

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LOW TEMPERATURE SATURATION OF STEEL WITH NITROGEN AND CARBON -U-

AUTHOR--LAKHTIN, YU.M.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (4), 61--9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL FRICTION, NITROGEN CONTAINING STEEL, NITROGEN CONTAINING ALLOY, MACHINE TOOL INDUSTRY, DURABILITY, NITRIDATION, CYANIDATION, SURFACE HARDENING, METAL DIFFUSION, CARBURIZATION, SULFURIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--30G5/0908

STEP NO--UR/0129/70/001/004/0061/0069

CIRC ACCESSION NO--AP0132997

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132997

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DURABILITY OF MANY FRICTIONAL PARTS OF A MACHINE IS DETD. BY THE STATE OF THE RELATIVELY THIN SURFACE LAYERS OF THE METAL, WHICH IS WHY THE METHODS OF SURFACE HARDENING OF THE METAL ACQUIRE SIGNIFICANT IMPORTANCE. FOR PARTS OPERATING UNDER THE CONDITIONS OF HIGH CYCLIC STRESSES AND WEAR AT SMALL CONTACT LOADS, THE LOW TEMP. (500-650DEGREES) PROCESSES OF NITRIDING, NITROCEMENTATION, CYANIDING, AND SULFIDOCYANIDING ARE WIDELY EMPLOYED. THESE PROCESSES ARE ESP. RECOMMENDED FOR ARTICLES WHICH MAKE NO ALLOWANCE FOR DEFORMATION. THE FORMATION OF THE RESP. DIFFUSION LAYERS BY THE PROCESSES CITED IS DISCUSSED, AS IS THE COMPN. OF THE LAYERS. ALL THE ABOVE PROCESSES SHOULD FIND BROAD APPLICATIONS IN THE SOVIET MACHINE CONSTRUCTION INDUSTRY. FACILITY: MOSK. ANTO.-DOROZH. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.15'295-194:620.178.2

LAKHTIN, Yu. M., ZELENKOVA, V. D., GLADOVA, G. V., and KNORHOZOVA, T. B.,
Moscow Automobile and Road Institute

"The Tendency Toward Brittle Failure of Titanium-Containing Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972,
pp 60-61

Abstract: A study was made of the tendency toward brittle failure of 30KhT2 and 30KhT2N3Yu steels containing 2.1% Ti, in order to determine regions of their applicability. Specimens with and without nitrated layer, the latter with notches, were subjected to impact tests. Their impact strength and cold brittleness threshold were determined and the macro- and micro-structures of fractures after tests at different temperatures were analyzed. According to test results and electron-microscopy investigations, the lower cold brittleness thresholds of 30KhT2 and 30KhT2N3Yu steels are at 10°C and 40°C, respectively. Because of the high temperature of the lower threshold of cold brittleness, the 30KhT2 and 30KhT2N3Yu steels are not recommended for parts working under conditions of significant impact loads. Two figures, one table, three bibliographic references.

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USSR

UDC 669.14.018.295:539.4

LAKHTIN, YU. M., and TSYRLIN, E. S.

"Nitriding of Martensite Aging Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan/Feb 73, pp 101-105

Abstract: Nitriding of N18K9M5T steel at 450°C for 24 hours produced non-brittle diffused layers up to 0.25 mm thick and high surface hardness up to 900 HV₅. An increase of the nitriding temperature to 500°C decreased the surface hardness to 700 HV₅ and hardness of the alloy inner layers from 500 to 430 HV₅. An increase of the nitriding time to 48 hours at 450°C decreased only slightly the surface hardness (from 900 to 860-870 HV₅). Nitriding at 500°C for 24 hours produced a surface hardness of 830 HV₅; surface hardness decreased by 100 HV₅ when nitriding time was extended to 48 hours. Changes in the nitriding time at the same temperature had little effect on the hardness of the steel inner layers. The thickness of the surface nitrided layer was related to the nitriding duration by the parabolic nature at all temperatures. The best nitriding regimes for this steel are: 500°C for 24 hours, and 450°C for 48 hours. Nitriding had little effect on steel strength but it decreased the impact toughness. Stress concentrators were practically unaffected by nitriding. Corrosion properties of this steel were the same as in steel subjected to aging.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ANTICOAGULANT ACTIVITY OF RARE EARTH SALTS --U--

AUTHOR--(05)--LAKIN, K.M., ZIMAKOV, YU.A., PLYUSHCHEV, V.YE., NADEZHINA,
G.V., LOSEVA, G.S.
COUNTRY OF INFO--USSR

SOURCE--FARPAKGL. TOKSIKOL. (MOSCOW) 1970, 33(2), 205-10

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTICOAGULANT DRUG, RAT, RABBIT, BLOOD CHEMISTRY, HEPARIN,
RESPIRATION, RARE EARTH COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0367

STEP NO--UR/0390/70/033/002/0205/0210

CIRC ACCESSION NO--AP0127948

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127948

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I.V. ADMINISTRATION TO RATS AND RABBITS OF PROPIONATES OF DY, LA, TB, Y, HO, ER, NO, GD, YB, CE, PR, LU, AND SM AT 0.5 ML 2PERCENT AQ. SOLN.--KG INCREASED FREE HEPARIN CONTENT IN BLOOD BY DEGRADATION OF MAST CELLS, THUS LESSENING COAGULABILITY. THERE WAS NO APPRECIABLE EFFECT ON ARTERIAL TENSION OR RESPIRATION.
FACILITY: II. MOSK. MED. INST. IM. PINOGOVA, MOSCOW, USSR.

UNCLASSIFIED

LAKIN, Ye. Ye.

SPRS 59203
6-73

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VILL-9b. STUDY OF LATTICE DEFECTS IN SINGLE ZINC SULFIDE CRYSTALS AND THEIR EFFECT ON PHYSICAL PROPERTIES

Prepared by V. V. Lakin, Ye. Ye. Lakin, in A. S. Gerasimov, *Abstracts of Proceedings of International Conference on Crystal Growth and Defects in Solids*, Moscow, 1977, p. 111

In the course of X-ray studies, the zinc sulfide crystals grown from the melt under stress pressure have high concentration of the peeling defects which have an effect on the physical properties of the crystals. The procedure developed for the study of the structure for determining the peeling defect concentration in single crystals on a diffractometer with respect to the scattering intensity of X-rays by synthetic and natural crystals was used. The investigation of the peeling defects and the structural levels of crystals, and it also fails to permit distinguishing of retained and deformation peeling defects. Thus the X-ray diffraction method of solving these problems for crystals are not applicable to single crystals, we have developed a method of determining the peeling defect concentration in single crystals by measuring the scattering intensity distribution curves for the stress on an X-ray diffractometer (corresponding to diffusion of the inverse lattice nodes of the crystals).

Results are presented from determining the peeling defect concentration in single crystals grown under different conditions and with different additions and also depending on the temperature and time of annealing of the specimens. A comparison is made with other physical characteristics of the crystals.

