"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXISTENCE OF A QUASI LIQUID FILM ON THE SURFACE OF ICE -U-

AUTHOR-(03)-KVLIVIDZE, V.I., KISELEV, V.F., USHAKOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1088-90

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NMR SPECTRUM, ICE, LINE INTENSITY, LINE WIDTH, SURFACE FILM, FLUID STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1495 STEP NO--UR/0020/70/191/005/0188/1090

CIRC ACCESSION NO--AT0130424

UNCLASSIFIED

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2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0130424

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FROST FORMED BY LIQ. N ON THE WALLS OF A DEWAR FLASK WAS INVESTIGATED BY NMR. THE SPECTRA THUS OBTAINED CONSISTED OF 2 COMPONENTS: A WIDE AND A NARROW COMPONENT. THE NARROW COMPONENT WAS CLEARLY DISCERNIBLE AT LARGER THAN OR EQUAL TO 268DEGREESK, AND ITS INTENSITY INCREASED WITH TEMP. A WEAK NARROW COMPONENT WAS ALSO OBSD. IN NMR SPECTRA OBTAINED FROM POLYCRYST. ICE PRODUCED BY FREEZING WATER IN AN AMPUL. THE WIDE COMPONENT OF THE SPECTRUM IS PRODUCED BY RIGIDLY FIXED MOLS. IN THE CRYST. LATTICE OF ICE, WHEREAS THE NARROW COMPONENT IS PRODUCED BY LABILE H SUB2 O MOLS. OR PROTONS. THE CURVE DESCRIBING THE RELATION BETWEEN THE CONTENT OF THE NARROW SPECTRUM COMPONENT AND TEMP. OBTAINED EXPTL. AGREES QUAL. WITH THE THEORETICAL CURVE OF N. H. FLETCHER, 1963. THIS AGAIN INDICATES THAT THE NARROW COMPONENT OF THE SPECTRUM OF HIGHLY DISPERSED ICE IS DUE TO LABILE WATER MOLS. FORMING A QUASI LIQ. FILM ON THE SOLID ICE CRYSTALS. A ROUGH EST. OF THE CORRELATION TIME TAU SUBC OF THE LABILE MOLS. BY THE THEORY OF RELAXATION GIVES A VALUE OF TAU SUBC SIMILAR TO 10 NEGATIVE PRIME8, WHEREAS FOR ICE IT IS SIMILAR TO 10 NEGATIVE PRIME4 AND FOR ORDINARY WATER SIMILAR TO 10 NEGATIVE PRIME11. THIS VALUE OF TAU SUBC IS VERY NEAR THE VALUE FOR WATER ADSORBED ON SILICA GEL. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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UDC: 620.193.2'198

USSR

KVOKOVA, I. M., DRUZHININA, T. A., LAPINA, L. N., POVALISHNIKOVA, T. Ye.,
Moscow Institute of Steel and Alloys

"Investigation of a Multilayered Galvanic Coating Based on Nickel for Corrosion Protection Under Open-Sea Conditions"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

Abstract: The paper deals with problems of the corrosion behavior of a multilayered nickel-based galvanic coating under the atmospheric conditions of the tropic seas. A layer of dull nickel 15-30 um thick is applied to a base of Armco iron, copper and Kovar. As a preliminary step, all substrates were cathodically degreased in an alkaline solution for 5 minutes and then chemically etched: the Armco iron in hydrochloric acid; the copper in a mixture of orthophosphoric, sulfuric and hydrochloric acids; the Kovar in a mixture of nitric, acetic and hydrochloric acids. The composition of the tinning electrolyte (g/l): $Na_2SnO_3 \cdot 3H_2O$ 60, NaOH 13-18, CH_3COONa 25. The bright nickel electrolyte (g/l): $NiSO_4 \cdot 7H_2O$ 250; NaCl 15; H_3BO_3 30; 1,4-butyldiol 0.7; sodium allylsulfonate 0.[illegible]; chloramine B 1. On the basis of testing of multilayer coatings on all three substrates it

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USSR

KVOKOVA, I. M. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

is concluded that a coating of Ni_{dull} (15 μm)—Sn (15 μm)—Ni_{br} (10 μm) can be recommended for protecting important components from corrosion under tropical sea conditions with steady-state operating schedules without intense cooling to temperatures where tin undergoes an allotropic change and the coating loses its protective properties.

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USSR UDC 621.785.52:669.3

KVYATKOVSKIY, A. N., VDOVKIN, G. G., KUDINOV, B. V.

"Polarization of Vibrating Iron and Copper Electrodes in Sulfuric Acid Solutions of their Salts"

Sb. tr. N.-i. i proyekt. in-t po obogashch. rud tsvet. met. (Collected works of the Scientific Research and Planning and Design Institute with Respect to Beneficiation of Nonferrous Metal Ores), 1971, No 2, pp 64-73 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L320)

Translation: On the basis of the recorded polarization curves of the anode and cathode stages of the process of casehardening of copper in sulfuric acid solutions of natural salts on quiet and vibrating electrodes at 20-40 and 60° it was demonstrated that the electrode vibration lowers the concentration polarization of the cathode stage and has an insignificant effect on the variation of the anode polarization.

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USSR UDC 621.224.004

KVYATKOVSKIY, V. S., Doctor of Technical Sciences, Professor, and KURBSKIY, V. A., Engineer

"Design and Performance of an Experimental Diagonal-Flow Turbine at the Bukhtarma Hydroelectric Power Plant"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 4, Apr 73, pp 21-24

Abstract: The basic characteristics of an experimental diagonal-flow turbine at the Bukhtarma hydroelectric power plant are presented, and its design is evaluated. A comparison is made between the operating conditions of the diagonal-flow turbine and a radial-axial turbine. Seven years of operation of the new turbine have demonstrated an outstandingly small amount of cavitation damage to the blades in comparison to radial-axial turbines, the labor input required for repair of the cavitation damage being five times less, over the period, for the diagonal-flow turbine than for radial-axial turbines. At heads of 50-200 m, diagonal-flow turbines are found to be superior in all respects to fixed-blade radial-axial turbines. 4 figures. 11 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 539.375

KYARAS, V.

"Cybernetic Aspects of the Mechanics of Rupture"

Soprotivl. Materialov. Materialy XXII Resp. Nauch.-tekhn. Konf. [The Strengths of Materials, Materials of XXII Republic Scientific-Technical Conference -- Collection of Works], Kaunas, 1972, pp 146-149, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V592 by S. Ya. Yarema).

Translation: The expediency of analysis of rupture processes from the standpoint of cybernetics is affirmed, since they have a number of peculiarities characteristic of cybernetic systems. The author reports that he has formulated a theorem on the energetic adaptation of rupture processes and their tendency toward Lyapunov stability, as well as a theorem on a convenient policy for natural optimization of the process. The apparatus of games theory in its nonclassical statement and the apparatus of dynamic programming of Belman can be used to describe the rupture process and control it. 6 Biblio. Refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 621.224

KVYATKOVSKIY, V. S., SOKOLOV, A. P., and BELASH, I. G.

"New Research on Diagonal Hydroturbines Series D60 (thrusts 36 + 60 m)"

Tr. Mosk. Energ. In-ta (Works of the Moscow Power Engineering Institute), No 132, 1972, pp 5-14 (from Referativnyy Zhurnal -- Turbostroyeniye, No 2, 1972, Abstract No 2.49.170)

Translation: On the basis of an analysis of previous developments of hydraulic-turbine impellers, two high-speed impellers have been designed: one with $Z_1 = 7$, $dv_t = 0.5\ D_1$, $n = 110$ rpm, $Q = 1100$ l/sec (turbine D60 - 4015) and the other with $Z_1 = 9$, $d_{tv} = 0.55\ D_1$, $n = 105$ rpm, $Q = 1000$ l/sec (turbine D60 - 4016). Consideration is given to variants of the application of the designs of series D60 for specific hydroelectric power plants. 6 figures. 4 references.

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JPRS 59203

C-73

XII-15. CHARACTERISTIC FEATURES OF THE GROWTH OF EPITAXIAL FILMS OF CADMIUM SELENIDE ON SOME $A^{III}B^{V}$ COMPOUNDS

[Article by S. A. Artkhozhin, L. G. Kyarginskaya, Moscow; Novosibirsk, III Simposium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 17-17 June 1972, p 179]

Monocrystalline films of cadmium selenide have been grown by the gas transport method in a hydrogen current on substrates made of semiconductor materials: gallium arsenide, gallium antimonide, indium antimonide, and gallium phosphide.

It was demonstrated that the growth of the epitaxial films of cadmium selenide on $A^{III}B^{V}$ takes place at lower temperatures than on dielectric substrates. The minimum temperature of the epitaxial growth is 350° C.

The characteristic features of the growth of cadmium selenide films on the (111) and ($\bar{1}\bar{1}\bar{1}$) surface of $A^{III}B^{V}$ are discussed.

KYARGINSKAYA, L.G.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 577.1:615.7/9

KRAYYALIS, K. I., KYARSKULIS, A. A., and DYASHRYUS, A. P.

"The Effect of Some Neurotropic Substances on Total Toxicity and Antitumor Activity of B-66 and B-67 Preparations"

Vil'nyus, Liet, TSR Mokslu Akad. darbai, Tr. AN LitSSR (Proceeding of the Academy of Sciences Lithuanian SSR), Vol B, No 1 (57), 1972, pp 123-129 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, Otdel'nyy Vypusk, No 19, 1972, Abstract No 19F2061 by N. Andreyeva)

Translation: A combined intraperitoneal application of 75-100 mg/kg of preparation B-66 (N-/2-di-(2'-chlorethyl)amino-4-diethylsulfamoylphenyl/ morpholine (I) suspended in vegetable oil and 25 and 35 mg/kg of B-67 (6-diethylsulfamoyl-4-(2'-chlorethyl)-1,2,3,4-tetrahydroxyquinolin-1-spiro-4-morpholinium chloride (II) in isotonic NaCl solution with 6 mg/kg of aminazin (III), 20 mg/kg of dicoline (IV), 40 mg/kg of spasmolytin (V), and 30 mg/kg of amizyl (VI) for 10 days did not influence the growth of sarcoma in 45 white mice. Preparations were administered 6 days after inoculation of mice with sarcoma. Compound III increased considerably the toxicity of I and II; and compound IV increased the toxicity of II. The toxicity of II decreased because of V; and VI did not altered the toxicity of I and II.

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UDC 615.77.17

USSR

SHIMKYAVICHENE, B. I., KYARSHULIS, A. A., and SLAVENENE, L. V., Institute of Biochemistry, Academy of Sciences Lithuanian SSR

"Antileukosis Effect of Basic Amino Acid Derivatives Containing the Di(2-Chloroethyl) Amino Group. 1. Application of MD-3 Preparation of Experimental Leukoses of Mice, and Effect on the Blood and Hemopoietic Organs"

Vilna, Trudy Akademii Nauk Litovskoy SSR, Seriya Biologicheskaya, No 1, 1970, pp 137-150

Abstract: Mice inoculated with three leukoses (hemoblastosis La, lympholeukosis NK/Ly, and TsOLIPK No 8) were treated with preparation MD-3. The preparation was found to have a strong antileukosis effect, especially with respect to hemoblastosis La. MD-3 administered intraperitoneally 10 times in doses of 10 mg/kg of body weight caused leukopenia in albino mice, affecting primarily the lymphocytes. The absolute number of leukocytes after 10 doses was reduced by a factor of 4. Normalization of the leukocytes was observed on the 25th day of the experiments. When MD-3 was administered intraperitoneally in daily doses of 30 mg/kg for 10 days, survival was prolonged in 86% of the mice. Infiltration of leukemic cells into the liver and spleen was found to be considerably decreased.

