2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102890

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MORSHIN MINERAL WATER COMPLEXLY USED WITH OTHER HEALTH RESORT FACTORS HAD A FAVOURABLE EFFECT ON THE COURSE OF GASTRIC AND DUODENAL ULCER IN THE MAJORITY OF PATIENTS. HYPOTONIC SOLUTIONS OF THIS MINERAL WATER EXERT AN INHIBITORY EFFECT ON GASTRIC SECRETION. MORSHIN MINERAL WATER IS CONTRAINDICTED DURING EXACERBATIONS OF ULCER DISEASE, SHARP STIMULATIONS OF GASTRIC SECRETORY ACTIVITY AND DISORDERS OF THE MOTOR EMPTYING ACTIVITY (PYLOROSPASM, PYLOROSTENOSIS.

UNCLASSIFIED

Acc. Nr: AP0044145 Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1, pp 12-15

ABSORPTION OF THE MORSHIN HEALTH-RESORT MINERAL WATER FROM THE SMALL INTESTINE BEFORE AND AFTER ITS INTAKE IN PATIENTS WITH GASTRITIS

V. G. Denisyuk, R. P. Makos' (Ivano-Frankovsk and health resort Morshin)

Summary

Absorption of sodium chloride, glucose, potassium iodide, ether and blood plasma from the jejunum was investigated in gastritic patients with the aid of a special tube. In patients suffering from anacid gastritis the absorption was found to be deferred, in those with hyperacid gastritis — intensified, whereas in normacid cases no material changes in absorption were on record. On introduction into the stomach of the chlorosulfate-sodium-magnesium mineral water of the health resort Morshin with total mineralization amounting to 380—390 g/l its abosption in the first 15 mintues gained in strength, being then depressed for a short while and revived afresh thereafter. Following introduction of the mineral water (especially of its 1.4% hypertonic solutions) into the duodenum and also jejunum its absorption was inhibited. After a course of treatment at the health resort Morshin the absorption was noted to become normal mostly in patients with anacid gastritis who had taken hypertonic solutions of the mineral water.

1/1

REEL/FRAME
19770626

USSR

UDC 535.317.1

DENISYUK, YU. N., SOSKIN, S. I.

"Holographic Correction of Deformation Aberrations of the Main Mirror of a Telescope"

Leningrad, Optika i Spektroskopiya, No 6, Dec 71, pp 992-999

Abstract: A method is proposed for correcting by holographic methods aberrations caused by inaccuracies in fabrication or by an arbitrary deformation in the process of using the main mirror of a mirror-lens telescope. The method involves a correcting source placed close to the optical system, making it possible to apply the method for any objects, including those intended for recording distant and almost inaccessible objects such as the objectives of telescopes and photographic equipment. The method was developed for application to mirror-lens telescope objectives with a large main mirror. It is noted that such objectives are very widely used, since large mirrors are easier to fabricate than lenses, but that these objectives have a serious shortcoming in that they are very sensitive to deformations of the main mirror. The purpose of this method is the continuous control and correction of distortions caused by these deformations.

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USSR.

DENISYUK, YU. N. et al, Optika i Spektroskopiya, No 6, Dec 71, pp 992-999

The telescope is equipped with a special interferometer attachment for recording the hologram of the main mirror. This hologram is then put into the optical system of the telescope. It is shown theoretically and experimentally that an image of the object with a quality higher than in a telescope without correction is then obtained. Photographs are included showing the image in its original form and then as produced by the telescope with the interferometer installed.

2/2

USSR

DENISYUK, Yu. N.; SOSKIN, S. I.

"Scanning of a Wave Field by an Optical System of Arbitrary Aperture"

Leningrad, Optika i Spektroskopiya; July, 1971; pp 121-7

ABSTRACT: The authors present a means of recording holograms by a method of scanning a wave field of an object by an optical system of arbitrary aperture, in the center of the input pupil of which is located a reference point source and in the plane of the image, a photoreceiver whose dimensions are circumscribed by a field diaphragm. It is shown that a hologram produced by such a method can generate the images of objects located in a given field of view the dimensions of which are determined by an expression which is a function of the dimensions of the aperture and field diaphragms. The Fourier transform of this function defines the detail of recording the wave field. The power involved in the recording system is considered. A luminous point observed in a given field of view is given as an example of the simplest type of object, and a connection is established between the dimensions of the input pupil and the signal-to-noise ratio. It is shown that increasing the aperture is advantageous only up to that point at which the angle of diffraction of the optical system becomes equal to the angle of the field of view.

There are 30 equations involved in the calculations. The article includes three figures. There are 5 bibliographic references.

1/1

USSR

DENISYUK, Yu. N.; SEMENOV, G. V.; SAVOST'YANENKO, N. A.

"Effect of Nonlinearity of Photomaterial on the Characteristics of Amplitude Holograms"

Leningrad, Optika i Spektroskopiya; November, 1970; pp 994-1001

ABSTRACT: Expressions are derived for determining the magnitudes of the radiation in the first and second orders of the spectrum of amplitude holograms, taking into account the nonlinear character of recording on photomaterial. It is shown that the effect of nonlinearity on the distribution of light between different orders of the spectrum can be determined more precisely by means of nonlinearity factors depending on the contrast p of the interference pattern registered on the hologram, as well as on the contrast factor γ of the photomaterial. Analytic expressions are obtained by means of which it is possible to determine the nonlinearity factors for the first and second orders of the spectrum, and curves are drawn for their dependence on p for several values of γ. Results of an experimental check of the theory are given.

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USSR

DENISYUK, Yu. N.; GALPERN, A. D.

"The Possibility of Improving the Quality of an Image by a Method of Storing Holograms"

Leningrad, Optika i Spektroskopiya; February, 1971; pp 340-4

ABSTRACT: The authors investigate the possibility of improving the quality of an image during observation through a medium with random phase inhomogeneities. With the assumption of the homogeneity and isotropy of the functions characterizing the medium it is shown that the sequential storage and averaging of n holograms result in an n-fold decrease in the average square of the fluctuations of the field in the image.

The article includes 25 equations. There are two bibliographic references.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE RELATION BETWEEN THE SPATIAL FREQUENCY SPECTRA OF A THREE DIMENSIONAL PHASE OBJECT AND ITS THREE DIMENSIONSAL HOLOGRAM -U-
AUTHOR-(02)-SUKHANOV, V.I., DENISUK, YU.N.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P 126-131

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HOLOGRAM, HOLOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1675 STEP NO--UR/0051/70/028/000/0126/0131

CIRC ACCESSION NO--AP0047993
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0047993

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEMONSTRATION THAT THE SPATIAL FREQUENCY SPECTRUM OF A THREE DIMENSIONAL HOLOGRAM OF A PHASE OBJECT IS THE PRODUCT OF THE THREE DIMENSIONAL SPATIAL FREQUENCY SPECTRUM OF THIS OBJECT TIMES A TRANSFER FUNCTION WHICH DEPENDS ON THE PARAMETERS OF THE INCIDENT RADIATION. THIS FUNCTION, CALLED THE SPATIAL FREQUENCY INTERACTION CHARACTERISTIC, IN THE CASE WHERE THE OBJECT IS ILLUMINATED BY A PLANE MONOCHROMATIC WAVE, IS REPRESENTED IN THE FREQUENCY SPACE BY TWO OSCULATING SPHERES THE RADII OF WHICH ARE EQUAL TO THE VALUE OF THE WAVE VECTOR OF THE INCIDENT WAVE. IT IS NOTED THAT WITH A BROADENING OF THE INCIDENT RADIATION SPECTRUM THE SPATIAL FREQUENCY SPECTRUM OF THE THREE DIMENSIONAL HOLOGRAM TENDS TO THE SPATIAL FREQUENCY SPECTRUM OF THE OBJECT, AND THUS IN THE LIMITING CASE THE THREE DIMENSIONAL HOLOGRAM BECOMES A COPY OF THE OBJECT.

D

USSR

DENISYUK, Yu. N.; SUKHANOV, V. I.

"Relation between Space-Frequency Spectra of a Three-Dimensional Phase Object and Its Three-Dimensional Hologram"

Leningrad, Optika i Spektroskopiya; January, 1970; pp 126-31

Δ Δ Δ

ABSTRACT: It is shown that the space-frequency spectrum of a three-dimensional hologram of a phase object is the product of the three-dimensional space-frequency spectrum of the object and the transfer function varying with the parameters of the incident radiation. This function, called the space-frequency interaction characteristic for the case in which the object is illuminated by a flat monochromatic wave, is depicted in the space of frequencies of two spheres tangent to each other, whose radii are equal to the value of the wave vector of the incident wave. It is noted that with a broadening of the spectrum of the incident radiation the space-frequency spectrum of a three-dimensional hologram tends toward the space-frequency spectrum of the object and, thus, in the limiting case the three-dimensional hologram becomes a copy of the object.

The article includes 34 equations. There are three references.

Cytology

USSR

UDC 546.212.02 and 576.30

DEN'KO, Ye. I., Institute of Cytology and Botanical Institute imeni V. L. Komarov, Academy of Sciences USSR

"The Effect of Heavy Water (D_2O) on Animal and Plant Cells and Microorganisms"

Moscow, Uspekhi Sovremennoy Biologii, Vol 70, No 1(4), Jul/Aug 70, pp 41-64

Abstract: Work on heavy water effects is reviewed (138 references) under the subject headings of inhibition of cell division and growth by D_2O, inhibition of other vital functions of cells by D_2O, the stabilizing effect of D_2O on cells and protoplasm proteins, and the molecular mechanisms of adaptation of cells to deuterization. The mechanism of adaptation of cells to D_2O is described on the basis of results obtained by Den'ko and V. Ya. Aleksandrov in regard to interrelationships between adaptation to D_2O and thermal stability. During adaptation of cells to D_2O, the thermal stability of protein molecules in the cells is increased because of an increase in the conformational flexibility of these molecules. According to Aleksandrov's hypothesis, vital functions of cells in the absence of adaptation to D_2O are inhibited by D_2O, because the conformational flexibility of protein molecules is lowered. In a process presumably involving substitution of D for H in protein molecules, both the stability at elevated temperatures and the conformational flexibility are increased in comparison with these properties in ordinary water before adaptation to D_2O.

