

USSR

KOVALEV, V. V. GOLEGO, N. L., TRUSKOV, P. F., Kiev, Fiziko-khimicheskaya
Mekhanika Materialov, Vol 8, No 3, 1972, pp 21-26.

cant layer above the values causing its local breakdown results in an increase in wear rate, roughness, coefficient of friction and in a decrease in micro-hardness. The end of the break-in period can be considered to have arrived when a condition of sufficiently complete contact and equality of dimensions of projections and depressions on the profiles of the microirregularities of the two friction surfaces is reached, which occurs as the normal pressure is increased from its average values to the critical values for each given friction speed. When these conditions are met, the load-bearing ability of friction surfaces increases. This means that if the critical values of normal pressure and contacting surface temperature for a given pair of materials is reached during the break-in process, changes in these parameters between the minimum values and the critical values at the same friction speed or less cannot later cause disruption of the normal friction and wear process in the friction couple.

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USSR

TRUSOV, A. S. and VESELKOV, N. A.

UDC: 621.165

"Problem Associated With the Effect of Operational Factors on the Economy of Steam Turbine Installations"

Silovyye silovyye ustanovki. Nauch.-tekhn. sb. (Marine Power Installations. Scientific-Technical Collected Works, 1973, vyp.10, pp 64-69 (from RZh-Turbostroyeniye, No 5, 1973, Abstract No 5.49.18)

Translation: The authors study the reasons responsible for pressure deviation in the condenser P_x . It is shown that the accuracy and measurement control quality of the instrument are insufficient for disclosing the reasons responsible for the deviation of P_x . The presented graphs descriptively show the effect of pressure deviation in the condenser on the economy of GTZA [expansion unknown]. The obtained relationships: $\Delta N = f(P_x)$ and $P_x = f(G_p, t_1, k)$ make it possible for the user not only to set the optimal operating regimen of the circulation pump, but also to determine the technical state of the condensation installation. Original article: 2 illus., 1 table, 4 bibl. entries.

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USSR

UDC 621.314.57

RUDAYA, K.I., SASHKO, N.A., TRISOV, G.G.

"System For Control Of Thyristors Of Diesel Locomotive Inverter Units"

Elektr. i teplovozn. tyaga (Electrical And Diesel Locomotive Traction), 1970, No 12, pp 23-24 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B666)

Translation: The paper describes a circuit for control of a thyristorized unit with a large number of series-connected elements (80 pieces in the channel). A phase-shifting device operates in accordance with the vertical principle with a sawtooth synchronizing voltage. The pulse shaper uses a Schmitt trigger. The output stage of the pulse generators for control of a group of power thyristors is fulfilled by an auxiliary thyristor. The circuit passed bench tests and was checked in a 3-phase dependent bridge inverter. The range of variation of the control angle is 0--220°. The precision of synchronization does not depend on the oscillations of the network, and the temperature limits are from minus 50 to plus 70° C.
3 ill. I.R.

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USSR

UDC 621.155.621.74.019

TRUSOV, I. P., Candidate of Technical Sciences, DUBROVSKAYA, Ye. F., Candidate of Technical Sciences and ZAKHAROVA, L. N., Engineer. (Central Scientific Research Institute of Technology and Machinery Manufacture)

"Metal Properties of Turbine Cast Components From 15Kh1M1F-L Steel"

Moscow, Teploenergetika, No 3, March 72, pp 64-67

Abstract: The results of an investigation on the chemical composition and mechanical properties of cast components (1000 items) of steam turbine body from perlitic 15Kh1M1F-L steel are presented. It is shown that the production technology ensures basically a sufficiently uniform chemical composition and the assigned level of mechanical properties of cast metal. However for a further improvement of quality of castings from 15Kh1M1F-L steel and greater stability of cast metal high-temperature properties it is advisable to amend the requirements on steel chemical composition and on technology of cast item heat treatment.

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1/2 054

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--PROSPECTS FOR DEVISING NEW HEAT RESISTANT MATERIALS FOR STEAM POWER
PLANT EQUIPMENT -U-

AUTHOR--(03)--MIRKIN, I.L., LANSKAYA, K.A., TRUSOV, L.P.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (4), 8-15

DATE PUBLISHED-----70

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

TOPIC TAGS--HEAT RESISTANT MATERIAL, DISPERSION HARDENING, GRAIN BOUNDARY,
MICROALLOYING, INTERMETALLIC COMPOUND, STEAM BOILER, STEAM TURBINE,
CARBIDE, POWER PLANT, SOLID SOLUTION, ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0903

STEP NO--UR/0129/70/000/004/0008/0015

CIRC ACCESSION NO--AP0132992

UNCLASSIFIED

2/2 054

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132992

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

ABSTRACT. THIS REVIEW OF THE DEVELOPMENT OF NEW STEELS FOR THIS PURPOSE INCLUDES (1) INCREASING AND RETAINING FOR A LONGER OPERATIONAL TIME THE REFRACTORINESS OF THE FUNDAMENTAL SOLID SOLN., (2) DEVELOPMENT OF A MORE STABLE AND SLOWLY COALESCING DISPERSION HARDENING PHASE: IN LOW ALLOY STEELS THE DISPERSION HARDENING PHASE IS THE CARBIDE PHASE, IN MEDIUM AND HIGH ALLOY STEELS IT IS ALSO THE CARBIDE PHASE, AND ALSO THE INTERMETALLIC PHASES (LAVES PHASES OF THE AB SUB2 TYPE), (3) STRENGTHENING OF THE GRAIN BOUNDARIES BY MICRO ALLOYING.

UNCLASSIFIED

USSR

UDC 621.165.621.74.019

TRUSOV, L. P., DUBROVSKAYA, Ye. F., and ZAKHAROVA, L. N.

"Properties of the Metal of Cast Body Parts of Turbines of 15Kh1M1F-L Steel"

Teploenergetika, 1972, No 3, pp 64-67 (from Referativnyy Zhurnal, No 6, Jun 72. Turbostroyeniye. Single Issue. Abstract No 6.49.84)

Translation: It is demonstrated that, for increasing the casting properties and for higher stability of heat-resistant properties of the metal of casts, it is expedient to correct the requirements of "Technical Regulations/Standards", according to the chemical composition of steel and the technology of heat treatment. Four illustr., five tables.

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1/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--INTERNAL CONVERSION COEFFICIENTS IN M SUBI-III SUBSHELLS OF AN ATOM
ZETA EQUALS 94 BY TAKING INTO CONSIDERATION GASPAN SCREENING BY USING
AUTHOR--(03)-BARISOGLLEBSKIY, L.A., TRUSOV, V.F., SHULYAKOVSKIY, G.S.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ. MAT. NAVUK 1970, (1),
101-6
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON TRANSITION, COULOMB INTERACTION, CHARGE DENSITY,
ELECTRON STRUCTURE, HEAVY NUCLEUS, ELECTRON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1493

STEP NO--UR/0428/70/000/001/0101/0106

CIRC ACCESSION NO--AP0118480

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0118480

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERNAL CONVERSION ON THE M SHELL OF AN ATOM IS A PROCESS IN WHICH SCREENING OF THE NUCLEUS BY E PLAYS AN IMPORTANT ROLE. COEFFS. OF INTERNAL CONVERSION (CIC) CALCD. BY TAKING THIS SCREENING INTO CONSIDERATION HAD VALUES 50-200PERCENT LOWER THAN THOSE CALCD. ON THE ASSUMPTION OF AN UNSCREENED NUCLEUS AND AGREED WELL WITH EXPTL. RESULTS. IN EARLIER WORK THE METHOD OF CALCG. SCREENING ACCORDING TO GASPAR WITH SEMIEMPIRICAL CORRECTIONS WAS APPLIED BY T., ET AL. 1968, IN THE CALCN. OF CIC VALUES FOR THE M SHELL OF AN ATOM WITH ZETA EQUALS 65. IN THIS INSTANCE, THE SAME METHOD WITH SOME MODIFICATIONS WAS APPLIED IN THE CALCN. OF CIC FOR AN ATOM WITH ZETA EQUALS 94. ELEC. AND MAGNETIC CIC FOR THE SUBSHELLS M SUBI, M SUBII, AND M SUBIII WERE CALCD. THE RELATIONS BETWEEN THE CIC VALUES AND TRANSITION ENERGIES; THOSE BETWEEN CIC RATIOS M SUBI-M SUBII, M SUBII-M SUBIII AND TRANSITIONS ENERGIES; AND THE EFFECTIVE PARAMETERS SIGMA SUBEFF EQUALS ZETA MINUS ZETA SUBEFF (CALCD. BY RELATING DETO. VALUES OF CIC TO THOSE LISTED IN M. E. ROSES'S TABLES) WERE DERIVED.

FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--18OCT70

TITLE--DEPENDENCE OF THE INTENSITY OF CHARACTERISTIC X RAY RADIATION ON NUCLEAR CHARGE -U-

AUTHOR--TRUSOV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(11), 148-50

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHARGE DENSITY, X RAY EMISSION, RADIATION INTENSITY, NUCLEAR PROPERTY, CALCULATION, ELECTRON INTERACTION, MATRIX ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1101

STEP NO--UR/0139/70/013/001/0148/0150

CIRC ACCESSION NO--AT0115120

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0115120

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X RAY LINE INTENSITIES WERE CALCD. AND THE DEPENDENCE OF THE RELATIVE K ALPHA SUB2 LINE INTENSITY ON NUCLEAR CHARGE (ZETA EQUALS 76, 80, 84, 88, AND 92) WAS STUDIED. THE DIFFERENCES BETWEEN THE CALCD. AND EXPTL. INTENSITY VALUES COULD NOT BE EXPLAINED BY THE EFFECT OF THE INTERNUCLEAR PART IN THE MATRIX ELEMENTS NOR BY SCREENING EFFECTS. EFFECTS OF MAGNETIC INTERACTION BETWEEN ELECTRONS CAN AFFECT THE CALCS. FACILITY: LATV. GDSUNIV. IM. STUCKI, RIGA, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70
ORIGINATING FROM CASTING -U-

TITLE--CERTAIN FORMS OF DEFECTS IN PRESSINGS
AUTHOR--(02)-TRUSOV, V.A., MUKHANDV, V.D.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METALLY, FEB. 1970, (2), 59-60

DATE PUBLISHED-----70

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

TOPIC TAGS--METAL CASTING, COPPER, TIN ALLOY, ZINC ALLOY, VISUAL DEFECT,
CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0194

CIRC ACCESSION NO--AP0123963

STEP NO--UR/0136/70/000/002/0059/0060

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0123963

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBLE CAUSES OF STRUCTURAL DEFECTS IN CU AND SN, ZN ALLOYS PRESSINGS (CRACK AND 'STAR' FORMATION) ARE DISCUSSED IN THE LIGHT OF PRACTICAL EXPERIENCE. MANY SUCH DEFECTS APPEAR TO BE DUE TO THE ORIGINAL CASTING CONDITIONS, WHICH, IN UNFAVOURABLE CASES, LEAD TO THE SEGREGATION OF IMPURITIES AND THE DEVELOPMENT OF COMPLEX LAMINATION EFFECTS. IN THE CASE OF CU, FOR EXAMPLE, THIS SOURCE OF DEFECT MAY BE ELIMINATED BY CHANGING THE MOULD GEOMETRY.

UNCLASSIFIED

USSR

UDC: 519.2:621.391

TRUSOV, V. S.

