inhibition of blood acetylcholinesterase activity by 65 to 74% within 24 hours. Full restoration in the surviving animals occurred in 20 days. In chickens sacrified 4 to 5 days after injection of the pesticide, small amounts were found in the kidneys, brain, lungs, heart, gizzard, and muscles. No traces could be detected in the organs and tissues 6 to 27 days after intoxication. Excretion of methylnitrophos in feces started within are hour or two of injection of the preparation, reached a peak after 7 or 8 hours, decreased sharply by the end of the day, and ceased entirely after 9 days.

1/1

USSR

UDC 541.49:546.791.6

GUREVICH, A. M., POLOZHENSKAYA, L. P., OSICHEVA, N. P., and SOLNTSEVA, L. F.

"Reactions of Uranyl Malonate Complexes with Hydrogen Peroxide. II. Study of the Equilibria in the System UO_2^{2+}-H_2O_2-$C_3H_2O_4^{2-}$-H_2O"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 688-692

Abstract: Results are reported on the study of the reaction of uranyl malonate complexes with hydrogen peroxide employing the methods of light absorption and pH-metry. On the basis of the results of calculations, the following reaction is proposed as representative for the range of molar ratios selected:

$$2\,[UO_2(Mal)_2]^{2-} + 2\,H_2O_2 \rightleftharpoons [(UO_2)_2(OO)_2(Mal)_2]^{4-} + 4H^+ + 2\,Mal^-$$

with the equilibrium constant of $(3.3 \pm 0.6)\cdot10^{-18}$. The complete formation of the complex ion $[(UO_2)_2(OO)_2(Mal)_2]^{4-}$ with a 10^{-3}M concentration of uranium occurs at the pH range of 6 $\approx$ 7. The stability constant of the diperoxodimalonatodiyranyl ion was determined to be $\simeq 1.7\cdot10^{75}$. In the pH range 2-7.5 partial displacement of the malonate groups takes place with the formation of $[(UO_2)_2(OO)(Mal)_x]$ $[(UO_2)_2(OO)(Mal)_x]^{(2x-2)-}$ type

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USSR

GUREVICH, A. M., et al., Radiokhimiya, Vol 13, No 5, 1971, pp 688-692

oc omplexes in the first phase, followed by the formation of $[(UO_2)_2(OO)_2(Mal)_x]^{2x-}$ in the second phase. in weakly basic medium, various types of peroxo-malonato-hydroxyl-uranyl complexes may form, and at pH >10, with excess H_2O_2 the hydroxyl and malonate groups may be displaced with formation of peroxide complexes $[(UO_2)_2(OO)_2(H_2O)_n]^{2}$ and $[UO_2(OO)_3]^{4-}$.

2/2

USSR

UDC 543.251:546.799.3

GUREVICH, A. M., POLOZHENSKAYA, L. P., OSICHEVA, N. P., and SOLNTSEVA, L. F.

"Electrochemical Method of Isolating Neptunium From an Alkaline Peroxide Medium"

Leningrad, Radiokhimiya, Vol XIII, No 2, 1971, pp 239-245

Abstract: In connection with the urgency of the problem of separation and purification of transuranium elements and the difficulties of analyzing salt solutions containing micro amounts of transuranium elements, the possibility of separating these elements both jointly with uranium and in pure form (without a carrier) from alkaline peroxide media was studied on the example of ^{237}Np. The experimental procedure using the electrochemical method, and the data obtained are discussed. The applicability of the method to analysis of salt solutions of neptunium was demonstrated in a broad neptunium concentration range.

The yield of neptunium, introduced in the amount of 50-100 micrograms, reaches 99-100 percent, and its total losses vary from 0.5 to 1 percent under the following optinum conditions: pH $\sim$ 14.0, [UO_2 $\geq$ $5.6 \cdot 10^{-5}$M(1-2 milligrams in 75 mℓ), current density $\geq$ 1.0 milliamp/cm^2, electrolysis time $\geq$ 60 minutes,

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USSR

GUREVICH, A. M., et al., Radiokhimiya, Vol XIII, No 2, 1971, pp 239-245

temperature 95-100°. Data indicating the effect of the amount of carrier introduced into the experiment on the neptunium yield show that with a decrease in carrier concentration below the indicated limit, the neptunium losses begin to increase in connection with an increase in the effect of the solubility factor of the uranium and neptunium compounds when washing the participates with water. The data on the effect of salts on the ^{237}Np yield with uranium as the carrier show that the acetate and nitrate ions (both separately and jointly in a concentration up to 2M); the oxalate ion (up to 0.5M), have almost no effect on the ^{237}Np yield (97-99 percent) with total losses varying within the limits from 1 to 3 percent.

2/2

USSR

UDC 621.371.332.3:551.463.7:538.3

LOBACH, V.T., GARNAKER'YAN, A.A., POLOZHENTSEV, R.G., TYUKOV, E.S., INKOVSKIY, A.A.

"Experimental Investigation Of The Statistical Characteristics Of Radar Signals Reflected From Disturbed Sea Surface And Small-Sized Surface Objects"

Tr. Taganrog. radiotekhn. in-ta (Works Of The Taganrog Radio Engineering Institute), 1971, No 22, pp 14-23 (from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2G14)

Translation: The correlation intervals and the variation factor were measured of signals reflected from a disturbed sea surface and small-sized surface objects. A block diagram is presented of a measuring device with use of the "Donets" marine radar station (λ = 3.2 cm). An analysis is given of the results obtained; it is shown that they can be used for measurement of the degree of roughness of the sea and for evaluation of the effectiveness of detection of small-sized objects on a background of reflections from the sea surface. 1 ill. 2 tab. 3 ref. N.S.

1/1

USSR

UDC 611.839+615.361.814.3]:359.6

POLOZHENTSEV, S. D., Lt Col Med Serv, Candidate of Medical Sciences, PADKIN, V. V., Lt Col Med Serv, Candidate of Medical Sciences, NAUMOV, G. M., Lt Col Med Serv, and MAKHNENKO, A. A., Maj Med Serv.