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USSR

UDC 621.391.17

KYCHKIN, I. N.

"Noise Immunity of Information Transmission Systems Using the OChFM Method"

Moscow, Elektrosvyaz', No 8, 1970, pp 48-51

Abstract: The OChFM acronym of the title is the transliteration of the Cyrillic letters standing for relative frequency-phase manipulation. This article considers a two-channel system of communication for digital information by this method, and the possibility of rendering such a system free of sinusoidal noise — a problem the author considers important and real. The signal in the first channel is transmitted by the frequency manipulation method while that of the second is transmitted by the relative frequency-phase manipulation method. The spread between attached and unattached bit pulse frequencies is equal to the orthogonality interval. Also described is a system in which orthogonality between the attached and unattached frequencies is not required. An appendix to the article shows how a random sequence of bits is transformed into a radio-frequency voltage for a number of manipulation positions greater than three.

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Therapy

UDC 616.981.553-06:616.8-036.17

USSR

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

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

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

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

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USSR

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

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

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Acc. Nr. AP0055929 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0078

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115285a $Co(NO_3)_2$-CH_3CONH_2-H_2O and $Ni(NO_3)_2$-CH_3CO-NH_2-H_2O systems. Dzhunusov, A. D.; Imanaliyev, B. I.; Kydynov, M. M.; Druzhinin, I. G.; Karnaukhov, A. S. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 532-8 (Russ). Heterogeneous equil. were studied in the title systems at 25° and solv. diagrams of the systems are constructed. Four new compds. sep. in the systems: $Co(NO_3)_2.4AcNH_2.2H_2O$, $Co(NO_3)_2.6AcNH_2.2H_2O$ and analogous Ni compds. Thermographs, x-ray powder diffraction patterns, and ir absorption frequencies of these compds. are given. HMJR.

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USSR UDC 599.32

KYDYRBAYEV, Kh. K., Institute of Zoology, Academy of Sciences, Kazakh SSR

"Contribution to the Ecology of the Long-Tailed Siberian and Red-Cheeked Susliks in the Kalbinskiy Altay"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, No 5, 1971, pp 50-57

Abstract: In the Kalbinskiy Altay, the long-tailed Siberian (Citellus undulatus Pall.) and red-cheeked (Citellus erythrogenys Brandt) susliks are hunted for their fur. They are also crop pests. Though the two species have the same broad habitat, they are not in competition with each other or in close contact and no hybrids have ever been found. C. undulatus prefers elevated and stony places while C. erythrogenys favors open plains. There is little difference in composition of food. C. undulatus feeds on about 30 plant species as well as on animals and insects (mostly beetles, grasshoppers, and ants), whereas the diet of C. erythrogenys consists half of plants (25 species) and half of animals and only occasionally insects. Each species has its typical ectoparasites (fleas). C. erythrogenys is much more fecund than C. undulatus.

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UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 015

TITLE--SOLUBILITY ISOTHERM FOR THE ZINC SULFATE AMMONIUM SULFATE POTASSIUM SULFATE WATER QUATERNARY SYSTEM AT 25DEGREES -U-

AUTHOR-(02)-AYDYRGANOV, A., IPANAKUNOV, B.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 665-

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PHASE DIAGRAM, AQUEOUS SOLUTION, INORGANIC SALT, ZINC COMPOUND, POTASSIUM COMPOUND, AMMONIUM SULFATE, SOLUBILITY, ISOTHERM, MULTICOMPONENT CHEMICAL MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0958

STEP NO--UR/0080/70/043/003/0665/0667

CIRC ACCESSION NO--AP0131543

UNCLASSIFIED

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UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 015

CIRC ACCESSION NO--AP0131543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHASE DIAGRAM IS GIVEN FOR THE TITLE QUATERNARY SYSTEM AT 25DEGREES. IN THE SYSTEM CONTG. ZN 31.25, NH SUB4 2.20, AND K 2.52 WT. PERCENT (PRESENT AS SULFATES) IN THE AQ. PHASE, THE SOLID PHASE IS FORMED BY A MIXT. OF ZNSO SUB4 (NH SUB4) SUB2 SO SUB4 6H SUB2 O (A) AND A COMPD. OF VARIABLE COMPN., VIZ., KZNSO SUB4.(K SUB2 SO SUB4.M(NH SUB4) SUB2 SO SUB4.6H SUB2 O (B). A MIXT OF A AND B IS IN EQUIL. WITHSOLN., THE COMPN. OF WHICH VARIES IN THE RANGE ZN 20.55-8.02; NH SUB4 4.98-9.68; K 1.54-0.38 WT. PERCENT. THE AQ. SOLNS. WITH ZN 1.87-13.30, NH SUB4 5.97-1.98, AND K 18.16-6.22 WT. PERCENT ARE IN EQUIL. WITH A MIXT. OF B AND ZNSO SUB4 (NH SUB2 SO SUB4 6H SUB2 O. THE SYSTEMS WITH ZN 0.24-0.79, NH SUB4 42.26-29.04, AND K 13.64-14.86 WT. PERCENT IN THE AQ. PHASE ARE IN EQUIL. WITH A MIXT. OF SOLID B AND A SALT OF VARIABLE COMPN., VIZ., KL SUB2 SO SUB4 M(NH SUB4) SUB2 SO SUB4. FACILITY: KIRG. GDS. SEL'SKOKHOZ. INST., FRUNZE, USSR.

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USSR UDC 547.564.12.544.3'294

KYKALENKO, S. S., Scientific Research Institute of Fertilizers and Insectofungicides Imeni Samoylov

"From the Area of Insectofungicides. I. Synthesis and Some Reactions of γ-Arylthiobutyric Acids"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 6, No 4, Apr 70, pp 680-684

Abstract: In search of novel fungicides a series of γ-arylthiobutyric acids and their derivatives was synthesized. Gradual addition of sodium p-chlorothiophenoxide to γ-butyrolactone at 80-150° with casual stirring followed by heating to 150-175° for 12 hrs and acidification in cold gave γ-p-chlorophenylbutyric acid, m.p. 102-103°. When γ-phenylthiobutyric acid was heated with 30% hydrogen peroxide and 30 ml of glacial acetic acid at 50-80° for 7 hrs, followed by standing overnight and removal of solvent in vacuum, γ-phenylsulfonebutyric acid was obtained, m.p. 90-91°. Same product could be obtained analogously starting with propyl ester, which in turn was obtained by

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KYKALENKO, S. S., Zhurnal Organicheskoy Khimii, Vol 6, No 4, Apr 70, pp 680-684

reacting the free acid with a mixture of propanol, dichloroethane and 2 drops of sulfuric acid. To get an ester of γ-phenylsulfonebutyric acid, this acid was heated in dichloroethane for 8 hrs in presence of methanol and trace sulfuric acid. Reaction of γ-phenylthiomethylbutyrate in carbon tetrachloride with sulfuryl chloride gave the methyl ester of γ-p-chlorophenylthiobutyric acid. Analogues of the described compounds were synthesized in a similar manner. All of them appeared to be strong fungicides against phytopathogenic spores of fungi and bacteria. In studies on green plants these compounds exhibited high activity against the Phytophtora of tomatoes, black stem rust of wheat and tobacco mosaic virus.

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UDC 612.821.6+612.822.6

USSR

BOLONDINSKIY, V. K. and KYLAGIN, D. A., Laboratory of Cortico-Visceral Physiology and Pathology and Laboratory of Genetics of Higher Nervous Activity, Institute of Physiology imeni I. P Pavlov, USSR Academy of Sciences Leningrad

"On the Correlation Between the Strength of the Excitatory Process, Emotional Reactions and RNA Concentration in the Brain of Rats"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 887-889

Abstract: A significant negative correlation was found between the strength of stimulation, measured as the value of a conditioned reflex after introduction of caffeine, and emotionality, measured as the number of fecal droppings in response to strong light. Emotionality also showed a negative correlation with the concentration of RNA in the brain, but not with DNA concentration. The experiments were performed on 14 male rats of the Wistar line.

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USSR UDC 612.45+612.1

VIRU, A. A., KYRGE, P. K., and VIRU, E. A., Problem Laboratory Concerning the Basis of Muscle Activity, Tartu State University

"Interrelations Between Adrenal Glucocorticoid Activity, the Cardiovascular System, and Electrolyte Metabolism During Exhausting Work"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 1, 1973, pp 105-110

Abstract: Twelve athletes repeatedly performed 1-min exercises on a bicycle ergometer up to exhaustion. The first 10 exercises increased glucocorticoid concentration in blood plasma, saliva, and urine. Subsequently, with increasing fatigue, 17-hydroxycorticoid concentration in these fluids decreased and so did the maximum arterial blood pressure. The Na/K ratio in urine decreased, while K concentration in blood plasma and K and aldosterone excretion with urine increased. There was a downward shift in the S-T segment in the EKG, which diminished with increasing K concentration in blood plasma. Since Na concentration in plasma decreased (thus excluding the effect of plasma concentration due to dehydration) and since K excretion was elevated throughout the period of exercise, it is inferred that the rise in plasma K is due to release of intracellular K and that this rise is indicative of the individual's physical fitness.

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USSR

SKOK, V. I., and KYRYCHYNS'KYY, B. R., (Reviewers)

Lazery v Eksperyments y Klynyke (Lasers in Experimental and Clinical Conditions), by N. F. Gamaleya, Moscow, Meditsina, 1972, 231 pp

Kiev, Visnik Akademii Nauk Ukrayins'koy RSR, No 6, 1972, pp 108-110

Abstract: The book by N. F. Gamaleya covers a broad spectrum of problems on the use of lasers in medical and biological sciences. In an introduction, the author considers the biological effect of light in general on animals cells, and the application of coherent and monochromatic laser beams in medicine and biology. The next chapter presents a detailed review of developments in quantum electronics and lasers. A separate chapter in devoted to types of lasers, especially those used in medicine and biology, the techniques of measuring laser radiation, and innovations in the designing of units for medical applications. The author also describes safety measures used in working with lasers, as well as design principles of laser laboratories and laser surgical rooms. Existing medical laboratories devoted to the treatment of malignant tumors. Much space is given to the interaction of laser radiation with biochemical substances such as proteins and nucleic acids. The effect of laser beams on cells and intracellular structures is discussed at length, with emphasis on cytological and embryological experiments. In the same chapter the author presents his own results obtained with the use of

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USSR

SKOK, V. I., and KYRYCHYNS'KYY, B. R., Visnik Akademii Nauk Ukrayins'koy RSR, No 6, 1972, pp 108-110

an argon laser in the study of cell structures. The longest chapter is devoted to the effect of laser radiation on different organs and cells, such as eyes, skin, nervous system, organs located in the chest and abdominal cavities, and others. The mechanism of laser radiation is analyzed to the greatest extent. Without a detailed understanding of this mechanism it would be impossible to apply laser radiation rationally in medical and biological fields. Clinical applications of lasers are based mainly on the author's own results, especially in ophthalmology. Therapy of malignant tumors in humans is also covered. The author also described results obtained in the treatment of cancer with laser beams at the Goldman Laboratory in the U.S. and at the Institute of Problems of Oncology, Academy of Sciences Ukrainian SSR. Some future applications of laser radiation in experiments and in clinical research are indicated at the end of the book. An extensive bibliography covers works appearing from 1960 to 1970.

