2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124414
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE GIVEN FOR UPTAKE OF O BY CUMENE AT 55DEGREES WITH AND WITHOUT ADDEDTITLE COMPLEX I (DH EQUALS DIMETHYLGLYOXIME). KINETIC ANAL. OF THE DATA SHOWED THAT I HAS A HINDERING EFFECT ON THE OXION., OWING TO REACTION OF I WITH THE PEROXIDE RADICALS. THE CHAIN TERMINATIONS FOLLOWED BOTH 1ST AND 2ND ORDER KINETICS IN RESPECT TO PEROXIDIC RADICALS. THE RATE CONSTANTS FOR INDIVIDUAL REACTION STEPS WERE CALCD. AND TABULATED FOR TEMPS. FOR 45 TO 55DEGREES. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SIGNIFICANCE OF SOME SYSTEMIC AFFECTIONS IN GLAUCOMA -U-

AUTHOR--ZUBAREVA, T.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 3, PP 46-48

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, HYPERTENSION, GERONTOLOGY, BLOOD VESSEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1909 STEP NO--UR/0357/70/000/003/0046/0048

CIRC ACCESSION NO--AP0129258

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129258

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELATIONSHIP BETWEEN SYSTEMIC MALADIES AND GLAUCOMA WAS STUDIED WITH DUE REGARD FOR AGE SPECIFIC FEATURES, 1352 PERIUS HAVING BEEN KEPT UNDER OBSERVATION FOR MORE THAN 1 YEAR. SYSTEMIC AFFECTIONS WERE CONSIDERED IN THREE GROUPS, VIZ. IN PATIENTS WITH PRIMARY GLAUCOMA; IN THOSE PRESENTING NO SIGNS OF THE DISEASE, AND IN SUBJECTS IN PREGLAUCOMATOUS CONDITION. SYSTEMIC DISEASES WERE FOUND TO OCCUR PRACTICALLY WITH EQUAL FREQUENCY, BOTH IN PATIENTS WITH PRIMARY GLAUCOMA, AND IN THOSE WITH UNESTABLISHED AND REJECTED DIAGNOSIS. THIS WARRANTS CONSIDERING SYSTEMIC DISEASES NOT TO BE DIRECTLY RESPONSIBLE FOR THE DEVELOPMENT OF GLAUCOMA. THE LACK OF A CLEARCUT DIFFERENCE IN THE PRESENCE OF SYSTEMIC DISEASES AMONG PATIENTS OF THE SAID GROUPS SUGGESTS THAT SUCH MALADIES MAY OCCUR CONCOMMITENTLY WITH GLAUCOMA, OR BOTH AFFECTIONS OWE THEIR ORIGIN TO ONE AND THE SAME CAUSATIVE FACTOR. THERE IS GOOD REASON IN ARRANGING PROPHYLACTIC EXAMINATIONS AIMED AT GLAUCOMA CASE FINDING AMONG INDIVIDUALS SUFFERING FROM HYPERTENSIVE DISEASE AND OTHER VASCULAR AFFECTIONS, WHO MADE UP NEARLY ONE THIRD OF CASES PRESENTING GENERAL PATHOLOGY OBSERVED IN EACH OF THE GROUPS UNDER INVESTIGATION. PREGLAUCOMATOUS STATE IS ENCOUNTERED MORE COMMONLY IN THE YOUNG, AND GLAUCOMA, IN THE AGED. FACILITY: MOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT GLAZNYKH BOLEZNEY IM. GEL'MGOL'TSA.

UNCLASSIFIED

Welding

USSR

UDC 621.774.2

MATVEYEV, Yu. M., MAKAROV, I. P., KRYUKOV, V. N., ZUBAREVA, V. A., SAMARYANOV, Yu. V., ANTIPOV, B. F., KOZLOV, D. G., and ZIMINA, N. G., Ural Scientific Research Pipe Institute, Vyksunskiy Metallurgical Plant

"Production of Furnace-Welded Pipes With Oxygen Blowing of Skelp Edges"

Moscow, Metallurg, No 1, Jan 71, pp 34-35

Abstract: The quality of furnace-welded pipe is assessed by the welded seam quality, which is a function of the chemical composition of the metal, reduction in the welding pass, heating temperature, and the finish of the edges to be welded. In order to remove the scale and preheat the metal prior to welding, the edges are blown with high-pressure air. Blowing with oxygen makes it possible to raise the temperature of the edges. Oxygen facilitates the melting of refractory oxides and their removal from the surface of the skelp. The use of oxygen for blowing skelp edges on the furnace welding line of the Vyksunskiy Metallurgical Plant resulted in a marked increase in the quality of pipes. The strength of the weld in cone flaring tests was found to increase more than six-fold and the weld structure improved as well. The yearly savings with the use of oxygen on one mill was about 50,000 rubles.

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USSR

UDC 547.785.5+542.95

ZUBAROVSKIY, V. M., KHODOT, G. P.

"New 1,5-Substituted 2-Methylbenzimidazols"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol XXXVIII, No 6, 1972, pp 594-597

Abstract: In order to perform a systematic study of the optical and photographic properties of imidacyanins, new pigments of this class were synthesized which contain the 4,5,6,7-tetrahydro-2-benzthiazolyl radical and the vinyl group, and the properties of these pigments were compared with those described previously [V. M. Zubarovskiy, et al., ZhOKh, No 32, 1581, 1962; Kh. getrots. soyed., No 1, 571, 1965] for their analogs with two-benzthiazolyl radical and substituted vinyl groups. The procedure used to obtain the necessary bases and quaternary salts for the synthesis is described. The absorption peaks of all the pigments were determined in ethyl alcohol using the SF-10 spectrophotometer. Replacement of the 2-benzthiazolyl radicals in 1,1'-diphenyl-3,3'-diethyl-5,5'-di(2-benzthiazolyl)-imidacarbocyaniniodide by tetrahydro-2-benzthiazolyl radicals leads only to an insignificant shift (2 nm) of the light absorption peak to the shortwave side of the spectrum. More intense coloring of the given pigment is observed on replacing both of its 2-benzthiazolyl radicals by vinyl groups. Comparison of the light absorption peaks of imidacarbocyanin containing two vinyl groups of the substitutions with the absorption peak of 1,1'-diphenyl-3,3'-diethylimidacarbocyaniniodide (509 nm) not having substitutions in the

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USSR

ZABAROVSKIY, V. M., et al., Ukrainskiy Khimicheskiy Zhurnal Vol XXXVIII, No 6, 1972, pp 594-597

5,5'-positions shows that the introduction of vinyl groups into the benzene rings of the benzimidazol radicals of the imidacarbocyanin molecule causes a 15 nm shift of the absorption peak to the long wave side of the spectrum. The synthesis procedures, physical characteristics and yields are presented for 8 of the compounds.

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USSR

UDC [621.362:538.4]:621.565.001.24

BELODED, M.I., BOTUK, YU.S., GUTMAN, I.I., ZUBATOV, N.G., TETEL'BAUM, S.D.

"Thermodynamic Analysis Of Some Schemes For A Magnetohydrodynamic Installation With An Energy Exchanger"

V sb. Teplotekhn. probl. pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 44-52 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A178)

Translation: A comparative analysis is presented of a scheme for a magnetohydrodynamic (MHD) installation in which, after a preliminary regenerative heating of the air to 1100--1300° K (which can be accomplished in actual available heat exchange apparatus of the recuperative type), a subsequent increase of the temperature to the level of 1700--2000° K takes place in the energy exchanger "air--air," and of an ordinary scheme of a MHD installation in which high-temperature heating of the air is conditionally assumed possible. The values of the efficiency obtained for a scheme with an energy exchanger "air--air" is 54.7 percent; without an energy exchanger, 55.9 percent. A thermodynamic analysis and optimization are presented. A conclusion is made concerning the prospects of schemes with energy exchangers with low-temperature heating of air. 3 ill. 3 ref. [Odessa Technological Institute] V.P. Bogatyrev

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USSR UDC [621.357.035.4:621.79.027]:669.14(088.8)

ZUBATOVA, L. S., MOROZ, I. I., and MONINA, M. A., Experimental Scientific Research Institute of Metal-Cutting Machines

"Electrolyte for Electro-Abrasive Grinding of Steels, Heat-Resistant, and Magnetic Alloys"

USSR Author's Certificate No 329246, Filed 2 Mar 70, Published 20 Mar 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23I236P by A. D. Davydov)

Translation: The Na_2CO_3electrolyte for electro-abrasive frinding of steels, heat-resistant, and magnetic alloys differs from other electrolyte by the presence of ammonium bifluoride. The presence of the latter inhibits the formation of sludge in the electrolyte and increases the finishing quality of the treated surface. The electrolyte components are taken in the following amounts (%); Na_2CO_3 12-14, $NH_4F \cdot HF$ 0.5-1.0, and water.

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USSR UDC [621.362:538.4]: 621.565.001.24

BELODED, M.I., BOTUK, YU.S., GUTMAN, I.I., ZUBATOV, N.G., TETEL'BAUM, S.D.

"Direct Energy Exchange And Its Application To Magnetohydrodynamic Installations"

V sb. Teplotekhn.probl.pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 37-44 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A177)

Translation: The scheme of the device is presented and the operation is considered of a tubular energy exchanger which assures a direct energy exchange between the working media and which makes it possible to exclude from the thermal scheme of an open-cycle magnetohydrodynamic (MHD) installation the high-temperature stage air heater. The computations show that with the aid of such an energy exchanger it is possible to increase the air temperature by 200--700° K. The range of air pressures at the output of the energy exchanger satisfies the condition of operation of the open-cycle MHD installation, and the theoretical efficiency of the energy exchanger reaches a magnitude of 0.9. 2 ill. 2 ref. [Odessa Technological Institute] V.P. Bogatyrev

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ZUBAVIN, V. B.