1/1

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--UNIMOLECULAR AND BIMOLECULAR RECOMBINATION IN KCL:IN,AG AND KBR:IN CRYSTALS -U-
AUTHOR-(04)-LEYMAN, V.I., DENKS, V., LUKANTSEVER, N.L., SAVIKHIN, F.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1455-61

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--REACTION KINETICS, POTASSIUM CHLORIDE, BROMIDE, INDIUM, SILVER, THERMOLUMINESCENCE, REACTION MECHANISM, IONIZATION, RECOMBINATION LUMINESCENCE, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0169 STEP NO--UR/0181/70/012/005/1455/1461

CIRC ACCESSION NO--AP0129425
UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129425

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS WAS INVESTIGATED OF ELECTRON HOLE PROCESSES IN THE CRYSTALS KCL-IN, AG AND KBR-IN IN EXCITATION WITH THE RADIATION IN THE REGION OF THE C BAND OF ABSORPTION OF IN PRIME POSITIVE CENTERS. IN WEAK EXCITATION, THE KINETICS OF RECOMBINATION EXCITATION IS UNIMOL.; I.E., ELECTORNS RECOMBINE WITH THE SAME IN PRIME2 POSITIVE CENTERS FROM WHICH THEY WERE REMOVED IN IONIZATION OF IN PRIME POSITIVE CENTERS. IN THIS UNIMOL. MECHANISM, LIGHT STORED BY THE PHOSPHOR IS PROPORTIONAL TO THE INTENSITY OF EXCITATION, E, THE RATIO OF THE PEAKS OF THERMOLUMINESCENCE IS INDEPENDENT OF E, AND THE APPLICATION OF AN ELEC. FIELD LEADS TO AN INCREASE IN THE MAT. OF STORED LIGHT. FACILITY: INST. FIZ. ASTRON., TARTU, USSR.

UNCLASSIFIED

USSR UDC 621.791.89:620.193.41

DENYACHENKO, O. A., North Donets Chemical Combine, and KUZYUKOV, A. N., North Donets Brancy of the Scientific Research Institute of Chemical Machine Building

"Nitric Acid Corrosion Resistance of Aluminum Joints Formed by Explosive Welding"

Kiev, Avtomaticheskaya Svarka, No 4, Apr 71, pp 26-29

Abstract: Nitric acid corrosion resistance of aluminum lap joints made by explosive welding was investigated. The purpose of the study was to determine the basic principles governing corrosion behavior of joints produced by explosive welding. Aluminun grade AT was used. The necessary condition for high corrosion resistance in explosive welding of aluminum is selection of modes which provide joints with a rectangular interface. Joints with a rectangular interface are close to those of the base metal with reference to corrosion resistance and significantly surpass joints which have a wavy interface. Heat treatment does not substantially affect the corrosion resistance of joints produced by explosive welding. Five figures, one table, 7 bibliographic references.
1/1

USSR

UDC 621.73.04.001.5(082)

DEORDIYEV, N. T., Candidate of Tehnical Sciences (Editor)

Progressivnyye tekhnologicheskiye protsessy obrabotki metallov davleniyem (Advanced Technological Processes of Metalworking by Pressure), Moscow, Mashinostroyeniye Press, No 24, 144 pages

Translation of Annotation:

Data are presented from theoretical and experimental studies of the technological processes of metalworking by pressure performed at the ENIKMASh [Experimental Scientific Research Institute of Forging and Pressing Machinery]. A study was made of the problems of constructing kinematic designs and the problems of plastic flow of isotropically hardening materials. The force of inverse axisymmetric extrusion of the hardening material is defined. The basic relations required to obtain two-way estimates in the presence of plane strain are presented.

The force parameters are calculated, and the optimal thermomechanical conditions of high speed drop forging of milling cutters from high speed steel are defined. An analysis of the effect of the rigidity of the shears on the cutting accuracy is presented. Results are given from an experimental study of the process of flashless die forging of disc milling cutters from high speed steel, low-flash die forging of double-ended wrenches, the technological possibility of pressing high speed steel through a roll die without butts. Formulas

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200620017-1"

USSR

DEORDIYEV, N. T., Progressivnyye tekhnologicheskiye protsessy obrabotki metallov davleniyem, Moscow, Mashinostroyeniye Press, No 24, 144 pages

are derived for determining the projections of the contact area of the metal with the tool for transverse wedge roll forming. Results are presented from experimental studies to determine the force of deformation during cold rotational reduction.

The collection is designed for technologists, designers and scientific workers dealing with the problems of metalworking by pressure.

Translation of Table of Contents:

2/3

USSR

DEORDIYEV, N. T., Progressivnyye tekhnologicheskiye protsessy obrabotki metallov davleniyem, Moscow, Mashinostroyeniye Press, No 24, 144 pages

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USSR

UDC 511

DERMAN, I. YA.

"Bertrand's Postulate"

Uch. zap. Leningr. gos. ped. in-t im. A. I. Gertsena (Scientific Notes of Leningrad State Pedagogical Institute imeni A. I. Gertsen), 1971, 334, pp 218-228 (from RZh-Matematika, No 2, Feb 72, Abstract No 2A156)

Translation: An elementary proof of Bertrand's postulate is given.

1/1

USSR

DERAZHINSKAYA, N. A., Alma-Ata School of Higher Sport Proficiency

"The Relative Significance of Various Factors of Psychological Preparedness in Sport Training"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 3, Mar 73, pp 29-31

Abstract: Psychological preparedness is of cardinal importance for athletic performance, although insufficient attention is being paid to this aspect in the training of athletes. Trainers in 16 branches of athletics, competitive sports, and games (131 persons) at Alma-Ata schools of higher sport proficiency were asked to fill out a questionnaire indicating the relative importance for performance in their particular field of seven elements of psychological preparedness, to wit, training in will power, functioning of the higher nervous system, functioning of analysors, intellectual development, moral training, emotional education, and esthetic appreciation. Chess and artistic gymnastics were among the 16 fields in question. In the great majority of fields (11 out of 16) the trainers attached the greatest importance to training in will power. This is not surprising. The importance of will power in athletics can be illustrated by the following two examples. In 1956 at Melbourne, Tishchenko in the final football game (that between the USSR and Bulgaria) of the Olympic

USSR

DERAZHINSKAYA, N. A., Teoriya i Praktika Fizicheskoy Kul'tury, No 3, Mar 73, pp 29-31

meet continued to play for 30 min with a fractured clavicle and was instrumental in winning the game. In the 1971 competition for the world championship in speed skating at Helsinki, N. Stankevich of Leningrad had a fever on the second day of the meet. Nevertheless, she won the race over the distance of 3000 m and became world champion. Among the elements of training in will power, reliance in one's strength, persistence, self-control, courage, decisiveness, activity, initiative, and independence were judged to be of primary importance in the questionnaires, in that order.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF SURFACE ACTIVE AGENTS WITH COLLAGEN. 2. EFFECT OF TREATMENT WITH SOLUTIONS OF SURFACE ACTIVE AGENTS ON THE PROPERTIES OF

AUTHOR-(02)-DERBAREMDIKER, M.L., LIOKUMOVICH, R.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (1), 78-82

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--SURFACE ACTIVE AGENT, PROTEIN, LEATHER, SULFONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0949 STEP NO--UR/0323/70/000/001/0078/0082

CIRC ACCESSION NO--AP0124609

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF TREATING SAMPLES OF ACETONEDRIED RAW HIDES AND SOFTENED HIDES WITH SOLNS. OF ALKYL, AND ALKYLARENESULFONATES WERE STUDIED BY DETN. OF THE FUSION TEMP. AND AMT. OF PROTEIN EXTD. AT LOW CONCNS. OF SURFACTANT, THE FUSION TEMP. REMAINED UNCHANGED, ALTHOUGH THE AMT. OF EXTD. PROTEIN INCREASED. THE REDN. OF FUSION TEMP. BEGAN AT A CERTAIN CRIT. SURFACTANT CONCN., AND THE REDN. INCREASED WITH INCREASE IN THE SURFACTANT CONCN. IT IS SUGGESTED THAT THE CRIT. CONCN. OF SURFACTANT AND THE RATE OF REDN. OF FUSION TEMP. WITH INCREASE IN CONCN. OF SURFACTANT COULD SERVE AS INDEXES FOR WORK IN THE LEATHER INDUSTRY CONNECTED WITH THE USE OF SURFACTANTS. FACILITY: UKR. NAUCH.-ISSLED. INST. KOZH.-OBUV. PROM., USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--PROTONS POLARIZATION ARISING DURING THE INTERACTION OF 650-840 MEV PHOTONS WITH LITHIUM-7 AND CARBON-12 -U-

AUTHOR-(05)-TONAPETYAN, S.G., KONOVALOV, O.G., DEREBCHINSKIY, A.I., ZYBALOV, A.A., KHVOROSTYAN, V.M.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(3), 165-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PROTON POLARIZATION, PHOTONUCLEAR REACTION, ELASTIC SCATTERING, GRAPHITE, LITHIUM ISOTOPE, ARBON ISOTOPE, GAMMA SPECTRUM, PHOTO EMF

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0242 STEP NO--UR/0386/70/011/003/0165/0168

CIRC ACCESSION NO--AP0105318

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105318

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLARIZATION, P, OF P WHICH ARE ELASTICALLY SCATTERED ON NUCLEI OF GRAPHITE ELECTRODES WAS CALCD. AT ENERGIES OF PHOTOCURRENTS OF 700-900 MEV, P POL RIZATION FOR NUCLEI OF PRIME7 LI AND PRIME12 C IS CLOSE TO ZERO. IN THE MESON II KINEMATIC REGION P CHANGES SHARPLY FROM MINUS 0.76 TO 0.48 AS THE PHOTON ENERGY INCREASED. FOR PHOTONS WITH ENERGIES 650, 715, AND 840 MEV, IN THE REACTION GAMMA PLUS N YIELDS N PRIME NEGATIVE PLUS P, P EQUALS MINUS 0.74, MINUS 0.16, AND 1.66, RESP. FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.374.32

MASHCHIKHIN, G. V., CHUKAVIN, G. T., DERBENEV, P. V.

"A Magnetic Pulse Counter"

USSR Author's Certificate No 333711, filed 3 Aug 70, published 21 Apr 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A40 P)

Translation: This Author's Certificate introduces a magnetic pulse counter which contains a storage transformer with recording, readout, feedback, and output windings on a core with rectangular hysteresis loop, a slave squegging oscillator, and a transistorized recording circuit. To improve reliability and ensure stable operation of the counter over a wide range of temperatures, a resistor is connected in the emitter circuit of the transistor in the recording circuit, and an auxiliary stage is added which is based on a transistor in a common emitter circuit whose base is connected through a resistor and capacitor to the emitter of the recording transistor, and the collector of the additional transistor is connected through a commutating capacitor to the base of the transistor in the squegging oscillator. One of the ends of the record-

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MASHCHIKHIN, G. V. et al., USSR Author's Certificate No 333711

ing winding is connected to the slide wire on a variable resistor connected in parallel with the power supply. A capacitor is connected between the slide wire of the variable resistor and the common line.

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USSR

UDC: 538.4

DERBENEV, S. A.