"A Study of Some Signals of Complex Shape"

Tr. Sib. fiz.-tekh. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 150-156 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V279)

Translation: Assuming a large value of the product of the length times the width of the spectrum, a study is made of the properties of the following radar signals with intrapulse frequency modulation: 1) a two-frequency signal with Gaussian envelope; the duty-cycle frequency varies in accordance with the law $\omega_1(t) = bt + k$, $\omega_2(t) = bt - k$, where b , k are constants; 2) a two-frequency signal with Gaussian envelope, $\omega_1(t) = bt$, $\omega_2(t) = -bt$; 3) a signal with a square envelope whose instantaneous frequency first increases linearly, reaching a maximum at the center of the pulse, and then decreases linearly. Expressions are presented for the Woodworth's indeterminacy function of the signals considered, and the level and width of side maxima are evaluated. For signals of the first type, the relations are found between the rate of

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TRUSOV, V. S., Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te, 1970, vyp. 51, pp 150-156

change in frequencies, their spacing and the duration of the pulse which equalizes the two principal side maxima of the section of the indeterminacy function along the time axis. V. Briker.

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UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--THE DETERMINATION OF HEMODYNAMIC INDICES WITH THE AID OF
RADIOIODINE ALBUMIN IN CIRCULATORY INSUFFICIENCY -U-
AUTHOR-(02)-TRUSOV, V.V., PETROV, N.M.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 35-41
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIOACTIVE TRACER, CIRCULATORY SYSTEM DISEASE, HEMODYNAMICS,
ALBUMIN, IODINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1512
STEP NO--UR/0241/70/015/006/0035/0041
CIRC ACCESSION NO--AP0128907
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128907

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

ABSTRACT.

RADIOIODINE LABELLED ALBUMIN WAS USED FOR DETERMINING THE VOLUME OF CIRCULATING BLOOD, PLASMA AND ERYTHROCYTES IN 68 HEALTHY PERSONS AND 275 PATIENTS WITH ATHEROSCLEROTIC CARDIOSCLEROSIS AND RHEUMATISM. IN PATIENTS WITH CIRCULATORY INSUFFICIENCY THERE WAS A DISTINCT RISE OF THE MASS OF CIRCULATING BLOOD, WHICH DEPENDS ON THE MARKEDNESS OF CARDIAC DECOMPENSATION. IN 45 PATIENTS WITH ATHEROSCLEROTIC CARDIOSCLEROSIS DYNAMIC DETERMINATION OF THE BLOOD VOLUME WAS CARRIED OUT BEFORE AND AFTER TREATMENT. THE PROCESS OF RECOMPENSATION IS USUALLY ATTENDED BY REDUCTION OF THE PREVIOUSLY INCREASED BLOOD VOLUME. THE CIRCULATION RATE WAS DETERMINED IN 16 HEALTHY PERSONS AND 67 PATIENTS WITH ATHEROSCLEROTIC CARDIOSCLEROSIS. IT CHANGES IN ACCORDANCE WITH THE SEVERITY OF CARDIAC DECOMPENSATION. THE AUTHORS COMPARED THE RESULTS OF DETERMINING THE CIRCULATION RATE WITH RADIOIODINE ALBUMIN AND WITH STAIN, WHICH DEMONSTRATE THE GREATER ACCURACY OF THE FORMER TECHNIQUE. UNTHAWED REACTIONS WERE OBSERVED.

FACILITY: KAFEDRA GOSPITAL'NOY TERAPII
IZHEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THE FUNCTIONAL STATE OF THE KIDNEYS STUDIED WITH THE AID OF
RADIOISOTOPE RENOGRAPHY IN PATIENTS SUFFERING FROM HEMORRHAGIC FEVER

AUTHOR--(02)--OSINTSEVA, V.S., TRUSOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 3, PP 37-42

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGIC FEVER, KIDNEY FUNCTION, RADIOACTIVE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--2000/1463

STEP NO--UR/0497/70/048/003/0037/0042

CIRC ACCESSION NO--AP0125092

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING INVESTIGATION OF THE FUNCTIONAL STATE OF THE KIDNEYS BY MEANS OF RADIOISOTOPE RENOGGRAPHY WITH THE AID OF RADIOIODINE LABELLED HYPPURAN OUT OF 42 PATIENTS SUFFERING FROM HEMORRHAGIC FEVER WITH THE RENAL SYNDROME AT THE LATE PERIOD OF CONVALESCENCE THERE WERE REVEALED MARKED CHANGES IN 24 PERSONS WHICH IN RENOGGRAMS WERE MANIFESTED BY PROLONGATION OF THE EXCRETORY PHASE AND REDUCTION OF THE RENOGGRAPHIC PEAK. OFTEN RENOGGRAMS HAD A ROUNDISH ASPECT, RESEMBLING THE FORM OF A BELL. IT IS NECESSARY TO POINT TO THE PREVALENT AFFECTION OF THE SECRETORY FUNCTION OF TUBULES REVEALED DURING RENOGGRAMS OF A PATHOLOGICAL TYPE. CHANGES IN THE FUNCTIONAL CHARACTERISTICS OF THE KIDNEYS WERE MOST PERSISTENT IN A SEVERE COURSE OF THE DISEASE AND IN SOME CASES THEY COULD BE DETERMINED ONE YEAR AFTER THE ONSET OF THE DISEASE. IN HEMORRHAGIC FEVER WITH THE RENAL SYNDROME PREVALENT AFFECTION OF ONE OF THE KIDNEYS IS POSSIBLE. RADIOISOTOPE RENOGGRAPHY ENABLES TO DETECT PATHOLOGICAL SHIFTS IN PATIENTS DURING CONVALESCENCE IN COMPLETE ABSENCE OF COMPLAINTS AND NORMAL INDICES OF URINE ANALYSES, DISTINCTLY SHOWING THE DYNAMICS OF GRADUAL RESTORATION OF THE FUNCTIONAL STATE OF THE KIDNEYS. FACILITY: IZHEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CONDITION OF THE RESORPTIVE FUNCTION OF THE SMALL INTESTINE IN
PEPTIC ULCER -U-
AUTHOR--(02)-PLASTININA, R.A., TRUSOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--SOV MED 33(3): 87-90, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SMALL INTESTINE, DUODENUM, RESORPTION, IODINE ISOTOPE, LESION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605006/E11 STEP NO--UR/0344/70/033/003/0087/0090
CIRC ACCESSION NO--AT0139809
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0139809

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

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

UNCLASSIFIED

USSR

UDC [621.362:538.4]-16:537.311.3

USIKOV, A. Ya., TRUTEN', I. D., MOTORNEKO, A. P., BELOUSOV, Ye. V.

"On the Possibility of Using Microwave Ionization to Produce a Non-equilibrium Plasma in Magnetohydrodynamic Generators"

Ukr. fiz. zh. (Ukrainian Physics Journal), 1971, 16, No 5, pp 705-710
(from RZh-Elektrotehnika i Energetika, No 9, Sep 71, Abstract No 9A79)

Translation: The authors show the possibility of obtaining extended volumes of cold plasma with a charged particle concentration comparable to the concentration in a DC arc by using the ionizing radiation of electromagnetic fields in the superhigh-frequency band. A microwave plasma in argon without additives of alkali metals is produced with a conductivity exceeding 100 mho/m and conditions are determined for further increasing conductivity. Calculations are done to evaluate the effectiveness of using such a preionizer in MHD devices. Four illustrations, one table, bibliography of twenty-one titles. [Institute of Radio Physics and Electronics, Academy of Sciences of the UkrSSR, Khar'kov]. Authors' abstract.

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CSO: 1860-W

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USSR

UDC 531.717.2

TRUTEN', V. A., YAKUSHEVSKAYA, Ye. S.

"Study of the Accuracy of Recording of Noncircularity with the ARF-1M Device"

Tr. Metrol. In-tov SSSR [Works of Metrological Institutes, USSR], 1970, No 6, pp 84-88, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, 1972, No 5, Abstract No 5.32.298, from the Resume).

Translation: A description is presented of the ARF-1M device and the design of its sensors. A schematic diagram of the electronic control device is presented. The errors of measurement are analyzed and the practical limiting error is determined (as well as variation of indications). The influence of dynamics of the measurement process is studied. Results are presented from experimental studies of the accuracy of the device, as well as results of measurement of noncircularity of large parts. Recommendations are presented for use of the device for testing of heavy machine building parts and the accuracy of vertical turret lathes after repairs. 4 Figures; 2 Biblio. Refs.

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USSR

UDC: 62 + .317.7.083.5

TRUTEN', V. A., Candidate of Technical Sciences

"Compensation Methods for Increasing the Accuracy of Large-Dimension Measurements"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 7, 1970, pp 30-33

Abstract: Work was done by the author in conjunction with the Siberian Heavy Machinery Plant, the Izhora Plant, the Leningrad Metal Plant imeni XXII S"yezd KPSS, VPTI Energomash [All-Union Planning and Technological Institute of Power-Machinery Manufacture], the Kolomna Heavy Machinery Plant, and a number of other enterprises to develop modern dimension control techniques in heavy machine-building. The article gives a classification of compensation methods and examples of their use for the automatic measurement of large diameters, turbine blade pitches, deviations from roundness, as well as the measurement of great lengths and a number of overhead crane elements. Errors are divided into the following principal groups: basing errors, temperature errors, dynamic errors, errors due to deformations, instrumental errors. Each group of errors has certain corresponding compensation methods. A description is given of a device for the self-adjustment of the measuring head of the instruments OP-6M, AID-6, AID-7, AID-8 on an Izhora Plant lathe.

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Environmental and Ecological Problems

USSR

UDC 614.78:061.3(47)"1972"

TRUTNEV, A. I.

"Conference on Forecasts of Changes in Man's Urban Environment"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 118-119

Translation: An All-Union Conference on Forecasts of Changes in Man's Urban Environment was held in Moscow on 28 February 1972. The conference was sponsored by Gosgrazhdanstroy (State Committee for Civil Construction), Gosstroy RSFSR (State Committee for Construction RSFSR), and Union of Architects USSR. It was attended not only by engineers, city planners, and architects, but by health workers, hygienists, geographers, economists, and other specialists. The program focused on the problems connected with resettlement, changes in the planning and development of residential and urban industrial regions, reconstruction of municipal transport systems, improvement of health conditions in cities, and preservation and development of the architectural and aesthetic appearance of inhabited localities.

G. N. Fomin, Chairman of Gosgrazhdanstroy of Gosstroy USSR, noted in his report that the new and subsequent five-year plans would be important stages in the further planned transformation of the historically developed settlement

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TRUTNEV, A. I., *Gigiyena i Sanitariya*, No 1, 1973, pp 118-119

system into the new communist system, which rationally considers the social and economic development of our society. The speaker discussed the principles for creating urban agglomerations. Despite their generally positive features, these agglomerations (there are now more than 20 of them in the country) have some shortcomings, namely, the disproportion in the development of large and small cities, the qualitative limitations on group methods of settlement, the weak development of transportation systems in populated areas, and the still surviving dispersed rural network of inhabited places. Fomin commented on such phenomena as the occasionally unsound location of new industrial plants in large cities, deterioration of the natural environment and health conditions of the population, and danger of the inhabited places gradually merging with the centers of the agglomerations. Fomin concluded by formulating the elements of a long-term city planning policy, specifically noting that radical improvement in the urban environment is becoming a major social and economic objective.