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UDC 612.8+612.766.1

USSR

NAVAKATYKYAN, O. O., KUNDIYEV, Yu. I., LYSYNA, G. G., [illegible], [illegible] P., HRYSHKO, F. I., DERKACH, V. S., KAPSHUK, O. P., KYRYENKO, A. Ya., KARAKASHYAN, A. N., KOVAL'OVA, G. I., RATUSHNA, A. M., TOMASHEVC'KA, [illegible], [illegible], A. M., and MAYDYKOV, Yu. L., Kiev Institute of the Work Hygiene and Occupational Diseases, Kiev

"Nervous Emotional Stresses as a Problem of Modern Work Physiology"

Kiev, Fiziolchichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 535-546

Abstract: The introduction of machines and automatic control instrumentation into production lines at plants and factories and at many other institutions requires of workers rapid coordination of actions combined with mental activity. The volume of information input which requires a combination of physical and mental ability has been increasing tremendously for the last decade. This has produced nervous and emotional stresses and disturbances in the normal functions of many human organs. Analysis of many workers from various branches of industry as well as people occupied with mental work has shown that modern technology imposes heavy stresses on an individual which are accompanied by abnormal function of the adrenal glands, and hypothalamus, and the hypophysial and sympatho-adrenal systems. Measurements have shown that corticosteroid blood and urine

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USSR

NAVAKATYKYAN, O. O., et al., Fiziolohichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 535-546

levels exceed the norm by as much as 42-57% in people under heavy stress. Emotional stress with distortion in the function of many systems were more often encountered among the young (17-18 year olds). These malfunctions included the secretion of adrenalin and noradrenalin, and disturbances in hemodynamics. Shifts in physiological functions among different occupational groups under identical stresses occur at different times and are closely related to age. They were more pronounced among older people (31-40 years old). The cardiovascular system occupies a prominent place in labor physiology, and there are many methods and approaches to study it. Some literature methods and those of the authors are described, including instrumentation. Mental work which is accompanied by nervous-emotional stresses influences profoundly the cardiovascular system within a wide range of deviations, including pathological functional disturbances and hypertension. The same is true for other occupations as well. The authors recommend the rational use of working hours and rest periods to avoid overstresses.

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USSR UDC 553.91(474.2)

KYRVEL, V., Administration of Geology of the Council of Ministers Estonian SSR

"Graphite in the Crystalline Basement of Estonia"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR, Khimiya-Geologiya, Vol 20, No 2, 1971, pp 176-177

Abstract: In 1961 a core was drilled in eastern Estonia in the settlement of Palamuse, which extended 58.6 m through the crystalline basement and revealed a graphite stratum. The crystalline foundation in this area lies beneath a thick bed of Lower Paleozoic sedimentary rock and Quaternary deposits. The crystalline basement lies at a depth 428.6 m from ground surface. The composition of the drill core is described. Bands enriched with finegrain quartz and clay matter impregnated with sulfites and incrustations containing copper minerals were traced in the graphite. Structurally, the graphite from the Palamuse area is in the class of crypto-crystalline dense graphites. Analysis showed that the graphite is characterized by low carbon content and has high ash content (60.26%) probably associated with the presence of mineral inclusions.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC: 681.325

KYSHTYMOV, V. A., IVCHENKO, A. M.

"A Converter Which Changes Code to DC Voltage Amplitude"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 292171, Division G, filed 28 Mar 69, published 6 Jan 71, p 134

Translation: This Author's Certificate introduces a converter for changing code to AC voltage amplitude. The unit contains digital-place flip-flops, a reverse flip-flop, a sign flip-flop and a digital controllable divider. As a distinguishing feature of the patent, conversion accuracy is improved by incorporating two kipp oscillators, the output of the first being connected to the inputs of all digital-place flip-flops except for the first one, while the output of the second kipp oscillator is connected to the input of the reverse flip-flop.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 543.422.27:547.1'127

FEDOROV, L. A., KYSKIN, V. I., and ZAKHARKIN, L. I., Institute for Organometallic Compounds, Academy of Sciences SSSR

"Nuclear Magnetic Resonance Studies of the Methylmercury Derivatives of 1-Phospha-7-; 1-Phospha-12-; 1-Arsa-7-; and 1-Arsa-12-carbacloseododecaboranes (11)"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 536-538

Abstract: From data based on the cleavage of the C-C bond, the electron affinity of keto-borane increases in the following order: m-carborane ($m\text{-}B_{10}H_{10}C_2H_2$) < m-carboarsa borane ($m\text{-}B_{10}H_{10}AsCH$) < m-carbophosphaborane ($m\text{-}B_{10}H_{10}PCH$). It has also been shown in NMR spectra that the spin-spin interaction constants $J_{Hg^{199}-CH_3}$ of the metal derivatives of carboranes change to the electron affinity of the carborane group connected with the mercury atom. m- and p-carbophospha- and m- and p-carboarsa-boranes were prepared in the following way: m-, p-$B_{10}H_{10}ECH \xrightarrow{RLi}$ m-, p-$B_{10}H_{10}ECLi \xrightarrow{CH_3HgBr}$ m-, p-$B_{10}H_{10}ECHgCH_3$ where E = P, As; R = n - C_4H_9, C_6H_5. The ortho forms could not be

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FEDOROV, L. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 536-538

prepared by this method. The measured spin-spin coupling constants $J_{Hg^{199}-C-H^1}$, are given below.

Соединение / Compound	Растворитель / Solvent				
	CCl_4	$CHCl_3$	CH_2Cl_2	C_6H_6	Диоксан
	$J_{Hg^{199}-C-H^1}$, Hz				
m-$HCB_{10}H_{10}CHgCH_3$ [5]	136,1	138,7	140,9	140,9	145,0
m-$AsB_{10}H_{10}CHgCH_3$	136,5	139,3	141,8	141,2	145,0
m-$PB_{10}H_{10}CHgCH_3$	137,3	139,8	142,7	142,2	146,9
p-$HCB_{10}H_{10}CHgCH_3$ [5]	133,7	135,5	138,8	138,3	141,4
p-$AsB_{10}H_{10}CHgCH_3$	133,7	135,5	137,7	138,5	141,7
p-$PB_{10}H_{10}CHgCH_3$	134,4	139,5	140,9	142,6	145,1

These agree with earlier values.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 541.138.3:547.244

ZAKHARKIN, L. I., and KYSKIN, V. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Polarographic Reduction of Isomeric Carbaphosphaboranes ($B_{10}H_{10}PCH$) and Carbaarsaboranes ($B_{10}H_{10}AsCH$)"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2052-2053

Abstract: The authors studied the polarographic reduction on a dropping mercury electrode of all isomeric carbaphosphaboranes and carbaarsaboranes in dimethylformamide against a ($C_2H_5)_4NClO_4$ background. It was found that the polarographic reduction processes are irreversible. In the carbaphosphaforane series the electron affinity decreases in the order ortho > meta > para, in the carbaarsaborane series meta > para > ortho. Replacement of one CH group in the icosahedral skeleton of the carboranes $B_{10}H_{10}C_2H_2$ by a phosphorus or arsenic atom increases the electron affinity of the system. The authors thank S. A. SMIRNOVA and A. P. Snyakin for helping take the polarograms and for valuable consultations.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 543.878.547.244

ZAKHARKIN, L. I., and KYSKIN, V. I., Institute of Organoelemental Compounds, Academy of Sciences of the USSR

"On the Comparative Reactivity of Carborans ($B_{10}H_{10}C_2H_2$), Carbaphosphaborans ($B_{10}H_{10}PCH$) and Carbaarsaborans ($B_{10}H_{10}AsCH$)"

Moscow, IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 2,142-2,143

Abstract: Ortho-, meta- and para-carbaarsaborans were subjected to electrophilic halogenation, exchange halogenation by polychloromethanes and photochemical chlorination at the boron atoms of the carbaarsaboran ring. The facility of electrophilic halogenation of carbaarsaboran isomers decreases in the order: ortho-<meta-<para-isomers, and the stability of the carbaarsaboran ring with respect to piperidine increases in the order: ortho- <meta-<-para-isomers. The rate of halogenation of carbaarsaboran isomers is greater than for the corresponding isomers of carboran and carbaphosphaboran, and the carbaarsaboran ring is more resistant to the effect of piperidine than the carboran and carbaphosphaboran rings. Electrophilic and exchange monohalogenation of o-carbaarsaboran produces a mixture of 8(10)-, 9- and 12-halo-o-carbaarsaborans, while photochemical monohalogenation produces a mixture of

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

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ZAKHARKIN, L. I., and KYSKIN, V. I., IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 2,142-2,143

six possible B-chloro-o-carbaarsaborans. At 550°C in the gas phase, isomerization of o-carbaarsaboran to m-carbaarsaboran takes place with a 96% yield, while mutual conversion of meta- and para-carbaarsaborans takes place at 650°C giving an equilibrium mixture which contains 50% of the para-isomer.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DIPOLE MOMENTS OF O, M, AND P CARBAPHOSPHOBORANES C SUB10 H SUB10 PCH -U-

AUTHOR-(04)-ECHEISTOVA, A.I., SYRIKIN, YA.K., ZAKHARKIN, L.I., KYSKIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUCKT. KHIM. 1970, 11(3), 552

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIPOLE MOMENT, DIELECTRIC CONSTANT, BORANE, ORGANIC PHOSPHORUS COMPOUND, ORGANOBORON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605018/810 STEP NO--UR/0192/70/011/003/0552/0552

CIRC ACCESSION NO--AP0140798

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 027 UNCLASSIFIED PROCESSING DATE--[illegible]

CIRC ACCESSION NO--AP0140798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. REFRACTIVITIES, DIELEC. CONSTS., AND DIPOLE MOMENTS OF THE TITLE COMPDS. WERE DETD. THE DIPOLE MOMENTS OF THESE COMPDS. WERE COMPARED WITH THOSE OF THE CORRESPONDING ISOMERS OF B SUB10 H SUB10 C SUB2 H SUB2. FACILITY: INST. ELEMENTOORG. SOEDIN, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 547.26'18

GORDEYEV, A. D., KYUNTSEL', I. A., GOLIK, G. A., and SHOKOL, V. A.

"Study of the Structure of Phosphazo Phosphonils -- Products of the Reaction of Amido Esters of Alkyl Phosphonic Acids with Phosphorus Pentachloride Using the Nuclear Quadruple Resonance Spectra of ^{35}Cl"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 9-12

Abstract: The study of the nuclear quadruple resonance spectra of ^{35}Cl of phosphazo phosphonils obtained from the amides of alkyl and aryl esters of methyl and chloromethyl phosphonic acids with phosphorus pentachloride was used to establish that they have the structure of alkyldichlorophosphazo and alkylaroxychlorophosphazo dichlorophosphonils and not the trichlorophosphazoalkylchloro and trichlorophosphazo alkylaroxyphosphonils isomeric to them. The $\rightarrow P = N - P(=O)=$ grouping is more stable when the oxygen atom is on the phosphorus atom bound to the more electronegative atoms or groups. The measurements were performed on the pulse spin echo nuclear quadrupole resonance spectrometer equipped with a device for blowing liquid nitrogen vapor through the specimen. The measurement procedure was analogous to that described earlier [A. D. Gordeyev, et al., ZhSKh, No 11, 773, 1970].