"Group Characteristics of Limited Layer Equations in a Magnetic Field and Chemical Reactions"

Tr. Kazan. aviats. in-ta (Transactions of the Kazan Aviation Institute) 1970, No. 119, pp 100-105 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2B14)

Translation: On the basis of known methods (see Ovsyannikov, L. V., Gruppovyye svoystva differentsial'nykh uravneniy -- Group Characteristics of Differential Equations -- Novosibirsk, Sib. otd. AN SSSR, 1962) an investigation is made of the group characteristics of a system of equations S of the laminar limiting layer of an incompressible fluid in a magnetic field perpendicular to the wall, and in a chemical reaction between the components of a binary mixture. The mass formation speed of the components of the mixture m, as well as the magnetic induction B, are considered known functions of coordinates x and y. The expressions obtained for the coordinates of the infinitesimal operator determining the the basic group of transformations G of the system S are given. These coordinates contain five constants and one function, $\phi = \varphi(x)$. Three of the constants $\varphi(x)$ should be chosen such that two equations involving

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USSR

DERBENEV, S.A., Tr. Kazan. aviats. in-ta, 1970, No 119, pp 100-105 (from RZh-Mekhanika, No 2, Feb 71, Abstract No 2B14)

partial derivatives of B and m with respect to x and y are obtained. The following cases are used as concrete examples: 1) B = const, m = const; 2) $B = a_0 + \ldots + a_n x^n$, m = const, where the a_i are constants satisfying the relationship $a_1^n - n^n a_0^{n-1} a_n = 0$; B = C/y, m = const; 4) $B = Cy^m$, m = const; 5) $B = cx^n$, m = const; 6) B and m are arbitrary functions of x; 7) B and m are arbitrary functions of y. In each of these cases, there are independent operators producing Lie algebras of base group G. In the second case, for n = 1, there is a full set of independent invariants through which an invariant-group solution of the system S is constructed. The construction of this solution demands the integration of a system of ordinary differential equations of an independent variable, $\xi = y(x + a_0/a_1)$. A. N. Krayko

2/2

USSR

DERBENEV, Ya. S., KONDRATENKO, A. M., SKRINSKIY, A. N., Institute of Nuclear Physics, Siberian Department, Academy of Sciences, USSR

"The Dynamics of Particle Polarization Near Spin Resonances"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 4, 1971, pp 1216-1226

Abstract: The motion of particle spin in storage rings (accelerators) is investigated. The methods and results of specified works on the study of spin resonances are generalized for the case of an arbitrary closed orbit. In addition to first-approximation resonances, resonances of higher orders are considered, for which rules for the selection of resonating harmonics are obtained. The major part of the work is devoted to the passage of resonances. The concept of an effective zone and an adiabatic zone is introduced. A complete solution of the single-passage problem, which consolidates the particular solutions of cited works is presented. On this basis the problem of the periodic passage of resonance is solved with use of the general nature of spin motion in a periodic field. 1 figure. 17 bibliographic entries.

1/1

USSR

DERBENEV, Ya. S., KONDRATENKO, A. M., and SKRINSKIY, A. N., Corresponding Member of the Academy of Sciences USSR, Institute of Nuclear Physics of the Siberian Department of the Academy of Sciences USSR, Novosibirsk

"On the Motion of the Spin of Particles in an Accumulator With an Arbitrary Field"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1255-1258

Abstract: Certain general results of practical interest are presented concerning a study of the motion of spin in accumulators (or accelerators) with an arbitrary electromagnetic field, since studies of the behavior of the polarization of particles in accelerators are ordinarily limited to the case of a magnetic field that is almost constant in direction. It is shown that there is a periodic orbit $n(\theta)$, having the sense of direction of polarization of the periodic solution, around which the spin rotates, maintaining the projection in this direction. The spin turns around n through the same angle $2\pi\nu$ in a period of motion in orbit, independent of the place of observation and initial conditions. Of practical importance is the fact that the angular velocity makes it possible to produce the necessary orientation of n relative

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USSR

DERBENEV, Ya. S., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1255-1258

to the velocity and field at a given point in the orbit. It is pointed out, in conclusion, that the existence of a stable periodic motion of the spin indicates that the beam polarization of an accumulator with an arbitrary electromagnetic field under a closed orbit is stable in the same degree as in an accelerator with a magnetic field that is almost constant in direction, thus opening up broad possibilities for the control of polarization in accumulators.

USSR

UDC 911.3.616.9.576.89

PERSHINA-UKOVA, V. P.

"The Ecological Orientation in the Work of V. N. Beklemishev in the Study of Vectors of Infection and Preventive Measures Against Such Vectors"

V. sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta Med. parazitol. i tropich. med., 1970 (Proceedings of Scientific Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 9-10 (from RZh-36. Meditsinakay Geografiya, No 1, Jan 71, Abstract No 1.36.5)

[No abstract]

1/1

USSR UDC 615.322

DERBENTSEVA, N. O., MISHENKOVA, Ye. L., and GARAGULYA, O. D., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Comparison of the Antibacterial and Antivirus Properties of the Tannins of Imanine"

Kiev, Mikrobiologichniy Zhurnal, Vol 35, No 4, Jul/Aug 73, pp 485-488

Abstract: The antibiotic imanine, which is extracted from Hypericum perforatum L., exhibits activity against both viruses and Gram-positive bacteria. The imanine tannins were separated by a method described in earlier work by the authors (Mikrobiol. Zh., 6, 33, 1971). It was shown that the activity of the isolated fractions against Staph. aureus 209 did not correspond to their activity against the tobacco mosaic virus. The presence of catechins and polyoxyflavonoids in the fractions with antivirus activity was confirmed.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ROLE OF CYCLOHEXANE IN THE DEHYDROCYCLIZATION OF N-HEXANE ON A CHROMIUM CATALYST -U-

AUTHOR-(05)-ISAGULYANTS, G.V., ROZENGART, M.I., DERBENTSEV, YU.I., DUBINSKIY, YU.G., KAZANSKIY, B.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 600-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLOHEXANE, HEXANE, CARBON ISOTOPE, CATALYST, BENZENE, CATALYTIC CRACKING, HEXENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1079 STEP NO--UR/0020/70/191/003/0600/0602

CIRC ACCESSION NO--AT0124736

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124736

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FLOW METHOD WAS USED TO ANALYZE THE REACTION PRODUCTS OF HEXANE CYCLOHEXANE (TAGGED WITH PRIME14 C) AT 530DEGREES ON AN ALUMINOSILICATE CATALYST. THE CRACKING PRODUCTS WERE ISOHEXANES, HEXANE, HEXENES, CYCLOHEXANE, AND C SUB6 H SUB6; IT WAS SHOWN THAT CYCLOHEXANE IS NOT FORMED IN THE OVERALL PROCESS AND CANNOT BE AN INTERMEDIATE IN DEHYDROCYCLIZATION OF HEXANE TO C SUB6 H SUB6. C SUB6 H SUB6 IS FORMED FROM CYCLOHEXANE SOMEWHAT MORE RAPIDLY THAN IT IS FROM HEXANE. THE ADSORPTION COEFFS. OF CYCLOHEXANE AND HEXANE ON THE CATALYST APPEAR TO BE VERY SIMILAR. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--METHODS OF INTRODUCING GOST 1-68 AND THEIR PRACTICAL IMPLEMENTATION
-U-
AUTHOR--DERBISHER, A.V.

COUNTRY OF INFO--USSR

SOURCE--STANDARDY I KACHESTVO, 1970, NR 5, PP 10-12

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--TECHNICAL STANDARD, RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1571 STEP NO--UR/0422/70/000/005/0010/0012

CIRC ACCESSION NO--AP0120350
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT7
CIRC ACCESSION NO--AP0120350
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE EXPLAINS THE ESSENCE AND SIGNIFICANCE OF THE METHODOLOGICAL INSTRUCTION MU 1-69 FOR INTRODUCTION OF GOST 1-68; IT DESCRIBES THE ARRANGEMENTS NECESSARY FOR THE INTRODUCTION OF THE STANDARD. FACILITY: VNIIS.

UNCLASSIFIED

USSR

UDC 669.296:5:621.039.5

ANDREYEVA, A. B., BELOKOPYTOV, V. S., VOTINOV, S. N., DEREBIZOV, M. D., PETIN, B. P., PAKHOMOV, Z. I.

"Study of Fuel Assemblies of the VK-50 Boiling Reactor"

Radiatsion. fiz. tverd. tela i reaktornoye materialoved. -- V sb. (Radiation Solid State Physics and Reactor Material Science -- collection of works), Moscow, Atomizdat Press, 1970, pp 208-212 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I842)

Translation: The results of studying the fuel assemblies of a boiling reactor after operation in the reactor core for 5,000 hours are described. The fuel element cores are briquettes of sintered UO_2 with 2% enrichment. The can material was Zr + 1% Nb alloy, and the jacket material was Zr + 2.5% Nb alloy. A significant amount of the hydride phase was detected in the cans of ruptured fuel elements in defective places. The article contains 1 illustration and a 4-entry bibliography.

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1/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CONTINUOUS ALKYLATION OF PHENOL IN THE PRESENCE OF BENZENESULFONIC ACID ON INDUSTRIAL APPARATUS -U-

AUTHOR-(05)-TEMIRGALIYEV, T.G., MITZOFANOV, M.G., BOBYLEV, V.V., DEREKH, P.A., RUMYANTSEV, A.G.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 20-1 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AKLYLPHENOL, BENZENE, SULFONIC ACID, INDUSTRIAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1076 STEP NO--UR/0318/70/000/005/0020/0021

CIRC ACCESSION NO--AP0134765

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134765
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY CONTINUOUS AS COMPARED WITH PERIODIC ALKYLATION, THE PRODUCTION OF ALKYL PHENOLS WAS INCREASED FROM 50-60 TO 90-180 KG-HR PER M PRIME3 REACTION VOL., PHOH CONVERSION TO SMALLER THAN OR EQUAL TO 98PERCENT, THE COMPN. AND COLOR OF ALKYLATION PRODUCTS WAS CONST., AND THE PROCESS COULD BE READILY CONTROLLED. THE CONTINUOUS PROCESS AND ELIMINATION OF WATER WASHING OF THE ALKYL PHENOLS PRODUCED FOR PREPN. OF ADDITIVES HAD HIGH ECONOMIC EFFICIENCY.
FACILITY: NEFTEPERERAB. ZAVOD, VOLGOGRAD, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--INDUSTRIAL EXPERIENCE FOR OBTAINING ELECTRODE COKE FROM VACUUM RESIDUE OF MANGYSHLAK PETROLEUM -U-

AUTHOR--ZMIYEVSKIY, P.K., TIMOFEYEV, A.A., MITROFANOV, M.G., DEREKH, P.A., MARTIROSOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1) 5-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PROPULSION AND FUELS

TOPIC TAGS--PETROLEUM PRODUCT, CRUDE OIL, ELECTRODE, COKE, PETROLEUM DISTILLATION, VACUUM DISTILLATION, KEROSINE, PETROLEUM DESALTING, CHEMICAL COMPOSITION, SULFUR, VANADIUM, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1140 STEP NO--UR/0318/70/000/001/0005/0008

CIRC ACCESSION NO--AP0107629

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESIDUE, DISTG. 10PERCENT SMALLER THAN OR EQUAL TO 500 DEGREES, D PRIME20 0.926, ASH 0.06, S 0.26, V 0.001, NI 0.002, COKE 8.0, TAR 28, ASPHALTENES 1.75, OIL 70, HARD PARAFFINS 17 WT. PERCENT, YIELDED, BY DELAYED COKING, ELECTRODE COKE CONTG. 7PERCENT VOLATILE MATTER. GOOD RESULTS WERE OBTAINED WHEN THE CRUDE PETROLEUM WAS DESALTED TO 10-15 MG AND THE RESIDUE CONTAINED MAX. 30-45 MG NACL-L., YIELDING GAS 9PERCENT, GASOLINE B. SMALLER THAN OR EQUAL TO 200DEGREES 10, KEROSINE, GAS OIL, AND FUEL 62, COKE 16, INCLUDING ELECTRODE COKE 6.5 WT. PERCENT. THE LATTER CONTAINED S 0.6 AND V 0.0014-0.0022PERCENT.