UDC 612.014.4[illegible]

USE OF MULTICHANNEL RHEOGRAPHY IN PHYSIOLOGICAL INVESTIGATIONS ON A CE[illegible]

[Article by V. B. Zubavin, L. I. Letkova, Yu. S. Miroshnikov and M. A. [illegible]; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 5, Sep[illegible] October 1972, pp 75-79, submitted for publication 29 December 1971]

Rheography as a method for studying the cardiovascular system ha[illegible] into broad use in clinical practice and experimental investigations. [illegible] and two-channel rheographs have been used in most investigations. [illegible] such instruments make it possible to register pulse blood filling of di[illegible] ent organs only in succession. In a research plan this can be applic[illegible] in those cases when the organism is in a stationary state or when hemody[illegible] shifts occur slowly. However, if an investigator is dealing with extrem[illegible] exposures and accordingly with rapidly transpiring changes in the cardio[illegible] lar system (such as in experiments on a centrifuge) the need arises for [illegible] taneous observation of processes transpiring in many vascular zones. In [illegible] tion, long-imparted accelerations sometimes cause oppositely directed c[illegible] in blood filling in parts of the body situated under conditions differe[illegible] respect to hydrostatics. The multichannel rheography method is entirely [illegible] quate for studying hemodynamic reactions in this situation. This makes [illegible] possible to evaluate the changes in several vascular zones simultaneousl[illegible] to compare the results.

In this article we will not give a detailed analysis of the collec[illegible] material but will limit ourselves to an evaluation of the possibility [illegible] channel rheography as a method for studying the cardiovascular system [illegible] experimental conditions on a centrifuge.

The experiments were conducted on a centrifuge with a radius [illegible] The rheogram was registered using an original 6-channel rheographic [illegible] ment designed by S. L. Gorshcharuk and M. A. Ronkin. The rheograph was [illegible] up directly in the centrifuge cabin because the great length of the [illegible] line between the centrifuge cabin and the recording apparatus (35-40 [illegible] ly reduces noise immunity and increases circuit capacitance-resistance, [illegible] exerts a considerable effect on power transfer and shape of the useful [illegible] Registry of the rheogram signal was with a 13-channel electroencephalo[illegible] manufacture by the Japanese Sanai firm with a rate of paper movement 25 [illegible]

JPRS 57577
15 Nov 72

USSR UDC 542.91 + 541.459 + 547.214

ZUBAYEV, G. A., MITROFANOVA, YE. V., DODONOV, V. A., and MOL'KOVA, L. N., Laboratory of Polymer Stabilization, Academy of Sciences USSR

"Synthesis and Some Reactions of Diethylthalliumethoxy-α-peroxy-tert.-butyl"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 465-466.

Abstract: The interaction of triethylthallium with α-hydroxy-tert.-butyl peroxide gives diethylthalliumethoxy-α-peroxy-tert.-butyl. The latter is an organometallic peroxide compound which decomposes on heating in benzene, cumene, isopropyl bromide and tert.-butyl bromide with cleavage of the oxygen-oxygen bond to give diethylthallium acetate and tert.-butyl alcohol.

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ELASTOPLASTIC STABILITY OF LAMINATED BEAMS -U-

AUTHOR--ZUBCHANINOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, FEB. 1970, P 127-129

DATE PUBLISHED--------70

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

TOPIC TAGS--BOX BEAM, ELASTICITY, STRUCTURE STABILITY, PLASTICITY, REINFORCED MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1332 STEP NO--UR/0198/70/006/000/0127/0129

CIRC ACCESSION NO--AP0106109

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STABILITY OF A THREE LAYER BEAM COMPRESSED AT BOTH ENDS. IT IS ASSUMED THAT THE RIGID OUTER LAYERS ARE MADE FROM THE SAME MATERIAL, HAVE THE SAME DIMENSIONS, AND OPERATE WITH THE ELASTIC LIMIT, WHILE THE PLASTIC INNER LAYER OPERATES BEYOND THE ELASTIC LIMIT. VALIDITY OF THE PLANE SECTION LYPOTHESIS IS POSTULATED. IT IS SHOWN THAT THE CRITICAL LOAD CAN BE TREATED AS THE SUM OF AN EULERIAN LOADING OF THE OUTER LAYERS AND LL'IUSHIN'S CRITICAL LOADING FOR THE INNER LAYER. THE LATTER LOAD IS DEFINED AS A LOAD FOR A LAYER OPERATING IN AN UNLOADING SYSTEM. THE SOLUTION OBTAINED IS FOUND TO HOLD ALSO FOR A COMBINATION OF BEAMS OF VARIOUS PROFILE ANALOGOUS TO THE INITIAL THREE LAYER BEAM.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 018

TITLE--ELASTOPLASTIC STABILITY OF LAMINATED BEAMS -U-

AUTHOR--ZUBCHANINOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, FEB. 1970, P 127-129

DATE PUBLISHED-------70

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

TOPIC TAGS--BOX BEAM, ELASTICITY, STRUCTURE STABILITY, PLASTICITY, REINFORCED MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1332 STEP NO--UR/0198/70/006/000/0127/0129

CIRC ACCESSION NO--AP0106109

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 018

CIRC ACCESSION NO--AP0106109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STABILITY OF A THREE LAYER BEAM COMPRESSED AT BOTH ENDS. IT IS ASSUMED THAT THE RIGID OUTER LAYERS ARE MADE FROM THE SAME MATERIAL, HAVE THE SAME DIMENSIONS, AND OPERATE WITH THE ELASTIC LIMIT, WHILE THE PLASTIC INNER LAYER OPERATES BEYOND THE ELASTIC LIMIT. VALIDITY OF THE PLANE SECTION LYPOTHESIS IS POSTULATED. IT IS SHOWN THAT THE CRITICAL LOAD CAN BE TREATED AS THE SUM OF AN EULERIAN LOADING OF THE OUTER LAYERS AND LL'IUSHIN'S CRITICAL LOADING FOR THE INNER LAYER. THE LATTER LOAD IS DEFINED AS A LOAD FOR A LAYER OPERATING IN AN UNLOADING SYSTEM. THE SOLUTION OBTAINED IS FOUND TO HOLD ALSO FOR A COMBINATION OF BEAMS OF VARIOUS PROFILE ANALOGOUS TO THE INITIAL THREE LAYER BEAM.

UNCLASSIFIED

UDC 621.791.019:546.17

USSR

ZUBCHENKO, A. S., L'vov Polytechnical Institute, TIMOFEYEV, M. M., KAZIMIROVSKAYA, YE. L., Central Scientific Research Institute of Technology and Machine Building, and KOLYADA, A. A., (VNIIPTKhimmach)

"Effect of Nitrogen on Cold Brittleness of Heat-Resistant Kh25Yu5 Steel"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 70, pp 8-9

Abstract: The effect of nitrogen on the cold brittleness of 220 x 120 x 30 mm samples from a metal fused in an open induction furnace was investigated. The nitrogen content in the fused metal was controlled by introducing nitrided ferrochromium into the crucible. The chemical composition and mechanical properties of the tested metal are presented in tables. They show that an increase in nitrogen content in the Kh25Yu5 steel substantially reduces its strength and impact strength. The dependence of impact strength and mechanical properties on test temperature, and the effect of nitrogen on the critical temperature of the transition of the steel into the brittle state are shown in graphs. It can be assumed that the temperature of equilibrium nitrogen concentration in the solid solution of Kh25Yu5 steel coincides with the critical temperature of the transition of the steel into a brittle state.

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UDC 621.791.019

USSR

TIMOFEYEV, M. M., ZUBCHENKO, A. S., KOLYADA, A. A., PAKHURIDZE, V. N., and ROMANENCHUK,

"Cold Crack Formation in Ferrite Steel Welding"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 70, pp 9-12

Abstract: Several types of steel are mentioned as being suitable for structures requiring high anti-corrosion and anti-thermal properties. These include the OKh23S2Yu and Kh25Yu5 types, the first of which is known in foreign countries under the name of Sikhromal-12. The defect of these steels is that they are poorly resistant to cold cracks under welding. The purpose of this paper is to investigate the causes of this defect and to study the mechanism of formation of the cracks. Specimens used for the research were these two types of steel, both of which were smelted in open induction furnaces under slag. The OKh23S2Yu was hammered after casting into sheets measuring 12 x 120 x 300 mm while the Kh25Yu5 specimens were studied in cast form. A table of the chemical compositions of both is given. The authors find a dependence between the temperature interval of the crack formation in welds of the two steels and the temperature transition of the steels to the brittle state. They propose

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USSR

TIMOFEYEV, N. M., et al, Avtomaticheskaya Svarka, No 10, Oct 70, pp 9-12

a method of welding ferrite steel involving the use of preliminary and accompanying heating to a temperature exceeding the temperature of the transition to the brittle state near the welded seam. Tempering directly after the welding makes it possible to remove the remaining stresses which cause the formation of the cracks. They assert also that the critical temperature of the transition to the brittle state can serve as a criterion of the weldability of ferrite steels.