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EVALUATION OF METHODS OF INTERNAL USE OF FLUORIDE FOR THE PURPOSE OF COLLECTIVE PROPHYLAXIS OF DENTAL CARIES -U-

AUTHOR-(02)-KYUNTSEL, V., KLIMM, V.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 13-20

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DENTAL CARIES, FLUORIDE, PEDIATRICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0100 STEP NO--UR/0511/70/049/003/0013/0020

CIRC ACCESSION NO--AP0120800

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 015

CIRC ACCESSION NO--AP0120800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. BASING UPON STATISTICAL INVESTIGATIONS THE AUTHORS COMPARE THE RESULTS OF USING FLUORIDE CONTAINING TABLETS WITH THE RESULTS OF FLUOROIDATION OF DRINKING WATER. THE LATTER IN ALL RESPECTS IS MORE ADVANTAGEOUS. AFTER AN 8 YEAR LONG ADDITION OF FLUOROIDE (UP TO 1 PPM) TO THE DRINKING WATER THE AUTHORS OBSERVED A REDUCTION OF THE INCIDENCE OF DENTAL CARIES IN CHILDREN, AGE 6-10 AND 11-15 YEARS, BY 74 AND 43 PER CENT RESPECTIVELY. ANALOGOUS DATA WERE ESTABLISHED IN THE MILK BITE IN CHILDREN, AGED 3-6 AND 7-10 YEARS. THE EMPLOYMENT OF FLUORIDE CONTAINING TABLETS DOES NOT YIELD SUCH GOOD RESULTS. THE POSSIBILITY OF ELABORATING A SYSTEM OF COMPLEX COMBAT WITH DENTAL CARIES IS DISCUSSED. FACILITY: KLINIKA TERAPEVTICHESKOY STOMATOLOGII UNIVERSITETA IM. KARLA MARKSA.

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UDC 621.315.592

USSR

KYUREGYAN, A. S., LAZAREVA, I. K., STUCHEBNIKOV, V. M., YUNOVICH, A. E.

"Photoluminescence of Gallium Antimonide at a High Excitation Level"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 242-247

Abstract: The radiation recombination in GaSb under laser excitation was investigated. With an increase in the excitation power to 10^3-10^5 watts/cm^2, new shortwave bands appear in the spectra. The width of the forbidden band of GaSb defined by the peak energy of the interband (exciton) radiation is 0.813 ± ± 0.003 electron volts at 12° K and 0.800 ± 0.005 electron volts at 80° K. In the case of weak alloying of the GaSb with tellurium, recombination occurs in the spectra with the participation of natural acceptors (0.034 and 0.070 electron volts), deep acceptors (0.10 and 0.13 electron volts) and a shallow donor (0.01 electron volts). The effect of the temperature variation, degree of alloying and excitation level on the form of the photoluminescent spectra is discussed. The results are compared with data obtained by one of the authors [V. M. Stuchebnikov, Author's Review of Candidates Dissertation of Moscow State University, Moscow, 1969] for a comparatively low excitation level by a He-Ne-laser.

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UDC: 538.576.54

USSR

KYURKCHAN, A. G.

"Application of the Method of Orthogonalization to Problems of Diffraction by Several Bodies"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 687-700

Abstract: The author analyzes the problem of diffraction by a group of N interacting bodies using the "method of orthogonalization" proposed by Ya. N. Fel'd (Radiotekhnika i Elektronika, 1959, Vol 4, No 12, p 2004). In essence, the procedure consists in constructing a series for the unknown current on the surfaces of the bodies with respect to some system of functions which is orthogonal with the operator of the corresponding integral equation for the current. The coefficients of this equation are then found by using the properties of completeness and orthonormality of the system. The simplest two-dimensional case (circular and elliptical cylinders) is considered, formulas are derived for the scattered field, and numerical calculations are given for various cases of diffraction by circular cylinders. In conclusion, the author thanks Ya. N. Fel'd for directing the work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC 532.512.3

KYURKCHIYEV, R.

Chair of Theory of Plasticity, Moscow University

"A Cylindrical Shell With An Elastic Core Under the Effect of a Moving Circumferential Load"

Vestnik Moskovskogo universiteta, Matematik, mekhanika, No 6, 1970, pp 80-84

Abstract: A solution in linear form is obtained for the problem of the dynamic behavior of an infinite cylindrical shell which contains an elastic core and is under the effect of a moving circumferential load. It is assumed that the load is normal to the center of the shell, equally distributed in the circumferential direction and is moving in the direction of the axis of the cylinder at constant velocity. It is assumed that the shell is sufficiently thin and that the core is soft (with low modulus of elasticity). A Fourier integral transform is used to obtain a stationary solution of the problem. A transcendental system of two equations is derived, which can be used to compute the critical velocity of the motion of the load.

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Acc. Nr: AP0036527

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Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 41-48

ADSORPTION AND ADSORPTION HEATS OF VAPORS ON GEOMETRICALLY MODIFIED SILICA GELS

Yekabson, Ya. Ya.; Kiselev, A. V.; Kvaratsov, B. V.; Nikitn, Yu. S.

The measurements of the adsorption extent and adsorption heats of water and benzene vapors have shown that macroporous silica gels obtained by hydrothermal treatment in an autoclave followed by calcination at 900 and 1000° for 8—10 hours and rehydroxylation contain very few ultrapores and in respect to their surface chemistry are similar to silica without ultrapores. A longer calcination of macraporous silica gel at 1000° leads to the appearance of microcracks in it and to an increase of its ultraporosity.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 039 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INDUCED ENTROPY, TEMPERATURE, SCATTERING OF LIGHT IN LIQUIDS -U-

AUTHOR-(03)-KYZYLASOV, YU.I., STARUNOV, V.S., FABELINSKIY, I.L.

COUNTRY OF INFO--USSR

K

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(2), 110-13

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ENTROPY, LIGHT SCATTERING, BENZENE, ETHANOL, RUBY LASER, FABRY PEROT INTERFEROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0998 STEP NO--UR/0386/70/011/002/0110/0113

CIRC ACCESSION NO--AP0115019

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--27NOV70

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CIRC ACCESSION NO--AP0115019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STOKES SHIFTED LINE OF INDUCED ENTROPY SCATTERING OF LIGHT WAS OBSD. IN LIQS.; THE SCATTERING WAS CAUSED BY THE ELECTROCALORIC EFFECT. THIS SCATTERING WAS EXCITED IN C SUB6 H SUB6 AND ETOH BY A LIGHT PULSE (10-15 NSEC) OF A RUBY LASER (MAX. OUTPUT SIMILAR TO 180 MW, LINE WIDTH 2-3 TIMES 10 PRIME NEGATIVE2 CM PRIME NEGATIVE1). THE LIGHT, SCATTERED UNDER AN ANGLE OF 90DEGREES, WAS ANALYZED BY A FABRI-PEROT INTERFEROMETER. THE STOKES SHIFTS WERE OF SIMILAR TO 10 PRIME NEGATIVE2 CM PRIME NEGATIVE1. BY ADDING AN ABSORBENT TO THE LIQS., AN ANTI STOKES SHIFTED LINE OF INDUCED TEMP. SCATTERING OCCURRED. AT HIGH ABSORPTIVITIES AND INTENSITIES OF EXCITING RADIATION, THE ANTI STOKES SHIFT WAS SEVERAL TIMES HIGHER THAN THE STOKES ONE. IN THE CASE OF C SUB6 H SUB6, THE STOKES AND ANTI STOKES (OWING TO THE EFFECT OF NONLINEAR LIGHT ABSORPTION) SHIFTS WERE OBSD. AT THE OUTPUTS OF SIMILAR TO 50-80 AND LARGER THAN 80 MW, RESP.

FACILITY: FIZ. INST., IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 019

TITLE--STIMULATED ENTROPY TEMPERATURE SCATTERING OF LIGHT IN LIQUIDS -U-

AUTHOR-(04)-KYZYLASOV, YU.P., STARUNOV, V.S., FABELINSKIY, I.L., LEBEDEV, P.N.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 110-13 (JAN, 1970)

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT SCATTERING, ENTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1090 STEP NO--US/0000/70/011/002/0110/0113

CIRC ACCESSION NO--AP0136510

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 019

CIRC ACCESSION NO--AP0136510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS HAVE SHOWN THAT STIMULATED (ENTROPY) SCATTERING OF LIGHT (STS) CAN BE DUE TO TWO DIFFERENT CAUSES. IT FOLLOWS FROM A GENERAL ANALYSIS OF THE STS PHENOMENON THAT THE STS LINE DUE TO THE ELECTROCALORIC EFFECT SHOULD BE SHIFTED TO THE STOKES SIDE RELATIVE TO THE FREQUENCY OF THE EXCITING RADIATION (STS-I), AND THE STS LINE DUE TO THE DIRECT ABSORPTION OF LIGHT SHOULD HAVE AN ANTI STOKES SHIFT (STS-II). THE AUTHORS REPORT HERE THE FIRST OBSERVATION OF THE STS-I LINE IN LIQUIDS, WITH AN INTENSITY MAXIMUM SHIFTED IN THE STOKES DIRECTION RELATIVE TO THE FREQUENCY OF THE EXCITING RADIATION. THEY HAVE THUS OBSERVED THE STS DUE TO THE ELECTROCALORIC EFFECT. IN THERMAL (SPONTANEOUS) SCATTERING, THIS FORM OF STS CORRESPONDS TO SCATTERING OF LIGHT BY ENTROPY FLUCTUATIONS. FACILITY: USSR ACAD. SCIS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--02OCT70

1/3 029

TITLE--THE RESULTS OF OXYHEMOGRAPHIC STUDY DURING STANGE'S TEST -U-

AUTHOR--LAANE, E.YA.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARCHIV, 1970, VOL 42, NR 3, PP 69-72

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL APPARATUS, RESPIRATORY, MEDICAL EXAMINATION, HYPERTENSION, OBESITY, ENDOCRINE SYSTEM DISEASE, THYROID, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0504/70/042/003/0069/0072

PROXY REEL/FRAME--1986/0306

ACCESSION NO--AP0102769 UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UNCLASSIFIED PROCESSING DATE--02OCT70

2/3 029

CIRC ACCESSION NO--AP0102769

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS USED A MODIFIED MODEL OF THE OXYHEMOGRAPH 036M TO INVESTIGATE DUTING RETENSION OF RESPIRATION 130 PRACTICALLY HEALTHY INDIVIDUALS AND 129 PATIENTS WITH DIFFERENT DISEASES. THE PATIENTS UNDER EXAMINATION WERE DIVIDED INTO THE FOLLOWING GROUPS: WITH CHRONIC DISEASES OF THE LUNGS, 32, WITH HYPERTENSIVE DISEASE (OF THE IIA AND IIB STAGE), 30 PATIENTS, WITH SECONDARY THYREOTOXICOSIS IN A LIGHT FORM, 31 AND WITH OBESITY OF THE I-II DEGREE, 36 PATIENTS. IN THE NEW MODEL THE SENSITIVITY OF THE 036M OXYHEMOGRAPH TO HYPOXY WAS INCREASED 2.5 FOLD, THE SPEED OF THE PAPER BAND FOR RECORDING, 25 FOLD. BESIDES THAT THE APPARATUS WAS PROVIDED WITH A MARKER WHICH RECORDS THE BEGINNING AND THE END OF THE RETENTION OF RESPIRATION. THE OXYHEMOGRAMS WERE ANALYSED BY THE FOLLOWING INDICES: A) THE TIME DURATION AT WHICH AFTER THE BEGINNING OF THE RESPIRATION RETENTION NO SUBSTANTIAL DROP IN THE OXYHEMOGLOBIN LEVEL OF THE PATIENT'S EAR BLOOD WAS OBSERVED, THE AUTHORS CALLED A TEMPORARY OXYGEN RESERVE; B) TIME OF VOLUNTARY RESPIRATION RETENTION (STANGE'S TEST); C) TIME OF THE BLOODFLOW: THE LUNGS, THE EAR (AFTER I. F. OSTAPCHUK AND E. N. BRUDNAYA); D) CALCUALTED THE RATIO BETWEEN THE TIME OF SPONTANEOUS RESPIRATION RETENTION AND THE TIME REQUIRED TO RESTORE HYPOXY HAVING DEVELOPED AFTER VOLUNTARY RETENTION OF RESPIRATION WHICH WAS CALLED A COEFFICIENT OF RESTORATION.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

3/3 029 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102769

ABSTRACT/EXTRACT--AS A RESULT OF INVESTIGATION THE AUTHOR CAME TO THE CONCLUSION THAT EXAMINATION OF PATIENTS DURING VOLUNTARY RETENTION OF RESPIRATION BY OXYHEMOGRAPHY IS NOT COMPLICATED AND MAY GIVE ADDITIONAL INFORMATION FOR SUMMARIZED ASSESSMENT OF THE FUNCTIONAL RESERVES OF THE ORGANS OF RESPIRATION AND CIRCULATION. IF THE TEMPORARY RESERVE OF OXYGEN IS LESS THAN 9 SEC. AND A COEFFICIENT OF RESTORATION IS LESS THAN 1.2 THEY MAY BE CONSIDERED AS SIGNS OF THE RESPIRATORY FUNCTION DISORDER.