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRENGTH OF CRYSTALLIZATION STRUCTURES AFTER HYDRATION OF GROUND
UNSLAKED LIME -U-
AUTHOR--(03)-LAKINSKAYA, N.M., MANAKIN, B., ILCHENKO, A.I.
COUNTRY OF INFO--USSR
SOURCE--BUDIVEL'NI MATER. KONSTR. 1970, (1), 38-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--SORPTION, CRYSTAL STRUCTURE, CALCIUM OXIDE, CALCIUM CARBONATE,
LIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605019/B03 STEP NO--UR/0635/70/000/001/0038/0040
CIRC ACCESSION NO--AP0140894
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CUBES WERE FORMED FROM MIXTS. OF CAO, CACO SUB3, AND WATER IN VARIOUS RATIOS, WHERE CAO PLUS CACO SUB3 EQUALS CONST. EQUALS 1 MOLE, WHILE WATER VARIED 1-9 MOLES, AND CAO-CACO SUB3 VARIED FROM 1-9 TO 10-0. THE CUBES WERE HARDENED FOR 28 DAYS AT 15, 0, AND MINUS 15DEGREES AND THEN THEIR STRENGTH WAS TESTED. THE CHEM. PURE, HIGHLY EXOTHERMIC CAO, HEATED FOR 2 HR AT 900DEGREES AND SIEVED (SIEVE NO. 0085) AND FINELY GROUND, DRIED AND SIEVED (THE SAME SIEVE) LIMESTONE WERE USED. FOR ANY MIXT. THE MAX. STRENGTH OCCURRED AT A CERTAIN OPTIMUM INTERVAL OF WATER ADMIXTS., WHICH INCREASED WITH THE RISING CAO-CACO SUB3 VALUE AND AT 15DEGREES SHARPLY, AND AT MINUS 15DEGREES ONLY LITTLE. THE OPTIMUM CONTENT OF WATER AT THE LATTER TEMP. WAS GENERALLY LOW (1-2.5 MOLE) AT ANY VALUE OF THE FORMER RATIO. CAO WITHOUT CACO SUB3 DID NOT HARDEN, IRRESP. OF THE WATER CONTENT AT 15DEGREES, WHILE AT MINUS 15DEGREES IT HARDENED WELL (1.25 KG-CM PRIME2 AT 2.5 MOLE WATER). GENERALLY, THE STRENGTH OF ALL SAMPLES THAT HARDENED AT MINUS 15DEGREES EXCEEDED THE STRENGTH OF SAMPLES HARDENED AT 15DEGREES. THE HEAT OF HYDRATION OF CAO ELEVATES THE WATER TEMP. TO B.P. THUS FORMING GAS. THIS INTERFERES WITH THE SORPTION PROCESSES AND DESTROYS THE FORMING CRYSTAL STRUCTURE, WHICH CONSEQUENTLY CAN FORM ONLY AT MINUS 15DEGREES. AFTER CACO SUB3 ADMIXT. THE STRUCTURES THAT POSSESS STRENGTH WERE PRESERVED ALSO AT 15DEGREES, WHILE AFTER THE TEMP. DECREASE THE INTERVAL OF COMPN. THAT YIELDS THE STRUCTURE STRENGTH EXTENDED THE MORE THE LOWER THE TEMP.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--RECOVERY OF SULFURIC ACID BY HIGH TEMPERATURE DECOMPOSITION OF
SPENT ACID -U-
AUTHOR--(05)-SISIN, M.F., LAKIZA, S.M., MANAYEV, A.KH., KOLBASIN, A.YA.,
LANGE, S.A.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB, NEFTEKHIM. (MOSCON) 1970, (1), 23-5
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SULFURIC ACID, THERMAL DECOMPOSITION, WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1819

STEP NO--UR/0318/70/000/001/0023/0025

CIRC ACCESSION NO--AP0118703

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118783

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

ABSTRACT. SPENT H SUB2 SO SUB4 FROM
DITOLYLMETHANE MANUF. AND ALKYLATION WAS DECOMPO. IN A FURNACE AT
1200DEGREES, WHERE H SUB2 S WAS BURNT. THE TEMP. IN THE FURNACE WAS
CONTROLLED BY ENDOTHERMIC DECOMPN. OF THE ACID, THE LATTER BEING FED IN
DETO. AMTS. THE METHOD WAS RECOMMENDED FOR THE PRODUCTION OF H SUB2 SO
SUB4 BY DRY CATALYSIS. THE DECOMPN. CONDITIONS ARE TABULATED AND A FLOW
SHEET IS PRESENTED FACILITY: SALAVAT, NKHK, SALAVANT, USSR.

UNCLASSIFIED

AA0040514

Lakiza, S. P.

UR 0482

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

239780 ARC DISCHARGE EXCITER has a switching control to increase the cathode area simultaneously with disconnection of the heating source. Prior to ignition a plasma forming gas (2) is passed through the burner (1), contactor (3) is closed, connecting branches (A,B) of the cathode in series. Cathode heating uses one section of the power source, the anode voltage being taken from section (B). When the arc discharge (7) develops current relay (8) opens contacts (9) and closes contacts (10), connecting the cathode branches in parallel, and both sections of the power source in series to give the required anode voltage. Variable resistance (11) controls the heating current and the current/voltage characteristics of the arc power source. This system can be used in arc welding under vacuum or in an inert atmosphere.

1.4.68 as 1229230/25-27. D.A. DUDKO et alia. E.A.
 PATON ELECTRIC WELDING INST. (24.7.69) Bul 11/18.3.69
 Class 49h. Int.Cl.B 23k.

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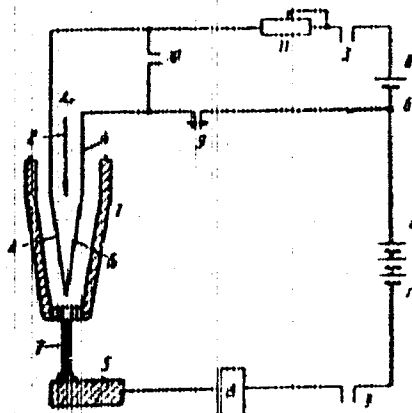
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19750018

AA004G514

AUTHORS: Dudko, D. A.; Lakiza, S. P.; Lapchinskiy, V. F. and Magalev, Yu. A.

Institut Elektrosvarki imeni Ye. O. Patona



19750019

USSR

UDC 547.341.26'118.07

NIFANT'YEV, E. YE., MASCNOVSKIY, I. S., LAKKORIN, B. N., SKURQVAROV, D. I.,
SHATALOV, V. V., Moscow State University imeni M. V. Lomonosov

"A Method of Making Phosphinates"

Moscow, Otkrytiya, Izobreteniya, Prinyshlennyye Obraztuy, Tovarnyye Znaki,
No 22, Aug 72, Author's Certificate No 345165 , Div C, filed 23 Nov 70,
published 14 Jul 72, p 97

Translation: This Author's Certificate introduces: 1. A method of making phosphinates with the distinguishing feature that the process is simplified by reacting the sodium salt of phosphinic acid with an alkyl halides in an inert organic solvent such as methanol in the presence of heating with subsequent isolation of the goal product by conventional methods. 2. A modification of this procedure distinguished by the fact that heating is done to 130-135° C. 3. A modification of the method covered in points 1 and 2 distinguished by the fact that the process is carried out in the presence of a peroxide such as tert-butyl peroxide.