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1/2 044 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--WELDING OF HEAVY GAGE STEEL OKH23N28M3D3T -U-

AUTHOR-(03)-ZUBCHENKO, A.S., YERNILLOV, V.A., KOLYADA, A.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (3), 30-1

DATE PUBLISHED-------70

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

TOPIC TAGS--AUSTENITIC STEEL, WELDING ELECTRODE, ARC WELDING, NONDESTRUCTIVE TEST, STEEL WELDING, WELDING INSPECTION, CHEMICAL COMPOSITION, TENSILE STRENGTH, SULFURIC ACID, PHOSPHORIC ACID, CORROSION RESISTANT STEEL, IMPACT STRENGTH/(U)OKH23N28M3DT AUSTENITIC STEEL, (U)OKH23N28M3D3T WELDING ELECTRODE, (U)OZL17U WELDING ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1460 STEP NO--UR/0314/70/000/003/0030/0031

CIRC ACCESSION NO--AP0109520

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--09OCT70

2/2 044
CIRC ACCESSION NO--AP0109520
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILIZED AUSTENITIC STEEL OF THE OKH23N28M3D3T GRADE EXHIBITS A HIGH CORROSION RESISTANCE TO H SUB2 SO SUB4, H SUB3 PO SUB4, AND SULFIDIC SOLNS. BUT IS MORE SUSCEPTIBLE TO WELDING INDUCED HOT CRACKING THAN ARE AUSTENITIC STEELS OF THE NONTRANSITION CLASS. HOT CRACKING AND (OR) INTERCRYST. CORROSION ARE FREQUENTLY ENCOUNTERED IN WELDED JOINTS ON PLATES IS GREATER THAN 20 MM THICK. TO IMPROVE THE QUALITY OF WELDS ON HEAVY GAGE STEEL, A SERIES OF MANUAL AND AUTOMATIC WELDING TESTS USING VARIOUS COM. AND LAB. PREPD. WELDING ELECTRODES WAS PERFORMED ON 45 AND 50 MM THICK PLATES OF THE OKH23N28M3D3T STEEL (CONTG. C 0.06, SI 0.53, MN 0.32, S 0.007, P 0.026, CR 23.1, NI 27.0, CU 2.79, MO 2.7, AND TI 0.73PERCENT AND EXHIBITING AN ULTIMATE TENSILE STRENGTH OF 69 KG PER MM PRIME2 AND AN IMPACT STRENGTH OF 22 KG-M PER CM PRIME2). AUTOMATIC WELDING BY OKH23N28M3D3T ELECTRODES UNDER AN OXIDIZING, CERAMIC FLUX YIELDED UNSATISFACTORY RESULTS, OWING TO THE OCCURRENCE OF DEEP, PROPAGATING CRACKS. SEAMS WELDED BY THE OZL-17U ELECTRODES (OF A COMPN. SIMILAR TO THAT OF THE BASE METAL, EXCEPT FOR MN 3.06, TI 0.15, AND NB 0.45PERCENT) FAILED IN TESTS FOR INTERCRYST. CORROSION. SOUND AND CORROSION RESISTANT HEAVY GAGE WELDS OF SATISFACTORY MECH. PROPERTIES MAY ONLY BE OBTAINED BY MANUAL ARC WELDING UNDER AR BY USING OKH23N28M3D3T OR SIMILAR ELECTRODES OF 3-4 MM DIAM. PARTS OF HEAT EXCHANGERS FOR H SUB2 SO SUB4 SHOULD BE WELDED BY THIS METHOD.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--WELDING OF STEEL OKH23S2YU -U-

AUTHOR-(03)-ZUBCHENKO, A.S., TIMOFEYEV, M.M., BUDAYEV, G.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (1) 23-4

DATE PUBLISHED--------70

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

TOPIC TAGS--CORROSION RESISTANT ALLOY, ALLOY DESIGNATION, SLAG, MECHANICAL PROPERTY/(U)OKH23SZYU CHROMIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0005 STEP NO--UR/0314/70/000/001/0023/0024

CIRC ACCESSION NO--AP0102105

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102105

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OKH23S2YU, A FERRITIC, OXIDN. RESISTANT STEEL OF THE FE-SI-CR-AL TYPE (CR 23, SI 1.8, AL 1.3PERCENT) CAN BE ARC WELDED, AFTER HEATING TO 200 TO 250DEGREES, WITH COATED ELECTRODES OF OKH27YU5A ALLOY, USUALLY USED FOR RESISTANCE HEATING ELEMENTS. THE ELECTRODE COATING CONTAINS AN INCREASED AMT. OF MARBLE (70PERCENT) AND A LOWER CONTENT OF FLUORSPAR, THUS DECREASING THE FLUIDITY OF THE SLAG. TI POWDER 2PERCENT IS ADDED TO REFINE THE WELD GRAIN AND 2PERCENT FERROSILICON SI45 TO FACILITATE THE SLAG REMOVAL. MECH. PROPERTIES OF THE WELD ARE EQUAL TO THOSE OF THE WELDED ALLOY; THE CORROSION RESISTANCE IS HIGHER DUE TO AN INCREASED CR CONTENT.

UNCLASSIFIED

Instrumentation and Equipment

USSR

UDC 621.791.72.03

PATON, B. YE., Academician, NAZARENKO, O. K., LOKSHIN, V. YE., Candidates of Technical Sciences, ZUBCHENKO, YU. V. and AKOP'YANTS, K. S., Engineers, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Classification of Electron-Beam Welding Guns"

Kiev, Avtomaticheskaya Svarka, No 12 (249), Dec 73, pp 34-41

Abstract: Electron-beam welding guns have been classified and diagrams have been constructed for the suggested classification as well as the area of technological possibilities for standard guns. The principle of constructing these guns has been described. As a result of the investigations a device has been created for shaping the accelerating voltage on electrodes using a column of water. Extended exploitation has confirmed the high degree of operating reliability. The basic models of standard welding guns have been thoroughly tested both under laboratory and industrial conditions and are recommended for commerical production. The article contains 7 figures, 3 tables, and 5 bibliographic references.

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USSR

UDC 669.24:669.017.3:548.5

ZUBEKHIN, V. P., and TURBIN, V. S., Voronezh

"Rate of Nickel Whisker Growth"

Moscow, Izvestiya Akademii Nauk SSSR, No 1, Jan/Feb 74, pp 62-63

Abstract: The kinetics of nickel crystal whisker growth in the different stages is examined and a method proposed for increasing the rate of growth. The whisker growth mechanism occurs in three stages: 1) nucleation, where water vapors from the $NiBr_2$ or $NiCl_2$ are present; 2) water vapors are dissipated and conditions are favorable for growth; and 3) growth becomes radial and not lengthening. The first stage is slow, the second stage is the fastest, and the third stage slows in length growth rate as the whiskers become fatter. A high-voltage discharge from a high-voltage induction coil (for hydrogen ionization) made it possible to increase whisker growth rate. For instance, under ordinary conditions the whiskers grew about 8 mm in six hours while, using the induction coil to produce more hydrogen, this value was about 14 mm in six hours. One figure, seven bibliographic references.

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Public Health, Hygiene and Sanitation

USSR

UDC 614.3:658.5

ZUBELEVICH, V. A., and BARYKINA, A. A., Sanitary Epidemiological Station of the Rogachev Rayon, Gomel'skaya Oblast

"Organization of Current Sanitary Supervision Carried Out by a Sanitary-Epidemiological Station"

Moscow, Gigiyena i Sanitariya, No 3, Mar 73, pp 71-72

Abstract: To improve the efficiency of sanitary supervision in the Rogachev Rayon, a special card file was introduced at the rayon sanitary-epidemiological station. Cards with a distinctive color corresponding to the type and branch of supervision are used (e.g., blue for the subdivision of communal sanitation and white for school inspection). In the case of violations of sanitary rules discovered during an inspection, the number of examinations (the number of persons examined) and the date on which these violations are expected to be removed are entered on a card. If inspection on this date discloses that some violations remain, a later date for another inspection is entered on the same card and the card is filed under the month corresponding to that data. The system of keeping track of violations of sanitary rules is the same as that applied in connection with the checking of the carrying out of prophylactic inoculations.

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1/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STUDY OF A PLATINUM,BARIUM ALLOY IN A FIELD EMISSION MICROSCOPE -U-

AUTHOR-(02)-ZUBENKO, YU.V., YESAULOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA TVERDOGO TELA, MAR. 1970, 12, (3), 852-855

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ELECTRON MICROSCOPY, SINGLE CRYSTAL, PLATINUM, CRYSTAL STRUCTURE, BARIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0153 STEP NO--UR/0181/70/012/003/0852/0855

CIRC ACCESSION NO--AP0129409

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129409

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EMISSION IMAGES OF A PT-1.3 WT. PERCENT BA SINGLE CRYSTAL WERE STUDIED IN A FIELD EMISSION ELECTRON MICROSCOPE AFTER HEAT TREATMENT AT VARIOUS TEMP. (1000-1900DEGREESK). THE IMAGES THUS OBTAINED GAVE A CLEAR PICTURE OF THE GRADUAL FORMATION OF AN ADSORBED BA FILM AND ITS GENERAL BEHAVIOUS ON THE SURFACE ON THE ALLOY. ON HEATING THE CRYSTAL TO 1050DEGREESK AND CAREFULLY RAISING THE APPLIED VOLTAGE AN EMISSION PICTURE IN WHICH THE CENTRAL DARK (111) FACE APPEARED SURROUNDED BY A BRIGHT HALO WAS OBTAINED. 15 REF.