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UDC 531.717:539.238

USSR

BOGUSLAVSKIY, M. G. and LAANEOTS, R. A.

"Criteria of Film Thickness Evaluation"

Moscow, Izmerital'naya Tekhnika, No 6, 1972, pp 35-36

Abstract: In determining the thickness of a film coating to be applied on articles of simple or complex shape, the basic problem is to find the basic planes or the basic curvilinear surfaces, on the basis of which is found the direction for determining the current and average thickness of the film. Most film surfaces have microunevennesses and deviations from regular geometric configuration, therefore film thickness is characterized by current and average thickness. For flat and cylindrical backings, the basis for the measurement of current and average film thickness is, respectively, the average plane and the average cylinder of the backing surface. For known equations of the film surface and the backing surface, the current film thickness is expressed in the form of a function, and the average film thickness between the film surface and the backing surface in a specific sector is expressed in the form of an integral. 2 figures. 3 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC 621.375.024.001

LAANSOO, A. A.

"Calculating the Setup Time in Direct Current Amplifiers with Feedback for the Nonlinear Mode of Operation"

Tr. Tallinsk. politekhn. in-ta (Works of the Tallin Polytechnical Institute), 1970, A, No 288, pp 133-143 (from RZh-Radiotekhnika, No 8, Sep 70, Abstract No 9D95)

Translation: For large discontinuous input signals, part of the amplifying cascades of the DC amplifier will operate in the limitation mode at the initial stage of the transient process. The operating time in the limitation mode depends on the arrangement of the correction circuits with respect to the amplification channel (first, last cascades). A procedure is presented for analyzing the nonlinear section of the transient characteristic with use of piecewise linear approximation of the limitation characteristic. The calculated formulas are obtained for determining the length of the nonlinear section and the criterion for selecting correct arrangement of the correcting circuits. There are six illustrations and a two-entry bibliography.

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Acc. Nr.: AT0046525 Ref. Code: UR0144

USSR

GRATSIANSKIY, IGOR' NIKOLAYEVICH, Candidate of Technical Sciences, Docent of Moscow Power Engineering Institute, LAANSOO, ANTS ARNOL'DOVICH, Associate of Tallin Polytechnical Institute

"Study of the Problems of Optimal Correction of Transient Characteristics of Measuring DC Amplifiers"

Novocherkassk, Izvestiya Vysshikh Uchebnykh Zavadeniy, Elektromekhanika (News of the Institutions of Higher Learning, Electromechanics), No 1, 1970, pp 83-91 (from Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, No 1, 1970, p 115)

Translation: The problems of calculating the parameters of the correcting circuits of measuring DC amplifiers in order to obtain maximum speed, that is, minimum time of establishment of the output voltage under transient conditions with a discontinuous modifying effect, are investigated. Formulas and graphs are obtained which permit calculation of the amplifiers without additional signal transmission channels for the given indexes of speed and accuracy considering scattering of the parameters. There are 2 tables, 8 illustrations and a 3-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 045 UNCLASSIFIED PROCESSING DATE [illegible]70

TITLE--DISPERSION OF AN INERTIAL IMPURITY OF VARIOUS PARTICLE SIZE IN A TWO PHASE AXISYMMETRIC JET -U-

AUTHOR-(02)-LAATS, M.K., FRISHMAN, F.A.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO-FIZICHESKIE ZHURNAL, VOL. 18, APR. 1970, P. 643-647

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IMPURITY LEVEL, TURBULENT FLOW, NOZZLE, NOZZLE FLOW, PARTICLE DIFFUSION, PARTICLE DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1262 STEP NO--UR/0170/70/018/000/0643/0647

CIRC ACCESSION NO--AP0124913

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE DISPERSION OF A PULVERIZED IMPURITY CONTAINING PARTICLES OF VARIOUS SIZE IN A TWO PHASE JET. IT IS FOUND THAT THE IMPURITY IS UNIFORMLY DISTRIBUTED OVER THE INITIAL CROSS SECTIONS OF THE JET, BUT THAT THE DISPERSION INTENSITY DEPENDS STRONGLY ON THE INITIAL IMPURITY CONCENTRATION AND PARTICLE SIZE. THE EXPERIMENTAL DATA INDICATE THAT IN ADDITION TO TURBULENT TRANSPORT, THE RELATIVE TRANSVERSE MOTION OF THE PARTICLES HAS AN APPRECIABLE EFFECT ON THE DISPERSION OF THE IMPURITY NEAR THE NOZZLE. THIS IS ATTRIBUTED TO THE PRESENCE OF A LIFTING FORCE GENERATED BY PARTICLES ROTATING IN THE FLOW. FACILITY: AKADEMIIA NAUK ESTONSKOI SSR, INSTITUT TERMOFIZIKI I ELEKTROFIZIKI, TALLIN, ESTONIAN SSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

UDC 581.143 + 547.379.52

USSR

PRILEZHAYEVA, YE. N., LUKIN, V. V., SMEGOTSKIY, V. I., NOVITSKAYA, N. N., LABA, V. I., SEMONINA, L. I., PETUNOVA, A. A., and LEBEDEVA, G. F., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, Moscow

"A New Group of Herbicidal Compounds -- Alkylvinyl Sulfones"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

Abstract: A systematic study was made of the relation between herbicidal activity and structure for vinyl sulfones and substances similar to them under hothouse conditions on potted plants. It was found that the display of appreciable herbicidal action in these series is due to the presence of a double bond adjoining the sulfonyl group and possessing strong electrophilicity. The highest herbicidal activity was found in vinyl sulfones with normal primary radicals containing 8-10 atoms. These compounds, to which the authors have given the names Alvisone 8, 9, 10 respectively, showed selectivity of action in hothouse experiments. Some properties of Alvisones 8 and 10, obtained

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USSR

PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

from chromatographically pure primary n-octyl and n-decyl mercaptans, were compared with the properties of Alvisone-K, obtained from mercaptan concentrate extracted from polysulfide petroleum of the Ishimbay type, as well as Alvisone 8-10 obtained from a mixture of synthetic alcohols C_8-C_{10} (supplied by YU. B. KAGAN and S. M. LOKTEV). Alvisone-K was found to be only slightly inferior to Alvisones 8 and 8-10 in herbicidal activity. Data were obtained on the dosage of "Alvisone" herbicides under field conditions, based on three-year field plot tests conducted at the Pushkin base of the All-Union Institute of Plant Protection (Leningradskaya Oblast), as well as by the Chair of Agriculture of the Soil Biology Faculty of Moscow University (Moskovskaya Oblast).

The results indicate that Alvisone-K possesses a number of properties (e. g., low toxicity for warm-blooded animals, stability under storage) which make it promising for the control of annual di-

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PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

cotyledonous weeds in carrot plantings. Alvisone can be used as a contact herbicide as a supplement to soil preparations (of the propazine type etc.). The most convenient way of preparing these α,β-unsaturated sulfones is three-stage synthesis from mercaptans, either individual ones or mixtures thereof.

The authors thank T. YE. PIVOVAROVA, V. I. DRONOV, V. KH. SYUNDYUKOVA, T. S. PAPKO for taking part in the synthetic portion of the work, P. V. SABUROVA for taking part in the hothouse tests, A. V. ZAKORDONETS and YE. V. ARZAMASTSEV for determining the toxicity for warm-blooded animals, and Professor R. D. OBOLENTSEV and V. S. BURYY for their interest in the study.

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USSR UDC 616-001.34-07:[616.33+616]-008.1-072.7

LABADZE, P. F., Institute of Labor Hygiene and Occupational Diseases, Tbilisi

"Gastric and Hepatic Function in Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nye Zabolevaniya, No 7, Jul 70, pp 30-32

Abstract: The antitoxic and glycogen function of the liver (galactose and glucose balance), the blood serum albumin (by paper electrophoresis), the enzyme function of the liver, and the secretory function of the stomach were determined in 100 young patients afflicted with vibration sickness. All of the patients had been exposed to medium-frequency vibration (30-50 hz), together with a number of associated effects. Pathological glycemia was observed in 70% of the patients and reduced antitoxic function of the liver in 51%. The total protein fraction in the blood serum was increased (8.96±0.09 g%), the albumin content was decreased (4.2±0.008 g%) and the globulin content was increased (4.76±0.09 g%). Ornithine carbamyl transferase activity was enhanced in almost all patients, even in the early stages of the disease. Pathological shifts in the acidity of the gastric juices, were reported also. In 40% of the cases, changes in the mucous membrane of the stomach were

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USSR

LABADZE, P. F., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 30-32

determined by x-ray studies. The studies reconfirmed that vibration sickness produces not only local shifts but also harmful effects on a variety of organs, among them the liver and the stomach.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 612.335.1

LABAKHUA, T. Sh., Institute of Physiology, Academy of Sciences Georgian SSR

"Negative Components of the Direct Cortical Response in Nembutalized Cats Subjected to Hypothermia"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 68, No 3, Dec 72, pp 677-680

Abstract: Two negative components, DP and MOP, and a positive phase were recorded on nembutalized (60 mg nembutal/kg) cats cooled (ice bath) from 37 to 20°C. Electrical cortical responses and electrocorticograms (ECoG) were recorded in response to the electrical (10 and 50 volts for 0.05 sec.) stimulation of the suprasylvian gyrus. Irregular slow and rapid waves of different amplitude were observed on ECoG at 37-32°C. All components of a direct response, DP, MOP, positive phase after DP, and ratio of DP2 and DP1 changed insignificantly within this temperature range. Signals varied from 20 to 30% up and down. A further cooling from 32 to 24°C produced sharp changes in the ECoG, especially within frequencies of high-voltage and low-amplitude components. This was especially noticeable within 31-28°C, the critical temperature range. Frequency and amplitude of the ECoG waves considerably decreased upon further cooling. The positive phase, DP and MOP increased by 330, 150-170, and 150-270%, respectively, at 31-28°C. This increase was gradual and uniform for all 1/2

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LABAKHUA, T. Sh., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 68, No 3, Dec 72, pp 677-680

components. The ratio of DP2 and DP1 was always below 100% scale. This state of responses was preserved up to 24°C, with DP and NDP responses at their peak at 31-28°C. The last step of cooling from 24 to 20°C was characterized by a progressive decrease in the ECoG activity until it disappeared completely. All response components started to decrease simultaneously, and it was gradual and uniform up to 21°C. All responses stopped altogether at 21-20°C. This was attributed to the suppressing effect of low temperature on the metab lism of neurones.