"The State of the Sympatho-Adrenal System in Sailors During Long-Term Cruises"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 6, 1973, pp 56-57

Abstract: Determinations of urinary excretion of catecholamines were performed on two groups of sailors. In the first group comprising 28 men, noradrenaline excretion was moderately increased (39 units/min) and adrenalin excretion decreased (7) prior to sailing, corresponding to the general emotional excitation of anticipation. During the second half of cruising when adaptation to the changed surroundings was achieved, noradrenalin excretion increased to 67.6 while adrenalin excretion remained unchanged (6.9). Immediately after completion of the cruise, noradrenalin excretion fell to 31.6 while adrenalin excretion rose to 13.6. The second group comprising 21 men repeatedly sailed from one climate zone into another. During the first half of cruising, excretion of both catecholamines was elevated to about 40, indicating exposure to severe stress. In the final period of cruising when marked fatigue was observed in most

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USSR

POLOZHENTSEV, S. D., et al., Voyenno-Meditsinskiy Zhurnal, No 6, 1973, pp 56-57

sailors, excretion of noradrenalin fell to 9.2 and that of adrenalin to 12.4. Immediately after completion of the cruise, noradrenalin excretion rose to 24.6 while adrenalin excretion further fell to 3.8. The figures indicate a dissociation between the activities of the adrenal medulla and the sympathetic nervous system, corresponding to the various periods of adaptation to the changing external conditions.

2/2

POLOZHENTSEV, S.D

UDC 629.78.048.3/.4:/614.71+613.1[illegible]

MICROFLORA IN A CLOSED CABIN IN A THREE-DAY EXPERIMENT WITH HUMAN SUBJECTS AT A REDUCED TEMPERATURE AND HIGH RELATIVE HUMIDITY

[Article by S. D. Polozhentsev and M. N. Chikin; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 5, September-October 1972, pp 89-90, submitted for publication 24 December 1968]

It has been established that a combination of spaceflight factors [illegible] change the nature of the protective-adaptive body reactions and reduce [illegible] antibacterial immunity (Yu. V. Mashkovtsev). Data are also available [illegible] possibility under these conditions of intensifying the pathogenic propert[illegible] of microorganisms (Yu. G. Nefadov and S. N. Zaloguyev).

Table 1

1 Динамика качественного распределения микробной обсемененности воздушной среды камеры (количество микробов в 1 м³)

	2 До дезинфекции	3 Сразу после герметизации	4 1-е сутки: 8 часов	4 1-е сутки: 16 часов	4 1-е сутки: 24 часа	5 2-е сутки: 3[illegible] часов	5 2-е сутки: 48 часов	6 [illegible]	6 [illegible]
8 Гемолитический стрептококк	32	—	—	—	—	64	64	43	[illegible]
9 " стафилококк	96	32	32	64	64	—	64	[illegible]	[illegible]
10 Негемолитический "	295	64	96	128	128	320	[illegible]	[illegible]	[illegible]
11 " стрептококки	224	32	128	64	192	64	32[illegible]	171	17[illegible]
12 Протей	64	32	64	64	—	—	—	[illegible]	[illegible]
13 Синегнойная палочка	—	—	—	64	—	—	[illegible]	[illegible]	[illegible]
14 Кишечная палочка	128	—	64	128	192	320	[illegible]	[illegible]	[illegible]
15 Сарцины	96	32	64	128	64	—	—	[illegible]	[illegible]
16 Белый стафилококк	64	—	32	64	—	64	[illegible]	[illegible]	[illegible]
17 Различные плесени	320	128	128	256	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18 Другие непатогенные микробы	672	160	320	960	832	[illegible]	[illegible]	[illegible]	[illegible]
19 Общее число микробов	1984	480	928	1920	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1) Dynamics of Qualitative Distribution of Microbial Occupation of Atmo[illegible] in Chamber (Number of Microbes per 1 m^3); 2) Prior to disinfection; 3) [illegible] diately after pressurization; 4) 1st day; 5) 2d day; 6) 3d day; 7) hour[illegible] 8) Hemolytic Streptococci; 9) Hemolytic Staphylococci; 10) Nonhemolytic [illegible] ylocci; 11) Nonhemolytic Streptococci; 12) Proteus; 13) Blue pus bacteri[illegible] 14) Coliform bacteria; 15) Sarcina; 16) White Staphylococcus; 17) Vario[illegible] fungi; 18) Other nonpathogenic microbes; 19) Total number of microbes

JPRS 57517
15 Nov 72

UDC 549.212

USSR

KOTOSONOV, A. S., DEMIN, A. V., POLOZHIKHIN, A. I., NIKOL'SKIY, I. F., and RAKCHEYEVA, V. I.

"Effect of Boron on Some Physical Characteristics of Artificial Graphites"

Moscow, Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

Abstract: The authors studied the effect of boron, introduced into the initial raw material (0.01-5.0 wt. percent), on some physical characteristics of graphite materials based on calcined petroleum coke, prepared by the thermomechanical treatment method. The attempt was also made to estimate the amount of boron dissolved in the graphite lattice and to establish the interrelationship between the amount of dissolved boron and the total content thereof, on the one hand, and certain physical properties of graphite, on the other. Specific electrical resistivity, magnetic resistance, Hall constant, X-ray diffraction parameters, compression strength and residual boron content were

USSR

KOTOSONOV, A. S., et al., Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

measured on specimens, as well as relative deformation during thermomechanical treatment.

There was found to be an increase in the deformation of specimens during thermomechanical treatment and the density and mechanical strength of the material with an increase in the boron content. The structure of boronized graphite is characterized by increased crystallite size and reduced interlayer distance. The electron properties of the graphite depend mainly on the amount of boron dissolved in the lattice and replacing some of the carbon atoms.

It is shown on the basis of an analysis of the Hall constant that the limiting solubility of boron is limited to 1 percent with re-

USSR

KOTOSONOV, A. S., et al., Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

spect to the ordered part of carbon. The rest of the boron is localized between the graphite crystallites in the form of carbide compounds. It is assumed that the increased strength of the graphite is due to the carbide phase of boron.