N. V. Baranov, Vice Chairman of Gosgrazhdanstroy, outlined the main problems involved in altering the layout and development of urban regions and improvement of health conditions therein. In order to effectively limit the growth of large cities and build small and medium-size ones, it is necessary to

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TRUTNEV, A. I., *Gigiyena i Sanitariya*, No 1, 1973, pp 118-119

work out, simultaneously with general plans, designs for the layout and development of industrial zones of influence in the largest cities, improve the quality of these designs, combine them organically with state economic plans, and centralize the control of the design and development activities. The problem of reorganizing city traffic and transport has been raised and suggestions have been made to solve it by using the underground space in the centers of cities.

Baranov noted some of the achievements that have been made in protecting (and purifying) the air and water from injurious industrial emissions and wastes. He pointed out methods of improving urban health conditions that should be used by the various government industrial ministries and departments and by ministerial councils of the union republics. He mentioned the installation of purification equipment in industrial plants, specialization of some plants to manufacture such equipment, units, and devices, determination of the unit cost of industrial production with account taken not only of plant expenses but all the capital investments required to create buffer zones, treatment facilities, etc. Baranov suggested that the implementation of the plans for this purpose be evaluated, with the managers of the enterprises rewarded in accordance with the effectiveness of the steps taken.

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USSR

TRUTNEV, A. I., *Gigiyena i Sanitariya*, No 1, 1973, pp 118-119

Considerable interest was aroused by the paper of P. N. Burgasov, Deputy Minister of Health USSR, Chief Health Officer USSR, and corresponding member of the Academy of Medical Sciences USSR. He observed that Soviet health legislation is progressive and that long strides have been taken to upgrade municipal services and improve town planning and development. He analyzed in detail the negative aspects of urbanization (lag in transportation facilities, noise, difficulty in finding recreation out of town, and overcrowding in large cities). Environmental pollution is partly responsible for the change in structure of the morbidity rates of the urban population compared to the rural.

Using examples, figures, and original illustrative material, the speaker convincingly described the health situation prevailing in various cities, gave his opinion of buffer zones, the thoroughly discussed the steps that are to be taken in the near future to protect the health of the urban population and change the urban environment.

M. V. Posokhin, Chief Architect of Moscow, spoke about the prospects for improving the layout, development, and general health conditions of Moscow. He also analyzed the new general plan for the city which, he said, does not permit the construction of new or enlargement of existing industrial and other objects

4/7

USSR

UDC 621.791.76.011:621.7.044.2:621.791.03:
539.4

TRUTNEV, V. V., Candidate of Technical Sciences, YAKUSHIN, A. F., DUNAYEV, A.A.,
and MISHIN, N. I., Engineers, and GODIN, V. M., Candidate of Technical Sciences

"Comparative Evaluation of Joint Quality From Explosive Welding of Aluminum
With Titanium, Steel and Nickel"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 73, pp 19-21

Abstract: Results of a comparative evaluation of the weldability of Al with Ti, steel, and Ni by explosion welding under identical conditions is presented. Plates of AMg6 alloy measuring 6x 65 x 130 mm were clad with hot rolled AD1 aluminum and plates of VT6 titanium alloy, Kh18Ni10T steel, and electrolytic nickel measuring 5 x 60 x 120 mm. From shear tests it was found that Al + Ti had the best weldability. Shear strength also increased when the distance between the metal being welded was increased from 3 to 5 to 8 mm with the highest test values noted for the distance of 5 mm. The shear strength of Al + Ni joints was better than that of Al + Kh18Ni10T steel. It was noted that the coefficient of impact energy utilization is one of the important parameters in the explosive welding process that affects the weldability of dissimilar materials. 3 figures, 2 tables, 6 bibliographic references.

1/1

- 36 -

Composite Materials

USSR

UDC 669.715

KOLPASHNIKOV, A. I., MANUYLOV, V. F., TRUTNEV, V. V., DUNAYEV, A. A. and SHIRYAYEV, YE. V.

"Reinforced Material Based on Aluminum and Weldable Aluminum Alloys"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 56-57

Abstract: This study concerns the mechanical properties of composites, the structure of transition zones, and the metal flow in rolling prefabricated blanks designed for service under high work loads in assemblies and structures. Composite sheet metal blanks based on AMg6 alloy reinforced with Kh18N9T and EP322 steel wire fibers show a tensile strength of 53.6 and 69.2 kg/mm² and a bend angle of 55.7 and 36.5° at a specific weight of 3.46 g/cm³. Reinforcement with EP322 steel fibers produces composites with a strength exceeding that of Kh18N9T steel-wire reinforced composites by 29.1%. The amount of wire reinforcement is 15% in both materials. Tables in the original article show the relationship between the percentage of fibers and the strength of the composite material. (3 illustrations, 4 tables, 3 bibliographic references).

1/1

USSR

UDC 621.791.14:669.14.018.44

TRUTNEV, V. V., Candidate of Technical Sciences, KAMYSHEVA, G. P.,
Engineer, and GODIN, V. M., Candidate of Technical Sciences

"Friction Welding of EP56 Steel With EP202 Alloy"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 17-18

Abstract: Welding of EP56 steel with EP202 nickel alloy in the solid phase by friction was studied; the diffusion processes in this instance occur significantly more slowly than in the solid-liquid phase during fusion welding. It is demonstrated that the embrittlement of the welded joint between the two metals produced in the solid state occurs after heat treatment as a result of formation of a narrow, softened zone in the joint. Embrittlement of these joints can be eliminated by increasing the thickness of the softened zone by introducing an intermediate layer similar in composition to this zone, for example, by using an interlayer of austenitic Kh12N22T2,5 steel.

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USSR

UDC 621.791.052.001.5:669.3+669.71

TRUTNEV, V. V., Candidate of Technical Sciences, YAKUSHIN, A. F., Engineer,
and YAKUSHINA, G. V., Technician

"Kinetics of Intermediate Phase Growth in Copper and Aluminum Combinations"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 71, pp 15-16

Abstract: Copper and aluminum combinations are interesting in that they are difficult to weld together, and formations of thermodynamically stable intermetallic phases may occur. This article investigates the interaction of the two metals when welded. The investigation method involves plotting kinetic curves of the growth of the intermetallides during the welding process from metallographic examination of the transitional zone structure for the combination subject to isothermic processing at various temperatures. Specimens of AD1 aluminum and M1 copper, 16 mm in diameter, were cold welded. They were then subjected to isothermal processing in an atmosphere of air at a temperature range of 300-450° C maintained from 1 minute to 20 hours, and microsections bearing the intermetallic phase in the welded joint were made. A curve for the growth of intermetallic phase was plotted for each temperature value.

1/1

USSR .

UDC 547.26'118

IL'INA, N. A., YULDASHEVA, I. N., ~~TRUTNEVA, YE. P.~~

"Reactions of Dialkylamidoalkylphosphorous Acids With Aldehydes and Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2173-2177

Abstract: The title reactions were studied in an effort to ascertain the existence of two tautomeric forms: the phosphonate (I) and the hydroxyphosphite (II) forms of dialkylamidoalkylphosphorous acids. In the presence of sodium alkoxide catalyst, N,N-dialkylamidoalkylphosphorous acids (III) reacted exothermally and rapidly with aromatic aldehydes, aromatic and aliphatic ketones to give N,N-dialkyl(α -hydroxy)alkyl(aryl)phosphonamides which were identified by their IR spectra. A high reaction rate indicated a possible ionic mechanism involving an attack on the electrophilic carbonyl carbon by the nucleophilic phosphorus atom with formation of an intermediate compound which reacts with a second (III) molecule to give the final product. In the absence of a catalyst, aromatic aldehydes and ketones react very

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USSR.

IL'INA, N. A., et al, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2173-2177

vigorously with (III), probably in (II) form, to give an intermediate compound with a negatively charged oxygen atom. This oxygen atom attacks P atom and simultaneously an amin-anion is eliminated from P atom and attacks C atom to form an intermediate cyclic cation which rearranges to crystalline alkyl amino-alkylarylophosphonates which exhibit differences in IR spectra, compared with those of the products of catalyzed reactions. The products of the (III) reaction with aliphatic aldehydes were not identified. The experimental procedures are outlined and elemental analysis data and physical constants of the reaction products are tabulated.

2/2

172 020
 UNCLASSIFIED
 TITLE--PHOTOELECTRIC MEASUREMENTS OF THE ZODIACAL LIGHT IN ASHKABAD -U-
 PROCESSING DATE--02OCT70
 AUTHOR--TRUITSE, YU.L. T
 COUNTRY OF INFO--USSR
 SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA I SVETCHENIYE NOCHNOGO NEBA, 1970,
 NR 18, PP 37-41
 DATE PUBLISHED--70
 SUBJECT AREAS--ATMOSPHERIC SCIENCES, PHYSICS
 TOPIC TAGS--PHOTOELECTRIC DETECTION, ZODIACAL LIGHT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1994/0124
 STEP NO--UR/3307/70/000/013/0037/0041
 CIRC ACCESSION NO--AP0114520
 UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0114520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DESCRIBES THE RESULTS OBTAINED DURING PHOTOELECTRIC OBSERVATIONS OF THE INTENSITY OF ZODIACAL LIGHT AND ITS DISTRIBUTION DEPENDING ON THE ECLIPTIC LATITUDE BETA AND ELONGATION ANGLE PHI.

UNCLASSIFIED

89

1/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CERTAIN CHARACTERISITIC OF UPPER ATMOSPHERIC HEATING DURING
GEOMAGNETIC STORMS AND POLAR AURORAS -U-

AUTHOR--TRUTISE, YU.L.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIIA, VOL. 8. MAR-APR. 1970, P. 298-305

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ASTRONOMY, ASTROPHYSICS,
ATMOSPHERIC SCIENCES
TOPIC TAGS--GEOMAGNETIC STORM, AURORA, UPPER ATMOSPHERE, HEATING,
ATMOSPHERIC DENSITY, GEOGRAPHIC LATITUDE, SOLAR ACTIVITY, GEOMAGNETIC
ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1764

STEP NO--UR/0293/70/008/000/0298/0305

CIRC ACCESSION NO--AP0115593

UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0115593

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THE ATMOSPHERIC DENSITY VARIATION AT LOW LATITUDES AS A FUNCTION OF SOLAR AND GEOMAGNETIC ACTIVITY. IT IS FOUND THAT THE DEPENDENCE OF VERTICAL DENSITY VARIATIONS ON SOLAR ACTIVITY DIFFERS FROM THE DEPENDENCE ON GEOMAGNETIC ACTIVITY. AN EXPLANATION OF THIS DIFFERENCE IS THAT THE SOURCES RESPONSIBLE FOR THE EXPANSION OF THE UPPER ATMOSPHERE ARE LOCALIZED AT VARIOUS HEIGHTS. THE DEPENDENCE OF DENSITY ON THE GEOMAGNETIC AE INDICES IS LINEAR (WITHIN EXPERIMENTAL UNCERTAINTY) OVER THE ENTIRE RANGE OF VARIATION OF THESE INDICES, BUT REMAINS CONSTANT FOR DIFFERENT SOLAR ACTIVITY LEVELS. THE DEPENDENCE OF DENSITY ON THE SOLAR ACTIVITY INDICES EXHIBITS A PRONOUNCED NONLINEARITY. INDICATIONS ARE THAT THE UPPER ATMOSPHERIC WAVELENGTH BUT ALSO WITH SOME OTHER SOURCE. AN ANALYSIS OF THE INTENSITY OF RED HYDROGEN EMISSION AT 6300 A SHOWS THAT THIS EMISSION IS LOCALIZED BEYOND THE LOW LATITUDE REGION.