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USSR UDC 576.851.214.095.1

LABINSKAYA A. S. and PONOMAREVA, Ye. P., Scientific Research Institute of Rheumatic Fever, Academy of Medical Sciences USSR

"Study of Survival and Retention of Biological Signs of Hemolytic Streptococci in the External Environment"

Moscow, Voprosy Revmatizma, No 1, Jan/Feb/Mar 71, pp 12-17

Abstract: The survival time of hemolytic Streptococci in the external environment ranges from several hours to several weeks, depending on the individual resistance of the strain, the concentration of the Streptococci, and the characteristics of the medium in which they are located. The resistance of Streptococci is enhanced by a mucin membrane with which all microorganisms discharged from the mouth cavity and the upper respiratory tract of man are covered. While living in the external environment, serological group A Streptococci, pathogenic to man, first lose their species-specific properties and then their biological activity but retain their capacity to react with

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USSR

LABINSKAYA, A. S. and PONOMAREVA, Ye. P., Voprosy Revmatizma, No 1, Jan/Feb/Mar 71, pp 12-17

homologous antistreptococcal serum. These findings suggest that personal belongings of patients with streptococcal infections transmit the pathogen.

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UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 027

TITLE--IMMUNOMICROBIOLOGICAL INDICES IN PATIENTS WITH RHEUMATISM IN SEASONAL BICILLIN PROPHYLAXIS -U-

AUTHOR--LABINSKAYA, A.S., PONOMAREVA, YE.P., MIKHAYLOVA, I.N., MALYSHEVA, E.A.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 50-52

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RHEUMATIC DISEASE, STREPTOCOCCUS, ANTIBIOTIC, PROPHYLAXIS, ANTIBODY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1852 STEP NO--UR/0504/70/042/002/0050/0052

CIRC ACCESSION NO--AP0101897

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101897

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE MICROFLORA OF THE PHARYNX TO THE CONTENT OF STREPTOCOCCUS OF GROUP A IN 65 PATIENTS WITH RHEUMATISM BEFORE THE BEGINNING AND AFTER THE TERMINATION OF EACH COURSE OF SEASONAL BICILLIN PROPHYLAXIS AND IN 45 THE BLOOD SERUM FOR DETERMINATION OF THE TITRES OF ANTISTREPTOLYSIN-O, ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE. IT IS SHOWN THAT BY THE END OF EACH COURSE OF PROPHYLAXIS A DROP IN THE TITRES OF STREPTOCOCCAL ANTIBODIES AND IN PARALLEL, A REDUCTION IN THE PERCENTAGE IN THE STREPTOCOCCAL CARRIER STATE WERE SEEN. BY THE END OF THE V COURSE IN THE MAJORITY OF PATIENTS THE INDICES OF ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE BECAME STABILIZED DROPPING TO THE NORMAL LEVELS. A COURSE BICILLIN TREATMENT DOES NOT ENSURE PATIENTS COMPLETELY FROM THE RISK OF SUPERINFECTION MOSTLY IN THE FORM OF STREPTOCOCCAL CARRIER STATE. THE LATTER DEVELOPS IN THE PHARYNX USUALLY BETWEEN TREATMENT AND IS ACCOMPANIED AS A RULE BY AN INCREASE OF THE CONTENT OF STREPTOCOCCAL ANTIBODIES IN THE BLOOD SERUM. THUS THERE IS A CORRELATION BETWEEN THE MICROBIOLOGICAL AND IMMUNOLOGICAL INDICES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SURVIVAL AND BIOLOGICAL PROPERTIES OF STREPTOCOCCI GROUP A UNDER CONDITIONS OF EXPERIMENTAL STREPTOCOCCUS INFECTION TREATED WITH

AUTHOR-(04)-LABINSKAYA, A.S., PONOMAREVA, YE.P., AKHNAZAROVA, V.O., YESHCHINA, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5, PP 105-108

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS INFECTION, ANTIGEN, BLOOD SERUM, ANTIBIOTIC/(U)BICILLIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0132 STEP NO--UR/0016/70/000/005/0105/0108

CIRC ACCESSION NO--AP0114528

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114528

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER TREATS OF THE RESULTS OF STUDYING THE SURVIVAL AND VARIABILITY OF STREPTOCOCCUS A OF CULTURES UNDER THE EFFECT OF THERAPEUTIC CONCENTRATIONS OF BICILLIN IN AN EXPERIMENTAL FOCUS OF CHRONIC INFECTION CREATED BY RASKIN'S METHOD (1962). IN BICILLIN TREATED ANIMALS VIABLE STREPTOCOCCUS A CELLS WERE REVEALED FOR A PERIOD OF 3 WEEKS, AND IN CONTROL ANIMALS, DURING THE WHOLE OBSERVATION PERIOD (FOR 8 WEEKS). STREPTOCOCCI ALTERED IN MORPHOLOGICAL AND IN CULTURAL RESPECT IN THE ORGANISM OF CONTROL AND, PARTICULARLY, OF EXPERIMENTAL ANIMALS. AS A RULE, REDUCTION AND LOSS OF HEMOLYTIC ACTIVITY OF STREPTOCOCCI WAS ACCOMPANIED BY CHANGES IN THE STRUCTURE OF AN ANTIGENIC APPARATUS: DUE TO THIS MICROBIAL CULTURES FAILED TO REACT IN PRECIPITATION REACTION AT FIRST WITH THE GROUP, AND LATER WITH THE TYPE HOMOLOGOUS ANTISTREPTOCOCCUS SERUM. STREPTOCOCCUS ANTIGEN WAS REVEALED IN THE BLOOD SERUM OF MANY EXPERIMENTAL ANIMALS AT LATE OBSERVATION PERIODS, WHEN BACTERIOLOGICAL EXAMINATION FOR STREPTOCOCCI OF THE CONTENTS OF THE CHAMBERS ALREADY PROVED TO BE NEGATIVE. FACILITY: INSTITUT REVMATIZMA AMN SSSR, MOSCOW.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 629.78.017.2

LABRINOVICH, K. K., Leningrad Institute

"Plane Nonlinear Vibrations of the Relative Center of Mass of a Solid With a Magnetic Damper"

Leningrad, Mekh. Upravlyayem. Dvizheniya i Probl. Kosmich. Dynamiki--Sbornik (Mechanized Motion Control and Problems of Space Dynamics -- Collection of Works), 1972, pp 70-83 (from Referativnyy Zhurnal -- Raketostroyeniye, No 5, May 73, Abstract No 5.41.129)

Abstract: Nonlinear plane vibrations of a solid are presented in this work for the relative center of mass with the following assumptions: 1) the center of mass of the indicated body moves in a circular trajectory under the action of gravitation forces around another body which possesses a central newtonian gravitational field; whereupon mass of the moving body is negligibly small in comparison with the mass of the attracting body; 2) the attracting body also possesses a magnetic field which can be represented by a dipole model. Plane of the moving body trajectory passes through the pole of the magnetic dipole; 3) a magnetic damping device has been installed on the moving body which itself is a magnetized metallic sphere submerged in a chamber with a viscous liquid. The damping effect is achieved by the viscous friction between the liquid

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USSR

LABRINOVICH, K. K., Mekh. Upravlyayem. Dvizheniya i Probl. Kosmich. Dynamiki -- Sbornik, 1972, pp 70-83

with the chamber walls and magnetized sphere which attempts to remain immobile during vibrations of the body relative to the local direction of the force line of the external magnetic field. Damping moment was proportional to the first degree of angular velocity of the magnetized sphere relative to the damper housing. An external disturbing moment acts on the moving body in the trajectory plane which can be represented by a Fourier series for a multiple orbital frequency. Motion will be developed as a transient vibration process; small residual vibrations relative to position of stable equilibrium, characterized by v = 0, will be in a steady-state mode. Amplitude, phase shift, and mass center displacement of these residual vibrations can be calculated with the aid of linear theory assuming a small v. 7 bibliographic references.

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Magnetohydrodynamics

USSR

UDC 533.9.07

YEL'YASHEVICH, M. A., Academician of the Belorussian SSR Academy of Sciences, LABUDA, A. A., MIN'KO, L. YA., NEKTRASHEVICH, I. G., KOVIR, G. M., BAKANOVICH, G. I., Belorussian State University imeni V. I. Lenin, Physics Institute of the Belorussian SSR Academy of Sciences

"Generation of High-Speed Plasma Fluxes by a Pulse Accelerator on the Basis of the Phenomenon of Electric Detonation of Conductors and Dielectric Erosion"

Minsk, Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

Abstract: A study was made of a pulse generator of a moving plasma created by electric detonation of conductors of defined form in a bounded volume. The described plasma generator can operate in two versions -- on the basis of electric detonation of conductors as a source of a metal plasma or using pulse surface discharge where the plasma is formed as a result of erosion of the walls of the discharge chamber and the electrodes. The described pulse plasma generator permits the creation of incompletely expanded supersonic erosion plasma jets at atmospheric pressure with given gas dynamic characteristics determined by the discharge conditions and parameters.

Utilization of the phenomenon of electric detonation of conductors of a defined form under conditions of operating the plasma generator with an

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USSR

YEL'YASHEVICH, M. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

auxiliary gap introduced into the discharge chamber permitted flows of a low-temperature metal plasma of any given chemical composition to be obtained with relatively high efficiency of utilization of the stored initial energy. The energy in the discharge gap for V = 4 kilovolts and C = 200 microfarads (mode I) was calculated from the current and voltage oscillograms as 1.3 kilojoules with an initial energy of 1.6 kilojoules. This essentially exceeds the energy contributed in the case of operating the generator with an external auxiliary gap (0.5 kilojoules). Optimization of the discharge conditions and the geometry of the discharge chamber and, consequently, the detonated conductor permitted incompletely expanded supersonic plasma jets to be obtained at atmospheric pressure with an escape velocity of v = 25 km/sec for a contributed energy of 1.3 kilojoules (mode I). The presence of intense continuous and linear spectra is a characteristic feature of the emission of the erosion plasma (V = 5 kilovolts, C = 1,950 microfarads (mode II) without electric detonation of the conductors) formed inside the discharge chamber. Spectroscopic measurement of the plasma temperature and concentration ($T = 6,000°$ K, $n_e = 5 \cdot 10^{16}$ cm^{-3})

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USSR

YEL'YASHEVICH, M. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

indicates the formation of a relatively dense low-temperature plasma. When the plasma generator is operated with electric discharge of the conductors under the same discharge conditions, the plasma concentration increases appreciably.