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ACC NR: AM7004692 (N) Monograph UR/

Bayrashevskiy, Aleksandr Mustafovich; Bykov, Vladimir Ivanovich; Nikitenko, Yuriy Ivanovich; Polozhintsev, Vasiliy Alekseyevich

Radio navigation apparatus (Radionavigatsionnyye pribory) Moscow, Izd-vo "Transport", 66. 0448 p. illus., biblio. 10,000 copies printed. A textbook for radioengineering students at higher marine engineering schools.

TOPIC TAGS: navigation equipment, navigation radar, ship navigation, shipborne-radar, radio beacon, direction finder, omnidirectional antenna, waveguide antenna, marine engineering

PURPOSE AND COVERAGE: This textbook, approved by the Administration of Education of the Ministry of the Merchant Marine, USSR, is intended for radio-engineering faculties in merchant marine schools of higher education. It may also be used by students of other schools and faculties for the study of radio-navigation instruments as well as by navigation personnel of merchant-marine and fishing-industry ships. Such radionavigation instruments as radio-direction finders, radar equipment, and receiver-indicators of pulse and phase radionavigation systems are discussed. Operating principles, construction, and exploitation are analyzed, and examples of the calculation of the elements in the latest systems

Card 1/4 UDC: 621.396.967.72(075.1)

ACC NR: AM7004692

of audio and visual radio-direction finders, the Decca and Loran navigation systems, etc., are also given. Special attention is given to Soviet radar equipment. Information on coast radio equipment, such as beacons and radionavigation transmitters, is also given. The textbook is based on a series of lectures given by the authors at the Department of Radio Engineering of the Leningrad Higher Marine School im. Admiral S. O. Makarov. No personalities are mentioned. There are 33 references, all of which are Soviet.

TABLE OF CONTENTS [abridged]:

ACC NR: AM7004692

Card 3/4

ACC NR: AM7004692

SUB CODE: 09,13 /SUBM DATE:none /ORIG REF: 033

Card 4/4

USSR UDC: 621.165"313"

POLOZHIY, S. V.

"Difficulties in the Development of Steam-Turbine Installations -- the Results of Using the Modern Steam-Power Cycle, its Contradictions and Disadvantages"

Sb. statey 1 Nauchno-tekhn. konferentsii po teploobmenu i szhiganiyu (Collection of Articles of the First Scientific and Technical Conference on Heat Exchange and Combustion), Krasnoyarsk, 1970, pp 350-356 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.1)

Translation: An analysis of the present state and development of thermal power engineering is presented. Reasons are given which hamper an increase in the economy of an installation. It is proposed that adiabatic steam formation be used in a steam-turbine installation, which should eliminate drawbacks and contradictions in modern heat and electric power plants. Power units with adiabatic steam formation considerably reduce capital outlays, and increase the economy and reliability of electric power production. A thermal diagram is given for a unit with adiabatic steam production and a power of 300 MW. Two illustrations, bibliography of six titles.
1/1

USSR

UDC 911.3:616.936(470.311)

LOBAN, K. M., and POLOZOK, YE. S.

"The Problem of Clinical Characteristics of Imported Malaria and the Effectiveness of Modern Methods for Its Cure"

V sb. Materialy XV Vses. syezda epidemiologov, mikrobiologov i infektsionistov, Tezisy Dokl. Ch 2 (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists, and Infectious Disease Specialists, Theses Reports, Part 2 -- collection of works), Moscow, 1970, pp 66-68 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36. 294)

Translation: In 1961-1969, 234 malaria cases were recorded in Moscow, of which 174 had come from Africa, 56 from Southeast Asia, and 3 from Latin America. There were 137 Soviet citizens, and the remaining 97 were foreigners, mostly Africans. Tropical malaria (50.5% of the cases), tertian malaria (31.7%), and P. ovale malaria (14.7%) were observed.

1/1

USSR

UDC 616.936-036.25

POLOZOK, YE. S., Candidate of Medical Sciences, Chair of Infectious Diseases, Patria Lumumba Friendship University

"Diagnosis and Treatment of Imported Cases of Malaria"

Moscow, Meditsinskaya Sestra, No 6, 1971, pp 38-41

Abstract: Malaria as an endemic disease has been virtually eradicated from the USSR. During the past few years only sporadic cases of tertian and quartan malaria have been reported, mainly in the Azerbaydzhan SSR. However, the recent broadening of cultural and economic relations between the USSR and African countries and increased travel of Soviet citizens to these countries have resulted in an increased number of imported cases. The disease is diagnosed on the basis of clinical symptoms, epidemiological data, and detection of Plasmodia in the Blood. The technique for preparing smears and drops of blood for analysis is described. Chloroquine is the drug of choice in the treatment of all forms of malaria. If gametocytes are still presnet in the blood after 2 days of chloroquine therapy, other agents such as quinocide are administered in addition. The principal prophylactic measures employed by Soviet authorities are early detection and treatment. Examination of the blood of all persons with fever who have come from areas within the USSR and overseas known to be affected with malaria is recommended.

1/1

USSR UDC 616.981.553-06:616.8-036.17

ANTONOVA, T. M., VORONTSOVA, L. P., KYDRYAVTSEVA, Ye. L., OSADCHAYA, Ye. I., POLOZOV, A. M., and TROFIMENKO, N. K., Volgograd Children's Infections Hospital No 21, and Volgograd Medical Institute

"Clinical Characteristics and Management of Patients Suffering From Botulism With Severe Affections of the Nervous System"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 130-133

Abstract: Twenty botulism patients, including 12 with bulbar involvement were studied. Nineteen of the 20 patients recovered. Treatment with botulin antiserum (polyvalent initially, and monovalent after identification of the bacterium type) is effective. However, injections of the serum do not suffice when bulbar disorders develop. In such cases, it is imperative to perform tracheotomy, drain mucus from the trachea and the bronchi, and apply an artificial respiration apparatus. Patients with impaired deglutition and breathing should be admitted to artificial respiration departments as soon as possible; tracheotomy should be performed and other measures such as injection of the antiserum, washing of the gastrointestinal tract, etc., should be taken immediately. Since most botulism cases are caused by consumption of improperly

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USSR

ANTONOVA, T. M., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 130-133

home-canned food, it is necessary to expand public education in sanitation and hygiene. This work must be carried out by physicians in all of the specialties, who must enlighten the general public on the importance of proper processing and canning of food.