UNCLASSIFIED

USSR

UDC 669.183.218.5

TRUVETSKOV, K. M., TARASOV, V. M., KONOVALOV, I. M., MOKRUSHIN, K. D., TAP'YANSHCHIKOV, A. G., and YAKUSHIN, V. I.

"Operation of a Dual Bath Steel Melting Furnace at the Cherepovetsk Metallurgical Plant"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75 Metallurgiya Press 1970, pp 56-68

Translation: The operating indicators of a dual bath steel-making furnace for 1968 are analyzed. The productivity of the dual bath furnace was 1.024 million tons. The technology of melting of steel in the dual bath furnace has a number of specifics in the mode of carbon oxidation, steel heating, and desulfuration and dephosphoration of the metal. Over 60% high-quality structural steel is produced by the furnace. The quality of the metal is equal to that of open-hearth steel. 8 figures; 3 tables; 5 biblio. refs.

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TRUZHENIKOVA, G.K.

Planning/Design

SO: SPN: 56047
19 May 1979

DEVELOPMENT OF A SET OF CLASSIFIERS FOR CONSTRUCTION CONTROL SYSTEMS

Article by G. K. Truzhenikova, GIPROTIS of the USSR State Construction Committee, Moscow, Stroitel'stvo, No 3, 1972, pp 30-32]

The GIPROTIS (State Institute for Standard Experimental Planning and Technical Research) of the USSR State Construction Committee (State Planning and Administration) of the USSR Ministry for Construction has worked on the creation of a system of classifiers of economic information for automatic construction control systems (ASUS) since 1967.

The planning and design of the classifiers was preceded by analyzing the composition of the information used in the economic system, determining each flow and file characteristics (volumes, periodicity, the "effectiveness" of composition of the classified items and the internal structure, and so on). The classifiers were established on the same level. The structure of the individual categories were developed, and the definitions of the concepts used were presented.

What do we mean by a set of classifiers?

A set of classifiers of economic information in construction can be characterized as an ordered set of systematized and mutually correlated lists of encoded economic information used in controlling construction production.

This system must correspond to the following requirements:
Inclusion of the entire set of economic information referenced in the sphere of construction control;

Insurance of the possibility of separating economic information of different nature with respect to clearly defined technical-economic attributes and aggregation of information to obtain indexes for production control on all levels (in the trusts, combines, main administrations and ministries);
Insurance of the possibility of economic information processing by computer media.

GLORIA

UNCLASSIFIED

PROCESSING DATE--30OCT70
-U-

TITLE--REPLACEMENT OF BLAST FURNACE SLAG WITH OPOKA
AUTHOR--(03)-STOVBA, R.V., ANANYEV, V.N., TRVASTSINA, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSEMENT 1970, (2), 19-20

DATE PUBLISHED-----70

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

TOPIC TAGS--BLAST FURNACE, SLAG, CEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1983

STEP NO--UR/0101/70/000/002/0019/0020

CIRC ACCESSION NO--AP0118942

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF REPLACING PART OF SLAGS ADDED TO PORTLAND CEMENT AND SLAG PORTLAND CEMENT WAS STUDIED AS WELL AS OF OBTAINING PUZZOLANI PORTLAND CEMENT ON THE BASIS OF OPOKA. COMBINED GRINDING OF CLINKER, GYPSUM, SLAG, AND OPOKA WAS CARRIED OUT TO A RESIDUE OF 8.5PERCENT ON SIEVE NO. 008. GYPSUM WAS ADDED IN THE AMT. OF 4PERCENT BASED ON CEMENT WT. REPLACEMENT OF SLAG BY UP TO 15PERCENT OPOKA IMPROVES THE STRENGTH OF PORTLAND CEMENT AND RAISES ITS QUALITY TO TYPE 600. IF THE GRINDING IS IMPROVED TO A RESIDUE OF ONLY 5PERCENT ON SIEVE NO. 008 THE ACTIVITY OF THE CEMENT IS IMPROVED TO 788 KG-CM PRIME2. REPLACEMENT OF SLAG BY OPOKA IN SLAG PORTLAND CEMENT IMPROVES ITS STRENGTH. GRINDING TO A RESIDUE OF 5PERCENT ON SIEVE NO. 008 IMPROVES THE ACTIVITY TO 722KG-CM PRIME2 AFTER 28 DAYS. WITH THE ADDN. OF 20-30PERCENT OPOKA PUZZOLANI PORTLAND CEMENT OF HIGH QUALITY CAN BE OBTAINED IF THE RESIDUE ON SIEVE NO 008 IS 5 PERCENT. MIXTS. WITH OPOKA ARE MORE EASILY GROUND THAN THOSE WITH BLAST FURNACE SLAGS. FACILITY: OL'SHAN. TSEMENT. ZAVOD, OLSHANKA, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6-181.5(088.8)

GLAZKOV, I. M., ZAYTSEV, V. A., KOZLOV, V. A., RAYKHMAN, Ya. A., TRYAKOV, E. N.

"A Microphoto Assembly Device for Making Phototemplates"

USSR Author's Certificate No 263414, filed 3 Jan 68, published 9 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V209 P)

Translation: This Author's Certificate introduces a microphoto assembly device for making phototemplates. The device contains a stand with illuminator and shutter, a coordinate table with linear displacement data units, a composing diaphragm with sliding screens, an interchangeable objective in the form of a lens raster or high-resolution lens, and a program control unit. To improve accuracy (resolution) and increase productivity, a removable holder with a projection lens is mounted in a horizontal base on the coordinate table which rests on the upper surface of the stand. The table is equipped with an aperture for the lens and a receptacle for holding a photographic plate. The composition diaphragm with sliding screens hangs under the coordinate table on columns which pass through the stand. Fastened on the columns between the composition diaphragm and the lens is a ring for the phototemplate blank.

1/1

USSR

UDC 533.6.011:001.24

GORELOV, G. M., TRYANOV, A. YE., ~~PODDUBNOV, V. P.~~

"Calculating Pressure Losses in a Gas Flow Through a Cylindrical Channel With Friction and Heating"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 79-86 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr '72, Abstract No 4.34.4)

Translation: Gas flow in a rectilinear cylindrical channel under the combined action of friction and heat exchange on the flow is discussed. A formula is obtained for calculating the coefficient of resistance in the case of a uniform supply of heat along the length of the channel under the assumption of a power dependence of density and viscosity on temperature in the region of ideal and real gas. 4 ill., 6 ref. Resume.

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USSR

UDC 582.288:581.2:634.956(477.234)

TRYBUN, P. A.; DVOYNOS, L. M.; DEMCHAK, I. I.; Carpathian Branch,
Ukrainian Scientific Research Institute of Forest Management and
Agricultural and Forest Melioration; Institute of Microbiology
and Virology, Academy of Sciences Ukrainian SSR

"Species Composition of Fungi That Cause Diseases of Tree
Seedlings in Nurseries of Ivanovo-Frankovskaya Oblast"

Kiev, Ukreinskiy Botanicheskiy Zhurnal, Vol 28, No 4, Jul/Aug 71,
pp 511-514

Abstract: As a part of a study of fungus infections of trees in
the forests of the Ukrainian Carpathians, a phytopathological
investigation of tree nurseries of the State Forest Reserve in
Ivanovo-Frankovskaya Oblast was carried out in 1968-70. It was
established that seedlings of pedunculate oak (*Quercus robur*)
were infected with powdery mildew caused by *Microsphaera alphi-*
toides; those of European beech (*Fagus sylvatica*) were infected
with *Pestalozzia hartigi* and *Fusarium javanicum*; and those of

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USSR

TRYBUN, P. A., et al, Ukrainskiy Botanicheskiy Zhurnal, Vol 28,
No 4, Jul/Aug 71, pp 511-514

oriental beech (*Fagus orientalis*) with *Pestalozzia hartigi* and *Fusarium avenaceum*. Sweet cherry (*Prunus avium*) seedlings were infected with coccomycosis caused by *Coccomyces hiemalis*. Root rot of coniferous and deciduous species was caused by eight species and various genera of *Fusarium*. In addition to being affected by fusariosis, seedlings of Scotch pine (*Pinus sylvestris*) were infected with a disease caused by *Melampsora pinitorqua*.

2/2

Epidemiology

USSR

UDC 59:616.981.455(574.52)

AYKIMBAYEV, M. A., KORNEYEV, G. A., KUNITSA, G. M., TLEUGABYLOV, M. K., TRYKIN, V. S., SKVORTSKOVA, S. S., KUZIN, I. P., and SURMIN, V. M., Central-Asian Scientific Research Antiplague Institute, Alma-Ata

"A Tugai Focus of Tularemia in Dzhabul'skaya Oblast in the Lower Chu Flow"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 10, 1971, pp 1595-1598

Abstract: *Rhipicephalus pumilio*, the tick which carries and transmits tularemia bacteria, can circulate the bacteria over a long time-span due to its ability to parasitize hares and other rodents at all stages of its development. The flooded fields in this region, on which cattle graze, create ideal conditions for the spread of the ixodid tick. *Dermacentor daghestanicus* is the dominant species because of its high percentage of infection by tularemia bacteria and because it preserves the bacteria in its body for a long period. Bacteriological studies were made of 117 mammals and 19,000 ticks of various species. In infected hares pathological-anatomic changes were manifested by enlargement of the spleen, in some cases by a change in the color and texture of the liver, and by the characteristic mound arrangement of cocci-bacteria in the spleen, liver, lungs, lymph nodes, and blood. 30 strains of *Pasteurella tularensis* were found in ixodid ticks and 7 strains, in the hare (*Lepus tolai*). These strains decompose glycerine and circulate in the tugai focus.

1/1

USSR

UDC: 53.07/.08+53.001.5

KUKHTEVICH, V. I., TRYKOV, L. A., TRYKOV, O. A.

"A One-Crystal Scintillation Spectrometer (With Organic Phosphor)"

Odnokristal'nyy stsintillyatsionnyy spektrometr (s organicheskimi fosforami),
(cf. English above), Moscow, Atomizdat, 1971, 136 pp, ill. 86 k. (from RZh-
-Fizika, No 4, Apr 72, Abstract No 4A612 K)

Translation: This is a practical handbook on spectrometry using a single scintillation crystal with an organic phosphor (stilbene, liquid scintillators). The book describes methods for discriminating a background of gamma radiation or neutrons as well as methods for converting amplitude distributions to neutron or gamma-ray energy spectra. Examples of using the spectrometer are given (investigation of reactor emission, spectra and isotope sources of neutrons; measurement of the integral and differential cross sections of neutron reactions). A. V.

1/1

- 94 -

USSR

UDC 699.887 : 621.039.9
(355)

KUKHTEVICH, V.I., GORYACHEV, I.V., TRYKOV, L. A.