UNCLASSIFIED

USSR

UDC 619:616.9-097:636.4

ZUBEKHIN, A. V., Aspirant, Voronezh Agricultural Institute

"Immunity in Hogs Vaccinated With Monovaccine and Complex Vaccines"

Moscow, Veterinariya, No 9, 1971, pp 41-43

Abstract: The level of immunity induced in hogs by monovaccine and especially by complex vaccination against erysipelas, leptospirosis, and Aujeszky's disease was studied. Complex vaccination was carried out as follows: pregnant sows were vaccinated 35-45 days before parturition against erysipelas, leptospirosis, and Aujeszky's disease; young pigs aged 30-40 days were vaccinated against leptospirosis and Aujeszky's disease; weaned and 4-month old pigs against erysipelas and Aujeszky's disease. Hogs being fattened at 7-8 months were revaccinated against erysipelas. The level of immunity in vaccinated and control swine was tested by infecting the animals intracutaneously with a suspension of 2.5 billion cells of erysipelas bacteria in 0.3 ml, and subcutaneously with a dose of 5 ml of Leptospira. The investigations established the presence of antigens against all three of the infections in the blood and colostrum of all vaccinated sows. No antibodies were found in the blood of newborn animals; after the beginning of sucking colostrum, high titers of virus-neutralizing antibodies were established in young animals whether fed

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ZUBEKHIN, A. V., Veterinariya, No 9, 1971, pp 41-43

by sows vaccinated with monovaccine or by complex vaccination. No difference was noted in the degree of formation of antibodies against any of the infections in 2-2.5 month-old animals regardless of the method of vaccination. A high level of immunity against the agents of erysipelas and leptospirosis, lasting about 1.5 months, was noted.

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UDC 539.67

USSR

ZUBEKHIN, V. P., NOVOKRESHCHENOV, P. D., POPOV, V. I., and MAKSIMOV, V. P.

"On the Problem of Metal Internal Friction Mechanism in the Process of Plastic Deformation"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 73-76

Abstract: Results are presented of a study of the nature of internal friction in nickel and NTsm-2.5 alloy, measured in the process of their plastic deformation at various temperatures.

It is shown that a certain relationship is observed between changes in Q^{-1} and creeping stages.

Problems related to the onset and propagation of cracks are discussed on the basis of general dislocations. 3 figures, 8 references.

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USSR Hydraulic and Pneumatic UDC 627.81.034:532.5

ZUBENKO, F. S.

"Estimating the Magnitude of Erosion of Reservoir Banks"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of Coordinating Meetings on Hydroengineering), No 59, 1970, pp 100-103 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D48)

Translation: The Laboratory of Aerological Methods of the USSR Ministry of Geology has for a number of years been working on the study of the formation of the banks of reservoirs in the European part of the USSR based on repeated aerial surveys with subsequent field and camera decoding of the photographs and also comparison and analysis of the mass data obtained in this way. Accordingly, a procedure has been developed for quantitative determinations of bank erosion, the specific nature of the appearance of banks under various natural conditions has been established, and a number of laws of transformation of the bank zone reservoirs have been discovered. Some of the discovered laws of abrasion of reservoir banks permits correct understanding of the course of formation of the bank zones of these reservoirs, and others can help during planning and design operations to select the optimal position of the shore line and correspondingly regulate the level of the reservoir. A third group can be used directly when compiling revision forecasts and for controlling the values obtained. Part of the presented data and conclusions offer the possibility of

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ZUBENKO, F. S., Tr. koordinats. soveshchaniy po gidrotekhn., No 59, 1970, pp 100-103

objective evaluation of the economic effectiveness of different versions of a reservoir plan. The bibliography has 10 entries.

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Organ and Tissue Transplantation

UDC 577.1:612.744:612.603

USSR

ZUBENKO, P. M., Chair of Biochemistry, and Chair of Pediatric Surgery, Dnepropetrovsk Medical Institute

"Biochemical Shifts in Muscles of a Replanted Extremity"

Kiev, Ukrainskiy Biokhimicheskiy Zhurnal, Vol 42, No 3, 1970, pp 282-288

Abstract: Biochemical indices of protein, carbohydrate, and nucleic acid metabolism and energy shifts in muscles were studied in dogs at various intervals after removal of an extremity, upon subsequent replantation, and under conditions of immediate replantation. The effect of electrical stimulation on the chemical composition of muscles was also investigated. One hour after an extremity was removed, the quantity of creatine phosphate, glycogen, and ATP decreased, while the level of lactic acid and inorganic phosphate increased; with time these trends intensified, and after 24 hours replantations did not take. In the replanted muscles, the content of sarcoplasmatic, myofibrillar proteins and collagen was lowered 1.5 months after surgery, as was the activity of transaminases, phosphorylase, and aldolase. The activity of amylase increased, as did the rate of incorporation of tagged methionine into water-soluble proteins. The levels of glycogen, ATP, and creatine phosphate

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ZUBENKO, P. M., Ukrainskiy Biokhimicheskiy Zhurnal, Vol 42, No 3, 1970, pp 282-288

were lowered, and the oxidative processes were diminished. The shifts in these indices remained for up to one year (with the exception of oxidative phosphorylation and methionine incorporation, which returned to normal). Electrostimulation had little effect on the content of proteins and metabolic enzymes, but accelerated the normalization of glycogen and the activity of phosphorylase, aldolase, and anaerobic glycogenolysis.

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Acc. Nr.: AP0029805 Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 29-34

LIPID METABOLISM AND LIPOPROTEIN LIPASE ACTIVITY IN CEREBRAL FORMS OF HYPERTENSIVE DISEASE

P. M. Zubenko and M. D. Milsenko (Dniepropetrovsk)

Patients with cerebral forms of hypertensive disease showed a distinct increase of blood serum triglycerides, betha-lipoproteins, free cholesterol, a decrease of the blood heparine level and lipase inhibition even in the initial stage of chronic insufficiency of the cerebral blood circulation. Advancing cerebral vascular pathology was characterized by a further increase of the blood serum lipid fractions, lipase inhibition, decrease of the heparin level and also by an increase of total lipids.

It is suggested that one of the causes of lipid metabolism disorders in patients with hypertensive disease (cerebral form) is inhibition of the lipolytic activity and deficit of endogenous heparine.

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REEL/FRAME
19681491

USSR

UDC 621.3.032.3

ZUBENKO, YE. I., MEZHERITSKIY, A. M., and VDOVENKO, V. V.

"Investigation of the Relationship Between the Granulometric Composition of a Luminophore and the Starting Dicalcium Phosphate"

V sb. Tekh. progress is dostizh. nauki v khim. prom-sti (Technical Progress and Achievements of Science in Chemical Industry -- collection of works), Barnaul, 1973, pp 23-25 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19L143)

Translation: The photoluminescent material LG-1K with the composition $3Ca_3(PO_4)_2 \cdot Ca(F,Cl)_2:(Sb,Mn)$ used in low pressure luminescent lamps with 70 lm/vt light yield can be obtained by calcination of a batch consisting of $CaHPO_4$, $CaCO_3$, CaF_2, SB_2O_3, $MnCl_2$, $CdCO_3$ at 1100-1200°. To obtain this luminescent material with a given granulometri composition it is necessary to use $CaHPO_4$ with the desired granulation. The optimal granulometric composition of $CaHPO_4$ producing the particle content in the luminescent material $\geq$ 14 mk 15-18%, is in the range of 6-14 mk - 60-70%, $\geq$ 14-8-12%.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MIGRATION AND VAPORIZATION OF YTTERBIUM AND NEODYMIUM ON TUNGSTEN -U-
AUTHOR-(02)-MARINOVA, TS.S., ZUBENKO, YU.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2) 520-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--YTTERBIUM, VAPORIZATION, TUNGSTEN, DESORPTION, THERMAL EFFECT, FIELD EMISSION MICROSCOPE, METAL COATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0142 STEP NO--UR/0181/70/012/002/0520/0524

CIRC ACCESSION NO--AP0054938
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054938

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A FIELD EMISSION MICROSCOPE, SURFACE MIGRATION WAS STUDIED OF YB AND ND ATOMS ON W AND THERMAL DESORPTION. THE ACTIVATION ENERGY OF MIGRATION OF VB IN THE DIRECTION FROM THE (011) FACE TO (100), QM EQUALS 0.45 PLUS OR MINUS 0.05 EV, AND OVER THE FACE (121), QM EQUALS 0.70 PLUS OR MINUS 0.05 EV. FOR ND, THE ACTIVATION ENERGY FOR MIGRATION IN THE DIRECTION FROM (101) TO (100), QM EQUALS 0.75 PLUS OR MINUS 0.05 EV, AND OVER THE FACE (111), QM EQUALS 0.65 PLUS OR MINUS 0.05 EV. THE HEAT OF DESORPTION OF EV', FROM W QD EQUALS 2.2 EV, AND THE PREEXPONENTIAL FACTOR, C EQUALS 5 TIMES 10 PRIME13 SEC NEGATIVE PRIME1. FOR ND AT THE INITIAL STAGE OF DESORPTION OF A MONAT. LAYER, QD EQUALS 3.3 EV AND C EQUALS 2 TIMES 10 PRIME12 SEC NEGATIVE PRIME1, AND FOR DESORPTION OF A RAREFIED LAYER, QD EQUALS 4.5EV AND C EQUALS 7 TIMES 10 PRIME13 SEC NEGATIVE PRIME1.

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USSR

MARINOVA, Ts. S., ZUBENKO, Yu. V.