2/2

UNCLASSIFIED

TITLE--ADSORPTION OF CARBON MONOXIDE ON THE SURFACE OF A TUNGSTEN SINGLE CRYSTAL PARTIALLY FILLED WITH THORIUM -U-

PROCESSING DATE--17JUL70

AUTHOR--AGEYKIN, V.S., PTUSHINSKIY, YU.G., POLOZOV, B.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970 12(1), 221-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS ADSORPTION, CARBON MONOXIDE, SINGLE CRYSTAL PROPERTY, TUNGSTEN, METAL SURFACE IMPREGNATION, THORIUM, WORK FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1998

STEP NO--UR/0181/70/012/001/0221/0226

CIRC ACCESSION NO--AP0048276

UNCLASSIFIED

Acc. Nr: AP0048276 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0181

104165k Adsorption of carbon monoxide on the surface of a tungsten single crystal partially filled with thorium. Ageikin, V. S.; Ptushinskii, Yu. G.; Polozov, B. P. (Inst. Fiz., Kiev, USSR). *Fiz. Tverd. Tela* 1970, 12(1), 221–6 (Russ). The effect of partially filling a W surface with Th on the adsorption of CO was investigated. A large effect was obsd. with a very small amt. of Th on the W surface. In the mechanism of adsorbtion capacity suppression of the W surface, the dominant role is played by the charge state of the Th atoms. The charge of the adsorbing atoms sharply decreases with increasing degree of coverage. Results obtained for W faces with different work functions correlate with the expected dependence of the charge state of adsorbed atoms on the initial work function. A. Libackyi

1/1

REEL/FRAME
19791998

18 NT

USSR

UDC 577.15.049

SUKHORUKOV, B. I., POLTEV, V. I., POLOZOV, R. V., IL'ICHEVA, I. A., Institute of Biological Physics, Academy of Sciences of the USSR, Pushchino-na-Oke

"Concerning a Possible Method of Finding Potential Mutagens and Cytostatics Based on Calculating the Energy of Intramolecular Interactions of DNA-Containing Analogs of Nitrogen Bases"

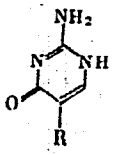
Moscow, Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

Abstract: Semiempirical calculations of the energy of interaction of nitrogen bases were used to find potential cytostatics and mutagens. The calculation was based on consideration of analogs which do not appreciably distort the double helix in the DNA molecule. The total energy of interaction of bases T is assumed to be comprised of the energy of electrostatic E, induction H and dispersion F interaction, and the energy of short-range forces of repulsion V. Each term was computed in the atom-atom approximation, using a BESM-3M digital computer. Following are the most probable potential cytostatics (upper row) and mutagens (lower row):
1/4

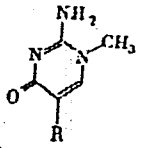
USSR

SUKHORUKOV, B. I., et al., Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

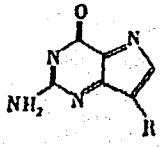
1) Т($C^2HC^3N^5$)



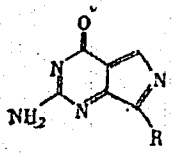
2) Ц(C^2N^3H)



2) Ц($C^2N^3CH_3$)



3) Пур($C^2NH_2C^6OC^9$)



3) Пур($C^2NH_2C^6OC^1HN^3C^9$)

Legend: 1. Thymine; 2. Cytosine; 3. Purine

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USSR

SUKHORUKOV, B. I., etal., Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

The notation in parentheses give the atoms and atomic groupings which distinguish the given analogs from the indicated bases. The position of the atom in the ring is given by the superscript, and atoms outside the ring are recorded following the ring to which they are attached without a superscript. Numbering of ring atoms is such that desoxyribose is always attached in the third position of the analogs of pyrimidines, and in the ninth position of analogs of purines. Calculations showed that for all five compounds the average energies of interaction of the bases for Pur:Cyt and Pur:Thy pairs are comparatively close to each other and to the energy of interaction in DNA falling to the Ad:Thy pair. The scheme of transitions of standard pairs of bases under the influence of an analog which can replace both purines in a singular molecular form is given as follows:

$$\underset{T_1}{Ad:Thy} \rightleftarrows \underset{T_2}{M:Thy} \rightleftarrows \underset{T_3}{M:Cyt} \rightleftarrows \underset{T_4}{Gua:Cyt}$$

where M is an analog of adenine and guanine, and T_1, T_2, T_3 and T_4 are the energies of interaction of the bases in DMA falling to the corresponding pairs of bases. The given analogs are potential mutagens which induce the

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USSR

SUKHORUKOV, B. I., et al., Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

transitions Ad:Thy→Gua:Thy more frequently than in the reverse direction. Other cases are possible for other ratios between energies. The ratio between these energies determines which base will probably be replaced by the analog, and in which direction this analog will induce transitions.

USSR

UDC: 532.073:532.135

MAKAROV, A. M., ZHDANOVA, L. A., POLOZOVA, O. N., Higher Technical Academy imeni N. E. Bauman, Moscow

"Nonstationary Flow of a Viscoplastic Medium in a Plane Channel"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 22, No 1, Jan 72, pp 73-79

Abstract: The paper deals with the problem of nonstationary plane flow of a viscoplastic medium between parallel walls under the effect of an instantaneously applied time-constant pressure gradient. A nonlinear integro-differential equation is derived for the distribution of tangential shear stresses in the investigated region. The method of successive approximations is used for solving this equation. The problem of determining the time required for the sought interface between zones to reach a predetermined position is reduced to calculation of a quadrature. Two figures, bibliography of nine titles.