ZASHCHITA OT PENIKAYUSHCHEY RADIATSII YADERNOGO VZRYVA (Protection Against the Penetrating Radiation of a Nuclear Explosion), Moscow, Atomizdat, 1970, 190 pp, illus, bibliis, 3,050 copies printed

Presents an engineering method of designing ground structures for the protection against the penetrating radiation of nuclear explosion. Since the nuclear explosion as a source of penetrating radiation is well treated in the literature, only its general characteristics are discussed here. Emphasis is placed here on neutrons and gamma rays produced at the atmosphere-ground interface and on the penetration of radiation through the typical protective media for the geometry inherent in protective structures. The book is intended for scientific and technical personnel engaged in radiation protection work.

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Chapter 2. The Field of Neutrons and Gamma-Rays During Nuclear Explosion	6-29
Chapter 3. The Emission of Radi active Fallout	30-88
	89-102

1/2

USSR

KUKHTEVICH, V. I., et al., ZASHCHITA OT PRONIKAYUSHCHEY RADIATSII YADERNOGO VZRYVA (Protection Against the Penetrating Radiation of a Nuclear Explosion), Moscow, Atomizdat, 1970, 190 pp

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| Chapter 5. The Passage of Beta- and Gamma-Rays Through a Shield | 121-145 |
| Chapter 6. Designing the Protection of Ground Structures Against the Radiations of a Nuclear Explosion | 146-172 |
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USSR

UDC: 53.07/.08+53.001.5

KUKHTEVICH, V. I.; TRYKOV, L. A., TRYKOV, O. A.

"A One-Crystal Scintillation Spectrometer (With Organic Phosphor)"

Odnokristal'nyy stsintillyatsionnyy spektrometr (s organicheskim fosforom),
(cf. English above), Moscow, Atomizdat, 1971, 136 pp, ill. 86 k. (from RZh-
-Fizika, No 4, Apr 72, Abstract No 4A612 K)

Translation: This is a practical handbook on spectrometry using a single scintillation crystal with an organic phosphor (stilbene, liquid scintillators). The book describes methods for discriminating a background of gamma radiation or neutrons as well as methods for converting amplitude distributions to neutron or gamma-ray energy spectra. Examples of using the spectrometer are given (investigation of reactor emission, spectra and isotope sources of neutrons; measurement of the integral and differential cross sections of neutron reactions). A. V.

1/1

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Welding

USSR

UDC 539.4.019

SONNOV, A. P., and TRYKOV, YU. P., Volgograd

"Calculation of the Parameters of Welding by Explosion of Multilayer Components"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, 1973, pp 128-133

Abstract: A method has been developed for the calculation of optimal parameters of explosion welding of multilayer components from various metals and alloys with consideration of the quantity, thickness, and physical-mechanical properties of the layers being joined. A couple of examples of the calculation of technological parameters for the welding of four- and eleven-layered compounds are reported.

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USSR

UDC 621.791:621.642.001.2

5

BOGOMOLOVA, A. S., Candidate of Technical Sciences, and BAKSHI, O. A., Doctor of Technical Sciences, Chelyabinsk Polytechnic Institute; SEDYKH, V. S., Doctor of Technical Sciences, and TRYKOV, YU. P. and BELOUSOV, V. P., Candidates of Technical Sciences, Volgograd Polytechnic Institute; BORISOVA, V. A., KARAN, A. B., POPOV, A. S., and SAPRYGIN, V. D., Engineers, Moscow

"Practical Design of Welded Vessels and Pipe From Dissimilar Materials"

Moscow, Svarochnoye Proizvodstvo, No 9, 1973, pp 3-6

Abstract: Welding tests were conducted for welding dissimilar materials to join dissimilar metals in the fabrication of vessels and pipe. A steel+copper+niobium+titanium joint was made from steel Kh18N10T, M1 copper, niobium, and OT4 titanium, and a magnesium alloy+titanium+aluminum+aluminum alloy joint was made from magnesium alloy MA2-1, VT1 titanium, Ad1 aluminum, and aluminum alloy AMg6. The goal of this work was to determine the proper materials which would yield a reliable diffusion barrier in the intermediate weld layers, and a joint with a strength equal to that of the base metal. Mathematical formulas are given for calculating the tensile and yield strengths of the soft sublayer and critical magnitude of relative thickness of the soft sublayer for which an equal-strength joint can be achieved. For the titanium-steel joint the

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USSR

BOGOMOLOVA, A. S., et al., Svarochnoye Proizvodstvo, No 9, 1973, pp 3-6

the relative thickness required for the copper sublayer was approximately 0.5 while this value for the magnesium-aluminum was not computed. 4 figures, 1 table, 12 bibliographic references.

5

2/2

- 70 -

USSR

UDC 621.791:621.7.044.2:669.295 + 669.71

YEROKHIN, A. V., Engineer, KAZAK, N. N., SEDYKH, V. S., and TRYKOV, Yu. P.,
Candidates of Technical Sciences, and ULITIN, A. I., Engineer, Volgograd
Polytechnic Institute

"Properties of Titanium-Aluminum Joints Produced by Explosive Welding"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 1972, pp 26-27

Abstract: The optimal parameters are determined for explosive welding of joints of titanium with aluminum and three-layer composite joints of AMg6-AD1-OT4, having strengths of 10-12 kg/mm² and rupturing through the aluminum when tested. The titanium-aluminum joints produced by explosive welding can withstand extended heating to 500-550°C, according to the temperature-time conditions of formation of intermetallic compounds on the division boundary of the layers, and can be used for various technological processes. A pilot scale technology is developed for explosive welding of titanium-aluminum joints, guaranteeing stable strength values.

1/1

Composite Materials

USSR

UDC 669.2:621.771

BAKUMA, S. F., BELOUSOV, V. P., SEDYKH, V. S., and TRYKOV, Yu. P.

"Production of Plate Metal Compositions by Explosive Welding and Intermediate Rolling"

Moscow, Tsvetnyye metally, No 5, May 72, pp 58-62

Abstract: Proposed are new flow charts for producing composite materials with provisions for combining explosive welding with either cold, warm, or hot rolling. Explosive welding of bimetal joints from hard-to-weld metal combinations (Ti-Fe, Al-Mg, Nb-Fe, and others) require strict adherence to specific parameters including precise setting of root gap openings between the plates, perfect dosage of composition and appropriate density of the explosive powder, and special surface preparation. Violation of either condition may cause drastic reduction of weld strength and even lamination. The new flow charts offer potentials for increasing the mechanical properties of bimetal weld joints. The complex technology is justified by the savings in costly and scarce materials and realization of new design problems. (3 illustrations, 1 table, 7 bibliographic references)

1/1

USSR

UDC 621.791.76.052:621.7.044.2:620.18

SAKHNOVSKAYA, Ye. B., Engineer, SEDYKH, V. S., Candidate of Technical Sciences,
TARABRIN, G. T., Candidate of Technical Sciences, TRYKOV, YU. P., Candidate of
Technical Sciences, Volgograd Polytechnic Institute

"Structural and Mechanical Nonuniformity of Explosion-Welded Steel-Aluminum
Joints"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 7-9

Abstract: A study was made of the structural and mechanical nonuniformity and strength of an explosion-welded three-layer composition of the two aluminum alloys AMg6+AD1 and Kh18N10T steel as a function of the kinetic energy of the impact, the scaling factor and the relative thickness of the aluminum sublayer. During explosion welding of this three-layer composition, an increase in the kinetic energy of the impact above W_0 leads to an increase in the proportional participation of the steel elements in the formation of the fused sections, gradual increase in their hardness and a sharp decrease in the strength of the AD1-Kh18N10T joint in the range of values $W > W_{critical}$. The process parameters, the welding schematic and the scaling factor have an effect on the structural and mechanical nonuniformity of the steel-aluminum joint. The strength characteristics of the explosion-welded AMg6+AD1+Kh18N10T compositional joint

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SAKHNOVSKAYA, Ye. B., et al., Svarochnoye proizvodstvo, No 9, 1972, pp 7-9 depend essentially on the relative thickness of the interstitial layer of aluminum and can be calculated by the formulas proposed earlier [O. A. Bakshi, Voprosy svarochnogo proizvodstva, Trudy ChPI, No 33, 1965; O. A. Bakshi, et al., Voprosy svarochnogo proizvodstva, Trudy ChPI, No 63, 1968]. The experimental data are plotted graphically, and the mechanisms of the formation of the mechanical and structural properties of the joints are discussed.

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USSR

UDC 621.791.76:621.7.044.2.052:621.791.011

POKATAYEV, YE. P., Engineer, TRYKOV, YU. P., Candidate of Technical Sciences,
KHTAPOV, A. A., Engineer, Volgograd Polytechnic Institute

"Residual Stresses in Explosion-Welded Joints"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 10-12

Abstract: A study was made of the distribution law of the residual stresses with respect to thickness of explosion-welded joints between like (steel-steel) and unlike (steel-titanium) metals. The residual stresses were determined in rods cut from bimetal billets 250 x 250 mm. The thickness of the base layer of MSt.3 steel was 31.5 mm in the steel-steel joint and 37 mm in the steel-titanium joint. The thickness of the cladding layer of MSt.3 steel and OT4-1 alloy was the same, 10 mm, in both cases. Graphs were plotted for the hardness distribution in an explosion-welded joint of steel-steel, steel-titanium, the OT4-1 titanium alloy in the initial state and MSt-3 steel in the initial state, the variation of the relative deformation of bimetal steel-titanium rods on removal of layers from the titanium and steel sides, the distribution of the residual stresses in the steel-steel bimetal obtained by explosion welding for longitudinal and transverse specimens after welding and after annealing, the residual stress distribution in the steel-titanium bimetal after explosion welding and the residual stress distribution in the steel-titanium bimetal

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USSR

POKATAYEV, YE. P., et al., Svarochnoye proizvodstvo, No 9, 1972, pp 10-12

after tempering. After annealing the residual stresses in the steel-steel bimetal were eliminated in practice as a result of intense relaxation of high temperatures and subsequent uniform cooling. In the steel-titanium bimetal, after tempering a new residual stress field arose caused by the different thermal expansion of the layers.

The residual stresses in the explosion-welded bimetals can be determined by the same methods as in uniform materials. The nature of the residual stress distribution in the initial state after welding is in practice the same in the joints between like and unlike materials.

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USSR

UDC 621.791:621.7.044.2:669.15-194.56-669.715

SAKHNOVSKAYA, YE. B., Engineer, SEDYKH, V.S., Candidate of Technical Sciences,
and TRYKOV, YU.P., Candidate of Technical Sciences, Volgograd Polytechnic
Institute

"Properties of Joints of Austenitic Steel With Aluminum Alloys, Produced by
Explosive Welding"

Moscow, Svarochnoye Proizvodstvo, No 7, 1971, p 34-36

Abstract: This article 1) studies some regularities in the changes in mechanical properties of explosively welded joints between austenitic steel and binary aluminum alloys, based on analysis of the state diagrams, 2) studies the temperature-time conditions of formation of intermetallic compounds during the process of heating of welded joints, and 3) suggests alloys based on this composition, providing high steel-aluminum joint strength. Increasing the initial strength (hardness) of the aluminum alloys caused a reduction in the range of optimal pressures realizing the maximum joint strength. A "triangle of weldability" was produced, which can be used to determine the optimal parameters of explosive welding of these metals. Alloying of the aluminum with Si, Fe, Cu, and Ni increases the length of the incubation period for formation of the diffusion interlayer. Alloying with Si, Fe, and Ni increases the strength of the steel-aluminum joint after long heating to 200-550°C. When

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SAKHNOVSKAYA, YE. B., et al, Moscow, Svarochnoye Proizvodstvo, No 7, 1971,
pp 34-36

commercial aluminum alloys are welded to austenitic steel, an interlayer of aluminum alloyed with Si, Fe, Ni, or Cu should be used between them, allowing an increase in the initial strength of the composite.