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1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INDICATIONS, EXPERIMENTAL SUBSTANTIATION AND RESULTS OF
PATHOGENETICALLY ORIENTED OPERATIONS IN ANGULAR GLAUCOMA --J--
AUTHOR--LAKOMKIN, V.I.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 48-54
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--EYE DISEASE, MEDICAL EXAMINATION, VISUAL ACUITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0805 STEP NO--UR/0357/70/000/002/0048/0054
CIRC ACCESSION NO--AP0102768
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0102768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OBSERVATION COVERED 78 PATIENTS (82 EYES) WITH ANGULAR GLAUCOMA. A THOROUGH DIFFERENTIATION OF THE TYPE OF NARROWING/CLOSURE OF THE ANTERIOR CHAMBER ANGLE (FUNCTIONAL, ORGANIC AND MIXED), WAS MADE IN 56 SUBJECTS (60 EYES) BEFORE SURGERY. IN THIS GROUP OF PATIENTS PATHOGENETICALLY ORIENTED OPERATIONS WERE PERFORMED, VIZ. BASAL IRIDECTOMY, IRIDOCYCLORETRACTION, CYCLODIALYSIS WITH BASAL IRIDECTOMY, IRIDOCYCLORETRACTION WITH BASAL IRIDECTOMY. IN 22 PERSONS (22 EYES) DIFFERENTIAL DIAGNOSIS OF THE NARROWING AND CLOSURE OF THE ANGLE WAS NOT PRACTICED AND IN THIS GROUP PATHOGENETICALLY NON ORIENTED OPERATIONS WERE EFFECTED (MAINLY BASAL IRIDECTOMY). IMMEDIATE AND LATE RESULTS, COMPENSATION OF THE INTRAOCULAR PRESSURE, VISION FIELD AND ACUITY WERE BETTER IN THE FIRST GROUP OF PATIENTS, SUBJECTED TO PATHOGENETICALLY ORIENTED OPERATIONS. COMPLETE AND PARTIAL OPENING OF THE ANTERIOR CHAMBER ANGLE IN PATIENTS OF THE FIRST GROUP OCCURRED IN 70PERCENT AND IN THE SECOND, IN 22PERCENT OF CASES. TOMOGRAPHIC INVESTIGATIONS SHOWED THAT IN PATHOGENETICALLY ORIENTED OPERATIONS THE REDUCTION OF THE INTRAOCULAR TENSION COMES ABOUT, CHIEFLY, DUE TO AN IMPROVED OUTFLOW OF THE INTRAOCULAR HUMOR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEPENDENCE OF PHOTODIFFUSION CURRENTS IN SOLUTIONS ON THE
CONCENTRATION OF ELECTRON ACCEPTORS -U-
AUTHOR--(04)-LAKONOV, V.I., YELETSKIY, V.V., KOTENBERG, I.A., PLESKOV,
YU.V.
COUNTRY OF INFO--USSR
SOURCE--ELEKTRKHIMIYA 1970, 6(3), 415-17
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOTOCHEMISTRY, ELECTRODE POTENTIAL, PHOTOELECTRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1940 STEP NO--UR/0364/70/006/003/0415/0417
CIRC ACCESSION NO--AP0115748
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115748

ABSTRACT/EXTRACT--(U) CP-O- ABSTRACT. ONE OF THE FUNDAMENTAL STAGES OF THE CONVERSION OF ELECTRONS EMITTED, AFTER IRRADN., FROM METAL INTO THE SOLN. APPEARS TO BE THE SOLVATION (OR HYDRATION) IN THE SOLN. CERTAIN INFORMATION ABOUT THE PROCESS OF HYDRATION OF PHOTOELECTRONS MAY BE ACHIEVED ON THE BASIS OF THE EXPTL. OBSERVED DEPENDENCE OF PHOTODIFFUSION ON THE CONC. OF HYDRATED ELECTRON ACCEPTORS. AS ELECTRON ACCEPTORS H PRIME POSITIVE AND NO SUB3 PRIME NEGATIVE IONS WERE SELECTED. THE ACTIVITY OF H SUB3 PRIME O POSITIVE VARIED FROM 10 PRIME NEGATIVE3 TO 0.8M AND WAS CHECKED AGAINST THE H ELECTRODE POTENTIAL IN THE SAME SOLN. THE DEPENDENCE OF PHOTOCURRENT, J, TO THE 0.4 POWER ON THE POTENTIAL ALPHA AT VARIOUS H PRIME POSITIVE ACTIVITIES WAS ESTABLISHED. IF ACCEPTOR CONC. WAS CHANGED, THE CHARACTER OF THE DEPENDENCE OF THE PHOTOCURRENT ON THE POTENTIAL WAS CHANGED, AND HENCE EXTRAPOLATION OF ALL CURVES CONSTRUCTED IN THE SAME COORDINATE SYSTEM MUST RESULT IN DIFFERENT VALUES OF THE THRESHOLD POTENTIAL. A LINEAR RELATION BETWEEN J AND A SUBH30 POSITIVE PRIME ONE HALF AT LOW A SUBH30 POSITIVE WAS OBSERVED. ABOVE A SUBH30 POSITIVE EQUALS 0.2M THE SATN. PHOTOCURRENT BEGINS. THE MEAN DISTANCE MEAN VALUE OF X₀ AT WHICH ELECTRONS ARE PREFERABLY SOLVATED, WAS FOUND FROM THE PHOTOCURRENT CONC. AND WAS 80-100 ANGSTROM. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 575.24:578

PROZOROV, A. A., SAVCHENKO, G. V., NAUMOV, L. S., and LAKOMOVA, N. M., All Union Scientific Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow

"Mutants of *Bacillus subtilis* with a Modified DNA Donor Capacity in Spontaneous Transformation. I. The Method of Isolation of Mutants."

Moscow, *Genetika*, Vol 8, No 3, Mar 72, pp 79-86

Abstract: A method was developed for the isolation of *Bac. subtilis* mutants with a modified capacity of acting as donors of DNA in spontaneous transformation. The donor strain *Bac. subtilis* thr⁻thy⁻met⁻ was derived from a thy⁻met⁻ strain by treating the latter with diethylsulfate, whereupon 0.1-1% of the cells survived. Subsequent application of thymine starvation and treatment with penicillin killed cells with a normal rate of growth, while cells of ts-mutants with respect to DNA synthesis survived because of their subnormal rate of growth. To isolate mutants with modified donor capacity, mutagenized colonies of the donor strain were imprinted on agar covered with surface colonies of the recipient strain *Bac. subtilis* 39-22 leu⁻his⁻ind⁻. For the genetic mapping of auxotrophic mutations, strains leu⁻his⁻ind⁻ and leu⁻his⁻ind⁺ were transformed that had been obtained from strain 39-22 by treatment with DNA of the corresponding mutants. The transforming DNA was isolated by a modified Kirby
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PROZOROV, A. A., et al., Genetika, Vol 8, No 3, Mar 72, pp 79-86

method. To determine the relative distance of mutations from the markers his_2 and ind , the method of difactor crossings was applied. Fourteen mutations of the donor strain with modified donor capacity were isolated. Most mutations showed linkage and the his_2 and ind markers. The method applied makes it possible to isolate other auxotrophic mutations as well with the same marker linkage as that associated with modified donor capacity.

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- 31 -

1/3 054 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON THE POSSIBILITY OF PRODUCING REFRACTORY METALS AND COMPOUNDS IN
A LOW TEMPERATURE PLASMA -U-
AUTHOR--(02)-ZHDANOVSKIY, A.A., LAKOMSKIY, V.I.

COUNTRY OF INFO--USSR

SOURCE--KIEV, POROSHKOVAYA METALLURGIYA, NO 3, MAR 70, PP 16-22

DATE PUBLISHED-----70

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

TOPIC TAGS--REFRACTORY METAL, BORON NITRIDE, NIOBIUM COMPOUND, MOLYBDENUM
OXIDE, PLASMA ARC, LOW TEMPERATURE PLASMA, ARGON, PLASMATRON, METAL
REDUCTION, CHEMICAL REACTOR, TUNGSTEN, METAL POWDER, TITANIUM NITRIDE,
REFRACTORY COMPOUND, WELDING RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0407