1/1

Acc. Nr: AP0034145

Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code: 2AR 0078

P

71751t X-ray study of double tungstates, α-KLn(WO$_4$)$_2$. Pol'shchikova, Z. Ya.; Trunov, V. K. (Kafedra Neorg. Khim., Mosk. Univ., Moscow, USSR). *Zh. Neorg. Khim.* 1970, 15 (1), 208–9 (Russ). X-ray power diffraction data (*I*, d, *hkl*) of α-KHo(WO$_4$)$_2$ and lattice parameters (*a*, *b*, *c*) of KM(WO$_4$)$_2$ (where M = Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, or Y) are given. The compds. form monoclinic crystals and belong to group symmetry $I2_1/c$.
HMJR

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18 dc

REEL/FRAME

19710762

USSR

UDC: 550.834

POLSHKOV, M. K., MUSHIN, I. A., SHEKHTMAN, G. A., POTAPOV, O. A., All-Union Scientific Research Institute of Geophysical Methods of Prospecting

"A Method of Processing Seismic Data"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329492, Division G, filed 25 Aug 69, published 9 Feb 72, p 183

Translation: This Author's Certificate introduces: 1. A method of processing seismic data based on the effect of the change in intensity of a seismic recording when elastic oscillations are registered in media with different acoustic rigidities. As a distinguishing feature of the patent, the procedure is designed for improved precision in locating boundaries which separate media with different acoustic rigidities. Reproduced seismic recordings obtained by some such means as vertical seismic profiling at each point of the investigated medium along the direction which intersects the boundaries to be determined are integrated over a certain time interval after conversion to quadratic form, and the integral values are presented

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USSR

POLSHKOV, M. K. et al., USSR Author's Certificate No 329492

in the form of a depth curve. The presence of geological boundaries is then determined from changes in the curve. 2. A modification of this method distinguished by the fact that the integral values are obtained from seismic recordings converted to unipolar form.

2/2

USSR

UDC 539.216.2:535.211

ZAKHAROV, V. P., POL'SKIY, YU. M., and CHUGAYEV, V. N. (Kiev)

"Kinetics of Structural Changes in Thin Films of Germanium and Carbon During Their Interaction With Laser Radiation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 55-60

Abstract: The article describes results of a study of the process of crystal growth in thin germanium films during their interaction with laser radiation. An FEU-31 photomultiplier was used as the recording device. The germanium films were obtained by evaporation in a vacuum of the order of $5 \cdot 10^{-6}$ mm Hg on cold glass substrates. The interaction of thin germanium films with focused laser radiation results in the growth of single crystals within individual cells of the supporting grid on which the film was placed. The crystals reached 15-20 microns in length. Oscillograms disclosed a difference in the duration of changes in the optical density of the films when they were irradiated with laser radiation in air or in a vacuum. Since changes in the

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USSR

ZAKHAROV, V. P., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 55-60

optical density of germanium film in a vacuum begin following the completion of the laser pulse action, it may be considered that the single crystals grow in the film as it cools off. The temperature for the start of single-crystal growth is strictly determined. In air the appearance of significant temperature gradients determines a nigher rate of single-crystal growth in the films than under vacuum conditions. Crystal growth within different cells takes place sequentially as the film crystallization temperature is reached during cooling. The use of the photomultiplier makes it possible to estimate mean crystal growth rates. For 15-20-micron single crystals the mean rate of their growth in the film is of the order of 10 cm/sec.

The same method was used to study the time characteristics of the graphitization of carbon film in its interaction with a laser pulse. Unlike germanium films, where ordering of the microstructure occurs during their cooling, carbon films are

USSR

ZAKHAROV, V. P., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 55-60

graphitized on heating. Oscillograms of variations in the optical density of the carbon film show that the graphitization process begins 200 microseconds after the start of the laser pulse. The rate of movement of the film graphitization front in an individual cell is estimated to be of the order of 30 cm/sec.

3/3

USSR UDC: 621.372.061.1

POL'SKIY, Yu. Ye., RUSYAYEV, N. N.

"Investigation of a Parametric Resonance Circuit With Low-Frequency Pumping"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 129, pp 25-31 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D271)

Translation: The authors find the transient pulse response of the circuit, determine its equivalent circuit, and make an experimental investigation of the amplitude-frequency characteristics of a parametric comb filter with periodically varying energy parameters. A. K.

1/1

USSR

UDC: 621.372.061:538.56

BOLOZNEV, V. V., POL'SKIY, Yu. Ye.

"On Peculiarities of Synchronizing a Self-Excited Oscillator by a Frequency Modulated Signal"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 122, pp 86-90 (from RZh-Radiotekhnika, No 2, Jan 71, Abstract No 1A146)

Translation: The paper presents the results of an experimental study of the width of the lock-in region of an oscillator as a function of the frequency γ and modulation index ψ of the oscillator and the external signal. It is shown that the oscillator may be synchronized by one of the side components of the external signal. In this case, a number of lock-in regions arise with oscillations in each of them in accordance with the law

$$x(\tau)=B\sum_{m=0}^{\infty} I_m(\psi_1)\cos[(\varkappa_p+m\gamma_1)\tau+\varphi_m].$$

where B is the amplitude of the locked-in oscillator; $\varkappa_p = \varkappa + p\gamma_2$; p is the number of the lock-in region; $m = \pm 1, \pm 2, \ldots, \pm\infty$; φ_m is the phase of the m-th side component. It is noted that the width of the p-th region of lock-in depends on ψ_1, γ_1, ψ_2 and γ_2. By fixing ψ_1, γ_1 and γ_2, the p-th

1/2

USSR UDC: 621.373:530.145.6

YELOV, V. V., IL'YASOV, R. Sh., MOROZOV, V. P., ORLOV, B. V., POL'SKIY, Yu. Ye.