UNCLASSIFIED

USSR

UDC: 620.193.19;621.723

DERENDOVSKIY, A. F., KUKONESKU, V. F., BOLOGA, M. K., Kishinev

"Cavitation and Corrosion Resistance of Metals Protected by Metallized Coatings"

Kishinev, Elektronnaya Obrabotka Materialov, No 2(44), 1972, pp 67-70

Abstract: The paper presents the results of studies of the cavitation and corrosion resistance of cast iron and steel with various thermodiffusion and electrospark coatings under conditions of ultrasonic cavitation and in noncavitation flows. The standards were specimens of SCh 18-36 cast iron and St.3 steel to which zinc, chromium, and T15K6 alloy were applied. Plating conditions are given. Steel with electrospark T15K6 alloy coating shows the best resistance to cavitation erosion.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RELATIVE MIGRATION TENDENCIES OF P SUBSTITUTED PHENYL GROUPS IN CARBONIUM ION DOUBLY DEGENERATE REARRANGEMENTS -U-

AUTHOR-(05)-SHUBIN, V.G., KORCHAGINA, D.V., BORODKIN, G.I., DERENDYAEV, B.G., KOPTYUG, V.A.

COUNTRY OF INFO--USSR

SOURCE--J. CHEM. SOC. D 1970, (11), 696-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, NUCLEAR MAGNETIC RESONANCE, UV SPECTRUM, FLUORINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0989 STEP NO--UK/0000/70/000/011/0696/0697

CIRC ACCESSION NO--AP0136419

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORDER OF THE MIGRATION OF P,X,PHENYL GROUPS IN THE DOUBLY DEGENERATE REARRANGEMENT OF STABLE (I) IONS, FORMED BY PROTONATION OF NEUTRAL PRECURSORS, IS X EQUALS ME LARGER THAN F SIMILAR TO H LARGER THAN CL LARGER THAN CF PRIME3. THE NMR AND UV SPECTRA OF I ARE DISCUSSED. FACILITY: INST. ORG. CHEM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 621.385.6

KHOTYAINTSEV, S. N., DEREHOVSKIY, M. V.

"Study of the Structure of an Electron Beam Shaped by a High-Perveance Triode Gun in the Current Regulation Mode"

Kiev, Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 1047-1050

Abstract: An experimental study was made of the structure of a beam shaped by a high-perveance triode gun in the current regulation mode. The schematic of the electron gun is also given. In this mode, along with variation of the perveance of the beam, the shape of the beam cross section, the current density distribution and the angle of emergence from the anode opening vary significantly. The results obtained provide a basis for the requirements on the focusing system and stability of the modulating voltage. In view of significant asymmetry of the beam in the current regulation mode when calculating a real EOS, analysis of a three-dimensional model is required.

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USSR

UDC 621.385.6

KHOTYAINTSEV, S. N., DERENOVSKIY, M. V., D'YACHENKO, S. M., TARANENKO, V. P.

"Powerful Electron Guns with Control Electrodes"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

Abstract: A survey of foreign and Soviet papers on high-perveance electron guns with low voltage modulation is presented. The characteristic features of the structural elements, calculation techniques, control characteristics and operating characteristics of electron guns with grid control are investigated. The most prospective guns are guns with control grids located in front of the cathode. Guns with control posts appear effective for devices with high average power operating with a solenoid.

The study includes the characteristics of development of controlled guns, guns with control electrodes, a triode gun with the "natural" grid potential, the static amplification factor of the triode gun, operation of guns with grid potentials other than "natural," the lens effect of the grid, heating of the grid, grid emission, and designs of guns with control electrodes.

USSR

KHOTYAINTSEV, S. N., et al., Izvestiya vysshikh uchebnykh savedeniy--Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

The transverse components of the electron velocities in guns with control electrodes in front of the cathode and low voltage modulation are larger than in the analogous diode guns as a result of the lens effect of the grid cells. The magnitude of the transverse velocities is minimal for the "natural" grid potential. The average power of the gun is limited to the magnitude at which extraordinary grid heating takes place. Further improvements of the gun characteristics can be expected in guns with low temperature cathodes and in multiple beam systems. Application of a remote focusing electrode for modulation of the electron flux has low efficiency. Electron guns with control posts introduce significant distortions in the beam structure. They are most prospective for powerful devices in which focusing by a constant magnetic field is used.

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USSR

UDC: 533.9.07

BELIKOV, A. G., GONCHARENKO, V. P., GONCHARENKO, D. K., DEREPOVSKIY, N. T., SAFRONOV, B. G., KHIZHNYAK, N. A.

"Energy Characteristics of a Coaxial Plasma Source"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1881-1886

Abstract: Some considerations are presented on selecting the parameters of a coaxial plasma source. On the basis of this preliminary theoretical study, a plasma source is determined and its energy characteristics are experimentally investigated. It is shown that plasmoid energy increases in proportion to the energy stored in the battery of the plasma source. The total plasmoid energy is greater than 1 kJ. It is shown that pure hydrogen plasmoids can be produced. Eight figures, bibliography of five titles.

USSR

UDC 621.4/.6:533.6

DEREVENKO, V. A., MITYUSHKIN, Yu. I.

"Study of Gas Flow in Turbine Stages With a Twist of the Blades From the Condition β_1 = const"

Tr. Leningr. koorablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1971, No. 73, pp 55-59 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B534)

Translation: The effect of a radial gradient $\partial\alpha_1/\partial r_1$ of the exit angle of flow from a nozzle determining the intensity of reverse twist on the change in the basic parameters of the stage along the blade is investigated theoretically: the exit angle of flow to the blade in relative motion, the exit angle from the working wheel, the degree of reactivity and the work of the gas. The study was made considering the curvatures of the meridional lines of flow caused by the reverse twist of the nozzle blades for three types of active stages with different reverse twist, and one "gradientless" reactive stage with working blades of constant cross section ($\delta\beta_2 = \beta_{2p} - \beta_{2v} = 3^\circ\ 40'$) and a twist of the nozzle blades given by $r_1/\sin(\beta_1 - \alpha_1)$ = const. Formulas for $\partial\tan\alpha_1/\partial r_1$ are given for all these

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USSR

DEREVENKO, V. A., MITYUSHKIN, Yu. I., Tr. Leningr. koorablestroit. in-ta, 1971, No. 73, pp 55-59

cases. The nozzles for all these stages have the same degrees of expansion for the same angle of exit from the nozzles at an average radius $\alpha_{1av} = 16°$. The calculations were made on the "Minsk-1" computer by the Runge-Kutta consecutive approximation method. The basic results were: (1) it is necessary to take into account the curvature of meridional lines of flow in calculating the stages with a twist obtained from the condition $\beta_1 = \text{const}$; (2) in the event of overlap at the top of the working blade, the calculation should be carried out considering the different deflection of the lines of flow in the nozzle and working collars for cylindrical bounded surfaces of the circulating section; (3) in active stages with untwisted working blades the intensity of the reverse curvature of the nozzle in the range of difference in angles studied $\delta\alpha_1 = \delta\alpha_{1p} - \alpha_{1v} = 7°$, 18′ - 11° 56′ has practically no effect on the distribution of flow parameters and the characteristics of the stage along the radius; (4) in reactive stages with a twist of the blades determined from the condition $\beta_1 = \text{const}$ there occurs a considerably greater drop in the reactivity gradient than in active stages. 8 ref. A. G. Plotkina.
2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STRUCTURE OF THE CARBOHYDRATE CHAINS OF THE BLOOD GROUP SUBSTANCE (A PLUS H) -U-

AUTHOR-(05)-KOCHETKOV, N.K., DEREVITSKAYA, V.A., LIKHOSHERSTOV, L.M., MARTYNOVA, M.D., SENCHENKOVA, S.N.

COUNTRY OF INFO--USSR

SOURCE--CARBOHYD. RES. 1970, 12(3), 437-47

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBOHYDRATE, BLOOD TYPE, PEPTIDE, ENZYME, CLOSTRIDIUM PERFRINGENS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0428 STEP NO--NE/0000/70/012/003/0437/0447

CIRC ACCESSION NO--AP0117664

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117664

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF THE CARBOHYDRATE CHAINS OF BLOOD GROUP SUBSTANCE (A PLUS H) (BGS) IN THE REGION ADJACENT TO THE PEPTIDE BACKBONE WAS INVESTIGATED. TWO APPROACHES WERE USED: (1) A STUDY OF THE DEGRADATION OF BGS BY A COMBINATION OF CHEM. AND ENZYMIC (PREPN. FROM CLOSTRIDIUM PERFRINGENS) METHODS, AND (2) A STUDY OF THE ALK. DEGRADATION OF BGS BY MEASUREMENT OF THE ACCUMULATED PRODUCTS OF DEGRADATION OF N ACETYLHEXOSAMINES (3,ACETAMIDO,5,DIHYDROXYETHYLFURAN) AND D GALACTOSE (METASACCHARINIC ACID AND 5,HYDROXYMETHYL,2,FURAL DEHYDE). THE CARBOHYDRATE PEPTIDE LINKAGE UNIT CONTAINS 2,ACETAMIDO,2,DEOXY,D,GALACTOSE RESIDUES. DIRECTLY ADJACENT TO THIS REGION IS A CHAIN OF SEVERAL N ACETYLHEXOSAMINE RESIDUES BOUND BY (1 YIELDS 3) LINKAGES AND PARTIALLY BRANCHED AT C 6. FACILITY: INST. ORG. CHEM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A., DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P., MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV, Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of High-Energy Particles"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at the Institute of High-Energy Physics, for investigation of the elastic scattering of high-energy particles within the pulse range of 30-60 gigaelectron volts/sec. The range of dispersion angles covered by the installation is 0-29 millirads with an angular resolution of $\pm$ 0.17 millirad. The total solid angle is 39 microsteres. The pulse is determined to within $\pm$ 0.22%. The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per hour. The installation is electrically coupled to a "Minsk-22" computer, which stores and processes the information during the experiment. The

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200620017-1"

USSR

BORISOV, A. A., et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^--mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--USE OF A BOLOMETRIC METHOD TO MEASURE RADIANT LOSSES IN AN IMPLUSE PLASMA ACCELERATOR -U-