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USSR

UDC 621.791:621.7.004.2.01:669.295+669.14

BELOUSOV, V. P., Engineer, SEDYKH, V. S., Candidate of Technical Sciences,
and TRYKOV, YU. P., Candidate of Technical Sciences

"Mechanical Properties of Explosion-Welded Titanium-Steel Joints (With Interlayers)"

Moscow, Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 19-21

Abstract: Investigation results of the effect of mechanical heterogeneity on strength and plasticity characteristics of titanium-steel joints with Cu-Nb interlayers after explosion-welding and heating are discussed. The change of mechanical properties of explosion-welded joints of OT4 titanium alloy with Kh18N10T austenite steel with Cu-Nb interlayers of various thickness is explained by hardening of the latter as the result of explosion loading and the effect of case hardening. The gradual decrease of the relative thickness k of the copper alloy in the range of 0.5 to 0.057 results in a progressive increase in strength and decrease of plasticity characteristics. Due to case hardening of the copper alloy at $k=0.03$ an increase in joint strength up to the strength level of steel and also a plasticity increase take place. A comparison of mechanical properties of titanium-steel joints with interlayers of copper and its high-strength alloys demonstrates their

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USSR

BELOUSOV, V. P., et al., Svarochnoye Proizvodstvo, No 9 (443), Sep 71,
pp 19-21

unjustified application at $k \leq 0.03$. The rating of mechanical properties of welded joints with soft interlayers from calculation formulas showed that it is necessary to take into account the hardening of soft layers as the result of explosion loading. Seven illustrations, one table, eight bibliographic references.

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USSR

UDC 621.791.76:621.7.044.2:669-419.4:621.643.4.065

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LISUKHA, G. P., Engineer, KHEYFETS, M. Ye., Engineer (Volgograd Ship Building Plant), KAZAK, N. N., Engineer, ~~OVCHINNIKOV, A. A., Engineer,~~ SAKHNOVSKAYA, Ye. B., Engineer, and TRYKOV, Yu. P., Candidate of Technical Sciences (Volgograd Polytechnical Institute)

"Efficiency of Bimetallic Steel-Aluminum Adapters Produced by Explosive Welding"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 20-22

Abstract: Tests were made of a composite material produced by explosive welding of St.4S and Kh18N10T steels 8 mm thick to a cladding layer of AMg6 aluminum alloy 6 mm thick with a sublayer of AD1 technical aluminum 1.5 mm thick acting as a plasticity buffer. The tests showed that the bimetal AMg6 + St.4S has an average layer-separation resistance of 9.9 kg/mm² and a shear strength of 7.6 kg/mm², while AMg6 + Kh18N10T has strengths of 7.0 and 6.8 kg/mm², respectively. The AMg6 + steel produced can be used for the manufacture of adapters of various shapes for the production of steel-aluminum welded structures. The proper sequence for welding of a steel-aluminum structure to avoid overheating of the bimetal

USSR

LISUKHA, G. P., et al, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 20-22

over a broad range of welding currents was determined. If the optimal welding current values determined are exceeded, a sharp decrease in strength of the welded joints involving Kh18N10T steel occurs, as a result of its higher tendency toward overheating than St.4S.

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USSR

UDC 621.374.33

VIGDORCHIK, V. G., DARKOV, S. K., KORTEVA, T. V., MEYERSON, S. I., POPOV, V. A., SITNIKOV, O. P., TRYKOV, Yu. V., OSTRYY, Kh. Ya.

"A Magnetic Digital Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Jul 71, Author's Certificate No 308518, Division H, filed 16 Feb 70, published 1 Jul 71, pp 207-208

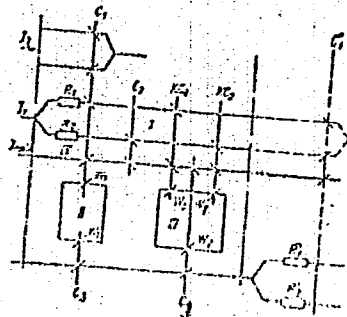
Translation: This Author's Certificate introduces a magnetic digital element which contains information, compensation and two switching cores. The device has a recording circuit, a coupling loop with flux quenching on resistors, and a ready circuit for the switching cores. As a distinguishing feature of the patent, in order to increase speed, improve stability, extend the range of ambient temperature variation and simplify the power supply system, the element is equipped with resistors in the coupling loop, dynamic excitation and dynamic magnetizing cores, one additional winding on each of the switching and compensation cores, and also two additional windings on the information core. The primary windings of the dynamic excitation and dynamic magnetizing cores are connected in series in the circuit of one of the cadence currents. The series-connected auxiliary windings of the switching cores and

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VIGDORCHIK, V. G., et al., Otkrytiya, izobreteniyе, promyshlennyye obraztsy, tovarnyye znaki, No 21, Jul 71, Author's Certificate No 308518, Division H, filed 16 Feb 70, published 1 Jul 71, pp 207-208

the secondary winding of the dynamic excitation core form a loop for dynamic excitation of the switching cores. The series circuit comprised of the secondary winding of the dynamic magnetizing core and one of the auxiliary windings of the information core forms a loop for dynamic excitation of the information core, and the auxiliary winding of the information core and the third winding of the dynamic excitation core are connected in series to the ready winding of the switching core.



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C13

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--REGION OF THE FORMATION OF INTERNAL CONVERSION COEFFICIENTS IN THE UPPER ATOMIC SHELLS -U-
AUTHOR--(03)-GAND, I.M., SLIV, L.A., TRZHASKOVSKAYA, M.D.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 306-8

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CONVERSION ELECTRON SPECTRUM, ELECTRON SHELL STRUCTURE, ELECTRIC FIELD, NUCLEAR SPIN, PARITY PRINCIPLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0995

CIRC ACCESSION NO--AP0115016

STEP NO--UR/0386/70/011/006/0306/0308

UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0115016
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

INTEGRALS FOR THE FORMULAS USED TO CALC. THE INTERNAL CONVERSION
COEFFS., IT WAS CONCLUDED THAT THE VALUES OF THE COEFFS. ON ALL AT.
SHELLS ARE FORMED WITHIN THE INNER LAYERS OF THE ATOM AND THEREFORE
THEIR VALUE IS NOT DEPENDENT ON ANY CHANGES IN THE ELEC. FIELD ON THE
PERIPHERY OF THE ATOM. THE DETN. OF THE COEFFS. ON THE HIGH AT. SHELLS,
AS WELL AS ON THE INTERNAL SHELLS, CAN BE USED TO FIND THE SPIN AND
PARITY OF THE NUCLEAR LEVELS. THE COEFFS. ON THE HIGH SHELLS SHOULD NOT
CHANGE MUCH FOR CHANGES IN THE NO. OF ELECTRONS IN THE OTHER SHELLS BUT
SHOULD CHANGE MARKEDLY FOR A CHANGE IN THE TOTAL NO. OF ELECTRONS ON THE
SHELL FROM WHICH THE CONVERSION TAKES PLACE.
FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

FACILITY:

UNCLASSIFIED

Veterinary Medicine

UDC 614.9-084.48

USSR

POLYAKOV, A. A., ~~TRZHEBETSEVSKAYA, T. A.~~, BOSH'YAN, G. M., PRESNOV, I. N.,
IVANOVA, V. I., TARAKANOV, Yu. I., SMIRNOV, A. M., KULIKOVSKIY, A. V. SHUVAYEVA,
O. N., and DMITRIYEVA, T. A., All Union Scientific Research Institute of
Veterinary Sanitation, Moscow

"Advances in the Disinfection of Objects Associated With Livestock Raising"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 20-24

Abstracts: An outline is given of the results of recent research conducted by the All Union Scientific Research Institute of Veterinary Sanitation. Some of the practical and theoretical accomplishments are: (a) synthesis of 5 disinfectants (caspos, demp, molaran, gudronol, hypochlor); (b) electron microscope study of the effects of different classes of disinfectants (alkalies, acids, chlorine preparations) on bacterial cells (E. coli, Salmonella, Staphylococci) (c) discovery that soil can be completely or partly disinfected by growing timothy and sweet clover; (d) development of methods for disinfecting wool and hides by means of gases (ethylene oxide, methyl bromide); and (e) successful testing of various gases (ethylene oxide, methyl bromide, war gases) and gamma rays to combat some bee diseases (foulbrood, nosema disease, Isle of Wight disease) found in hives.

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USSR

UDC 576.851.511.094.71.095.18:615.281

TRZHETSETSKAYA, T. A. and KULIKOVSKIY, A. V., All Union Institute of
Veterinary Sanitation

"Structural Changes in Spores From a Virulent Strain of Bacillus anthracis
After Treatment With Disinfectants"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 15-17

Abstract: Spores from the typical virulent B. anthracis strain No 66 were
created with sporicidal solutions of three alkalies. Caustic soda (1.1%) at
first attenuated and sometimes dissolved the spore membrane and cortex.
Longer exposure resulted in rupture of the membrane and outflow of the sporo-
plasm. Hydrochloric acid (0.8%) also destroyed the surface structures of the
spore with consequent outflow of the sporoplasm, which was found to contain
osmiophilic conglomerates. Treatment of spores with chloramine (0.55% active
chlorine) did not rupture the surface structures but produced clarification
and vacuolation of the sporoplasm.

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1/2 016
UNCLASSIFIED
TITLE--INVARIANT SOLUTIONS TO EQUATIONS OF THE NONEQUILIBRIUM KINETICS OF
ADSORPTION -U- PROCESSING DATE--04DEC70
AUTHOR--TSABEK, L.K.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1366-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--REACTION KINETICS, ADSORPTION, KINETIC EQUATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0768 STEP NO--UR/0078/70/044/005/1366/1367
CIRC ACCESSION NO--AP0136205
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136205

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NONEQUIL. KINETICS OF SORPTION IS DESCRIBED BY THE EQUATION OF THE MATERIAL BALANCE IN THE GRAIN OF A SORBENT, BY THE EQUATION OF KINETICS OF SORPTION ON THE PHASE BOUNDARY, AND BY THE CONDITION OF SYMMETRY IN THE CENTER OF THE GRAIN. THE USE OF THE CONTINUOUS LIE GROUPS MAKES IT POSSIBLE TO SIMPLIFY THE SOLN. OF THE MENTIONED EQUATIONS BY USING A SYSTEM WITH A SMALLER NO. OF INDEPENDENT VARIABLES. SOLVING THE SYSTEM OF DETG. EQUATIONS, IT IS POSSIBLE TO FIND THE INFINITESIMAL OPERATORS BY MEANS OF WHICH, FOR SOME CASES, THE EQUATIONS OF THE NONEQUIL. SORPTION HAVE AUTOMODEL SOLNS. WHICH ARE EASILY NUMERICALLY INTEGRATEABLE. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EQUILIBRIUM DYNAMICS OF ADSORPTION WITH A VARIABLE QUANTITY OF THE
FILTRATION FLOW RATE -U-
AUTHOR--TSABEK, I.K.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1367-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, FILTRATION, FLOW RATE, CALCULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0922 STEP NO--UR/0078/70/044/005/1367/1368
CIRC ACCESSION NO--AP0136353
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136353