"Adsorption and Work Function of Ytterbium and Neodymium Layers on Tungsten"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 2, 1970, pp 516-519

Abstract: This paper describes experiments for determining the adsorption and electron emission from tungsten monocrystals with sputtering ytterbium and neodymium atoms on their surfaces, the experimentation being done by an electron gun. It is asserted that up until now only metal film structures with alkali metals have been investigated in this respect and the electron-adsorption characteristics of the metals in the third group of the periodic table have been studied. The experimental procedure is described. The neodymium and ytterbium were vaporized by a special device, a tungsten basket degassed in advance. In front of each vaporizer was placed a diaphragm and a movable gate to cover the molecular clusters of the two elements. The vaporizers were then heated to incandescence. The pressure in the experimental equipment during the vaporization of the metal and its adsorption on the tungsten was no more than $1 \cdot 10^{-9}$ mm Hg. The tungsten was formed into a sharp point, and the condensate was

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MARINOVA, Ts. S., ZUBENKO, Yu. V., Fizika Tverdogo Tela, Vol 12, No 2, 1970, pp 516-519

uniformly distributed on its surface as a result of migration at a temperature in which the vaporization can be neglected. A curve is given showing the work function as a function of the sputtering time of the neodymium and ytterbium on the tungsten surface. Emission photographs of the adsorption of the two metals on the tungsten are also given.

ZUBENKOVA, E. S.

JPRS 55030
18 May 72

UDC 615.849.1.015.46

STATE OF NATURAL IMMUNITY OF DOGS DURING CHRONIC GAMMA IRRADIATIONS UNDER THE INFLUENCE OF ANITETRAVITE

[Article by S. I. Pal'mina, V. A. Zuyeva, N. I. Ovsyaeva, M. F. Shirnina, A. A. Akhunov and E. S. Zubenkova, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 2, March-April 1972, pp 24-29, submitted for publication 11 February 1971]

Abstract: The effect of anitetravite, a biological protectant, on the state of natural immunity was investigated in experiments on dogs exposed to three-year chronic gamma irradiation simulating the dose characteristics of a space-flight environment. Long-term irradiation of dogs with low Co^{60} gamma ray doses induced wavelike changes in the natural immunity of the test animals. Regular administration of anitetravite produced a normalizing effect on the state of skin autoflora, favored a relative stability of the indices of blood phagocytic activity, and restrained the development of autoimmune reactions.

It has been established in numerous investigations that body exposure to ionizing radiation in large doses, leading to the development of acute or subacute radiation sickness, is accompanied by an impairment of many body functions. Among these impairments a leading place is occupied by a decrease in natural and artificial immunity (P. N. Klaselev and P. A. Bazin; N. N. Klemparskaya, et al.; V. M. Shilov; R. V. Petrov, and others). However, the problem of the effect of prolonged chronic irradiation in small doses on immunobiological reactivity and the influence exerted on it by protective-therapeutic measures has not been adequately covered.

The objective of this study was an evaluation of the effectiveness of one of the means of biological defense, the drug anitetravite, on the state of natural immunity in dogs subjected to prolonged chronic gamma irradiation. This study is a part of a complex investigation with chronic irradiation which in dose level and intensity simulated the radiation conditions of a prolonged space flight (Yu. G. Grigor'yev and E. A. Markelov, and others).

1/2 046 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DYNAMICS OF GRANULOCYTIC RESERVE CHANGE IN THE BONE MARROW OF ANIMALS EXPOSED TO CHRONIC GAMMA IRRADIATION -U-

AUTHOR-(02)-ZUBENKOVA, E.S., MARKELOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1, JANUARY FEBRUARY 1970, SUBMITTED FOR PUBLICATION 6 JANUARY 1969, PP 3-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE MARROW, GAMMA IRRADIATION, RADIATION CELLULAR EFFECT, SPACE RADIATION HAZARD, CANCER, PYROGEN, SOLAR FLARE, SOLAR CORPUSCULAR RADIATION, TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1863 STEP NO--UR/0453/69/004/001/0003/0006

CIRC ACCESSION NO--AP0103606

UNCLASSIFIED

2/2 046 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0103606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING PROLONGED SPACE FLIGHTS IONIZING RADIATION IS ONE OF THE FACTORS TO WHICH MAN IS EXPOSED. ACCORDING TO BOBKOV, ET AL., THE GALACTIC RADIATION TO WHICH COSMONAUTS ARE SUBJECTED CONTINUOUSLY DURING THE ENTIRE FLIGHT IS APPROXIMATELY 70-100 REM PER YEAR OF FLIGHT AND SOLAR CORPUSCULAR RADIATION IN THE SPACESHIP SHIELDED COMPARTMENTS IS 5-50 REM PER FLARE. EVALUATION OF THE DEGREE OF DAMAGE TO BLOOD FORMING TISSUE (DURING IRRADIATION OR MALIGNANT DISEASES) FROM THE MAGNITUDE OF THE GRANULOCYTIC RESERVE IS USED EXTENSIVELY BOTH IN OUR COUNTRY AND ABROAD. DURING RECENT YEARS A TEST WITH PYROGENAL IS BEING USED EXTENSIVELY FOR CHARACTERIZING THE FUNCTIONAL STATE OF LEUKOPOESIS IN CLINICAL AND EXPERIMENTAL WORK (RAUDSEPP; KELLER AND HEILMEYER; HELIMAN AND FINK). WE USED A PYROGENAL TEST FOR MAKING A MORE DETAILED STUDY OF THE STATE OF LEUKOPOESIS DURING CHRONIC GAMMA IRRADIATION.

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1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DYNAMICS OF CHANGES IN THE MARROW GRANULOCYTE RESERVE OF ANIMALS EXPOSED TO CHRONIC GAMMA RADIATION -U-

AUTHOR-(02)-ZUBENKOVA, E.S., MARKELOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P. 3-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA IRRADIATION, RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE, LEUKOPOIESIS, PYROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0052 STEP NO--UR/0453/70/004/000/0003/0006

CIRC ACCESSION NO--AP0119048

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119048

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF VARIATIONS IN THE MARROW GRANULOCYTE RESERVE OF 55 DOGS EXPOSED TO 25 TO 225 REM PER YEAR DOSES OF GAMMA RADIATION OVER A PERIOD OF 1.5 YEAR, WITH OR WITHOUT INSTRAMUSCULAR INJECTIONS OF A PYROGENIC AGENT. A CERTAIN DEPRESSION OF LEUKOPOIESIS ESTABLISHED BETWEEN THE 6 AND 14TH MONTHS OF THE EXPERIMENT IN DOGS EXPOSED TO 225 REM PER YEAR RADIATION DOSES WAS FOLLOWED BY A GRADUAL RESORATION OF THE MARROW GRANULOCYTE RESERVE. AS A RESULT, THE LEUKOCYTE REACTION OF THE DOGS TO THE PYROGENIC AGENT WAS NORMALIZED BY THE 16 TO 18TH MONTHS OF THE EXPERIMENT.

UNCLASSIFIED

USSR

UDC: 8.74

ZUBER, I. Ye., KOLKER, Yu. I., POLUEKTOV, R. A.

"Control of the Numbers and Age Composition of Populations"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 129-138 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V600)

Translation: Bisexual populations are examined with regard to the age distribution of individuals. It is shown that the dynamic particulars of a bisexual population are related to characteristic parameters of individuals of the female sex. Males play a subordinate role in the model. Variation in the numbers and age structure of the population is completely determined by the nature of the variation in the age structure of the population of female individuals in time. Authors' abstract.

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USSR

UDC 632.954:576.8

CHUNDEROVA, A. I., ZUBETS, T. P., and SOFINSKIY, A. M., Northwestern Scientific Research Institute of Agriculture

"Effects of Herbicides on the Soil Microflora on Systematic Application Under Conditions of Crop Rotation"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 47-50

Abstract: Fields on which crops were rotated in the order peas + oats, winter rye, potatoes, barley with an undersow of perennial grasses, during a period of five years were treated with the herbicides 2,4-D, DNOK, neburon, 2M-4Kh, prometrin, monuron, pyramine, propazine, and 2M-4KhM in various rotations. The soil microflora, as indicated by counts of bacteria, fungi, antinomycetes, and nitrifying bacteria, was not reduced in any instance; there was even an increase in the amounts of bacteria and actinomycetes. The nitrification capacity of the soil did not decrease under the action of the herbicides; it increased in the range of 35-43% in some cases. As shown by determinations of protease, urease, phosphatase, and invertase in the soil, the activity of hydrolytic enzymes that convert organic matter into inorganic compounds in the soil was practically unaffected during 3-4 yrs of application of the herbicides, but

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USSR

CHUDEROVA, A. I., et al., Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 47-50

then showed a tendency to drop in the 5th year. The decrease in enzyme activity was apparently due to a reduction in the number of weeds. The most favorable conditions with respect to both the soil microflora and biochemical processes in the soil, as indicated by the activity of enzymes were observed after applications of herbicides in the sequence 2,4-D for four years, then 2M-4KhM; or 2M-4Kh, 2,4-D, pyramin, 2M-4Kh, 2M-4KhM. The least satisfactory state of the soil in regard to biochemical activity resulted after the sequence no herbicide in the first year, 2,4-D, propazine, 2M-4Kh, 2M-4KhM.