AUTHOR-(02)-DEREVSHCHIKOV, V.A., RUSAKOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOFIZIKA VYSOKIKH TEMPERATUR, VOL 8, NO 1, JAN-FEB 70, PP 17-21

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA ACCELERATOR, BOLOMETER, RADIATION RECEIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1803 STEP NO--UR/0294/70/008/001/0017/0021

CIRC ACCESSION NO--AP0120494

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. A PROCEDURE IS PROPOSED FOR MEASURING RADIANT LOSSES IN AN EROSION IMPLUSE PLASMA ACCELERATOR BY USING RAPID RESPONSE RADIATION RECEIVERS PLACED A CONSIDERABLE DISTANCE FROM THE RADIATING VOLUME OF THE PLASMA TO ISOLATE THE EFFECT OF BOMBAROMENT BY PLASMA PARTICLES FROM THE EFFECT OF RADIATION. LOSSES OF ENERGY TO RADIATION ARE MEASURED IN END TYPE AND COAXIAL ACCELERATOR MODELS. DIAGRAMS OF THE ACCELERATOR MODELS ARE SHOWN IN THE FIGURE. IN THE END TYPE MODEL, LOSSES ARE 16-24PERCENT FOR AN ALUMINUM CENTRAL ELECTRODE AND 7-10PERCENT FOR A LITHIUM ELECTRODE. LOSSES COME TO 3-5PERCENT FOR THE COAXIAL MODEL. MOST OF THE RADIANT LOSSES FALL INTO THE VACUUM ULTRAVIOLET SPECTRAL REGION, WHICH POINTS UP THE UNDESIRABILITY OF USING OPTICAL FILTERS IN SUCH MEASUREMENTS. THE AUTHORS THANK YU. P. RYLOV FOR INTEREST IN THE WORK AND DISCUSSION OF THE RESULTS, AND I. N. POPOV FOR ASSISTANCE IN MAKING THE BOLOMETER. 1 INITIATING ELECTRODE; 2 EXTERNAL ELECTRODE; 3 INSULATOR; 4 CENTRAL ELECTRODE. FACILITY: ALL-UNION SCIENTIFIC RESEARCH INSTITUTE OF ELECTROMECHANICS.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--VISCOMETER FOR HIGHLY VOLATILE AND HYGROSCOPIC LIQUIDS -U-

AUTHOR-(04)-KRUMGALZ, B.S., DEREVSKAYA, V.I., TRABER, D.G., AMYANOVA, R.K.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 246-7.

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--VISCOMETER, SODIUM COMPOUND, FLOW MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1444 STEP NO--UR/0032/70/036/002/0246/0247

CIRC ACCESSION NO--AP0112438

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A HERMETIC VISCOMETER IS DESCRIBED WITH A "HANGING" LEVEL IN WHICH THE FLOW TIME OF THE STUDIED LIQ. IS INDEPENDENT OF ITS VOL. TO TEST THE VISCOMETER, THE VISCOSITY OF DIL. SOLNS. OF NAI IN MECN AT 50DEGREES WAS MEASURED. NO DETECTABLE CHANGE OF CONCNS. OF NAI WAS OBSD. AFTER 40 CONSECUTIVE MEASUREMENTS WITH THE SAME SAMPLE, I.E., AFTER 6 HR. FACILITY: SEV.-ZAPAD. ZAOCH. POLITEKH, INST., LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr. AP0054926 Abstracting Service: 6-70 Ref. Code:
INTERNAT. AEROSPACE ABST. 4R0181

DEREVYANCHENKO A.S.

A70-25381 # **Intermediary graphitization stages in thin films of a condensed carbon (Promezhutochnye stadii grafitizatsii v tonkikh plenkakh kondensirovannogo ugleroda).** B. T. Boiko, L. S. Palatnik, A. S. Derevianchenko, and A. A. Nechitailo (Khar'kovskii Politekhnicheskii Institut, Kharkov, Ukrainian SSR). *Fizika Tverdogo Tela*, vol. 12, Feb. 1970, p. 492-498. 24 refs. In Russian.

Electron diffraction study of carbon films obtained by using an electron beam technique involving condensation in vacuum on an unheated substrate. It is found that the film consists of aggregates of oriented and nonoriented coherent scattering regions bonded by disoriented carbon aggregates. Both oriented and nonoriented coherent scattering regions are formed by parallel packed graphite lattices. Large interlattice distances in these blocks indicate on characteristic to graphite impairments in the mutual orientations of the parallel lattices. This impairment is due to the insertion of carbon atoms between the lattices and formation of disordered, strongly supersaturated solid solutions.

Z.W.

REEL/FRAME
19840130

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USSR

UDC 911.3.616.981.452(574)

LAVROVSKIY, A. A., KUCHEROV, P. M., OPTYAKOVA, A. F., ROZHKOV, A. A., DEREVYANCHENKO, K. I., MATSUGA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A., CHIKRIZOV, F. D., KARUSHIN, P. A., and DUBYAGIN, P. S.

"Survival of Plague Bacteria During Interepizootic Years in the Sands Focus Area Between the Volga and Ural River"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Translation: A list is presented of reasons for the abrupt decrease in epizootic activity in the sands plague focus between the Volga and Ural Rivers. Plague bacteria, however, did not disappear from the biocenotic focus system, as evidenced by the epizootics of 1962-1963 and 1966 and the isolated cases of isolation of bacterial cultures from gerbils during depressed phases of focus life. It becomes more and more evident that the phenomenon of microfocality is an indispensible attribute of existence of plague bacteria in the biocenosis. Materials on landscape adjustment of particularly stable plague epizootics facilitate the definition, in the

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LAVROVSKIY, A. A., et al., Probl. osobo opash. infektsiy (Problems of Especially Dangerous Infections -- collection of Works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Volga-Ural sands area, of several more significant regions where the plague pathogen apparently survives even during depressed phases of focus activity.

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USSR

UDC [537.226+537.311.33]:[537+535]

DEREVYANKO, A. I., and KURILENKO, O. D.

"Analysis of Dielectric Relaxation in Plane of Complex Permittivity"

V sb. Fiz.-khim. mekh. i liofil'nost' dispersn. sistem (Physicochemical Mechanics and Lyophilic Nature of Disperse Systems -- Collection of Works), Vyp. 2, Kiev, "Nauk, Dumka," 1971, pp 141-147 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE593 from summary)

Translation: On the basis of the symbolic method a formal analysis is made of frequency dependences of the dielectric parameters of a substance, and the properties of equivalent circuits are discussed in terms of complex permittivity and complex specific electrical conductivity. Certain new properties of diagrams in the complex plane are established, and on this basis simple correlations for finding dispersion parameters are suggested.

- END -

CSO: 1862-W

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Acc. Nr. AP0055216 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR 9085

113061a **Effect of the impurity content of hydrogenated fat on its filtration rate.** Kamyshan, M. A.; Derevyanko, E. A. (Krasnodar. Politekh. Inst., Krasnodar, USSR). *Masla Zhir. Prom.* 1970, 36(1), 17–18 (Russ). The rate of filtration of hydrogenated fat is substantially influenced by substances contained in raw fat and byproducts formed during refining and hydrogenation. Therefore, the complete removal of phospholipids, waxes, soaps, and other constituents is necessary. The presence of 0.5–1.0% phospholipids decreases rate of filtration 70–80%; 0.025% xanthophyll decreases the rate 80–7%; 0.5% cholesterol ~50%, 0.1% waxes 50%, and 0.3% waxes 80%. The presence of soaps decreases the filtration rate as follows 0.0035% Na soap ~23%, 0.004% Mg soap ~40%, 0.004% Fe soap ~55%; and 0.01% Ni soap ~70%. Because the main part of impurities is collected on the catalyst (by reuse many times) it may be the main reason for difficulties in filtration of hydrogenated fats. Therefore, the reuse of the catalyst should be stopped before difficulties occur. M. Zajcew

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

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244426 OSCILLATING CIRCUIT consists of a variable capacitor designed in such a way that the fixed plates (2) also perform as inductive coils and the moving plates (7) have an additional function of being magnetic cores of the inductors. Both types of plates have been shaped as Archimedean spirals. The oscillations are generated by producing one potential on leads (5 & 10) and a different one on the lead (6). Bellows (9) are used for varying the relative inductance and capacitance. The component is encased in a glass hermetically sealed envelope (11).

3.7.67 as 1171030/26-9. A.S. POPOV. I.A. DEREV'YANKO (9.10.69) Bul 18/28.5.69. Class 21a4. Int.Cl. H 03H.

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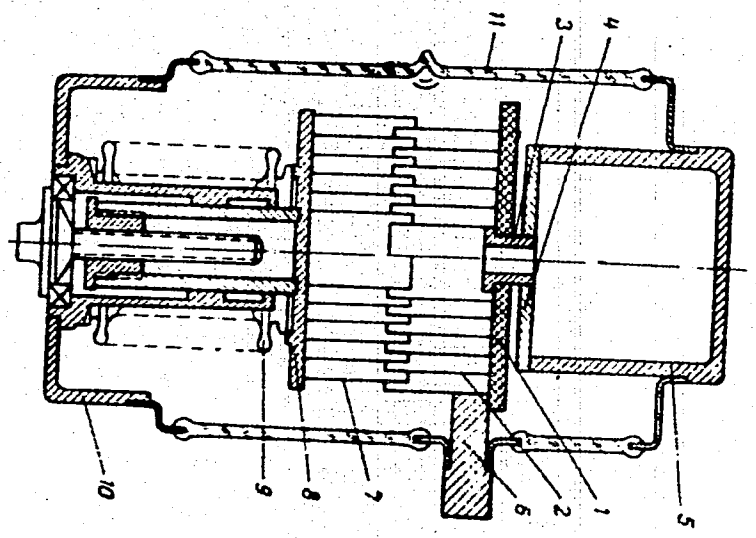

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USSR

UDC 541.135.2 + 621.359.7

MELESHKO, V. P., ISAYEV, N. I., PESTUSHKO, N. P., DEREVYANKO, L. A., TSYGUROVA, L. I., and BORISOVSKIY, I. V., Voronezh Technological Institute

"Electrochemical Regeneration of the Mixed Salt Forms of Anion Exchanger AV-17"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 2, Feb 71, p 482

Abstract: Completeness of regeneration of mixed chloride and sulfate forms of the anion exchanger AV-17 was studied as a function of current density, time and the ratio of above ionic forms. It was shown that the chloride-form regenerates better than the sulfate form. When the current density applied was 15 ma/cm^2, after 5 hrs of regeneration and Cl:SO_4 ratio 1:1, 32.5% of the Cl-form regenerated, and 30% of the SO_4-form; with a 3:1 ratio of Cl:SO_4 the values were 34% and 31% respectively.