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUATION FOR THE CALCN. OF THE CONCN. OF A SORBATE IN FILTRATION FLOW FOR THE GENERAL CASE WHEN THE SORPTION RATE IS DETD. BY ALL MECHANISMS OF THE MASS SUPPLY TO A SORBENT WAS DERIVED. FACILITY: MOSK. INST. NEFTEKHIM. GASOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
 TITLE--DYNAMICS OF ADSORPTION IN THE PRESENCE OF ADSORPTION AND
 EQUILIBRIUM DIFFUSION KINETICS AT PHASE BOUNDARIES CHARACTERIZED BY A
 AUTHOR--(03)-PANCHENKOV, G.M., TSABEK, L.K., ROZEN, I.V.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 233-6
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ADSORPTION, PHASE EQUILIBRIUM, ISOTHERM, CHROMATOGRAPHY,
 LAPLACE TRANSFORM
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1995/1424 STEP NO--UR/0076/70/044/001/0233/0236
 CIRC ACCESSION NO---AP0116871
 UNCLASSIFIED

2/2 020 .UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0116871
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GENERAL EQUATION DESCRIBING
THE DYNAMICS OF ADSORPTION IN A CHROMATOGRAPHIC COLUMN (G. M.
PANCHENKOV, ET AL., 1969) WAS SOLVED BY THE INTEGRAL LAPLACE
TRANSFORMATION. THE SOLN. OF THIS EQUATION IS BASED ON THE ASSUMPTION
THAT THE ADSORPTION ISOTHERM IS LINEAR AT PHASE BOUNDARIES. THE
NUMERICAL SOLN. OF THE EQUATION IS POSSIBLE BY MEANS OF SUITABLE
COMPUTERS. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV, PROM. IM.
GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.71.018.9.4

TSABROV, N. D., VINOKUROV, N. D., MARCHENKO, A. M., PECHENEV, V. S., KOPYTOV,
G. A., VOL'KHIN, G. D., BERNSHTEYN, G. G.

"Experiment in Operating a Vacuum Mixer"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Light Alloy Technology.
Scientific and Technical Bulletin of the VILS), 1970, No 5, pp 26-31 (from
RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G206)

Translation: The application of a vacuum mixer for evacuating liquid alloys based on aluminum is expedient and has a number of advantages over the methods used earlier: the gas saturation of the metal is reduced appreciably; the technological plasticity of the ingots is increased; an increase in the casting rate by 10-15% is possible; and the number of defects during ultrasonic control of the products is reduced sharply. The schematic of the mixer and its operation are described. There are 4 illustrations and 1 table.

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1/2 044

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--PROPERTIES AND USE OF AN ALUMINUM POWDER DEGASSED IN AN INERT
ATMOSPHERE -U-
AUTHOR--(05)--LITVINTSEV, A.I., TSABROV, N.D., VINOKUROV, N.D., TITOV, V.V.,
BORZUNOV, A.A.
COUNTRY OF INFO--USSR

SOURCE--TSVET, METAL. 1970, 43(2), 62-4

DATE PUBLISHED-----70

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

TOPIC TAGS--ALUMINUM POWDER, POWDER METAL PRODUCTION, POWDER METAL
PROPERTY, METAL DEGASSING, INERT GAS, INDUSTRIAL FURNACE, HOT ROLLING,
COLD ROLLING, DUCTILITY, HEAT RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1919

STEP NO--UR/0136/70/043/002/0062/0064

CIRC ACCESSION NO--AP0108248

UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HIGH TEMP. DEGASSING OF LARGE VOLS. OF AL POWDERS ON INDUSTRIAL SETUP WAS TESTED. UP TO 1600 KG OF AL POWDER WAS PURED INTO THE USEFUL VOL. OF THIS SETUP, WHICH WAS THEN PLACED INTO A COLD FURNACE, WHEREUPON AN AR ATM. WAS INTRODUCED. THE TEMP. WAS MEASURED AT THE UPPER, MIDDLE, AND LOWER PORTIONS OF THE DEGASSING CONTAINER. A 4TH THERMOCOUPLE WAS PLACED INSIDE THE CONTAINER. THE TEMP. DROP BETWEEN THE UPPER AND THE LOWER ZONES WAS SIMILAR TO 50DEGREES. THE RESULTS OF THE GAS ANAL. INDICATE THAT THE GAS CONTENT OF THE AL POWDER IS DETD. BY THE TOTAL CONTENT OF THE FRAGMENTS OF THE HYDROXY BOUNDARIES IN CONGLOMERATES OF CLUMPED PARTICLES. THE EFFECTIVENESS OF THE DEGASSING WAS THEN STUDIED IN ORDER TO BE ABLE TO EMPLOY THE POWDER IN THE PRODUCTION OF SEMIFINISHED PRODUCTS. BASED ON THE RESULTS OF THE MECH. PROPERTIES MEASUREMENTS IT CAN BE SEEN THAT HOT ROLLED STRIPS ACQUIRE INCREASED PLASTICITY, WHEREAS THE COLD ROLLED STRIPS ARE STABLE RELATIVE TO THE STRENGTH, PLASTICITY, AND HEAT RESISTANCE.

UNCLASSIFIED

Cytology

USSR

UDC 578.63

BUDANTSEV, A. YU., TSADKINA, YE. G., and VASILOY, YU. V., Department of Memory Problems, Institute of Biophysics, Academy of Sciences USSR, Pushchinona-Oke

"Lyophilization of Histological Material. II. A Vacuum Lyophilizer of Histological Specimens"

Leningrad, Tsitologiya, No 4, 1971, pp 532-535

Abstract: The apparatus designed by the authors consists of a preliminary vacuum pump with a vacuum rubber hose and 3-way vacuum valve connected to a diffusion pump. The valve is used to inject air into the preliminary vacuum pump. The diffusion pump is connected to a drying chamber through a nitrogen entrainment separator, which serves to prevent oil from the diffusion pump from entering the drying chamber. A vacuum valve between the drying chamber and the entrainment separator disconnects the drying chamber from the pumps. A feature of the device is the use of thermocouples to measure the temperature of a specimen at any time, thereby permitting objective determination of the end of lyophilization. The final vacuum in the drying chamber is 10^{-5} mm. The temperature of the lyophilized specimens averages -40 to -50°C . Some 10 to 15 specimens can be dried simultaneously. Lyophilization of 10 specimens of brain tissue weighing as much as 1 g takes 12 to 14 hours.

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USSR

UDC 578.088.6

TSADKINA, YE. G., BUDANTSEV, A. YU., and VASILOY, YU. V., Institute of Biological Physics, Academy of Sciences USSR, Pushchino

"Lyophilization of Histological Material. I. Investigation of the Length of Time of Drying"

Leningrad, Tsitologiya, Vol 13, No 3, Mar 71, pp 398-401

Abstract: Lyophilization was studied on an apparatus designed and constructed at the Laboratory of Physiological and Physicochemical Bases of Memory, Institute of Biological Physics, Academy of Sciences USSR. Drying by lyophilization of samples of porolon-water (water content 83.4%), porolon-gelatin-water (porolon treated with a 14-17% solution of gelatin; water content 76.7%), and of various rabbit tissues (hippocampus, lungs, intestine, liver, adrenals, heart) was carried out. The time that was necessary for drying was determined from temperature-time curves. The quantitative relations pertaining to drying by lyophilization could be expressed by the Knudsen-Langmuir equation in the form $m = S \cdot k_p d \sqrt{w/2} \sqrt{\pi} \sqrt{RT}$, where m is the amount of water vaporized during time t from the surface S , α the coefficient of vaporization (the ratio of observed vaporization in vacuo to the maximum

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USSR

TSADKINA, YE. G., et al., Tsitologiya, Vol 13, No 3, Mar 71, pp 398-401

value of vaporization), p the vapor pressure, and $k - 1 - q$, where q is the coefficient of resistance to vaporization produced by the dried layer at the surface. The value of k was in the range of 0.14 - 0.9, $3.9 \times 10^{-3} - 8.4 \times 10^{-2}$, and $1.8 \times 10^{-3} - 1.2 \times 10^{-2}$ for porolon-water, porolon-gelatin-water, and hippocampus tissue, respectively - i.e., the resistance of the dried layer increased in the order proclon water, porolon-gelatin-water, biological tissue.

2/2

USSR

UDC: 621.396.6-181.5

KOROL'KOV, N. V., MARYSHEVA, G. I., MAMATOV, Yu. A., TSAGARELI, D. V.

"Thin Ferromagnetic Films. (Some Problems of Magnetization)"

Tonkiye ferromagnitnyye plenki. (Nekotoryye voprosy namagnichivaniya) (cf. English above), AN SSSR, Vychisl. tsentr, Moscow, 1970, 59 pp, ill. 20 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V264 K)

Translation: The paper is made up of five sections: characteristics of actual thin magnetic films, stability conditions and complete recording of information on a thin cylindrical magnetic film with longitudinal preferred axis of magnetization, magnetizing a thin magnetic film, investigation of the dissipation flux of cylindrical magnetic films on an electric model, and the process of energy transmission during magnetic reversal of a thin magnetic film by rotation. I. M.

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110

USSR

KOROL'KOV, N. V., and TSAGARELI, D. V.

"Energy Transfer Process in the Remagnetization of a Thin Magnetic Film by Rotation"

Moscow, *Tonkiye Ferromagnitnyye Plenki (Thin Ferromagnetic Films)*, Computer Center of the Academy of Sciences USSR, Moscow, 1970, pp 52-56.

Abstract: The process of energy transfer from a coil creating a field along the axis of difficult magnetization to a coil connected with the component of the flow along the axis of easy magnetization is studied. It is assumed that the film is magnetized before saturation so that a one-domain structure is formed. A field is applied to the film at the initial time along the axis of difficult magnetization by passing a current I_T through a coil with a number of windings w_1 , the axis of which coincides with the axis of difficult magnetization. It is also assumed that there is a coil with a number of windings w_2 , the axis of which is along the axis of easy magnetization, and that this coil is loaded with the resistance R_g . The equation for remagnetization of the film by coherent rotation of the magnetization vector is given. The good agreement found between the shapes of the theoretical and experimental

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KOROL'KOV, N. V., and TSAGARELLI, D. V., Tonkiye Ferromagnitnyye Plenki, Computer Center of the Academy of Sciences USSR, Moscow, 1970, pp 52-56

characteristics for a sufficiently large segment of the remagnetization time leads the authors to hypothesize that although this equation describes processes of the rotation of the magnetization vector, it can be applied with a satisfactory degree of accuracy to those processes where processes of motion of the domain walls occur in addition to rotation of the magnetization vector. Since the coefficient of viscosity α depends on the properties of the film and remagnetization conditions, it was determined for each specific case of load resistance by substituting the maximum amplitude of the output voltage into the equation obtained for the output voltage. A graph of the coefficient α as a function of the mean remagnetization time shows that with a decrease in remagnetization time, α tends to a constant value, and with a remagnetization time corresponding to purely coherent rotation α will be a constant value.