STEP NO--UR/0226/70/000/003/0016/0022

CIRC ACCESSION NO--AP0119350

UNCLASSIFIED

2/3 054

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF PRODUCING REFRACTORY METALS AND COMPOUNDS IN A LOW TEMPERATURE PLASMA WAS EXPERIMENTALLY INVESTIGATED. A SCHEMATIC DIAGRAM OF THE EXPERIMENTAL SETUP IS PRESENTED AND DESCRIBED IN DETAIL. IT CONSISTS OF A PLASMATRON, A REACTOR, A TEMPERING CHAMBER, CYCLONES, A POWDER FEEDER, A DC SOURCE, CONTROL AND WATER COOLING SYSTEMS, A GAS FEEDER, AND SERUBBING SYSTEMS. A TUNGSTEN ROD ANODE, A COPPER AUXILIARY ANODE, AND AN ANODE NOZZLE ARE THE BASIC COMPONENTS OF THE PLASMATRON. THE RESULTS ON PLASMA REDUCTION OF THE NIOBIUM AND MOLYBDENUM OXIDES, USING ARGON AS A PLASMA GENERATING AND DRIVER GAS, ARE PRESENTED IN TABULAR FORM AND ANALYZED. IT IS SHOWN THAT THE DEGREE OF REDUCTION OF THE NIOBIUM AND MOLYBDENUM OXIDES CAN BE SUBSTANTIALLY INCREASED BY A SUFFICIENT INCREASE IN THE TEMPERING SPEED WHICH WOULD PREVENT THE OCCURRENCE OF BACK REACTIONS, AND BY PASSIVATING THE OBTAINED POWDERS WITH CARBON MONOXIDE. RESULTS ARE ALSO PRESENTED ON THE SYNTHESIS OF BORON AND TITANIUM NITRIDES USING NITROGEN AS A PLASMA GENERATING AND DRIVER GAS. THE PRODUCTS OF PLASMA SYNTHESIS OF NITRIDES WERE STUDIED BY COMPARING THE X RAY PICTURES OF THE FINAL PRODUCTS WITH STANDARD SAMPLES. THE NITROGEN CONTENT WAS DETERMINED BY THE KJELDAHL METHOD. X RAY PHOTOGRAPHS OF A SYNTHESIZED BORON NITRIDE, A STANDARD NITRIDE SAMPLE, AND AN ORIGINAL AMORPHOUS BORON ARE PRESENTED. IT IS STATED THAT THE PROCESS OF PRODUCING BORON AND TITANIUM NITRIDES, USING THE NITROGEN PLASMA AS A REACTION MEDIUM, IS BOTH PRACTICAL AND FEASIBLE.

UNCLASSIFIED

3/3 054 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119350
ABSTRACT/EXTRACT--IN ADDITION TO THE COMPOUNDS MENTIONED ANOTHER SERIES OF
NITRIDES AND CARBIDES WAS SYNTHESISED IN A LOW TEMPERATURE PLASMA AT THE
INSTITUTE OF ELECTRICAL WELDING IMENI YE. U. PATON. ORIGINAL ARTICLE
HAS 3 FIGURES AND 2 TABLES.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--ELECTRICAL ABSORPTION OF GASES IN ARC WELDING --U--
 AUTHOR--(02)--GRIGURENKO, G.M., LAKOMSKY, V.I.
 COUNTRY OF INFO--USSR
 SOURCE--AVTONAT. SVARKA. FEB. 1970, (2), 7-9
 DATE PUBLISHED--FEB70

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

TOPIC TAGS--ARC WELDING, BIBLIOGRAPHY, GAS ABSORPTION, CHEMICAL
 ABSORPTION, ARGON, HELIUM, METAL CONTAINING GAS, GAS CONTAINING METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--2000/0315

STEP NO--UR/0129/70/000/402/0001/0009

CIRC ACCESSION NO--AP0124074

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124074

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENCES BETWEEN THE ELECTRICAL AND CHEMICAL MECHANISMS OF THE ABSORPTION OF GASES BY METALS DURING ARC WELDING ARE DISCUSSED. A METHOD FOR EXPERIMENTALLY DISTINGUISHING BETWEEN THE TWO FORMS OF ABSORPTION IS DESCRIBED. TESTS APPLIED TO ARC WELDING IN AR-HE MIXTURES CONFIRM THAT IN ALL CASES THE CATHODE METAL CONTAINS AR WHILE THE ANODE IS FREE FROM ABSORBED GAS. A CONSIDERABLE AMOUNT OF GAS IS ABSORBED BY THE WELDED PARTS AS A RESULT OF THE ELECTRICAL MECHANISM.

UNCLASSIFIED

USSR

UDC 669.15'24:669.014.623

POMARIN, YU. M., GRIGORENKO, G. M., LAKONSKIY, V. I., TORIKHOV, G. F., and
SHEREVERA, A. V., Kiev

"On the Solubility of Nitrogen in Iron-Nickel Melts"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul/Aug 72, pp 32-36

Abstract: The solubility of nitrogen in iron, nickel, and iron-nickel alloys with 21.5% Ni and 59.0% Ni was experimentally investigated by the method of smelting the metal in an electromagnetic field in a gas flow (Ar, N, He) with subsequent hardening. The N solubility in Fe was investigated in the 1870-2860°K temperature interval, and in Fe-Ni alloys in the interval from the melting point to 2500°K. The temperature dependences of N solubility in Fe, Ni, and Fe-Ni alloys and the effect of Ni concentration in Fe-Ni alloys on the N heat of solution are shown. The temperature dependences of the N interaction parameter for Fe-Ni alloys are compared with data of other authors. The N solubility in Fe-Ni alloys was found to comply with the square root principle. An analytical expression was derived for the dependence of N solubility on the temperature and the Ni concentration in the Fe alloy. Five illustrations, one table, three formulas, twelve bibliographic references.

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LAKOTA, N.A.

Manipulators

PRINCIPLES OF CONSTRUCTION OF MANIPULATORS

(Translation in Russian)
Article by Doctor of Technical Sciences A. I. KOPRINSKIY, Leningrad, U.S.S.R.
Moscow, Voenno-Meditsinskii Nauchnyi Sbornik, November, Vol. 47, No. 6, 1972, pp. 104-107.

In recent decades a new class of machines intended for the artificial reproduction of the motor (muscle) of man has been forming at rapid rates. These machines (manipulators) are used for the automation of labor-consuming production operations and also to perform work in zones difficult of access to man or threatening his health and life.

The development of such devices started in 1943-1948 in connection with the requirements of the atomic industry. The development of automatic and space research has greatly expedited the development of applications of manipulators. Automatic manipulators (industrial robots) are widely used in various branches of industry. The theoretical principles of the creation of manipulators -- machines and automata intended for artificial reproduction of the function of the supporting and motor (muscle) of animals which walk on their feet -- are being intensively developed.

All this predetermined the great interest manifested by many organs and scientific research, planning and design and educational organizations in the work of the fourth Symposium on the Theory and Principles of Construction of Manipulators, held in Moscow on 1-10 February.

In the introductory report (I. I. Artyukhovich and A. Ye. Koprinskiy) an evaluation was given of the current state of the problem of manipulators, walking machines and robots, and the paths of its development were designated. In that case it was a matter of the further improvement of the functionality.

press forward

The report of a symposium on the systems for the control of a human operator in the systems for the control of a human operator... (text is very faint and partially illegible)

A number of reports (V. S. Kalashov, N. A. Laktion, S. I. Andreyenko, M. N. Yagorblin, A. G. Kozlov, V. A. Gromov, S. I. Gerasimov, V. I. Gerasimov, V. I. Gerasimov) were devoted to the planning of motion control of copying machines, kinematic and dynamic control of the motion of the end effector, and the development of methods of investigating the static and dynamic characteristics of the motion of the end effector. Particular attention was given to specific features of those systems in competition with their dynamical properties of those systems. The need for their investigation and development was stressed. V. S. Kalashov, A. G. Kozlov, and others discussed methods of analysis and planning of manipulators and control information systems of deep-water apparatus.

In a large group of reports the tasks in the creation and introduction of Soviet designs of industrial robots were examined (B. N. Surbin, P. N. Malanin, A. A. Gromov, and others). The results of construction of such automatic systems were also with the principle of construction of technological equipment. The organization and structure of automation sections, various aspects of digital computers. The discussion showed that in the very near future one should expect with broad introduction of industrial robots in various branches of industrial production. Experiments in the operation of the first Soviet robot assemblies have been conducted in various enterprises and the effectiveness of their application to automate the servicing of various technological equipment.

Much attention was given to working devices. The report of B. Ye. Gromov dealt with the development of algorithms of movement upon the assumption of complete information about the surface on which a six-legged apparatus moves, and at the same time of multilevel control has been worked out which solves the problem of steering with the construction of motion of a robot in an extremely and up to the formation of the path of motion of the entire apparatus in that case the algorithm is constructed.