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Public Health, Hygiene and Sanitation

USSR

UDC 613.632:632.934]:(631.37:629.13

DEREVYANKO, I., Dr., and KLIMENKO, A. A., All Union Scientific Research Institute for the Agricultural and Special Use of Civil Aviation, Krasnodar

"Hygienic Evaluation of Working Conditions During Aerial Spraying of Methylmercaptophos"

Moscow, Gigiyena i Sanitariya, No 7, Jul 70, pp 101-102

Translation: The extensive use of aviation to control crop and forest pests and diseases, undesirable vegetation, and vectors of infectious diseases makes it necessary to take steps to protect the health of those engaged in this work. The working conditions of those handling methylmercaptophos on An-2 planes were studied in June and July 1967 in Tashkentskaya Oblast, Uzbek SSR. The tanks were invariably filled with the chemical manually. Air was sampled for its methylmercaptophos content in the cockpit while the pilot was engaged in various operations: during flight to the designated plot, at the time of spraying, and while filling the tank (with ventilation on and off). The average concentration of the compound under these conditions ranged from 0.137 to 0.871 mg/m^3. The air temperature in the cockpit ranged from 17 to 40.4°C and the relative humidity from 19 to 81% at atmospheric air temperatures of 14.4 to 35°C and relative humidities

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200620017-1"

USSR

DEREVYANKO, L. D., et al, Gigiyena i Sanitariya, No 7, Jul 70, pp 101-102

of 37 to 90%. The highest temperature inside the cockpit was 35°C at an atmospheric air temperature of 31°C. Thus, the uncomfortable microclimatic conditions together with the high methylmercaptophos content are unfavorable for the crew. In addition, the plane is quite noisy and creates vibrations. Cardiovascular reactions and heat regulation were studied in pilots during exposure to the above unfavorable factors. Aviation technicians and mechanics, who are exposed to the chemicals to a lesser degree, served as a control group. The temperature and humidity at which they work match the climate of the surrounding locality and they are exposed to vibration and noise only briefly. The investigation showed that the temperature on various parts of the skin in both pilots and mechanics at the end of the flights significantly increased in direct proportion to the rise in air temperature around the work places. The skin temperature was somewhat higher in pilots than in mechanics. A comparison of the results of our studies with literature data (G. Kh. Shakhbazyan, 1947; D. A. Biryukov, 1959) showed that pilots and mechanics are uncomfortably warm by the end of the flight. The elevated temperature of the skin of the extremities, which under favorable conditions is the main source of heat emission is particularly unfavorable. Arterial pressure and pulse rate were also investigated in the same workers. By the end of the

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DEREVYANKO, L. D., et al, Gigiyena i Sanitariya, No 7, Jul 70, pp 101-102

workday, both systolic and diastolic pressures were high, and the increase in diastolic pressure was statistically significant. Also statistically significant was the drop in pulse pressure at the end of the day against the background of a rapid pulse. It was more pronounced in the pilots. All these findings indicate cardiovascular strain associated with aerial spraying in Uzbekistan. The absence of a hypotensive effect, as noted in the literature, despite the high temperatures and exposure to organophosphorus compounds (Yu. S. Kagan, 1963; Kh. Z. Lyubetskiy et al., 1961; and others), seems to have been due to the predominance of the nervous-emotional factor, which resulted from the numerous take-offs and landings (30 to 40) and speed of flight (150 to 160 km/hour) at low heights (about 5 m above the ground). Noise also helps to raise arterial pressure (V. S. Volkov, 1966). Hypotension in fliers and mechanics engaged in aerial spraying in Uzbekistan was observed during quarterly medical check-ups (L. D. Derevyanko, 1967). This is not inconsistent with the above findings, because during the examination the individuals are in a situation free from nervous and emotional stress, noise, and vibration. The working conditions of those engaged in aerial spraying can be improved by preventing the chemicals from entering the cockpit (through installation of a ventilation system that guarantees air pressure in the cockpit of 15 to 20 mm H_2O) and by creating a comfortable microclimate there.

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USSR

UDC 539/072

DEREVYANKO, N. I. and KOSEVICH, A. M., Kharkov Structural Engineering Institute and Kharkov State University

"Mechanics of an Elastic Body With Internal Rotations"

Kiev, Prikladnaya Mekhanika, Vol 8, No 12, Dec 72, pp 93-99

Abstract: The deformed state of a medium is described with the aid of the strain tensor, curvature tensor and vector of local slew and its derivatives. The stress state of a medium is characterized by the tensor force stresses, the two tensors of moment stresses and the vector of volume moments. The work of internal forces and moments, elastic energy, physical relationships and equations of motion were recorded. The resolving equations of plane strain with the addition of three functions of stresses were compiled. The problem of deformation of an unbounded plate with a circular opening was reduced to a system of two integral equations of the Volterra type. The plane problem contains two characteristic parameters with the dimension of length. 4 bibliographic references.

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1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THERAPEUTIC EFFICACY OF BICILLIN 6 IN TREATMETN OF GONORRHEA IN MEN -U-

AUTHOR-(04)-KOZIN, S.L., KRAVCHENKO, V.G., DEREVYANKO, R.V., SEDASH, V.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 5, PP 75-78

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VENEREAL DISEASE, ANTIBIOTIC, DRUG DOSAGE RESPONSE/(U)BICILLIN 6 ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/2046 STEP NO--UR/0206/70/000/005/0075/0079

CIRC ACCESSION NO--AP0122275

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200620017-1"

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0122275
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BICILLIN 6 IN DOSES OF 1,200,000 TO 2,400,000 UNITS WAS USED FOR TREATMENT OF 120 MEN WITH FRESH GONORRHEA. FAILURE OF TREATMETN WAS OBSERVED IN 10PERCENT OF THE PATIENTS DURING THEIR STAY IN THE HOSPITAL. POSTGONNORRHEAL URETHRITES WERE OBSERVED IN 21.7PERCENT OF THE PATIENTS. IN SOME PATIENTS WITH GONORRHEA FAILURE OF TREATMENT WAS OBSERVED AFTER A SERIES OF SUCCESSIVELY USED ANTIBIOTICS. TREATMETN WITH BICILLIN 6 WAS FOUND TO BE MORE EFFECTIVE THAN THAT WITH WATER SOLUBLE PENICILLIN IN THE SIMILAR COURSE DOSES. FACILITY: KHAR'KOVSKIY N-I INSTITUT DERMATOLOGII I VENEROLOGII, AND KHAR'KOVSKIY OBLASTNOY KOZHNO-VENEROLOGICHESKIY DISPANSER.

UNCLASSIFIED

DEREVYANKO, Ye. A.

JPRS 56030
18 May 72

UDC 612.821.8:529:629.7

PECULIARITIES IN TIME PERCEPTION IN SIMULATED AND REAL FLIGHT

[Article by S. S. Al'myashev, Ye. A. Derevyanko and V. F. Zhernavkov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 2, March-April 1972, pp 86-89, submitted for publication 15 March 1971]

Abstract: This paper presents experimental data accumulated concerning the peculiarities of time perception during real and simulated flights. The level of distortion and the accuracy in reproducing stipulated time periods can be attributed to the different degree of nervous and emotional stress of the pilot (space pilot). This in turn depends on the complexity and the hazard of the task to be performed, that is, on flight conditions. During a real flight under normal meteorological conditions, as well as during a simulated flight, the stipulated time intervals are reproduced in an extended form. This is due to the presence of working dominant foci in the cortex of the large hemispheres. During flights in a complicated environment and at extremely low altitudes in a turbulent atmosphere the processes in the brain cortex are depressed by a generalized excitation induced by emotional stress. This results in shortening of the reproduced time intervals.

One of the important conditions ensuring effective performance of a flight mission is the capacity of the flier or cosmonaut for correctly orienting himself in time. During training the flier or cosmonaut improves this capacity, enabling him to switch his attention correctly to those objects which are most important at the particular moment.

It is well known that emotional excitation exerts a considerable influence on the time perception process (M. F. Ponomarev; D. G. El'kin; A. A. Leonov and V. I. Lebedev; D. D. Sherman, and others). Accordingly, researchers in the field of aerospace medicine were faced with the problem of the

USSR

UDC 621.396.677.833

DERYUGIN, L. N., DEREZA, S. S., and CHEKAN, A. V.

"Some Problems of Construction and Design of Mirror Antenna Systems for Investigating the Propagation of Submillimeter Waves"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 117-121 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10B48)

Translation: Results are given of an investigation into mirror antennas of large electrical dimensions used for researching the propagation of submillimeter waves over short ranges. The transfer factor of an experimental communications line is computed; the effect on it of various phase errors is considered. Results are given of measuring the characteristics of the antenna systems. A method of tuning and adjusting antennas in the Fresnel zone is described. Four illustrations, bibliography of one. N. S.

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USSR

UDC 621.396.677.833

DERYUGIN, L. N., DEREZA, S. S., and CHEKAN, A. V.

"Some Problems of Construction and Design of Mirror Antenna Systems for Investigating the Propagation of Submillimeter Waves"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 117-121 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10B48)

Translation: Results are given of an investigation into mirror antennas of large electrical dimensions used for researching the propagation of submillimeter waves over short ranges. The transfer factor of an experimental communications line is computed; the effect on it of various phase errors is considered. Results are given of measuring the characteristics of the antenna systems. A method of tuning and adjusting antennas in the Fresnel zone is described. Four illustrations, bibliography of one. N. S.

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USSR

DERGACHEV, P. B., DYAD'KIN, V. P., SAVIN, N. S., SEVEROV, L. A., and TARAN, Yu. A.

"Principal Characteristics of the Random Rolling of Heavy Aircraft During Flight in Turbulent Atmosphere"

Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of Aircraft Instrument Manufacture), 1970, vyp. 66, pp 174-179 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B392 by G. V. Vronskiy)

Translation: The article considers equations of motion of aircraft equipped with an automatic pilot which maintains horizontal flight at a constant speed despite exposure to random vertical and transverse uncorrelated gusts of wind possessing the same spectral density. The solution was accomplished with the help of analog computers; at the same time the generation of random gusts with prescribed spectral density was effected by means of a shaping filter of the "white" noise produced by a random signal generator. During simulation, pitch-, bank- and yaw-angle signals, as well as their angular velocities and accelerations were simultaneously tape-recorded on a multi-channel oscillograph. After processing on the correlator, autocorrelation

USSR

DERGACHEV, P. B., et al., Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of Aircraft Instrument Manufacture), 1970, vyp. 66, pp 174-179 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B392 by G. V. Vronskiy)

functions of these signals were obtained, which are represented in the form

$$R(\tau) = D\left[e^{-\alpha_1|\tau|}\cos\beta_1\tau + \mu e^{-\alpha_2|\tau|}\sin|\beta_2\tau|\right]$$

The authors present a table of coefficients α_1, α_2, β_1, β_2, μ, corresponding to the above-indicated signals.