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USSR

TSAGARELI, S. N., Problem Laboratory of Physical Cybernetics, Tbilisi State University

"The Nature of Impairment of Emotional Memory Following Lesions of Various Parts of the Hippocampus"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/June 73, pp 653-655

Abstract: Experiments were conducted with white rats to determine the effect of lesions in various parts of the hippocampus on a conditioned food-getting response after the animals experienced fear caused by severe pain. The results showed that rats with coagulation of the anterior dorsal and ventral hippocampus and of the neocortex above the posterior dorsal hippocampus exhibited behavioral disturbances similar to those of the intact control animals. For 3 days following the pain stimulus (electric shock), the rats were depressed and engaged in no active movement. On the fourth day, their conditioned response was restored. Rats with coagulation of the posterior dorsal hippocampus displayed a weak reaction to the pain. Rats with bilateral lesion of the dorsal hippocampus displayed greater probability of conditioned response than the control group. It was concluded that different parts of the hippocampus play different roles in regulating the response of fear caused by pain.

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USSR

TSAGARELI, S. H., Zhurnal Vyshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/Jun
73, pp 653-655

The posterior dorsal hippocampus plays a greater role in this reaction than
the anterior dorsal or ventral hippocampus.

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Physiology

USSR

UDC 616.127

TSAGARELI, Z. G., Academy of Sciences Georgian SSR, Institute of Experimental
Morphology imeni A. N. Natishvili

"Ultrastructural and Some Histochemical Characteristics of the Myocardium
During Hypoxic Hypoxia"

Tbilisi, Soobscheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 3, 1970,
pp 733-735

Abstract: The study of structural and metabolic disturbances during hypoxia and explanation of pathogenic mechanisms of myocardial disease under conditions of general hypoxia of the organism are of great importance. Histochemical and enzymatic characteristics of the heart muscle were studied in 26 dogs, 12 of which served as controls. The test animals were killed at different intervals after hypoxia was induced. Parts of the heart taken from the wall of the forechamber, the ventricles and other sections were examined histologically, histochemically by methods of enzyme histochemistry and electron microscopy. Dystrophic and regenerative changes were noted already after six hours. These changes became more pronounced and widespread. It was found that the duration factor is decisive in the pathogenesis of development of a hypoxic disturbance in the heart. Long-term (30-60 days) experiments

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TSAGARELI, Z. G., et al., Soobscheniya Akademii Nauk Gruzinskoy SSR, Vol 60,
No 3, 1970, pp 733-735

indicated relative adaptation of the organism to hypoxia conditions.

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1/2 019 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--EXPERIMENTAL STUDY OF THE EFFECT OF CARBOCROMEN ON THE ISCHEMIC
MYOCARDIUM -U-
AUTHOR--(U4)--DZHAVAKHISHVILI, N.A., KOBALADZE, S.G., GIBRADZE, T.A.,
TSAGARELI, Z.G.
COUNTRY OF INFO--USSR
SOURCE--ARZNEIM., FORSCH. 1970, 20(3A), 440-1.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MYOCARDIUM, DOG, ARTERY, CARDIOVASCULAR DRUG, DRUG EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605015/F02 STEP NO--GY/0000/70/020/003/0440/0441
CIRC ACCESSION NO--AP0140632
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140e32

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN DOGS WITH EXPTL. CARDIAC
INFARCTION PRODUCED BY LIGATION OF THE ANTERIOR DESCENDING CORONARY
ARTERY; CARBOCKOMEN ENHANCED VASCULARIZATION, MAINTAINED INTACT MUSCLE
FIBERS, INCREASED RETROGRADE BLOOD FLOW AND LYMPH DRAINAGE, AND RESTORED
VASCULAR PERMEABILITY IN THE INFARCTED AREA. FACILITY: A. N.
NATISHVILI INST. EXPTL. MORPHOL., TBILISI, USSR.

UNCLASSIFIED

USSR

DUGLADZE, G. M., DARSVELIDZE, G. Sh., and TSAGAREYSHVILI, G. V., Academy of Sciences Georgian SSR, Institute of Metallurgy

"High-Temperature Internal Friction in Boron Fibers" (Presented by Academician P. N. Tavadze, Nov 23, 1972)

Tbilisi, Soobshcheniya Akademii nauk Gruzinskoy SSR, Vol 70, No 1, 1973, pp 141-143

Abstract: Results are presented of measurements of the internal friction of boron fibers (diam. $\sim 100\mu$) in the temperature interval from room temperature to 700°C . The measured fibers were produced by precipitation of boron from the gaseous phase on a heated tungsten wire (diam. $\sim 12.5\mu$). Boron fibers coated with a layer of boron carbide (thickness $\sim 5\mu$) were also measured. The investigation results are discussed by reference to diagrams showing the temperature dependence of internal friction of boron fibers and the effect of annealing at 550 and 850°C on the height of the high-temperature peak, the effect of the diameter of the specimen on the high-temperature peak, the frequency dependence

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DUGLADZE, G. M., et al., Soobshcheniya Akademii nuak Gruzinskoy SSR, Vol 70, No 1, 1973, pp 141-143

of the temperature of the maximum of the internal friction, and temperature dependences of the modulus of rigidity of pure boron and of the internal friction of pure boron fibers, fibers coated with a boron carbide layer, and fibers annealed at 650°C. The activation energy of the relaxation process, determined by the frequency shift of the peak of internal friction, was found to be 55.2 kcal/mol (2.36 eV). The viscous behavior of boundaries of small boron crystals of fibers in the strain field is assumed to be the probable mechanism causing the appearance of the 380-deg. peak of internal friction. Four figures, five bibliographic references.

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1/3 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--INTERNAL FRICTION OF IRON BORON ALLOYS -U-
AUTHOR--(05)-METREVELI, Y.SH., TSAGAREYSHVILI, G.V., MIKELADZE, A.G.,
ZOIDZE, N.A., DARSVELIDZE, G.SH.
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (1) 21-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--INTERNAL FRICTION, IRON ALLOY, BORON ALLOY, ACTIVATION
ENERGY, THERMAL EFFECT, TEST METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1980/1264 STEP NO--UR/0129/70/000/001/0021/0024
CIRC ACCESSION NO--AP0049427
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP76

CIRC ACCESSION NO--AP0049427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERNAL FRICTION WAS INVESTIGATED OF PURE FE, CRYST. B, AND FE-B ALLOYS AFTER VARIOUS THERMAL TREATMENTS. INTERNAL FRICTION WAS MEASURED ON WIRE SPECIMENS (0.75-0.8 MM IN DIAM. AND 100 MM LENGTH) WITH DIRECT AND INVERSE TORSION PENDULUM IN A PERMANENT MAGNETIC FIELD OF 300 OE AT TEMPS. MINUS 190-600DEGREES IN AN INERT ATM., OR AT 10 PRIME NEGATIVE 4 TORR. INTERNAL FRICTION OF ANNEALED FE (300 HR AT 700DEGREES IN WET H) DEPENDS LITTLE ON TEMP. AT MINUS 190-70DEGREES. ONE PEAK AT MINUS 75DEGREES WAS OBSD. TWO WEEKS HOLDING AT ROOM TEMP. DID NOT EFFECT THE HEIGHT OF THE PEAK. THE PEAK IS REMOVED BY HEATING TO 150DEGREES. WHEN FREQUENCY IS INCREASED 1-3.5 HZ, THE PEAK SHIFTS SIMILAR TO 12DEGREES. FROM THE PEAK SHIFT THE ACTIVATION ENERGY WAS DETD. AS 6.4KCAL-MOLE. DURING INVESTIGATION OF TEMP. DEPENDENCE OF INTERNAL FRICTION OF B, A PEAK AT 260DEGREES WAS REVEALED. ACTIVATION ENERGY DETD. FROM TEMP. SHIFT WAS 20 PLUS OR MINUS 2KCAL-MOLE. IN FE SPECIMENS CONTG. 0.004-0.016PERCENT B THE PEAK OF INTERNAL FRICTION WAS AT 40DEGREES. DEPENDENCE OF INTERNAL FRICTION ON B CONTENT IN FE-B ALLOYS WITH GRAIN SIZE 70-100 AND 10+20MU IS GIVEN. TEMP. DEPENDENCE OF INTERNAL FRICTION OF A SPECIMEN CONTG. 0.2PERCENT B IS GIVEN.

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PROCESSING DATE--18SEP70

CIRC ACCESSION NO--A00049427

ABSTRACT/EXTRACT--ON A SPECIMEN QUENCHED FROM 720DEGREES 2 PEAKS WERE OBSD.: ONE AT 40DEGREES, AND THE OTHER AT 340DEGREES. AFTER ANNEALING AT 500DEGREES, THE LOW TEMP. PEAK DISAPPEARED, THE HEIGHT OF THE HIGH TEMP. PEAK REMAINED UNCHANGED. TEMP. DEPENDENCE OF INTERNAL FRICTION OF THE SAME SPECIMEN BUT STRAINED TO 10-15PERCENT DEFORMATION AND ANNEALED AT 500DEGREES REVEALED A PEAK AT 240DEGREES, THE PEAK AT 340DEGREES WAS INCREASED. THE ORIGIN OF 40DEGREES PEAK IS ASSOCD. WITH MIGRATION OF INTERSTITIAL B ATOMS UNDER STRAIN. B DISSOLVES IN ALPHA FE AND GIVES MAX. OF INTERNAL FRICTION AT 40DEGREES. THIS MAX. IS INCREASED WHEN B CONTENT IN FE IS INCREASED; BUT DECREASES WHEN THE BORIDES APPEAR IN THE STRUCTURE. IT SEEMS THAT BORIDES ENHANCE PPTN. OF B ATOMS FROM SOLID SOLN. THE PEAK AT 240DEGREES CAN BE EXPLAINED BY INTERACTION OF DISLOCATIONS WITH B ATOMS; THE MAX. INTERNAL FRICTION AT 340DEGREES IS RELATED TO OCCURRENCE OF BORIDES.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--OLEFINS FROM N BUTANE BY CATALYTIC DEHYDROGENATION -U-
AUTHOR--(05)-STEPANOV, G.A., TSAILINGOLD, A.L., PILIPENKO, F.S., SOBOLEY,
V.M., BORESKOV, G.K.
COUNTRY OF INFO--USSR
SOURCE--GER. OFFEN. 1,800,063
DATE PUBLISHED--16APR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DEHYDROGENATION, BUTANE, CHEMICAL PATENT, METAL OXIDE,
CATALYST ACTIVITY, BUTENE, BUTADIENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1004 STEP NO--GY/0000/T0/000/000/0000/0000
CIRC ACCESSION NO--AA0119873
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AA0119873

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATALYTIC OXIDATIVE

DEHYDROGENATION OF N BUTANE AT 550-650DEGREES OVER MO AND-OR W OXIDE
CONTG. AT LEAST ONE OF THE OXIDES OF CR, MN, FE, NI, OR CO GAVE SIMILAR
TO 5 WT. PERCENT N BUTENES AND 10-20 WT. PERCENT BUTADIENE. THUS, ADDN.
OF NI(NO SUB3) SUB3 IN H SUB2 O TO (NH SUB4) SUB6 MO SUB7 O SUB24 IN H
SUB2 O AND HEATING THE PPT. AT 400-500DEGREES GAVE A CATALYST WITH 1:2
MO-NI AT. RATIO. N BUTANE, U, AND H SUB2 O VAPOR AT A 1:0.25:10 MOLAR
RATIO AND 590DEGREES REACTED IN THE PRESENCE OF 15 ML CATALYST TO GIVE
4.5 WT. PERCENT N BUTANES AND 21 WT. PERCENT BUTADIENE.

FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF MONDMERS FOR SYNTHETIC
RUBBER.

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