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USSR

UDC 616.981.452-022.39-036.23-078.7(479)

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., NAYDEN, P. Ye., YEMEL'YANOV, P. F., GOLUBEV, P. D., FILIMONOVA, Yu. A., GONCHAROV, A. T., LABUNETS, N. F., BABAYEV, M. R., ANANYAN, Ye. L., and KHANGULYAN, E. K., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, and Antiplague Stations, Azerbaydzhan SSR and Armenian SSR

"Experience in Serological Detection of Plague in Rodent Nest Substrate and in Predatory Bird Pellets Under Field Conditions in Natural Foci of the Caucasus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

Abstract: Use of the antibody neutralization reaction (ANR) employing plague antigenic erythrocyte diagnosticum was studied as a serological alternative to detection of plague by bacteriological analysis, for which it is not always possible to gather test material in the field. The study was based on the experimental finding that plague F1 antigen persists in the environment long after an epizootic has subsided. In the first phase, three areas in the Caucasus in which epizootics had been registered previously were studied in 1969-1971. Samples of rodent nest substrate were found to contain F1 antigen by the ANR, whereas bacteriological methods were generally unsuccessful,

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USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

indicating the usefulness of this method for retrospective analysis. In the second phase an area in which epizootics had not been recorded previously was studied in 1970-1971. While the ANR revealed the presence of F1 antigen in rodent nest substrate, bacteriological analysis did not produce such evidence until 4 months later. This result indicated that the method is also preferential for early detection of plague epizootics. In the final phase pellets regurgitated by predatory birds feeding on plague-carrying rodents were subjected to the ANR. Once again F1 antigen was detected in areas without previous epizootic history up to 2 months prior to detection by bacterial analysis. As a control pellets from an area known to be free of plague for 40 years was subjected to the ANR, and the results were negative. Thus the ANR is shown to be a suitable and preferential method for retrospective and early field detection of natural plague foci.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--A NEW SPECIES OF FLEA OF CTENOPHTHALMUS FROM ARMENIA -U-

AUTHOR-(02)-LABUNETS, N.F., AVETISYAN, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZOOL ZH 49(1): 157-159. ILLUS. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLEA, ANATOMY, GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0485 STEP NO--UR/0439/70/049/001/0157/0159

CIRC ACCESSION NO--AP0134253

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CTENOPHTHALMUS (LEUCTENOPHTHALAMUS) NAIRICUS IS DESCRIBED. NINE MALES AND 4 FEMALES OF THIS SPECIES WERE FOUND IN A NEST OF MICROTUS SOCIALIS (NAFANSKY REGION, ARMENIAN SSR). THE NEW SPECIES BELONGS TO THE SAME GROUP AS C. CONGENER ROTH., 1907 AND C. SECUNDUS WAGNER, 1916. FEMALES RESEMBLE C. STRIGOSUS ROST. ET SOLOV., 1964 IN THE FORM OF THE APICAL EDGE OF STERNITE VII. THERE IS SCLEROTIZATION UNDER THE EDGE OF STERNITE VII.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

1/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ANOMALIES OF DEVELOPMENT OF THE WEIGHTBEARING LOCOMOTOR APPARATUS
-U-

AUTHOR--(02)-LABUMETS, M.N., SILANTYEV, E.A.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 19-22

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HUMAN GENETICS, BONE DISEASE, CEREBRUM, PARALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0591 STEP NO--UR/9115/70/000/004/0019/0022

CIRC ACCESSION NO--AP0103806
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

2/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108806

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS HAD UNDER OBSERVANCE 158 PATIENTS: 42 ORTHOPAEDIC AND 116 PATIENTS WITH CONGENITAL MALDEVELOPMENT OF THE LOWER EXTREMITIES. THE OBSERVED CONTINGENT OF PATIENTS HAS BEEN STUDIED FROM THE POSITIONS OF MODERN ACHIEVEMENTS OF MEDICAL GENETICS. SPONTANEOUS MUTATIONS WERE RESPONSIBLE FOR THE CAUSAL GENESIS IN 38 ORTHOPAEDIC PATIENTS, AND IN 4 PATIENTS THE SPASTIC CEREBRAL PARALYSIS WAS THE RESULT OF RH BLOOD INCOMPATIBILITY OF THE FETUS AND MOTHER. THE CAUSES OF MALDEVELOPMENT OF THE LOWER EXTREMITIES WERE ANOMALIES OF AMNION, NOXIOUS TERATOGENIC AGENTS (SPHILITIC AND ALCOHOLIC INTOXICATION, THIOPHOSPHAMIDE, EXCESS DOSE OF ROENTGEN IRRADIATION, ETC.), MARRIAGE OF RELATIVES IN THE THIRD GENERATION, MANIFESTATION OF NONSPECIFIC PATHOLOGICAL HEREDITY IN THE FAMILY, POSSIBLE PHENOCOPIES WITH TRAITS OF RECESSIVE AND PRIMARY DOMINANT MUTATIONS. IN THE MAJORITY OF THE CASES, THE CAUSE OF CONGENITAL MALFORMATIONS COULD NOT BE ESTABLISHED. FACILITY: KHARKOV INSTITUTA PROTEXIROVANIYA, ORTOPEDII I TRAVMATOLOGII IM. M. I. SITENKO.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 621.357.8:669.71

SEVERDENKO, V. P., LABUNOV, V. A., VOROBEY, Z. F., and STEL'MAKH, V. T.

"Evaluation of Parameters for the Plasma Anodizing of Aluminum"

Dokl. AN BSSR (Proceedings of the Academy of Sciences Belorussia SSR), 16, No 11, 1972, pp 995-997 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L339 by Ye. I. Khrushcheva)

Translation: A study was made of the influence of the location of oxidizable areas -- relative to the plasma and the discharge current -- on the kinetics of the oxidation of Al films and their ultimate thickness. It was shown that in regimes of a fixed voltage of formation and also a fixed surface current an increase in the discharge current leads to an increased maximum thickness of the oxidized layer and the rate of its growth. This effect of the discharge current is explained by the fact that the wall film and the density of the negative ions increase as the discharge current increases. The wall film determines the size of the oxide film (that is, the final thickness), and the negative ion density determines the oxidation and probability of spreading of the developing oxide.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC: 539.210.2:537.311

SEVERDENKO, V. P., LABUNOV, V. A., TKHAREV, Yu. Ye., and KAZANTSEV, A. P.

"The Two-Temperature Method for Determining the Parameters of the Potential Barrier in Tunnel Metal-Dielectric-Metal Structures"

Tomsk, Izvestiya VUZ--Fizika, No 5, 1973, pp 145-147

Abstract: This brief communication proposes a method for measuring the height of potential barriers in asymmetrical MDM tunnel structures and for determining the barrier heights at the dielectric-metal junction interfaces. The authors claim the advantages of high precision and short measurement time for their method. A mathematical analysis is given, beginning with the Stratten equation for the voltampere characteristic of tunnel structures (R. Stratten, J. Phys. Chem. Solids, vol 23, p 1177. 1962).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 620.198:537.533.35

SEVERDENKO, V. P., Academician of the Belorussian Academy of Sciences; LABUNOV, V. A.; VOROBEY, Z. F.; and STEL'MAKH, V. T., Minsk Radio Engineering Institute

"Selecting Parameters for Plasma Anodized Aluminum"

Minsk, Doklady Akademii Nauk BSSR, vol 16, No 11, 1972, pp 995-997

Abstract: This paper is based on an earlier article (V. P. Severdenko, et al, DAN BSSR, vol 16, No 8, 1972) in which it was shown that the process of plasma anodizing of aluminum is determined to a large extent by the oxygen pressure in the vacuum chamber. The purpose of the present paper is to investigate other factors affecting this process, such as the position of the oxidized specimen relative to the plasma and the discharge current, which affects the kinetics of the aluminum film oxidation and the final thickness of the film. The experimental apparatus used to make these determinations is the same as that used in the earlier article, and the experimental method is described. Curves are obtained for the formation current and oxide thickness as functions of time, for various values of discharge current, and for the formation voltage

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SEVERDENKO, V. P., et al, Doklady Akademii Nauk SSSR, vol 16, No 11, 1972, pp 995-997

and oxide thickness as functions of the time. Comparison of the curves shows that with constant formation current density, an increase in the discharge current leads to an increase in the maximum oxide thickness and its growth rate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC: 621.315.592

SEVERDENKO, V. P., Academician of the Academy of Sciences of the BSSR, LABUNOV, V. A., KOSAREVICH, Ye. M., Minsk Radio Engineering Institute

"Switching Effects in Cupric Oxide Films"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 6, Jun 72, pp 497-498

Abstract: It is shown that cupric oxide films can be used as a basis for thin-film elements with switching and memory properties. The films were prepared by an anodic electrolytic process in potassium hydroxide. The specimens showing switching effects were obtained by stopping the formation process at points on the potentiodynamic curve lying beyond the second polarization current maximum. The current-voltage curve for these specimens shows two stable states: the initial (closed) state with low conductivity, and an open state with high conductivity. In the closed state the diode structure shows a resistance of more than a megohm, and in the open state the resistance is only a few dozen ohms. Switching from the high-resistance to the low-resistance state takes place at potentials of 0.4-40 v, depending on the conditions of formation of the oxide film (the specific point on the potentiodynamic curve at which the process is cut

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SEVERDENKO, V. P., DAN BSSR, No 6, Jun 72, pp 497-498

off. With elements in which switching occurs at 0.5-2 v the switching process takes place at the frequency of the applied voltage. When switching occurs at more than 2v, the element "remembers" the state: i. e., it remains in the altered state when the voltage is disconnected. The reverse state can be restored by a current pulse lasting 10^{-7}-10^{-5} sec. The effect is observed from room temperature to 120°C. The elements have stable characteristics and, with some improvement, could be used as switching and memory elements in computer technology.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 681.034

SEVERDENKO, V. P., Academician, AS BSSR, LABUNOV, V. A., and LESHCHENKO, I. N., Minsk Radio Engineering Institute

"Effect of Ultrasonic Vibrations on the Process of Condensation During Vacuum Vaporization"

Minsk, Doklady AN BSSR, Vol 15, No 8, Aug 71, pp 689-691

Abstract: The authors investigate the effect of ultrasonic oscillations on the formation of thin metal films made by vapor condensation. Specifically, they study the effect of ultrasonic vibration on the thickness of condensed layers of aluminum and copper made by thermal vaporization in a vacuum (i.e., on the change in the coefficient of accommodation which determines the thickness of the deposit during vaporization of an identical amount of material) and on the rate of formation of the deposit. The weight of the samples was 100 mg for aluminum and 130 mg for copper, and the vaporization times were 70 and 45 sec, for aluminum and copper respectively. Glass substrates were used. The thickness of the films was interferometrically measured with an accuracy of 20 Å. Curves are given for film thickness as a function of the amplitude of ultrasonic oscillations and also for film

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USSR

SEVERDENKO, V. P., et al., Doklady AN BSSR, Vol 15, No 8, Aug 71, pp 689-691

thickness as a function of vaporization time with and without ultrasonic vibration. A considerable increase in film thickness is observed as the amplitude of the ultrasonic vibration of the substrate increases. This shows that ultrasonic oscillation increases the coefficient of accommodation. The basic factor which influences the coefficient of accommodation is the increased energy of the substrate surface. It was found also that the rate of growth of the film is increased by the application of ultrasound. This may be attributed to increased mobility of the precipitating atoms. Two figures, bibliography of nine titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR UDC 669.187.2

KUZNETSOV, L. K., Candidate of Technical Sciences, TULIN, N. A., Candidate of Technical Sciences, CHAVORONKOV, K. P., Engineer, LAHUNCVICH, O. A., Engineer, and ZINUROV, I. YU., Engineer

"Working Experience of a 100-ton Electric Furnace with Uprated Transformer and Improved Short Mains"

Moscow, Stal', No 3, Mar 73, pp 236-238

Abstract: Transformers of 29, 15 and 32 Mv-amp uprated nominal power, permitting temporary overloading up to 45 Mv-amp, were installed on two 100-ton electric furnaces at the Chelyabinsk Metallurgical Plant. Modernization of short mains ensured a more uniform power distribution by phases and decreased induction losses. The conditions of melting stainless and structural steels are discussed. For greater effectiveness, further modernization measures must be carried out. One figure, four bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC: 622.011.43

KRASAVIN, A. P., KABAKOV, A. M., LABUNSKIY, L. V.