2/2

USSR UDC 612.821.2.017.4

DERGACHEV, V. V. and DOLGOV, O. N., Biomedical Faculty, Second Moscow Medical Institute im. N. I. Pirogov

"Suppression of Memory in Rats With Antibodies to the Brain of Trained Rats"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 12-15

Abstract: Rats were conditioned to escape from and avoid an electric current. Gamma globulin obtained from the serum of rabbits immunized with brain homogenates from the trained rats was injected into a group of untrained rats. The experimental animals proved to be much worse than the controls in acquiring and retaining the motor-defense skill of escaping from and avoiding the electric current. The authors conclude that training alters the brain antigens as well as the spectrum of proteins synthesized in the brain or of related substances that are specific to the skill studied.

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USSR UDC 616.89-008.46-053.2-085.356:577.164.1

DERGACHEV, V. V., PIVOVAROVA, G. N., KHAMAGANOVA, T. G., SHAGINYAN, Ye. V., KRASNUSHKINA, N. A., KULIKOVA, N. V., and MOKROVSKIY, V. B., Medico-Biological Faculty, Second Moscow Medical Institute imeni N. I. Pirogov and Department of Higher Nervous Activity Institute of Hygiene of Children and Adolescents, Ministry of Health USSR

"Orotic and Folic Acids and Vitamin B_{12} in the Treatment of Children with Memory Disorders"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 78-82

Abstract: Since the genetic apparatus contained in all cells preserves not only phylogenetic but also ontogenetic information, and since nucleoproteins and nucleic acids are essential constituents of the memory mechanism, a study was undertaken in which the cofactors and precursors of proteins and nucleic acids -- orotic acid, folic acid, and vitamin B_{12} -- were administered to a group of children with disturbed memory. The results indicated, that even though short-term memory, attention, and certain other mental functions were not affected, long-term memory improved significantly. Positive results can be obtained only if treatment is begun early, before marked organic changes develop in the central nervous system.

- END -

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5915
CSO: 1840

USSR UDC: 621.317.729:621.373.023

LEVIN, M. M., DERGACHEVA, L. F.

"An Installation for Measuring the Phase Structure of an SHF Field"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 97-98 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A318)

Translation: A distinguishing feature of the proposed installation is the absence of movable SHF channels. The master phase shifter is a system (quadripole) of two antennas, the phase rotation introduced by this system being proportional to the spacing between antennas. A modified Froome interferometer is used to determine the phase shift introduced by the master phase shifter. Procedural and instrument errors are analyzed. The total error of the installation (at a frequency of 10 GHz) is estimated at ±5°. The estimate is confirmed by measurements of the field structure of a point source. Bibliography of one title. E. L.

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1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ELECTROCHEMICAL SEPARATION OF INDIUM CONTAINING POLYMETALLIC AMALGAMS IN A CHLORIDE TARTRATE ELECTROLYTE -U-
AUTHOR-(03)-KUZIN, L.F., DERGACHEVA, M.B., CHERNIY, G.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 560-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--AMALGAM, ELECTROCHEMISTRY, INDIUM CONTAINING ALLOY, ELECTROLYSIS, CHLORIDE, ELECTROLYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0741 STEP NO--UR/0080/70/043/003/0560/0567

CIRC ACCESSION NO--AP0111934
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111934

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROCHEM. BEHAVIOR OF METALLIC ADMIXTS. IS STUDIED FROM POLARIZATION CURVES. AS ANODE AND CATHODE, 10PERCENT IN AMALGAM IS USED. SIMULTANEOUS DISCHARGE OF IN WITH MORE ELECTRONEG. METAL ADMIXTS. (C), GA, ZN) IS STUDIED BY INTRODUCTION OF METAL CHLORIDES INTO THE ELECTROLYTE AND DETG. THE DISTRIBUTION OF THE ADMIXTS. IN THE SYSTEM ELECTROLYTE IN AMALGAM (CATHODE). AFTER EACH EXPT., THE CATHODE AMALGAM IS DECOMPD. ELECTROLYTICALLY UP TO THE POTENTIAL OF PURE HG. THE METAL ADMIXTS. ARE DETD. COLORIMETRICALLY. THE POLARIZATION CURVES SHOW THAT SIMULTANEOUS ANODIC REACTIONS OF IN AND ACCOMPANYING ELEMENTS (CU, BI, PB, AND SN) AS WELL AS THE CATHODIC REACTIONS OF THE DISCHARGE OF TL, GA, CD, AND ZN IONS DO NOT TAKE PLACE. WITH USE OF A CALCN. ANAL. METHOD, PARTITION COEFFS. FOR PB IN, CD IN, AND ZN IN WERE 10 PRIME4, 1.9 TIMES 10 PRIME3, AND 1.8 TIMES 10 PRIME3, RESP. THE AMT. OF THE MORE ELECTRONEG. METAL ADMIXTS. MAY DECREASE DUE TO A SECONDARY REACTION BETWEEN THE IN IONS OCCURRING IN THE LAYER NEAR THE ELECTRODE, AND THE DISCHARGE METAL.

UNCLASSIFIED

USSR

UDC 624.131.43+539.21.084-492.3

[redacted], SOKOLOV, YU. A.

"Evaluating the Consolidation of Clay Rock Under Hydraulic Dump Formation"

V sb. Vopr. marksheyder. dela na otkrytykh razrab. Ch. 1 (Problems of Surveying in Open Workings. Part 1 -- Collection of Works), Belgorod, 1971, pp 93-97 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V856)

Translation: The authors use a finite difference method to solve the one-dimensional problem of filtration consolidation of layers of clay soil under hydraulic dump formation. An analytical calculation of the pore pressure is made by the V. A. Florin method. The distribution of pore pressure in the clay layer is determined by dividing the calculated thickness of the layer l into n equal segments for equal time intervals Δt. The use of a series of dimensionless quantities makes it possible to reduce the number of independent variables and obtain a general solution for a limited number of particular solutions. A program was developed for the calculation on the "Mir" computer for the values of the coefficients of the pore pressure w for different time intervals Δt. Knowing the values of the coefficient of pore pressure w, one can construct a diagram of the

USSR

DERGILEV, M. A., SOKOLOV, YU. A., Vopr. marksheyder. dela na otkrytykh razrab. Ch. 1, Belgorod, 1971, pp 93-97

distribution of pore pressure at a given time from any load that changes linearly with time. A program of calculations was developed on the "Mir" computer for the case of a change in conditions of hydraulic dump formation and nomograms of the pore pressure were constructed for a large series of values of Δt. The value of Δt is determined on the basis of given values of l and the coefficient of consolidation C and the necessary nomogram is selected for this value, where the annual distribution of pore pressure under the application of a single normal load is represented. The programs compiled are recommended for use in designing hydraulic dumps of various stripping soils for purposes of predicting the nature of the distribution of pore pressure with time. Yu. P. Lyapichev.

2/2

UDC: 51:621.391

USSR

DERGILEV, V. V.

"Selection of Code in a System of Residual Classes When Constructing Teleinformation Systems"

V sb. Teoriya i praktika ispol'z. sredstv tekhn. kibernetiki. Kn. 1 (Theory and Practice in Using Facilities of Technical Cybernetics--collection of works, Book 1), Novosibirsk, 1970 (1971), pp 17-20 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V573)

Translation: Estimates are presented for rates of transmission of messages for various equivalent codes in a system of residual classes. It is shown that for a noiseless channel, the redundancy of the coding decreases with an increase in the values of the selected bases and a reduction in code length. In the case of additive interference and uniform distribution of signal level with respect to the figures of the bases, codes with a small value of the first base of the set of mutually simple code bases have the greater resistance to interference. V. Dyn'-kin.

1/1

UDC 620.179.15

USSR

KONONOV, B. A., DERGOBUZOV, K. A., YEVSTIGNEYEV, V. V., ZYKOV, V. M., RUDENKO, V. N., and STEPANOV, Yu. M., Scientific Research Institute of Electron Introscopy, Tomsk Polytechnic Institute imeni S. M. Kirov

"Experimental Evaluation of the Possibilities of Electron Defectoscopy" (Paper presented at the Sixth International Conference on Nondestructive Control Methods, June 1-5 1970, Hannover, GFR)

Sverdlovsk, Defektoskopiya, No 2, 1971, pp 94-98

Abstract: The status and prospects for fast electron defectoscopy are discussed. An account is given of investigation results of the use of betatron electron beams for defectoscopy of layer materials. It is demonstrated that radiographic and radiometric (including spectrometric) methods of electron defectoscopy can be applied successfully for solutions of many tasks with a sensitivity of 0.5%. The experimentally derived dependence of the intensity of a reflected electron flux on the thickness of the aluminum coating on the backing of different materials shows that with increasing thickness of the coating the intensity of the flux decreases or increases, depending on whether the atomic number of the coating is smaller or greater than that of the backing. Three figures, 11 bibliographic references.

1/1

UDC: 661.66+677

USSR

DERGUNOV, N. N., FROLOV, V. I., RIPP, N. Ye., SOSEDOV, V. P., BARABANOV, V. N.

"Toughening of Carbon Fiber Under Cyclic Loading"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 70-71

Abstract: It was found that carbon fibers obtained by heat treating polyacrylonitrile filaments are toughened by cyclic stressing. The maximum toughening effect is observed when the maximum stress in a cycle is 60% of the ultimate strength of the fiber and 1000 cycles are used. The results are attributed to localized plastic deformation with resultant stress relaxation, as well as the crushing of fibrils. Increasing the number of stress cycles to 10,000 and the maximum stress in a cycle to 80% of the ultimate strength of a fiber brings the toughness of carbon filaments back to the original level. This is explained by an increase in cracks and pores.

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USSR

UDC 539.61:620.17:546.26

VOLKOV, G. M., BARABANOV, V. N., DERGUNOV, N. N., ZAKHAROVA, Ye. N., and KALUGIN, V. I., Moscow

"The Effect of the Structure of Graphite on Its Strength"

Kiev, Problemy Prochnosti, No 12, Dec 72, pp 65-67

Abstract: The mechanical strength of artificial graphites depends not only on the dispersed structure of the material, but also on its crystalline and supermolecular structure, which is the secondary structure developed as a result of different arrangement of crystallites. The effect of artificial defects of supermolecular structure on mechanical strength of pyrographite and its bonding strength is discussed by reference to diagrams and photomicrographs of its polished surface. The effect of precipitation strengthening of carbonic material as a result of decreased concentration effect of supermolecular structural defects was used for the development of a new class of carbon materials, the carbonic Pyroceram. The characteristics of the USB-15 Pyroceram are presented. Five illustrations, eight bibliographic references.