"A Transistorized Oscillator for Excitation of a Ring-Type Gas Laser"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 104, pp 116-122 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D199)

Translation: High-frequency pumping oscillators which operate in the 3-100 MHz frequency range are most frequently used for activating a gas laser. As a rule, these oscillators are based on vacuum tubes. With the development of Soviet high-frequency power transistors, it has become possible to make a miniaturized economic pumping oscillator. This paper describes a transistorized oscillator designed for excitation of three gas-discharge tubes on a frequency of 5 MHz with relative frequency instability of 2×10^{-4} with an output power of 50×3 W, the time for reaching the working mode being no more than 50 msec. The gas laser emission level is stabilized by using negative feedback with respect to the emission of the laser. The power level for excitation of the gas-discharge tubes in a ring laser is continuously variable from P_{max} to 0.3 P_{max}.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THE SURFACE TENSION OF SIO SUB2, BAO, B SUB2 O SUB3, ENAMEL, MELTS AND THEIR ADHESION TO CHROMIUM,NICKEL STEELS -U-

AUTHOR-(03)-PERMINOV, A.A., POPEL, S.I., POLTARAK, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZASHCHITA METALLOV, JAN.-FEB. 1970, 6, (1), 97-100

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SURFACE TENSION, ENAMEL, FLUID PROPERTY, CERAMIC COATING, CHROMIUM NICKEL STAINLESS STEEL, SILICA, BARIUM OXIDE, BORON OXIDE, ADHESION STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0309 STEP NO--UR/0365/70/006/001/0097/0100

CIRC ACCESSION NO--AP0129541

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129541

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETERMINATIONS WERE MADE OF THE WETTING ANGLE (NU) AND THE SURFACE TENSION (SIGMA) OF SIO SUB2, BAO, B SUB2 O SUB3 MELTS ON THE SURFACE OF A STEEL CONTG. NI 54.65, CR 25.12, SI 0.49, AND MN 0.32PERCENT PREPARED BY HEATING THE POLISHED STEEL IN DRY H; THIS PROCESS LEFT SOME OXIDE WHICH WAS NOT REMOVED. DETERMINATIONS OF SIGMA WERE MADE BY THE METHOD OF THE MAX. PRESSURE IN A BUBBLE, THE LOWEST VALUE BEING GIVEN BY BOROSILICATES CONTG. HIGH B SUB2 O SUB3 AND SIO SUB2 BUT INCREASING AS SIO SUB2 OR B SUB2 O SUB3 WAS REPLACED BY BAO. ALL THE MIXTURES SHOWED GOOD WETTING OF THE STEEL. THE INTERFACIAL TENSION SIGMA SUBSOLID AT THE METAL-MELT INTERFACE DECREASES ON REPLACING B SUB2 O SUB3 OR SIO SUB2 BY BAO. THE PRESENT RESULTS GIVE ADHESION VALUES 1.5 TIMES HIGHER THAN THOSE USUALLY OBTAINED WITH ENAMELS ON PRIMED MILD STEEL. THE HIGHER BOND STRENGTH IS ONE OF THE CAUSES OF THE IMPROVED QUALITY OF BOROSILICATE MELTS THAT CONTAIN BAO. IT IS CAUSED BY THE LOWER POLARIZATION OF THE BOUNDARY O ANIONS BY THE BA PRIME(X3)PLUS CATIONS WHICH REPLACE SI PRIME(X1)PLUS AND B PRIME(X2)PLUS.

USSR UDC: 621.791.856.3

MEDOVAR, B. I., MARTYN, V. M., CHEKOTILO, L. V., VOSVILOV, N. M., KULEV, G. B., POLTAVETS, A. V., KRAVETS, N. I., and GLOZMAN, L. P.

"Corrosion Resistance of Joints of EP668 Alloy in Nitrogen- and Sulfur-Containing Media"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 67-68

Abstract: A study was made of the corrosion resistance of high-chromium alloy Kh50N5V (EP668) and its welded joints in highly aggressive media involved in the production of sulfuric and nitric acids. It was found that EP668 alloy and its welded joints have a high corrosion resistance in media containing nitrogen oxides NO and NO_2, natural gas with air, H_2S, SO_2, CO_2, and HCN gases. In these media the maximum corrosion rate of the parent metal and its welds is 0.019 g/m^2.hour. For comparison, tests were also conducted on the most extensively employed corrosion-resistant materials, including Kh18N10T, Kh18N12M2T (EI448), OKh21N6M2T (EP54), titanium, aluminum, and St.3 steel. Under similar conditions these materials exhibited intensive corrosion. EP668 alloy is also resistant in ammonium carbonate solutions (43% NH_3, 34% CO_2, 23% H_2O) at 100°C and a maximum pressure of 200 atm.

1/1

Mechanical Properties

USSR

UDC 669.15-194:669.14

NIKITSKAYA, V. A., PYATAKOVA, L. L., POLTAVETS, N. A., SHUBINA, S. A., KUZNETSOVA, L. M., VOLKOV, L. G., BARANOV, V. Ya., and CHEREDNIK, L. Ye., Metallurgical Plant imeni Dzerzhinskiy, Dneprodzerzhinsk Industrial Institute imeni M. I. Arsenichev

"Improvement of Mechanical Properties of Hot-Rolled 10KhSND Steel"

Moscow, Metallurg, No 1, Jan 73, pp 16-17

Abstract: Experimental data are presented on the effects of chemical composition, method of final deoxidation, and temperature at the end of rolling on the level of mechanical properties and the amount of waste of 10KhSND steel in the hot-rolled state. The effects of C, Mn, Si, and Cr and their summary effect on the impact strength and the ultimate strength (yield) of 10KhSND steel deoxidized in the ladle with aluminum (1000 g/ton) and ferrotitanium (500 g/ton) are discussed by reference to diagrams. Best results in improving the mechanical properties and in decreasing the amount of waste were obtained by applying calciosilicate (2000 g/ton) and by reducing the rolling temperature to 900 °C at the same time. The use of calciosilicate in the final deoxidation of steel in the open-hearth shop of the Plant imeni Dzerzhinskiy decreased the amount of waste by 5-5.5 times. Two figures, one table.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EXCITED STATES OF ALTERNANT HYDROCARGONS IN A MO LCAO APPROXIMATION. II. SINGLET AND TRIPLET ABSORPTION SPECTRA OF CONDENSED
AUTHOR-(03)-MESTECHKIN, M.M., GUTYRYA, L.S., POLTAVETS, V.N.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 38(3), 454-61