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USSR

UDC: 681.3.519.2

OTKHMEZURI, G. L., GOGIBERIDZE, A. Sh., GURULI, V. V., ZUBIASHVILI, Sh. M., SIRADZE, Sh. M., SIGUA, V. F., DATUASHVILI, A. N., Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A Device for Determining the Mathematical Expectation of Random Processes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 48, Dec 73, Author's Certificate No 409244, Division G, filed 4 May 72, published 30 Nov 73, pp 120-121

Translation: This Author's Certificate introduces a device for determining the mathematical expectation of random processes. The device contains a pulse generator, source of input information, an amplifier, diodes, a rectifier, and a shifter. The pulse generator is connected to a modulator directly and to the first input of an interrupter through an accumulator. The source of input information is connected to the modulator through a comparison circuit. The shifter is connected through a multiplier to the output of the device. As a distinguishing feature of the patent, the working precision of the device is improved by adding magnetic accumulator elements.

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USSR

OTKHMEZURI, G. L. et al., USSR Author's Certificate No 409244

The inputs of these accumulator elements are connected to the corresponding diodes, and the diode inputs are connected to the output of the interruptor. The output of the rectifier is connected to the shifter and to the comparison circuit. The modulator output is connected through the amplifier to a second input of the interruptor.

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USSR

UDC 616.981.553

AKIMOV, G. A., LOBZIN, V. S., GAREMIN, Ye. M., ZHUK, L. N., and ZUBIK, T. N.
Chair of Nervous and Infectious Diseases, Military Medical Academy imeni Kirov, Leningrad

"Data on the Diagnosis and Pathogenesis ofBotulism"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,033-1,038

Abstract: Observation of six patients with botulism showed that gastrointestinal disorders developed in only three of them; three patients exhibited only disturbances of the nervous system expressed primarily in oculomotor and and bulbar disorders. In order to investigate changes in the nervous system during botulism, 24 dogs were given intramuscular injections of botulinus toxin type A in a dose of 2,500 MLD for mice per kg. Various branches of the nervous system of 12 of the dogs were subjected to a pathohistological examination after the dogs were sacrificed on the 3i to 12th day after administration of the toxin. No signs of selective action of the toxin on the central motor structures were detected. There was evidently selective action on peripheral motor neurons. Correlation of clinical and morphological data indicated that the determining factor in the pathogenesis of paralytic syndromes

USSR

AKIMOV, G. A., et al, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,033-1,038

was disturbance of neuromuscular transmission. All branches of the nervous system were involved in the pathological process, but the morphological changes in the nervous system, which were of the type of an acute swelling, were generally reversible. Although slow recovery of the dogs that had not been sacrificed began on the 10th - 12th day after administration of the toxin, muscular weakness persisted for one month. The most active systems with the highest metabolism (the oculomotor apparatus and the bulbar system) were apparently affected first, but they also recovered fastest.

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USSR

UDC 616.981.553-092.9

MATKOVSKIY, V. S., TSYBULYAK, G. N., ZUBIK, T. M., ZHUK, L. N., AKIMOV, G. A., GAREMIN, Ye. M., GOGLOZHA, R. L., KUSTOV, N. A., PASHKOVSKIY, E. V., and TIKHOFEYEV, V. V., Chair of Infectious Diseases, Chair of Military Field Surgery, and Chair of Nervous Diseases, Military Medical Academy imeni S. M. Kirov, Leningrad

"The Pathophysiology of Experimental Botulism"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 16-19

Abstract: A study was carried out of the disturbance of external respiration, gas content and acid-base state of blood, and of hemodynamic shifts with severe experimental intoxication with botulinus toxin. Fifty dogs were intoxicated with type A botulinus toxin. At the time of administration and at the peak of intoxication, the gas content of arterial and venous blood, hemoglobin, hematocrit, specific weight of blood and plasma, and content of sodium, potassium, lactic and pyruvic acid were determined. External respiration was studied by means of a type T35 spirometabolograph and circulation by the modified mechanical cardiographic method. Biocurrents of the cerebral cortex were recorded on a four-channel electroencephalograph. At the peak of

USSR

MATKOVSKIY, V. S., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 16-19

intoxication, a reduction of per minute respiration with a resulting lowered level of oxyhemoglobin in arterial blood, and respiratory acidosis were noted. EKG data revealed predominantly hypoxic shifts in the myocardium, and the EEG data -- inhibitory processes in the cerebral cortex. Intensified cardiac activity served as a compensatory mechanism for respiratory insufficiency. The secondary shifts in the function of organs and systems in connection with disturbances of a metabolic and functional nature played a vital role in the pathogenesis of botulinus intoxication. Morphological shifts in the CNS were apparently caused largely by disturbances in the microcirculation and were reversible. In treating severe botulinus intoxication, special attention should be paid to timely correction of external respiratory insufficiency, with artificial ventilation of lungs most expedient.

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1/2 006 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DETERMINATION OF THE DEPTH OF SUBMERSION OF BATHOMETERS FROM THE BATHYTHERMOGRAPH READINGS BY THE METHOD OF COSINES -U-

AUTHOR--ZUBIN, A.B.

COUNTRY OF INFO--USSR

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 363-368

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--BATHYTHERMOGRAPH, OCEAN DEPTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1280 STEP NO--UR/0213/70/010/002/0363/0368

CIRC ACCESSION NO--AP0109364

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UNDERTAKEN STUDIES SHOW THE EFFICIENCY OF THE METHOD OF COSINES FOR THE COMPUTATION OF TRUE DEPTHS FROM THE BATHYTHERMOGRAPH READINGS. THE DESCRIBED METHOD POSSESSES CERTAIN ADVANTAGES OVER THE GRAPHIC METHODS: GREATER ACCURACY IN DETERMINING TRUE DEPTHS OF SUBMERSION OF THE BATHOMETERS (SINCE THE COMPUTATION ACCURACY IS HIGHER THAN THE GRAPHIC ONE); CONSIDERABLE TIME ECONOMY (GIVEN PARTICULARLY BY THE USE OF AN ELECTRIC COMPUTER). FACILITY: ATLANTICHESKOYE OTD. INSTITUTA OKEANOLOGII IM. P. P. SHIRSHOVA.

UNCLASSIFIED

USSR

UDC: 621.317.343

CHUPRROV, I. I., ZUBKA, A. I., NAYDENOV, A. Ye., SVESHNIKOV, P. A.

"Measuring the S-Parameters of Remote Objects"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 62-63 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A348)

Translation: In developing panoramic instruments for measuring the parameters of remote objects, particular attention is given to selecting the scheme for connections of SHF units for simultaneous minimization of additional error and maximization of operational convenience. From the operational standpoint, the most suitable scheme is connection of remote objects through a section of high-uniformity cable whose electric length is compensated by introducing another cable in the reference arm of the meter, but in this case an error arises. More accurate but much less convenient is a circuit with a decoupling attenuator. Additional errors (on a fixed frequency) are almost completely eliminated when a double coupler (reflectometer) is brought out from the instrument to the object; the singularties of this method are pointed out. Bibliography of three titles. E. L.

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Publications

USSR

ZUBKIN, A. S., Obezzarazhivaniye ob'ektov podvergshikhsya vozdeystviya oruzhiya massovogo porazheniya (Decontamination of Objects Exposed to the Action of Weapons of Mass Destruction), Second edition, revised and supplemented, Moscow, Atomizdat, 1970, 128 pp

Abstract: One of the consequences of using weapons of mass destruction is the contamination of terrain, buildings, and various objects with radioactive and chemical or bacterial agents. In oreer to eliminate the consequences of this contamination and the danger of mass destruction of the population, various activities are being organized and implemented in decontamination (decontamination and disinfection), and the hospital treatment of the population. This book presents basic information about the types, methods, and means of decontamination and on the basis of the analysis, recommendations are made for the practical adoption of these measures in populated areas, sites of industrial enterprises and rural districts.

The book can serve as a textbook in training personnel in civil defense.

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USSR

ZUBKIN, A. S., et al., Decontamination of Objects Exposed to the Action of Weapons of Mass Destruction, Second edition, revised and supplemented, Moscow, Atomizdat, 1970, 128 pp

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Publications

USSR UDC 355.58:628.58

ZUBKIN, A. S.

"Obezzarazhivaniye Ob'yektov Podvergshikhsya Vozdeystviyu Oruzhiya Massovogo Porazheniya"(Decontamination of Objects Subjected to the Effect of Weapons of Mass Destruction), Moscow, "Atomizdat," 1970, 126 pp

Translation: Annotation: The contamination of a place, equipment, and various objects by radioactive and toxic substances is one of the consequences of the use of weapons of mass destruction. In order to eliminate the consequences of such infection and to prevent the danger of mass inquiry of people, various methods of decontamination (inactivation, degasification, disinfection) and sanitary processing of people are being organized and implemented. Basic information concerning the types, methods, and means of decontamination is presented in this book. On the basis of evaluation of these measures, recommendations are made for their practical application in populated areas, industrial enterprises, and rural areas.

The book may be used as a manual in teaching the personnel of Civil Defense establishments.

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USSR

ZUBKIN, A. S., "Atomizdat," 1970, 126 pp

Table of Contents:

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USSR

UDC: 621.777:546.621

PETUKHOV, V. I., ABRAMOV, O. V., ZUBKO, A. M. and MANEGIN, YU. V.