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USSR

UDC 539.3

DERGUNOV, V. P., KOLTUNOV, M. A., Moscow Institute of Electronic Machine Building

"Dynamics of the Snap-Buckling of a Cylindrical Panel"

Kiev, Prikladnaya mekhanika, No. 11, Nov 71, pp 3-7

Abstract: The dynamics of the snap-buckling of a flat elastic cylindrical panel that is rectangular in design and hinge-supported on all sides and has a sag equal to the value of the upper critical sag is considered as a function of the physical nature of the loading medium (gas, liquid or solid). An algebraic equation relating the load and the deflection parameter is obtained by applying the Bubnov-Galerkin method to a system of nonlinear equations from the theory of flexible shells. It is shown that the initial deflection of the panel is equal to the upper critical deflection and that the nature of the loading medium (gas, liquid or solid) has a considerable effect on the time of snap-buckling of the shell. Two cases of loading are discussed: (1) the load q acting on the panel during the snap-buckling process remains constant; this type of load occurs in the loading of the panel by a compressed gas contained in a low-volume

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1/3 030 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REFLECTION COEFFICIENT AND FREQUENCY CHARACTERISTICS OF THE E SUBS LAYER -U-
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COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA FIZIKO-TEKHNICHESKIKH, KHIMICHESKIKH I GEOLOGICHESKIKH NAUK, NO 3, 1970,
DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, NAVIGATION

TOPIC TAGS--E LAYER, RADIO COMMUNICATION, IONOSPHERIC STATION, RADIO WAVE ABSORPTION, FREQUENCY CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0394 STEP NO--UR/0202/70/000/003/0115/0118

CIRC ACCESSION NO--AP0137487
UNCLASSIFIED

2/3 030 UNCLASSIFIED

CIRC ACCESSION NO--AP0137487 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH RESPECT TO RADIO COMMUNICATION THROUGH THE E LAYER IT IS IMPORTANT TO STUDY THE REFLECTION COEFFICIENT P E SUBS FOR DIFFERENT RATIOS OF THE WORKING FREQUENCY OF SOUNDING F SUBWORK AND THE FREQUENCY CHARACTERISTICS OF THIS LAYER F SUBO E (CRITICAL REFLECTION FREQUENCY) AND F SUBB E SUBS (SCREENING FREQUENCY). FOR THIS PURPOSE DURING THE SUMMER OF 1968 SYNCHRONOUS OBSERVATIONS WERE MADE AT ASHKHABAD USING AN IONOSPHERIC STATION AND AN APPARATUS DESIGNED FOR MEASURING THE ABSORPTION OF RADIO WAVES IN THE IONOSPHERE BY THE A SUB1 METHOD. THE OBSERVATIONS WERE MADE USING THE FOLLOWING PROGRAM: THE IONOSPHERIC STATION OPERATED IN A FIVE MINUTE REGIME AND GAVE THE TIME VARIATION OF F SUBO E SUBS AND F SUBB AND E SUBS. THE APPARATUS FOR MEASURING ABSORPTION OPERATED AT A FIXED FREQUENCY OF 3.0 MC-SEC. 10 MINUTE MEASUREMENTS ALTERNATED WITH 5 MINUTE BREAKS, MAKING IT POSSIBLE TO DETERMINE THE TEMPORAL VARIATIONS P E SUBS. THE INITIAL EXPERIMENTAL DATA WERE PROCESSED BY STANDARD METHODS. SEVEN SERIES OF SIMULTANEOUS MEASUREMENTS WERE MADE WITH A TOTAL DURATION OF MORE THAN 25 HOURS. COMPARISON OF THE TEMPORAL VARIATIONS OF THE FREQUENCY PARAMETERS F SUBO E SUBS, F SUBB E SUBS AND THE REFLECTION COEFFICIENT P E SUBS REVEALS THAT FOR THE MOST PART THE FOLLOWING TENDENCY IS OBSERVED: WHEN F SUBWORK IS LESS THAN OR CLOSE TO F SUBB E SUBS, P E SUBS N 1. IN THESE CASES THE E SUBS LAYER IS A MIRROR REFLECTING LAYER. THE P E SUBS VALUE DECREASES WHEN F SUBWORK IS GREATER THAN F SUBB E SUBS, WHICH IS DETERMINED FOR THE MOST PART BY THE F SUBWORK-F SUBB E SUBS RATIO.

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3/3 030 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0137487
ABSTRACT/EXTRACT--AS AN EXAMPLE, THE ARTICLE GIVES THE RESULTS OF SIMULTANEOUS CONTINUOUS MEASUREMENTS MADE ON 29 JUNE 1968. THE DATA IN THE ARTICLE ARE OF A PRELIMINARY NATURE BUT THEY SHOW THAT IN CONTRAST TO THE REGULAR LAYERS OF THE IONOSPHERE, THE VALUES OF THE COEFFICIENT OF REFLECTION FROM THE E LAYER AT FREQUENCIES GREATER THAN F SUBB E SUBS ARE DETERMINED BY THE RATIO F SUBWORK-F SUBB E SUBS. CASES OF REGISTRY OF P E SUBS GREATER THAN 1 WERE NOTED; THESE OCCURRED IN EVERY SERIES. THESE CASES ARE OBSERVED MOST FREQUENTLY WHEN F SUBB E SUBS IS CLOSE TO OR GREATER THAN F SUBWORK, THAT IS, THE CONDITIONS ARE CLOSE TO MIRROR REFLECTION. THESE VALUES OF THE REFLECTION COEFFICIENT ARE ANOMALOUS AND REQUIRE SPECIAL ANALYSIS. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE, ACADEMY OF SCIENCES TURKMEN SSR; ASHKHABAD.

UNCLASSIFIED

USSR

UDC 539.216.2

GALKIN, YU. A., GUSEVA, N. P., DERGUNOVA, V. S., KONOKOTIN, V. V., KRAVETSKIY G. A., KUDINOV, V. V., AND SHORSHOROV, M. KH., Moscow,

"Interaction of Refractory Oxides with Graphite In Spraying"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

Abstract: The interaction of refractory oxides with graphite in flame spraying was investigated in order to develop protective means against oxidation of carbographitic materials. The investigated dependences included the effect of base preheating on the bonding strength with the protective coatings and its density, effects of silicate and borosilicate sublayers on the bonding strength and the activation energy of the chemical interaction of sublayers with oxide coatings, the effect of graphite porosity on the bonding strength, and the effect of addition of molybdenum, silicon, and aluminum into the sprayed oxide on the gas density and the oxidative resistance of coatings. The kinetics of the increasing bond strength of Al_2O_3 and ZrO_2 coatings sprayed on preheated graphite are analyzed. The required activation energy of the graphite surface and its strong bond with the sprayed Al_2O_3 was found to be close to the half of the energy of the atomic bond in the graphite lattice,

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GALKIN, YU. A., et al., Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

which is in accordance withe graphite preheating over 1000°C when spraying. Silicate and borosilicate sublayers are recommended; they guarantee a bond strength of coatings on the level of graphite strength. Five illustrations, one table, three bibliographic references.

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USSR UDC 661.666.2.661:665

DERGUNOVA, V. S., SHURSHAKOV, A. N., POSOS'YEVA, G. D., LUTSENKO, L. N.

"Certain Strength Properties of Composite Graphite-Zirconium Carbide Materials"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 51-58.

Abstract: Results are presented from a study of the physical and mechanical properties of graphite-zirconium carbide and graphite-zirconium carbide-zirconium materials of various chemical compositions and structures. Strength properties were determined in the 20-2,500°C temperature interval using tensile-test specimens. Several factors influencing the strength of composite materials are studied. It is shown that the material with 75% graphite and 25% zirconium carbide has 30% higher tensile strength at 2,500°C than structural graphite type VPP. It is established that, by changing the degree of saturation of the zirconium phase of carbon, the physical and mechanical properties of the composition can be changed significantly. When there is residual zirconium present, in the 20-2,000°C temperature interval, the tensile and bending strengths are 1.5-3 times higher than when the carbide phase alone is present in the structure.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200620017-1"

USSR UDC: 621.791.052:669.046.558.22:620.17

ANIKIN, L. T. (Candidate of Technical Sciences), KRAVETSKIY, G. A., DERGUNOVA, V. S. (Candidate of Technical Sciences)

"High-Temperature Strength of Joints of Graphite Materials"

Moscow, Svarochnoye proizvodstvo, No 1, Jan 72, pp 18-19

Abstract: Discussed is a method of joining graphite materials by the use of an intermediate carbide-forming interlayer. It is shown that the high-temperature strength of the brazed joint is a function of the interaction of the molten solder with the graphite, the depth of its penetration in the pores of the material, the newly formed phase composition,and the strength of the graphite. Comparison tests on graphite specimens bonded by a zirconium interlayer indicate that the strength of the brazed specimens heated above the melting temperature of zirconium is 30 to 35% higher than that of specimens heated below this temperature. The tensile strength of the brazed joints increases with the penetration depth of the solder up to a specific value (2-2.5 mm) and then remains constant. The failure which had occurred in the specimens in tensile tests at 2000°C was found to be

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ANIKIN, L. T. (Candidate of Technical Sciences), et al, Svarochnoye proizvodstvo, No 1, Jan 72, pp 18-19

along the graphite outside the brazing zone. It is suggested that brazing of large-pore graphite be done with solders capable of forming (on contact) carbon saturated fusions under compression to afford maximum solder penetration and complete carburization to a composition close to stoichiometric. The study includes test data on solders from hafnium, molybdenum, and tungsten. (5 illustrations, 9 bibliographic references).

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BOBKOLSKIY, V. N., DERGUNOVA, V. S., IVANOVA, T. N., KOSTIKOV, V. I., LEVIN, V. Ya., TARABANOV, A. S.

"Contact Interaction of Melts in the System Silicon-Niobium with Carbon Materials"

Konstrukts. Materialy na Osnove Grafita [Graphite-Based Structural Materials -- Collection of Works], No 6, Moscow, Metallurgiya Press, 1971, pp 109-115 (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1358 from the Resume).

Translation: The wetting of pyrographite (I), vitreous carbon (II) and graphite (III) by melts in the silicon-niobium system, produced by double arc remelting in purified argon is studied. The final contact wetting angle on porous (III) is equal to zero, on pore-free (I) and (II) it is greater than zero. It is established that the chemical activity of these materials in relationship to melts in the system Si-Nb increases in the sequence: I, II, III.

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USSR UDC 621.3.035.2

YELYUTIN, V. P., KOSTIKOV, V. I., DERGUNOVA, V. S., SHURSHAKOV, A. N., POSOS'YEVA, G. D., LUTSENKO, L. N.

"Specifics of Saturation of Porous Graphite Bases with Melted Zirconium"

Tsvetnye Metally, No 1, 1971, pp 46-50.

Abstract: Certain regularities involved in the process of capillary saturation of various porous graphite materials with liquid zirconium are studied. An attempt is made to determine experimentally the apparent activation energy of the process and to determine the influence of individual factors on various stages of the process. The experiments were performed in a specially designed high-temperature installation under a vacuum of $2 \cdot 10^{-2}$ mm hg. The experiments showed that the melt flows energetically over the outer surface of specimens, thus producing elevated capillary rise values on specimens less than 60 mm in diameter due to additional penetration of the melt through side surface pores. Penetration of porous graphite materials with liquid zirconium occurs by flow of the zirconium along poor walls. The time dependence of movement of the saturation front under isothermal conditions forms a quadrativ parabola. The apparent activation of the process of saturation was calculated for type PROG-2400 and PG-50 graphites.

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