Pharmacology and Toxicology

UDC 615.214.32.015.4:612.822.3

USSR

LAKOZA, G. N., Laboratory of Psychopharmacology, Institute of Pharmacology,
Acad. Med. Sc. USSR, Moscow

"Comparative Study of the Effect of Tricyclic Antidepressants on the Self-stimulation Reaction in Rats' Brain"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 4, Jul-Aug 71, pp 397-401

Abstract: Comparative study of the effect of tricyclic antidepressants on the self stimulation reaction of the brain was carried out on white male rats following implantation of electrodes into the lateral hypothalamus; their ability to potentiate the effect of phenamine was investigated. Derivatives of iminodibenzyl, dibenzocycloheptadiene, and phenothiazine were utilized in this study. Chloracyzin and fluoracyzin were found to increase the intensity of the brain selfstimulation reaction and to potentiate the activating effect of phenamine to a great degree. In contrast to the derivatives of iminodibenzyl (imizin) and dibenzocycloheptadiene (amitryptiline). Comparison of the results obtained with the data on anticholinergics suggested that the stimulating effect of fluoracyzin and chloracyzin could be due to their anticholinergic properties. Chloracyzin was found to be more active than fluoracyzin.

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USSR

UDC 621.3.07.001.5

LAKS, B. M.

"Voltage Reserve in a Double-Integrated Control System"

Moscow, Elektrotehnika, No. 7, 1971, pp 8-11

Abstract: The author of this article takes issue with the author of an earlier article (W. Gens, M. S. R., 1967, No. 10, n. 6) who determined the voltage reserve for a double-integrated control system required to make the adjustments for a symmetrical optimum for perturbations in the load. According to the author of the present paper, the approximations made in the earlier article lead to substantial errors in the results. In this paper, he considers a similar problem but with completely different premises, and discusses two cases: one, in which the behavior of the control system is approximated by a third-order equation; the other, in which the system's behavior is approximated by a fourth-order equation. A block diagram of the system, which is used for control of rotational drive mechanisms when the velocity of rotation must drop to zero in accordance with the conditions of the technical procedure, is given.

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- 31 -

1/2 014

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--CHANGE IN DROP SIZE DISTRIBUTION IN CONDENSATION CHAMBER -A-

AUTHOR--(02)--VOLKOVITSKIY, O.A., LAKTIONOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSR, FIZIKA ATMOSFERY I OKEANA,
VOL VI, NO 3, 1970, PP 259-264

DATE PUBLISHED--70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--DROPLET, FOG, SPECTRUM, METEOROLOGIC CHAMBER, CLOUD CHAMBER,
CLOUD FORMATION, CONDENSATION REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1991/0717

STEP NO--UR/0362/70/006/003/0259/0204

CIRC ACCESSION NO--AP0110450

UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AP0110450

UNCLASSIFIED

PROCESSING DATE--090CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF SOME LAWS OF TRANSFORMATION OF THE SPECTRUM OF CLOUD DROPLETS DURING SIMULATION OF THE PROCESS OF CLOUD FORMATION IN A CHAMBER WITH A VOLUME OF 3,200 M³ PRIME3. IT WAS EXPERIMENTALLY DEMONSTRATED THAT THE CHANGE IN THE MEAN CUBIC DIAMETER OF THE DROPLETS CAN BE SATISFACTORILY APPROXIMATED BY THE DEPENDENCE $D \text{ SUB3} \text{ SIMILAR TO } (U \text{ SUB2 } Y-N) \text{ PRIMEONE THIRD}$. IT WAS FOUND THAT THE DROPLET SPECTRUM OF THE FORMING FOG IS RATHER BROAD. AT THE ONSET OF FORMATION IT IS CHARACTERIZED BY THE RATIO SIGMA-D SUB1 APPROXIMATELY EQUAL TO 0.74; THEN IT NARROWS GRADUALLY AND BY THE END OF A 10 MINUTE PERIOD SIGMA-D SUB1 BECOMES EQUAL TO 0.37. NO FURTHER NARROWING OF THE DROPLET SPECTRUM WAS OBSERVED IN THESE EXPERIMENTS. THE EVIDENCE PRESENTED IN THIS PAPER INDICATES THAT IN THE CHAMBER THE CONDENSATION GROWTH OF DROPLETS IS NOT REGULAR SINCE DURING REGULAR CONDENSATION THERE SHOULD BE A FAR STRONGER NARROWING OF THE DROPLET SPECTRUM. IT IS POSTULATED THAT THE FACTORS LEADING TO THE FORMATION OF A RATHER BROAD DROPLET SPECTRUM CAN INCLUDE INHOMOGENEITIES IN THE SPATIAL DISTRIBUTION OF ACTIVE CONDENSATION NUCLEI, TEMPERATURE FLUCTUATIONS OR OTHER FACTORS WHICH CAN CAUSE SUPERSATURATION EVIDENTLY FLUCTUATIONS IN THE CHAMBER. SUPERSATURATION FLUCTUATIONS EVIDENTLY CANNOT BE ATTRIBUTED TO TURBULENT MIXING BECAUSE THE COEFFICIENT OF TURBULENT DIFFUSION IN THE CHAMBER, DETERMINED FROM THE RATE OF PROPAGATION OF A PASSIVE ADMIXTURE IN THE HORIZONTAL PLANE, IS APPROXIMATELY FIVE ORDERS OF MAGNITUDE LESS THAN IN THE ATMOSPHERE.

FACILITY: INSTITUTE OF EXPERIMENTAL METEOROLOGY, FACILITY:
INSTITUTE OF APPLIED GEOPHYSICS.

UNCLASSIFIED

USSR

UDC 669.187.2.083

GOTIN, V. N., ZAYTSEV, B. YE., SHCHERBAKOV, A. I., ZHITKOV, N. K., OKROKOV, G. N., BOYARASHINOV, V. A., VCYNOVSKIY, YE. B., TOPILIN, V. V., SHALINOV, AL. G., OSIPOVA, L. M., CHERNOV, YU. V., ROZANOVA, T. S., and LAKTIONOV, Y. S.

"Influence of Wall Thickness of Crystallizer and Consumption of Cooling Water on Conditions of Formation of Ingot During Vacuum Arc Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 178-180

Translation: In a vacuum arc furnace in a crystallizer (C) 160 mm in diameter with a current of 2.0-3.7 ka, the influence of wall thickness of C and temperature of cooling water on conditions of formation of ingot of complexly alloyed nickel-based alloys is studied. C with wall thicknesses of 30 and 18 mm were studied, the temperature on the outer surface of the C reaching 75°C in the first case, 105°C in the second. The temperature of the internal surface of the C was identical, 140-150°C. Neither a change in C thickness nor a change in water consumption from 11 to 22 m³/hr influenced the depth of the liquid metal bath, i.e., both repeated rolling of the C and reduced water consumption were permissible. 2 figures.

USSR

UDC 669.027:539.16.04

ABRAMOV, O. V., DMITRIYEV, N. N., KUDEL'KIN, V. P., LAKTIONOV, V. S., and
MILENIN, Ye. N., Moscow

"Ultrasonic Treatment of High-Heat-Resistance Nickel Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 67-72

Abstract: The steels Kh20Ni30, El437B, EP109, and EP220 were ultrasonically treated in the process of vacuum arc remelting, in order to improve their qualities by size reduction of macro- and micro-grains and removal of the zone of acicular crystals. The change of the ingot structure resulted in a considerable increase of plasticity properties of the cast material in the interval of hot deformation temperatures. The surface of bars obtained from ultrasonically treated ingots shows a considerably higher quality than the surface of bars from control ingots. The impact toughness of the rolled iron, obtained from ultrasonically treated alloys EP109 and EP220, increased in the interval of deformation temperatures by approximately two times in comparison with control ingots. Three figures, one table, four bibliographic references.