"Extrusion of Aluminum in an Ultrasonic Field"

Moscow, Kuznechno-shtampovochnoye proizvodstvo, No 3, Mar 72, pp 5-7

Abstract: Discussed are various techniques of applying ultrasonic vibrations in the process of direct and indirect extrusion. The test materials included cold-extruded aluminum and aluminum extruded with the application of ultrasonic vibrations. A coordinate grid was used to evaluate the metal flow. The ultrasonic vibration technique was most effective in direct extrusion when applied to the deformation area through both the male and female dies simultaneously and for indirect extrusion -- through the male die and deflector simultaneously. Increasing the shift amplitude of elastic vibrations results in a drop of the extrusion force and the degree of nonuniform deformation of the metal. Increasing the extrusion rate and the length of the formable slab decreases the effect of ultrasonic vibrations on the power parameters of extrusion. The reduced degree of deformation force under elastic vibrations is unaffected by changes in

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USSR

PETUKHOV, V. I., et al, Kuznechno-shtampovochnoye proizvodstvo, No 3, Mar 72, pp 5-7

the amount of deformation (from 26 to 75%), the die angle (from 60 to 120°) and the lubricant's viscosity. A table reflects the effect of technological parameters on the process of aluminum extrusion. (5 illustrations, 1 table).

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USSR UDC 669.15'26-194

BIKEZIN, K. P., LYUBINSKAYA, M. A., TOPILIN, V. V., ZUBKO, A. M., and DZUGUTOV, M. Ya.

"Developing Production Techniques and Determining the Characteristics of Low-Carbon Kh28-VI Steel"

Moscow, Stal', No 2, Feb 71, pp 162-166

Abstract: This steel differs from the known Kh28 type by its especially low carbon content. While steels of high chromium content are known to be highly brittle at room temperature and are consequently limited in their application in objects operating under shock conditions, the low carbon content of Kh-28VI steel provides a shock strength of more than 20 kg/cm^2 with high resistance to corrosion. Its coefficient of thermal expansion is close to that of glass, so that it can be joined to that substance. Three techniques for obtaining iron with a carbon content of less than 0.01% had to be tested before the steel could be produced. Details of the process finally decided upon are given together with the steel's chemical composition, and the results of heat deformation tests are presented. There is a table of the steel's mechanical qualities for different

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BIKEZIN, K. P., Stal', No 2, Feb 71, pp 162-166

variations of its carbon content and treatment. The metal is manufactured in a vacuum induction furnace using high-purity iron and electrolytic chromium.

USSR

UDC 616-008.97(VIBRIO]-057:656.61

ZUBKO, V. I. and ZHELEZNYAK, L. D., Basin Sanitary-Epidemiological Station, Black Sea- Azov Aquatic Division of Public Health, Odessa

"A Clinical-Epidemiological Description of the Transportation of Nonagglutinating Vibrios by Seamen Taking Long Cruises"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 72-74

Abstract: Foreign and Soviet seamen arriving at Black Sea ports after long cruises were tested in 1971 for the presence of nonagglutinating vibrios. Vibrios were detected among 0.2% of the individuals analyzed at different intensities throughout the year: The number of carriers followed the annual pattern of incidence of acute intestinal infections and detectability of vibrios in the environment at ports of call. Most carriers had visited ports in Indonesia, Maylaysia, India, and Bangladesh at which cholera outbreaks had been reported. While 44.8% of the seamen carried vibrios for 60 days after leaving such ports, they were also detected among seamen 15 to over 60 days after leaving. On the basis of occupation, 75% of the carriers were command staff and medical employees. It is suggested that sea water is an important source of infection. The need for enacting infection control measures at Black Sea ports is apparent. 1/1

USSR

UDC: 612.811

KURCHAVYY, G. G., DAN'KO, S. G., ZUBKOV, A. A., KAMINSKIY, Yu. L., Laboratory of Nerve Cell Physiology of the Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad; Department of Electronic Medical Equipment of the Leningrad "Order of Lenin" Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"A Method of Measuring the Impedance of the Membrane of Motoneurons During Synaptic Actions"

Leningrad, Fiziologicheskiy Zhurnal SSSR, Vol 58, No 8, Aug 72, pp 1309-1312

Abstract: The paper demonstrates the feasibility of separating the postsynaptic potential and the signal induced by variation of the conductivity of the motoneuron membrane. A simplified block diagram of the installation used by the authors to measure curves of transient impedance of the motoneuron membrane is shown in the figure. The object to be studied is connected in the arm of a bridge circuit fed by sinusoidal alternating current. The signals induced in the measurement diagonal of

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KURCHAVYY, G. G. et al., Fiziologicheskiy Zhrunal, Vol 58, No 8, Aug 72, pp 1309-1312

the bridge during stimulation of motoneurons are sent through the phase-sensing detector and then averaged, the sequence of stimuli impinging on the cell being incoherent with the reference current. The use of two phase detectors enables measurement of the cophasal and quadrature components of the transient impedance. Accumulation is used to achieve a usable signal-to-noise ratio. The operation of the synchronization module is described, and errors are analyzed. The maximum relative error of linear interpolation is no more than 5%.

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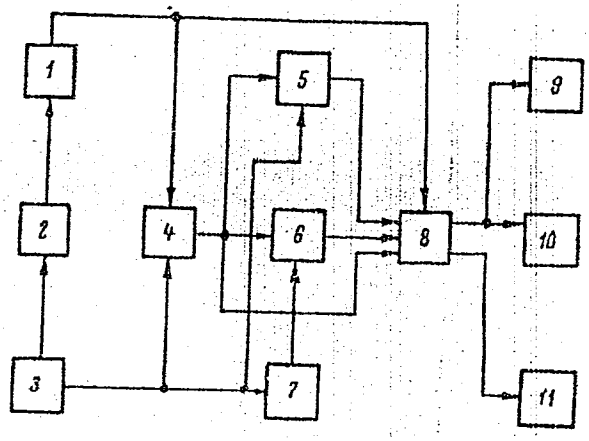
USSR

KURCHAVYY, G. G. et al., Fiziologicheskiy Zhurnal, Vol 58, No 8, Aug 72, pp 1309-1312



1--stimulator; 2--synchronization module; 3--audio oscillator; 4--bridge measurement circuit; 5, 6--phase detectors; 7--phase shifter; 8--"UM 1NKh" digital computer; 9--oscilloscope; 10--chart recorder; 11--printout

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USSR

UDC 615.45.012(075.8)

BABSKIY, Ye. B., ZUBKOV, A. A., KOSITSKIY, G. I., and KHODOROV, B. I.

Fiziologiya Cheloveka (Human Physiology), 2nd Edition, Moscow, Meditsina, 1972, 656 pp

Translation: Contents [Excerpts]

USSR

BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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USSR

BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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BABSKIY, Ye. B., et al., Fiziologiya Cheloveka, 2nd Edition, Moscow, Meditsina, 1972, 656 pp

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USSR

UDC 621.382.2

AVETISYAN, G.KH., ZHEKOV, A.M., MADOYAN, S.G.

"Investigation Of $n^+Ga_{1-x}In_xAs$--p^+GaAs Tunnel Heterojunctions"

V sb. Arsenid galliya (Gallium Arsenide--Collection Of Works), Issue 3, Tomsk, Tomsk University, 1970, pp 145-151 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B399)

Translation: The voltampere characteristics are investigated of tunnel diodes made with type $n^+GaInAs$--p^+GaAs heterojunctions. The dependence is studied of the properties of heterojunctions on the composition of the electrode material, on the polarity of the surface (111), and on the ambient temperature. A comparison is made of the voltampere characteristics with homogeneous and heterogeneous p-n junctions. A tunnel diode with a heterogeneous p-n junction is inferior in its characteristics to a tunnel diode with a conventional p-n junction. 4 ref. Summary.

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Acc. Nr. AP0049425 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR 0129

102849n Economical, alloyed tool steel for hot extrusion. Tursunov, A. V.; Tyurin, N. F.; Zubkov, A. P.; Litvinenko, Yu. P.; Sabaev, V. I. (Donets. Nauch.-Issled. Inst. Chern. Met., Donetsk, USSR). *Metalloved. Term. Obrab. Metal.* 1970, (1), 32–4 (Russ). As a result of earlier lab. studies a new alloyed steel Cr–Mn–Si, further alloyed by a complex W + Mo + V, was proposed as a construction steel and steel for extrusion instruments. In this work the properties were studied of tool steel 4Kh2GSVMF in comparison with 3Kh2V8F steel. Reason for replacing of high-W steel 3Kh2V8F by low-W steel 4Kh-2GSVMF is W deficiency. Steel 4Kh2GSVMF contained C 0.35–0.45, Mn 1.2–1.5, Si 1.3–1.6, Cr 2.0–2.5, W 0.2–0.5, Mo 1.1–1.4, and V 0.2–0.5%. Steel 3Kh2V8F contained C 0.30–0.40, Mn 0.20–0.40, Si 0.35, Cr 2.2–2.7, W 7.5–9.0, and V 0.2–0.5%. Steel 4Kh2GSVMF had following crit. points: Ac_1 and Ac_3 = 754 and 805°, Ar_3 and Ar_1 = 704 and 662°. Max. hardness and absence of overheating in microstructure was obsd.

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at 950–1000°. Heat-resistance of 4Kh2GSVMF steel is higher at 600 and 700° than that of std. steel 3Kh2V8F, and somewhat lower at 625 and 650°. Hardenability of 4Kh2GSVMF steel is higher than that of std. steel, esp. after slow cooling in air, or in an oven. Steel 4Kh2GSVMF in comparison with std. steel 3Kh2V8F has higher heat-resistance, plasticity, viscosity, and lower temp. of hardening. Recommended thermal treatment of 4Kh2GSVMF steel is hardening from 970–1000° in oil, tempering at 580–600° to hardness HRC 46-50.

Jiri Becvar

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19801261

USSR

UDC: 533.9.07

ZUBKOV, I. P., KISLOV, A. Ya., and MOROZOV, A. I.