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--EXCITED STATE, MOLECULAR ORBITAL, NAPHTHALENE, ANTHRACENE, AROMATIC HYDROCARBON, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/C08 STEP NO--UR/0051/70/028/003/0454/0461

CIRC ACCESSION NO--AP0140273

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MO LCAO CALCNS. SUGGESTED PREVIOUSLY (M. AND G., 1969; M., 1969) WERE APPLIED TO NAPHTHALENE, ANTHRACENE, TETRACENE, PYRENE, PERYLENE, PICENE, 1,2,BENZOPYRENE, PHENANTHRENE, CHRYSENE, 1,2:5,6,DIBENZANTHRACENE, 1,2,BENZANTHRACENE, AND 1,2,:10,11,DIBENZOPERYLENE; THE ENERGIES OF THE SINGLET AND TRIPLET ELECTRONIC TRANSITIONS ARE TABULATED. THE THEORETICAL VALUES WERE CORRELATED WITH THE POSITIONS OF THE MAIN ABSORPTION BANDS AND WITH THE TRIPLET TRIPLET ABSORPTIONS. THE ACCURACY OF THE CALCNS. ARE 0.1-0.2 EV.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE OPERATING CHARACTERISTICS OF THE PILOT BEARINGS OF HYDROTURBINES -U-
AUTHOR-(05)-KVITNITSKIY, YE.I., POLTAVSKIY, YU.D., PRIKHODKO, O.B., TODOROV, A.D., OSTAPENKO, V.V.
COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, ENERGOMASHINOSTROYENIYE, NO. 2, 1970, PP 10-11

DATE PUBLISHED-------70

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

TOPIC TAGS--HYDRAULIC EQUIPMENT, SLIDE BEARING, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1640 STEP NO--UR/0114/70/000/002/0010/0011

CIRC ACCESSION NO--AP0120394
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORETICAL FUNDAMENTALS FOR HYDRODYNAMIC MULTIPLE BUSHING SLIDE BEARINGS ARE INVESTIGATED FOR THE CASE OF THEIR STATIC LOAD. SIMILAR BEARINGS ARE USED AS GUIDE SUPPORTS OF HYDRAULIC UNITS. CONCRETE RESULTS ARE PRESENTED FOR THE DESIGN OF THE PILOT BEARING OF A HYDROTURBINE, WHICH IS INSTALLED AT THE MAIN HYDROELECTRIC POWER STATION OF THE VAKHSHSKIY CASCADE.

UNCLASSIFIED

POLTAVTSEV I.S.

AA0052677

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, /-70

241301 TRENCH FILLER has a working member comprising a frame 1 with closed scraping chain 3 placed in a vertical plane. It is distinguished by mounting, in the horizontal plane additional closed scraping chain 2 to, This achieves preloosening of the soil.

12.2.66. as 1055097/29-16, POLTATEEV, I.S. et al. Kiev Binding Inst. (15.8.69) Bul. 13/1.4.69 Class 84d, Int. Cl. E 02f.

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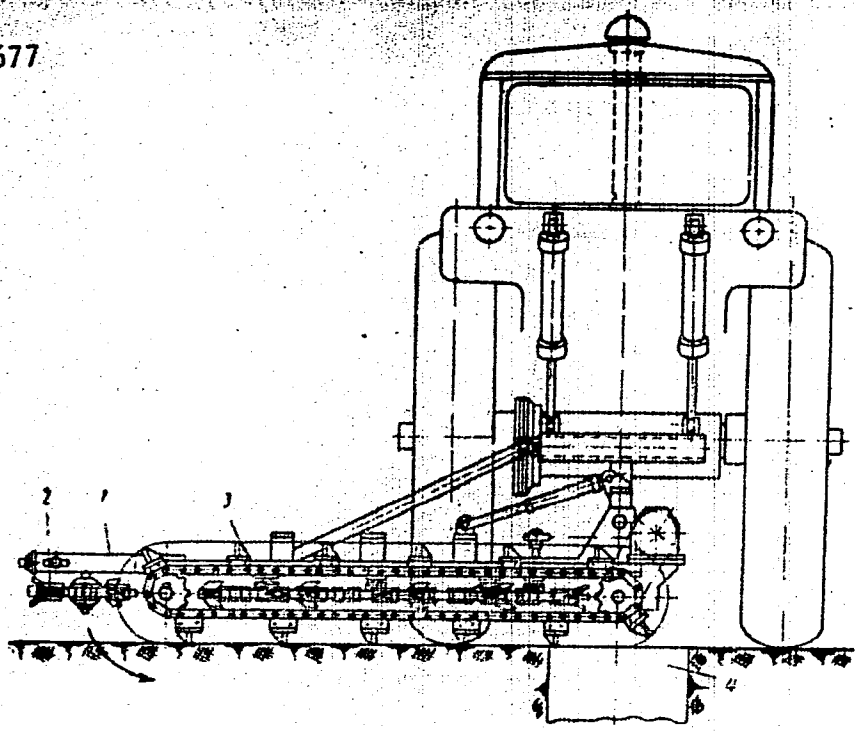
AA0052677



19821445

AA0052677

Poltavtsev, I. S.; Smryagin, A. G.; Protsenko, V. V.; Shvedov, V. Ye.; Zgurskaya, L. M.; Lekhovich, I. F.; Rutberg, Ye. I.; Borovik, N. A., Kiyevskiy Filial Tsentral'nogo Nauchno-Issledovatel'skiy Instituta Svyazi

3/3

19821446

USSR

POLTAVTSEV, Yu. G., POZDNYAKOVA, V. M.