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AA0040651- LAKTIONOV V.S. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-30

240726 ELECTROSLAG REMELTING in a syphon bottom pouring operation: the consumable electrode is inserted so that its base is clear of the bottom by one third of the slag bath depth. Voltage is applied and the molten slag syphoned into the mould, or else imported via a tundish and orifice in the bottom of the mould. The slag rises and makes the circuit. The idea is to raise the slag sharply and thus avoid any skull or crusting on the mould bottom or walls. Once the slag reaches project height, syphoning stops and remelting proceeds normally.

5.3.66 as 1060334/22-2. PATON, B. E. et al. B.O. PATON ELECTROWELDING INST. (26.8.69) Bul 13/1.4.69. Class 18b. Int. Cl. C 21 c. 18

19750234

AA0040651

AUTHORS: Paton, B. Ye.; Medvedev, B. I.; Latash, Yu. V.; Dudko, D. A.;
Yemel'yanenko, Yu. G.; Klyuyev, N. M.; Pryanishnikov, V. S.;
Laktionov, V. S.; Butskiy, V. N.; and Kosyrev, L. K.

Ordena Trudovogo Kraenogo Znameni Institut Elektrosvarki,
imeni E. O. Patona

19750235

LAKTIONOVA, T. I.

JPRS 555261
29 MAR 72

ABSTRACTS OF ARTICLES PUBLISHED IN THIS ISSUE

[Abstracts; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, p 96]

"Medicobiological Investigations Dealing with the Use of Estrogens as Growth Stimulating Agents," by A.A. Pokrovskiy, M.P. Besterin, G.P. Vavilina, Ye.Ye. Bystritskaya, L.Ya. Solov'yeva, p 3.

As a result of medicobiological examination of meat products, obtained from bull calves stimulated with diethylstilbestrol, it was shown that the recommended method of using this hormone does not rule out the possibility of retention in subproducts of meat of residual quantities of this agent. When feeding laboratory animals on experimental meat there was manifestation of some adverse effects on their development and change in sex gland function. On the basis of the data obtained and the literature, with due consideration of worldwide experience in using diethylstilbestrol to fatten various species of animals, the authors conclude that it is impossible to use this preparation in animal breeding.

There are eight tables, one illustration; bibliography lists 118 items.

"Experience with Vitamin E Supplement for Bicycle Racers and Skiers," by Ye.A. Sakayeva, V.V. Zeffremov, p 52.

A study was made of the effect of different intensities of physical stress on vitamin E availability in the organism of cyclists and skiers during winter sport meets. As a result of the study it was found that 1.5-2 mg especially 3-4-hour training imposes a considerable decline in vitamin E content in the blood serum of the athletes. Additional intake of this vitamin in doses of 50-150 mg for cyclists who trained for 1-3-7 hours and 100-100 mg for skiers who trained for 1-4 hours raises the blood serum vitamin E level and results in greater efficiency of the athletes.

Two illustrations; bibliography lists nine items.

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- 150 -

"A True Antrumectomy Technique in Surgery for Peptic Ulcers," by E.M. Prutitskiy, A.A. Stikharin, ~~et al.~~, p 72.

A method is described for pinpointing the boundaries of the antral portion of the stomach during surgical interventions using 2% solution of Congo red dye as an indicator on the gastric mucosa. The method has been described experimentally and used in clinical practice on 20 patients with duodenal and gastric ulcers; this revealed that it is simple, safe, and permits performance of a true antrumectomy. In other words, it permits the performance of a functionally substantiated sparing operation on the stomach. The precision of the method was confirmed by histological examinations.

Two illustrations; one table; bibliography lists 24 items.

- END -

10,457
C50: 1847-W

LAKTIONOVA, T.

Article by Yu. M. Pankratov, A. A. Gribanov, L. I. Laktionova, Second Moscow Medical Institute, Moscow, U.S.S.R. (1977, pp. 72-77)

PPS 55529
29 MAR 72
DOI: 10.1146/annals-1977-07-072

Interpretation of the data pertaining to clinical pathophysiology of the stomach led to the conception of the differential functional role of its different anatomical parts. With regard to the significance of the antral portion of the stomach in pathophysiology of ulcers it is important to stress the following: 1) the experimental work of physiologists proved that the antrum should be considered first of all as a unique organ that is quite distinct in its morphological and functional characteristics from the other portions of the stomach and plays a major part in regulation gastric secretion.

(P. Pankratov, L. I. Laktionova, A. A. Gribanov, U.S.S.R. (1977, pp. 72-77). In the case of duodenal ulcers, antrumectomy combined with vagotomy for the trunk or selective) has presently received both theoretical and clinical substantiation. The experience of Soviet surgeons (L. I. Laktionova, Yu. M. Pankratov et al.; V. S. Hayat et al.; V. S. Savitskiy et al.; and others) suggests that after such surgery peptic ulcers are extremely rare, while preservation of a large gastric reservoir constitutes, to some extent, a prophylactic measure against the serious postgastroresection disturbance: 1) ulcers which can with sufficient justification be called pyloric ulcers, as indicated by the comprehensive works of Ol et al., Rodin et al., and Schragel et al. Consequently, here too, there is no need for extensive gastric resection.

The effort is warranted with regard to substantiation of a technique for resection of the antral portion of the stomach within its true boundaries. It must be stressed, that the procedures that have become popular in clinical practice do not permit accurate enough resolution of this problem. It is not by chance that different surgeons imply resection of one-fourth to one-half the stomach when they use the term, "antrectomy." Only anatomical guide-

USSR

UDC: 621.372.061

LALAYEV, I. G.

"Effect of Transmitter Set Noises on Systems With Continuous Emission"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 208, pp 63-75 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A114)

Translation: The paper deals with passage of a transmitter signal through the receiver channel as a result of partial leakage due to incomplete decoupling between the transmitting and receiving antennas. The signal is represented in a form which takes account of noises. Expressions are derived which give the noise spectrum of the passing signal in terms of the noise characteristics of the transmitter signal. Consideration is given to the effect which departure of the balanced mixer from ideal has on noise power at its output. Three illustrations, bibliography of five titles.
N. S.

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Acc. Nr: **AT0043980**

Ref. Code: **UR0000**

PRIMARY SOURCE: *Geofizicheskiy Sbornik, Kiev, 1970, Nr 33, pp 43-48*

**INCREASE MAGNETIC SUSCEPTIBILITY OF PRACTICALLY
NON-MAGNETIC ERUPTIVE ROCKS
(Experimental Data)**

T. S. Lebedev, Yu. P. Orlovskiy, Yu. M. Lash
(Institute of Geophysics, Academy of Sciences, Ukrainian SSR)

Summary

The contents of the report is presented which was made by the authors at the All-Union seminar of experimenters in the Institute of Geochemistry and Analytical Chemistry of the Academy of Sciences of the USSR (February 18-19, 1969, Moscow).

Intrusive formations are known in the Mountain Crimea which belong to the zones of the Submontane Crimean-Caucasus and Krivoy Rog-Sansun abyssal fractures. Average value of magnetic susceptibility in the rocks of former zone is 1200, but of the latter it accounts only for $40 \cdot 10^{-6}$ CGSM. The composition of original rock-forming

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minerals of both zones is subidentical. It is supposed that the rocks of the former zone had acquired the extremal values of magnetic susceptibility as a result of allometasomatosis, of the latter due to autometasomatosis.