"Optimizing the Parameters of Heavy-Current Ion Accelerators"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 4, 1972, pp 898-900

Abstract: This brief communication demonstrates the possibility of reducing the relative dimension of the ionization zone and increasing the compensation of the output ion angular moment, with the consequent reduction in the angular loss at the output of a two-lens accelerator. Modifications of the accelerator with one, two, and four lenses are investigated and an important result is derived; it is found that the magnitude of the discharge voltage can be increased while the required current is maintained constant. A diagram of the accelerator used in the author's experiments together with oscillograms of the discharge current and voltage is given. Luminograms of the output ion current are also shown.

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UDC 533.9.07

USSR

ZUBKOV, I. P., KISLOV, A. Ya., LEBEDEV, S. V., and MOROZOV, A. I.

"Ion Motion in a Two-Lens Accelerator With 'Closed' Electron Drift"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 51, No 3, Mar 71, pp 526-533

Abstract: Ion trajectories in a two-lens accelerator with closed drift of electrons was calculated, and the distributions of ion current densities in the accelerated channel were measured. The article is a continuation of a description of studies of a high-current quasistationary ion plasma accelerator with closed electron drift. An averaged picture of the motion of the ion component inside the accelerator channel and the region of ionization of the working material (hydrogen) are given. Ion motion was analyzed by two methods: first, ion trajectories were calculated on the basis of experimentally measured distributions of electric and magnetic fields, and then a picture was obtained of the distribution of ion current densities along the channel with the aid of double electric probes. It was concluded from the study that the averaged picture of current density distributions qualitatively agrees with calculations of ion trajectories made on the basis of measurements of electric and magnetic fields in the accelerator

USSR

ZUBKOV, I. P., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 15, No 3, Mar 71, pp 526-533

channel. It was also concluded that the interaction of ions with the magnetic field basically determines the geometry of the ion current. As a result of this interaction, the beam moves close to the outer insulator in the region of the first lens; however, the greater portion of the ions generated in the vicinity of the first lens continued to accelerate in the second lens without collision with the wall.

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STRUCTURE OF THE SPECTRUM OF THE ANISOTROPIC FRACTION OF SCATTERED LIGHT IN ALPHA CHLORONAPHTHALENE -U-
AUTHOR-(02)-ROZHDESTVENSKAYA, N.B., ZUBKOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 599-600

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SPECTRUM, CHLORINATED AROMATIC COMPOUND, NAPHTHALENE, FLUID VISCOSITY, SPECIFIC DENSITY, HELIUM NEON LASER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1103 STEP NO--UR/0051/70/028/003/0599/0600

CIRC ACCESSION NO--AP0120530

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0128530
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTANCE BETWEEN THE COMPONENTS OF A DOUBLET IN THE I SUB2X COMPONENT OF THE SCATTERED LIGHT (2DELTAV) AND THE VISCOSITY AND THE D. OF ALPHA CHLORONAPHTHALENE WERE MEASURED AS AFFECTED BY TEMP. AT 1-50DEGREES. A HE-NE LASER (WAVE LENGTH EQUALS 6328 ANGSTROM) WAS USED AS THE LIGHT SOURCE. THE 2DELTAV VALUE CHANGED FROM 0.044 TO 0.077 CM PRIME NEGATIVE1 ON GOING FROM 1 TO 45DEGREES. THE APPEARANCE OF THE DOUBLET IS DISCUSSED IN TERMS OF THE LEONTOVICH THEORY.

USSR

ZUBKOV, S. A., State Institute of Physical Culture, Kiev

"The Nature of the Dynamics of Attention in Orienting to a Locality"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 12, 1971, pp 26-28

Abstract: The factors involved in an athlete's ability to maintain an intensity and persistence of attention while orienting himself to a locality in a sport such as cross-country running were studied. Two groups of runners (one was more proficient than the other) were subjected to a test which consisted of marking off specific topographic symbols on a sheet of paper two minutes before a 6 km race, and at three checkpoints in the course of the race. The number of symbols marked versus the number of errors for each checkpoint was then tabulated. It was found that: (a) the intensity and persistence of attention did not remain constant, just as the ability to carry out tactical and technical actions fluctuated; (b) the resulting table of data was useful to both athletes and coaches in determining where each runner is weakest in his ability to concentrate; (c) concentration may depend more on purely physiological factors than on the experience of the athelete.

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UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 . 023

TITLE--CONFORMATIONAL CHARACTERISTICS OF POLYMORPHOUS OPTICALLY ACTIVE MACROMOLECULES: A STATISTICAL ZIGZAG MODEL -U-

AUTHOR-(03)-BIRSHYTEYN, T.M., ZUBKOV, V.A., VOLKENSHTEYN, M.V.

COUNTRY OF INFO--USSR

SOURCE--J. POLYM. SCI., PART A-2 1970, 8, 177-90

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OPTIC PROPERTY, MOLECULAR STRUCTURE, MODEL, OPTIC ACTIVITY, STEREOCHEMISTRY, FREE ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0997 STEP NO--US/0000/70/008/000/0177/0190

CIRC ACCESSION NO--AP0055688 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 023

CIRC ACCESSION NO--AP0055688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONFORMATIONAL PROPERTIES OF OPTICALLY ACTIVE MACROMOLS. ARE CONSIDERED. A STATISTICAL ZIGZAG MODEL IS USED FOR THE CALCN. OF AVERAGED PHYS. PROPERTIES. THE MACROMOL IS CONSIDERED TO CONSIST OF SEGMENTS OF 2 TYPES WITH A STATISTICAL DISTRIBUTION OF LENGTHS. THE EXPRESSIONS FOR THE MEAN SQUARE OF THE END TO END VECTOR H PRIME2 AND THE DIPOLE MOMENT MU PRIME2 AND ALSO OF THE MEAN OPTICAL ANISOTROPY DELTA A AND THE ANISOTROPY OF THE OPTICAL ROTATION TENSOR DELTA G WERE OBTAINED IN THE CASES OF FREELY JOINTED AND FREELY ROTATING SEGMENTS. THE EQUATIONS WERE APPLIED TO THE PROBLEM OF THE HELIX COIL TRANSITION. IN THE CASE OF POLY-ALPHA-OLEFINS, THE VALUES OF H PRIME2, MU PRIME 2, AND DELTA A, ARE LARGER THAN CORRESPONDING VALUES FOR TYPICAL OPTICALLY INACTIVE MACROMOLS. THE ANISOTROPIES DELTA A AND DELTA G OF 2 POLY, ALPHA-OLEFINS OF SIMILAR STRUCTURES WERE CALCD. THE POLARIZABILITY THEORY OF OPTICAL ACTIVITY WAS USED FOR THE CALCNS. OF DELTA G. THE VALUES OBTAINED FOR DELTA A ARE SIMILAR, BUT THE VALUES OF DELTA G DIFFER. THE POSSIBILITY OF OBTAINING INFORMATION ABOUT THE STRUCTURE OF OPTICALLY ACTIVE MACROMOLS. IN SOLN. BY A STUDY OF ANISOTROPY OF THE OPTICAL ROTATION TENSOR IS CONSIDERED.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--NEUTRON DIFFRACTION STUDY OF THE STRUCTURE OF TITANIUM OXYCARBIDES -U-

AUTHOR-(05)-ZUBKOV, V.G., MATVEYENKO, I.I., DUBROVSKAYA, L.B., BOGOMOLOV, G.D., GELD, P.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK. SSSR 1970, 191(2), 323-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM CARBIDE, NEUTRON DIFFRACTION, ELECTRIC RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1114 STEP NO--UR/0020/70/191/002/0323/0325

CIRC ACCESSION NO--AT0116580

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. RESISTANCE WAS MEASURED AT 298DEGREESK FOR A SERIES OF SAMPLES OF TIC SUBX O SUBY (X PLUS Y EQUALS 1), AND TIC SUB0.44 O SUB0.57 WAS STUDIED BY NEUTRON DIFFRACTION. THE SAMPLES WERE PREPD. BY A METHOD DESCRIBED EARLIER (L. PIVOVAROV ET AL., 1967). THE CONCN. DEPENDENCE OF THE RESISTANCE IS CHARACTERISTIC FOR ORDERED SYSTEMS, AND THIS WAS SUPPORTED BY THE NEUTRON DIFFRACTION DATA. THE O AND C ATOMS ARE IN AN ORDERED POSITION IN THE NONMETALLIC SUBLATTICE. FOR COMPNS. THAT ARE NOT EQUI AT., THE ATOMS OF THE EXCESS COMPONENT OCCUPY UNIQUE POSITIONS IN THE STATISTICALLY VACANT POSITIONS FOR THE DEFICIENT COMPONENT. FACILITY: INST. KHIM., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

MONOSOV, Ya. A., ZUBKOV, V. I., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR, Moscow

"On the Mechanism of Limitation of the Amplitude of Spin Waves in a Strongly Energized Ferromagnetic"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 9, Sep 71, pp 2773-2775

Abstract: The authors take issue with some of the basic assumptions of a previous paper -- "New Mechanism of Limitation of the Amplitude of Spin Waves in the Case of Parallel Pumping", V. Ye. Zakharov et al., Fizika Tverdogo Tela, Vol 11, 1969, p 2047. In particular, the authors contend that the stability of a spin wave group was erroneously defined. Specifically, the error consisted in appending the hypothesis of "external" stability to the Lyapunov stability condition. This assumption is refuted, thus negating the validity of the proposed mechanism in the steady state. The action of this mechanism of spin wave amplitude limitation in the case of unstable nonlinear resonance has been previously studied. One figure, bibliography of eight titles.

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