"Physical and Mechanical Properties of Cover Rock of the Korkinskiy Brown Coal Deposit"

Fiz.-Mekh. Svoystva Gorn. Porod Ugol'n. Mestorozhd. Urala i Sibiri. Vyp. 1 [Physical and Mechanical Properties of Rock from Coal Deposits of the Urals and Siberia, No 1 -- Collection of Works], Chelyabinsk, 1971, pp 20-27 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V785, by Yu. M. Kartashov)

Translation: Results are presented from laboratory studies of the physical and mechanical properties of conglomerates, gravelites, sandstones, aleurolites, argilites and coal of the Korkinskiy brown coal deposit. The compressive and tensile strength, contact strength, abrasive properties, adhesion, internal friction angle and elastic constants of the rock were determined, as well as the total carbonate content of the rock, and special petrographic studies were performed. It was found that the physical and mechanical properties of the rock studied change over broad limits. The compressive strength for the rock of the deposit varies from 23 to 1315 kg/cm^2, the tensile strength -- from 2 to 177 kg/cm^2. The main factor determining the physical and mechanical

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USSR

Krasavin, A. P., Kabakov, A. M., Labunskiy, L. V., Fiz.-Mekh. Svoystva Gorn. Porod Ugol'n. Mestorozhd. Urala i Sibiri. Vyp. 1, Chelyabinsk, 1971, pp 20-27.

of the rock in the range of mining conditions studied is the degree of carbonatization. With increasing total carbonate content, the strength and mining indicators increase. The rocks were divided into three groups as to carbonate content: clay types with total carbonate content up to 15%, carbonate-clay with total carbonate content 15-30% and carbonate types with total carbonate content over 30%.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC 615.917:547.587

VASILENKO, N. M., VOLODCHENKO, V. A., and LABUNSKIY, V. V., Kharkov Institute of Industrial Hygiene and Occupational Diseases

"Correlation Between the Chemical Structure of Mono-, Bi-, and Trinuclear Quinones and Their Toxicity"

Moscow, Gigiyena i Sanitariya, No 6, 1972, p 113

Abstract: There are mono-, di-, and trinuclear quinones - benzoquinones (BQ), naphthoquinones (NQ), and anthraquinones (AQ) - depending on the number of benzene rings in the molecule. AQ derivatives containing various radicals in the main nucleus are more toxic than the AQ themselves. BQ are the least toxic among the amino AQ derivatives, the diamines are more toxic than the monamines. Among the AQ sulfonic acids, the most aggressive is the disodium salt of 1,8-sulfonic acid. The presence of methoxy, ethyoxy, and amino groups and especially combinations of them in the AQ molecule are the most dangerous. Introduction into the NQ molecule of 2 atoms of chlorine (2,3-dichloro-1,4-naphthoquinone) or 2 atoms of bromine combined with amino, hydroxy, and imino groups (5-amino-8-hydroxy-3,7-dibromo-1,4-naphthoquinonimine) mitigates the toxic and irritating effects of the compound.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC 577.1:615.7/9

LABUNSKIY, V. V.

"Comparative Evaluation of the Toxicity of Alpha Naphthoquinone and Several of Its Derivatives"

Farmakol. i toksikologiya. Resp. mezhved. sb. (Pharmacology and Toxicology. Republic Interdepartmental Collection of Works), 1970, No 5, pp 148-150 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 70, Abstract No 19 F1793 by A. Ignat'yev)

Translation: The most significant change in subacute (0.03 g/kg) and chronic (1-5 months) experiments (0.025 and 0.005 g/kg) on rats was the decrease in number of erythrocytes and Hb concentration. Alpha naphthoquinine was particularly active, unlike 2,3-dichloro-1,4-naphthoquinone and 5-amino-8-hydroxy-3,7-dibromo-1,4-naphthoquinonimine, which are not characterized by the formation of MtHb and Heinz bodies. All these substances reduced the amount of total protein in the blood and inhibited serum cholinesterase activity.

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Heat, Combustion, Detonation

USSR

UDC 621.1.016.4

LABUNTSOV, D. A., Doctor of Technical Sciences (Power Institute imeni G. M. Krzhizhanovskiy)

"Certain Problems of Convective Heat Transfer in a Supercritical Domain"

Moscow, Teploenergetika, No 3, March 72, pp 69-72

Abstract: Deterioration in heat transfer rates observed in media at supercritical parameters is analyzed. A tentative evaluation of the sphere of influence of the free-convection effects is presented. In particular, the role played by gravitational effects in deterioration in heat transfer is investigated. An approximate practical method for calculating turbulent heat transfer and friction in the domain of supercritical pressures is presented, which is related to the idea of using the averaged or "homogenized" flow properties.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710019-8

USSR

UDC 536.246:536.423.1

YAGOV, V. V., LABUNTSOV, D. A., Moscow Power Engineering Institute

"Intensification of Heat Exchange and Stabilization of the Boiling Process in a Regime of Very Low Pressures"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, No. 6, 1971, pp 973-981

Abstract: On the basis of an analysis of generation of the vapor phase in the evaporation of liquid on a solid heating surface, which affects the liquid surface tension sigma, the microgeometry of the heating surface, and the contact angle, the origination of vapor bubbles on a heat transfer surface may be facilitated. It is shown experimentally that with sufficiently low pressures, the roughness of the heating surface has very little effect upon the boiling behavior of water and the values of the heat transfer coefficients. The superposition of hydrophobic coatings upon the heating surface in the form of individual spots, and particularly the placement of punched hydrophobic films, causes a considerable improvement in the conditions of vapor generation and brings about an intensification of heat transfer to the boiling liquid. 3 figures, 17 bibliographic entries.

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TITLE--HEAT TRANSFER IN BOILING LIQUIDS AT REDUCED PRESSURES AND AT FREE FLOW CONDITIONS -U-

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CIRC ACCESSION NO--AP0136560

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT TRANSFER IN FREE CONVECTION WAS STUDIED IN BOILING WATER, ETOH, AND NACL SOLNS. ON A FLAT SURFACE (TOP OF A 56 MM DIAM, NI ROD) AT REDUCED PRESSURES OF 0.016-1.0 BAR AND AT HEATING RATES (Q) EQUALS 10-200 KW-M PRIMEZ. THE MECHANISMS OF HEAT TRANSFER OPERATING AT THE DIFFERENT Q ARE DISCUSSED. IN THE TRANSIENT (FREE CONVECTION TO STABLE BOILING) REGIME, THE TEMP. DRIVING FORCE DELTA T REMAINED CONST. WITH INCREASING Q, I.E. THE CURVE OF Q VS. DELTA T WAS VERTICAL IN THIS REGION. THE DEPENDENCE OF Q EQUALS F(DELTA T) IN THE TRANSITION REGION IS EXPLAINED ON THE BASIS OF OSCILLATIONS IN THE HEATING SURFACE TEMP. FACILITY: ENERG. INST., MOSCOW, USSR.

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USSR

LABUSHKIN, V. G., POPOV, V. I., RUZER, L. S. UDC 543.275:539.1.07.082

"Spectrometric Method of Measurement of Concentrations of Natural Radioactive Aerosols"

Tr. In-t Eksperim. Meteorol. Gl. upr. Gidrometeorol. Sluzhby pri Sov. Min. SSSR [Works of Institute of Experimental Meteorology, Main Administration of Hydrometeorological Service, Counsel of Ministers, USSR], 1972, No 25, pp 121-135, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.903).

Translation: A study is made of a spectrometric method for determination of the concentrations of natural radioactive aerosols in the air, formed as the daughter products of radon and thoron decay. The α and β activity of the dispersed phase of aerosols precipitated on a fine-fiber type LFS-1 (AFA-RSP-10, 20), are measured simultaneously using scintillation spectrometric detection units. It is shown that the use of spectrometric methods to measure the concentration of daughter products of radon and thoron decreases the error and allows the self-absorption of α radiation in the aerosol specimen and dust in the air to be determined at the same time. An apparatus used for measurement of the concentration of natural radioactive aerosols by spectrometric methods is described. 5 Figures; 2 Tables; 27 Biblio. Refs.

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USSR

UDC 621.382.002

LABUTIN, N.I., MARTYNOV, V.V., PAVILAYNEN, V.S., STORCHUK, G.A.

"Transfer Of Defects Of Photopattern To A Silicon Oxide Film In The Process Of Contact Photolithography"

Elektron.tekhnika. Nauch.-tekhn.sb. Mikroelektronika (Electronic Technics. Scientific-Technical Collection. Microelectronics), 1971, Issue 5(21), pp 41-44 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B392)

Translation: The transfer in the process of photolithography of the defects of a photopattern [fotoshablon] to SiO_2 was studied by the electron microscopic method for standard photolithographic regimes which are used in the production of silicon integrated circuits with the aid of positive photoresists. The critical dimensions of the permissable defects on the photopattern are determined. Summary.

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USSR

UDC: 550.837

VAKUL'SKIY, A. A., KAMENETSKIY, F. M., LABZHINSKIY, G. L., LUTSYSHIN, A. S., MIZYUK, L. Ya., TIMOFEYEV, V. M., YAKUBOVSKIY, Yu. V., Institute of Physical Mechanics, Academy of Sciences of the Ukrainian SSR

"A Device for Aerogeoelectric Prospecting"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331356, Division G, filed 12 May 69, published 7 Mar 72, p 144

Translation: This Author's Certificate introduces a device for aerogeoelectric prospecting by the method of transient processes. The device consists of a current pulse generator which contains a source of direct current, a master multivibrator, a frequency divider, a power amplifier, a current commutator and an oscillator tank circuit; and a meter which contains a receiving tank circuit, a preamplifier, a gating module, an accumulator, a DC amplifier, a registration unit, and a circuit for control and synchronization of the gating module. As a distinguishing feature of the device, interference suppression is improved, the measurement error is reduced and the stability of compensation of transient processes caused by the conduc-

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USSR

VAKUL'SKIY, A. A. et al., USSR Author's Certificate No 331356

tive fuselage of the aircraft is increased by connecting coincidence gates in the current pulse generator between the frequency divider and power amplifier. Some inputs of the coincidence gates are connected to the output of the master multivibrator, and the other inputs are connected to the outputs of the frequency divider. A band filter is connected in the meter between the preamplifier and the gating module, and a secondary gating block is connected between the pulse amplifier and the DC amplifier. The secondary gating block is connected to the control and synchronization circuit, and is made in the form of parallel-connected compensation and measurement strobe pulse multivibrators which are connected through a broad strobe pulse shaping multivibrator to the primary gating module. Multivibrators for delay and shaping of narrow strobe pulses [are connected] to coincidence gates with some inputs connected to the outputs of the oscillator frequency divider, while the other inputs are connected to the multivibrator for shaping narrow strobe pulses, and the outputs of these coincidence gates are connected to the secondary gating block.

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USSR

UDC 621.383.8:535.317.25

TSYGANENKO, V. V., LACHASHVILI, R. A., BOBROVSKIY, I. A.

"Estimation of the Paraxial Resolving Capacity of Cathode Lenses"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 12-16.

Abstract: The paraxial resolving capacity of a cathode lens, consisting of a system of electrostatic and magnetic fields, is determined by the distribution of energy of electrons emitted from the cathode, their angular distribution, chromatic aberrations and spherical aberrations of the lens itself. This article presents a method for estimation of paraxial resolving capcities of cathode lenses by means of the frequency-contrast characteristic (FCC). Results are presented from calculation of the FCC by computer in various planes of an image as a function of the spherical aberration and the distribution of electrons by energies (angular distribution assumed to be Lambert). Dependences of the maximum resolving capacity on position of the image plane and assigned distribution by initial energies are presented. The results produced are used to estimate the influence of fluctuations in the magnetic field on the resolving capacity of biplanar electronic-optical convertors. It is found that fluctuations of the magnetic field are among the main factors reducing the resolving capacity of the convertors.

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