The samples of practically non-magnetic gabbro-diorites ($\bar{\chi} = 30 \cdot 10^{-6}$ CGSM) were placed into an autoclave with semi-normal solution of NaHCO_3 and were kept here during 120 hrs at a pressure of $0.32 \pm 0.02 \text{ atm}^2$ and at temperature of $430 \pm 30^\circ \text{C}$ in a natural geomagnetic field. After the experiment the values of magnetic susceptibility increased by 6 times ($\bar{\chi} = 196 = 10\% \cdot 10^{-6}$ CGSM). The increase in the magnetic susceptibility values occurred as a result of a polymorphous transition of Fe^{2+} dark colour component of the rock into a new modification. The latter is observed in a fine-dispersed state (the size of grains $< 0.001 \text{ mm}$) and is presented by pyrrhotite.

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Cytology

USSR

UDC 612.411+612.419:578.035.23

FRIDENSHTEYN, A. Ya., CHAYLAKHYAN, R. K., and LALYKINA, K. S., Laboratory of Immunomorphology, Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR, Moscow

"Fibroblast-Like Cells in Cultures of Hemopoietic Tissue of Guinea Pigs"

Leningrad, Tsitologiya, Vol 12, No 9, Sep 70, pp 1147-1155

Abstract: Discrete colonies of fibroblast-like cells formed in monolayer cultures of bone marrow and spleen cells of guinea pigs toward the 10th day after explantation. The number of colonies increased linearly with the number of explanted cells. On cultivation of a mixture of equal amounts of spleen cells from males and females, it was found using X and Y chromosomes as markers that every colony constituted an individual clone. Notwithstanding the similar morphological characteristics of fibroblast-like cells in bone marrow and spleen cultures, their potency during implantation was different. Culturing in vivo in diffusion chambers showed that fibroblast-like cells from monolayer bone cultures 25-30 days old formed bone when the density of cells in the diffusion chambers was high enough. On the other hand cells from spleen cultures were incapable of forming bone spontaneously under similar conditions. However, when

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USSR

FRIDENSHTEYN, A. Ya., et al, Tsitologiya, Vol 12, No 9, Sep 70, pp 1147-1155

spleen cells were cultured in the chambers with transitional epithelial cells, which acted as inducers of osteogenesis, bone was formed by fibroblast-like cells from the spleen cultures.

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USSR

UDC 533.951

LAMAKIN, B. N., FORTOV, V. Ye.

"Pulse Roentgenography of Shock Waves in Dense Cesium Vapors"

Teplofizika Vysokikh Temperatur, Vol 9, No 6, 1971, p. 1291-1293.

Abstract: Compression and irreversible heating of Cs vapors in a shock wave is an effective means of studying the properties of a strongly non-ideal cesium plasma. However, the optical density of the plasma thus produced prevents the use of the well-developed optical methods of study. This article presents a calculation of the X-radiation density required to study shock waves in dense cesium plasma. The required radiation density can be achieved only in the pulse mode of operation of x-ray apparatus. An oscillogram of the absorption of x-radiation by a plasma behind a shock wave is presented, illustrating that it is possible to produce a reflected shock wave, which is particularly important for the investigation of a strongly non-ideal plasma.

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USSR

UDC 539.4

PISARENKO, G. S., LEBEDEV, A. A., KOVAL'CHUK, B. I., and LAMASHEVSKIY, Y. P.

"Anisotropy of the Mechanical Properties of Metal at Low Temperatures"

Khar'kov, Fiz. Mekhanizmy Plastich. Deform. pri Nizkikh Temperaturakh -- Sbornik (Physical Mechanisms of Plastic Deformation at Low Temperatures -- Collection of Works), 1971, p 55 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1252, Summary)

Translation: The article presents a discussion of the results of an experimental investigation of the influence of low temperatures upon the anisotropy of the mechanical properties of alloys Al19, D16T, and carbon steel type 45. On the basis of microstructural analysis data, the anisotropy of the aluminum alloys has both a homogeneous and an inhomogeneous nature. The anisotropy of carbon steel (of the heterogeneous type) was attained by plastic deformation by means of elongation at normal temperature to $\epsilon_{res} = 2\%$. The characteristics of

the mechanical properties in the direction of the main axis of anisotropy were obtained at normal temperature and at temperatures of -100° and -180° . It is shown that as the temperature decreases, change of the elastic strength, and deformation properties in the direction under consideration takes place unequally,
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USSR

UDC 669.018.2:669-974

PISARENKO, G. S., LEBEDEV, A. A., KOVAL'CHUK, B. I., and LONASHENSKIY, V. P.

"Anisotropy of Mechanical Properties of Metals at Low Temperatures"

V sb. Fiz. mekhanizmy plastich. deform. pri nizk. temperaturakh (Physical Mechanisms of Plastic Deformation at Low Temperatures -- Collection of Works), Khar'kov, 1971, p 55 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11725 by I. Yeroshenkova)

Translation of Abstract: The authors investigated the effect of low temperatures (-100 and -180°) on the anisotropy of mechanical properties of AL19 and D16T Al alloys and carbon steel 45. Variations in elastic, strength, and deformation properties occur nonuniformly in different directions with a decline in temperature. More intense growth occurs in the direction which at normal temperature is characterized by fewer high parameters. Anisotropy of the metals declines on cooling, which is characteristic of a large group of metals.

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UDC 539.4

USSR

SENIN, A. M., LAMASHEVSKIY, V. P., SIDOROV, N. G., KOPYLOV, A. K., NOVIKOV, N. V., and LEBEDEV, A. A., Kiev, Institute for Problems of Strength, Academy of Sciences UkrSSR

"Strength of Welded Pipe Joints from Heterogeneous Metals at Room and Low Temperatures"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 64-69

Abstract: The results are presented of an investigation of the strength of welded pipe joints made from heterogeneous metals, such as Kh18N10T steel and AMG-6 alloy, using friction welding and a soft AD1 aluminum interlayer. Tests were conducted under various loading conditions at room (20°C) and low temperatures (-180°C). The effect of the scale factor on strength was investigated by varying the pipe diameter, the width of the interlayer, and the shape of the joints. The results show that the width of the soft interlayer in a square butt joint substantially affects the strength of the joint, and that qualitatively different effects are obtained at different temperatures. At room temperature the strength of the joint decreases with interlayer width, while at -196°C the strength increases.

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USSR

SENIN, A. M., et al, Problemy Prochnosti, No 8, Aug 70, pp 64-69

In order to determine the magnitude of thermal stress, an investigation was made of the stress level in the soft interlayer and in joined items during cooling. The measurement of thermal deformations of welded joint elements was conducted tensometrically. The investigation of the effect of loading conditions on strength characteristics was conducted on a test bench designed for combined loading of pipe samples by axial force and internal pressure under conditions of room and low temperatures. The axial and tangential stresses were computed by Lamé formulas for a thick wall cylinder under internal pressure. The fracture stress levels, during application of axial force, internal pressure, and combined proportional loading by axial force and internal pressure at 20° and -180°C are presented in graphs and tables.