"Change in the Structure of Vitreous Arsenic Trisulphide and Triselenide Under the Effect of Penetrating Radiation"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, July 1973, pp 1150-1152

Abstract: An X-ray study was made of vitreous As_2S_3 and As_2Se_3 subjected to the gamma radiation of Co^{60} (10^8 roentgens). Under irradiation the structure of vitreous As_2S_3 is shown to approach that of a crystal. The first coordination number of irradiated As_2Se_3 is larger than that of the original vitreous samples.

The article includes five figures and a table. There is one bibliographic reference.

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POLTAVTSEV, YU. G.

JPRS 59208
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XVI-8. FORMATION OF THE FILM STRUCTURE OF CERTAIN SEMICONDUCTORS IN THE CASE OF LASER DEPOSITION OF SPECIMENS

[Article by Yu. G. Poltavtsev, V. P. Zakharov, I. M. Protas, Kiev; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 227]

Thermal deposition of chemical compounds containing components with high vapor pressures frequently cannot be used to contain condensed films of stoichiometric composition. Definite progress has been made in this direction in the presence of laser deposition of the samples. An estimate was made of the role of the molecular composition of the vapor and the interatomic interrelations with this type of deposition for the process of formation of amorphous film structures on a glass substrate. The research subjects were semiconductors of the $A^{III}B^{V}$ and $A_2{}^{V}B_3{}^{VI}$ type. The molecular composition of the vapor was investigated mass-spectrometrically; the structure of the amorphous films was investigated by the method of integral analysis of the electron scattering intensity curves.

It is established that the GaAs vapor contains ionized and neutral complexes comprising atoms of the same and different types, and the structure of the amorphous films is well described by the model of the set of dispersed crystals. In contrast to this, in GaP vapor complexes of atoms of different types are completely absent, and in the amorphous film structure in addition to the "crystal-like" regions there are regions containing atoms of one type with the structure of amorphous phosphorous and gallium.

For As_2S_3, As_2Se_3 and AsSe, the molecular composition of the vapor turned out to be similar whereas the structure of the amorphous films was different. Thus, for example, in the As_2S_3 films the value of the radius of the first coordination sphere and the coordination numbers are the same as in the crystal, and in the As_2Se_3 films they are appreciably less.

The results obtained have permitted evaluation of the effect of the molecular vapor composition on the processes of the formation of the film structures of the investigated substances. A description is given for the probable kinetics for the formation of the film structure.

USSR

UDC 548.52

POLTAVTSEV, Yu. G, ZAKHAROV, V. P., CHUGAYEV, V. N.

"Structural Studies of Graphitization of Thin Carbon Films Under the Influence of Powerful Light Pulses"

Moscow, Kristallografiya, Vol. 16, No. 2, 1971, pp 415-419.

Abstract: Changes in near order structure upon graphitization of carbon films under the influence of powerful light pulses are studied. Amorphous carbon films were irradiated with light pulses of various energies, the process of graphitization being continued to various stages. The intensities of scattering of electrons by the irradiated films were measured, and the curves of the radial distribution of atoms were calculated. The near order parameters were determined for various stages of graphitization. A probable kinetics is suggested for the transition of amorphous carbon to graphite upon irradiation of the initial films with light pulses of very high energy. It is suggested that a double C = C bond is produced between some of the atoms in addition to the single C - C bond in the graphitized films.

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USSR UDC 51

POLTEROVICH, V. M., FRIDMAN, G. YA.

"Model of Interaction in the Production and Consumption System"

V sb. Detsentralizovan. metody upr. (Decentralized Methods of Control--collection of works), Moscow,, 1972, pp 93-100 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V352)

No abstract

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USSR

UDC512.25/.26+519.3:330.115

POLTEROVICH, V. M.

"Mathematical Models of Redistribution of Resources"

Matematicheskiye Modeli Pereraspredeleniya Resursov, [English Version Above], Moscow, 1970, 108 pages, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V527 K).

No Abstract.

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USSR UDC 577.15.049

SUKHORUKOV, B. I., POLTEV, V. I., POLOZOV, R. V., IL'ICHEVA, I. A., Institute of Biological Physics, Academy of Sciences of the USSR, Pushchino-na-Oke

"Concerning a Possible Method of Finding Potential Mutagens and Cytostatics Based on Calculating the Energy of Intramolecular Interactions of DNA-Containing Analogs of Nitrogen Bases"

Moscow, Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

Abstract: Semiempirical calculations of the energy of interaction of nitrogen bases were used to find potential cytostatics and mutagens. The calculation was based on consideration of analogs which do not appreciably distort the double helix in the DNA molecule. The total energy of interaction of bases T is assumed to be comprised of the energy of electrostatic E, induction H and dispersion F interaction, and the energy of short-range forces of repulsion V. Each term was computed in the atom-atom approximation, using a BESM-3M digital computer. Following are the most probable potential cytostatics (upper row) and mutagens (lower row):
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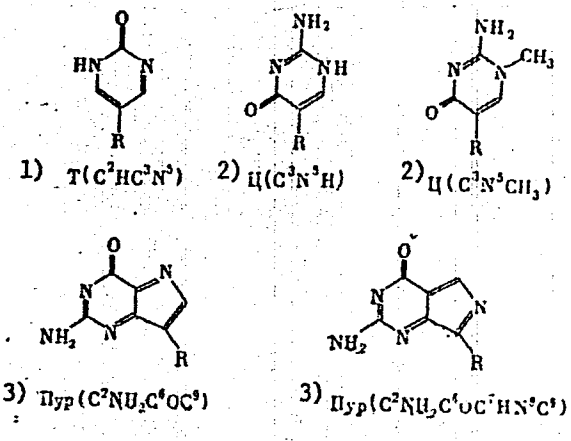
SUKHORUKOV, B. I., et al., Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446



Legend: 1. Thymine; 2. Cytosine; 3. Purine

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