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- 40 -

UDC 534.4.011

USSR

PRISARENKO, G. S., LEBEDEV, A. A., LAMASHEVSKIY, V. P., Institute of Reliability Problems of the Academy of Sciences, UkrSSR

"Criteria of Plasticity and Breaking Point Strength for Carbon Steel under Low Temperature Conditions"

Kiev, Problemy Prochnosti, No. 1, 1970, pp. 3-7

Abstract: The authors tested thin walled tubes of medium carbon steel ($C = 0.37\%$) under plane stress along one axis and two axes, at temperature from $+20$ to -180°C . They determined an arbitrary yield point, taken as 0.2% deformation in the direction of most intensive deformation, and a destructive tension, considered as the ultimate loads in the area of two-axis elongation. The samples developed instability when plastic deformations appeared under pure shear and single-axis compression, making it impossible to determine shear or compression strength for the material. The results of these tests are shown in a figure where the experimental yield points are shown by open circles and the corresponding breakdown points by dark circles. Also shown in these diagrams are the Mises and Coulomb-More curves for the arbitrary yield point and the ultimate strength under single-axis tension.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--CRITERIA OF PLASTICITY AND BREAKING POINT STRENGTH FOR CARBON STEEL
 UNDER LOW TEMPERATURE CONDITIONS -U-
 AUTHOR--PRISARENKO, G.S., LEBEDEV, A.A., LAMASHEVSKIY, V.P.
 COUNTRY OF INFO--USSR
 SOURCE--KIEV, PROBLEMY PROCHNOSTI, NO. 1, 1970, PP 5-7
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--LOW TEMPERATURE PROPERTY, CARBON STEEL, THIN WALL TUBE, YIELD
 STRESS, COMPRESSIVE STRESS, SHEAR STRESS
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1987/0638 STEP NO--UR/3663/70/000/001/0003/0007
 CIRC ACCESSION NO--AT0104170
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

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CIRC ACCESSION NO--AFO104170

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

ABSTRACT. THE AUTHORS TESTED THIN WALLED TUBES OF MEDIUM CARBON STEEL (C EQUALS 0.37PERCENT) UNDER PLANE STRESS ALONG ONE AXIS AND TWO AXES, AT TEMPERATURE FROM PLUS 20 TO MINUS 180DEGREESC. THEY DETERMINED AN ARBITRARY YIELD POINT, TAKEN AS 0.2PERCENT DEFORMATION IN THE DIRECTION OF MOST INTENSIVE DEFORMATION, AND A DESTRUCTIVE TENSION, CONSIDERED AS THE ULTIMATE LOADS IN THE AREA OF TWO AXIS ELONGATION. THE SAMPLES DEVELOPED INSTABILITY WHEN PLASTIC DEFORMATIONS APPEARED UNDER PURE SHEAR AND SINGLE AXIS COMPRESSION, MAKING IT IMPOSSIBLE TO DETERMINE SHEAR OR COMPRESSION STRENGTH FOR THE MATERIAL. THE RESULTS OF THESE TESTS ARE SHOWN IN A FIGURE WHERE THE EXPERIMENTAL YIELD POINTS ARE SHOWN BY OPEN CIRCLES AND THE CORRESPONDING BREAKDOWN POINTS BY DARK CIRCLES. ALSO SHOWN IN THESE DIAGRAMS ARE THE MIESES AND COULOMB MORE CURVES FOR THE ARBITRARY YIELD POINT AND THE ULTIMATE STRENGTH UNDER SINGLE AXIS TENSION.

UNCLASSIFIED

UDC: 8.74

USSR

LAMBIN, L. N., TSYMBAL, G. Ya.

"Synthesis of Algorithms for a Simple and Sequential Static Structure"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Technology in Machine Building, Scientific and Technical Collection), 1970, Dec, pp 31-35 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V638)

Translation: A method is described for cutting the "excess" lines out of a table of information in algorithm synthesis. Methods are given for synthesizing algorithms of simple and sequential static structure. Authors' resumé.

1/1

USSR

LAMBIN, L. N., TSYMBAL, G. Ya.

"Synthesis of Structures of Algorithms for an Ordered Information Table"

Vychisl. Tekhn. v Mashinostr. Nauch.-tekhn. sb [Computer Technology and Machine Building, Scientific and Technical Collection], June, 1970, pp 55-65, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 VS30 by the author's).

Translation: A description is presented of an algorithm for construction of an ordered information table. The basic versions of synthesis of the structure of the algorithm for calculation of a fixed set of finite goals is studied.

1/1

USSR

GORELIK, A. G., LAMBIN, L. N., TSYMBAL, G. Ya.

"System for Timely Change in Structure of Algorithms"

Vuchisl. Tekhn. v Mashinostr. Nauch.-tekhn. sb. [Computer Engineering in Machine Building, Scientific and Technical Collection], June, 1970, pp 41-54, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V700 by the author's).

Translation: A functional description is presented of the system. The interrelationship of man with machine is studied on the example of the solution of practical problems. A foundation is presented for a method of ordering the information in a description of a model of an object.

1/1

USSR

DEC: 621.396.6-181.5

ROZE, R. F., KOKORISH, Ye. Yu., LAMEKIN, V. P., PROKHOROV, V. K.,
and ROZHUKLINS, P. P.

"Integrated Microcircuits for Communications Equipment"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics)
1970, No. 2(23), pp 5-11 (from RZh-Radiotekhnika, No. 3, March 71,
Abstract No. 3V237)

Translation: The directions and perspectives of developments in hybrid-film and semiconductor microsystems are evaluated. Author's abstract

1/1

UDC: 681.3

USSR

LAMESTIN, V. E., LAVRENOV, O. Ye., Riga Institute of Civil Aviation Engineers
imeni the Lenin Komsomol

"Calculation of the y-Parameters of an Integral Amplifier by Reducing the
Matrix of an n-Pole Network to that of a Quadripole"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 16, No 1, 1973, pp 101-106

Abstract: The method of transforming the matrix of the multinode integrated circuit of a linear amplifier to the equivalent matrix of a two-terminal pair network is used for digital computer calculation of its y-parameters and operational parameters. It is shown that the proposed method can be used for simple and accurate computation of the frequency dependences of y-parameters of integral amplifiers, as well as their technical and working parameters.

1/1

USSR

UDC: 621.396.7

LAMEKIN, V. F.

"Using Universal Linear Integrated Circuits in Communications Equipment"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics) 1970, No. 2(23), pp 77-80 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D490)

Translation: The possibilities of using linear integral circuits in communications devices are investigated. The basic characteristics of such circuits and their construction are described.
Author's abstract

1/1

USSR

UDC 539.219.3:669.784.669.25

LAMKOV, K. K., DOROFYEV, YU. G., and SHATOV, YU. S., Novocherassk Permanent Magnet Plant

"Carbon Diffusion in a Single Crystal Alloy YuNDK24"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, Aug 73, pp 72-73

Abstract: The diffusion of carbon was investigated in a magnetically hard alloy of the YuNDK24 type containing (in %): 23.5 Co, 13.6 Ni, 7.9 Al, 3.1 Cu, 0.7 Nb, and 0.3 Ti. To eliminate the possible effect of grain boundaries on the diffusion processes, the study was made using a single crystal measuring 10x10x20 mm. It was found that in the complexly alloyed ferrite of alloy YuNDK24 the alloying elements substantially affect the diffusion mobility and diffusion coefficient (D_0) and Q by lowering the diffusion mobility of carbon with cobalt, rendering the greatest slowing effect of the carbide-forming elements. Three figures, one table, seven bibliographic references.

1/1

Thermomechanical Treatment 1

USSR

UDC: 621.762.32:539.219

DOROFYEV, Yu. G., ZHERDITSKIY, N. T., PRITSAKOV, V. T., ~~MIRALMANOV, V. M.~~
LAMKOV, K. K., Novocheerkassk Polytechnical Institute

"Effect of Thermomechanical Treatment on Diffusion of Carbon in Steel Produced by Dynamic Hot-pressing"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 36-39.

Abstract: Studies were performed using specimens produced by pressing with subsequent heating and dynamic hot-pressing at 1100°C with holding at this temperature for 20 minutes. After the holding, dynamic hot-pressing was performed at 1100, 1000, 900, and 800°C in a die heated to 600°C with subsequent rapid cooling of the specimens in water. The diffusion of carbon occurred in a rarefied gas medium, using C14 as a label. It was found that with high-temperature deformation with shock loads and subsequent hardening, recrystallization processes are suppressed. Therefore, relief of hardening due to elimination of dislocation imperfections occurs incompletely, and the structure of the material has high internal stresses and dislocation

1/2

SSR

DOROFYEV, Yu. G., ZHERDITSKIY, N. T., PRUDTSAKOV, V. T., NEJRAL', V. V.,
LANKOV, K. K., Novochoerkassk Polytechnical Institute, Kiev, Poroshkovaya
Metallurgiya, No 4, 1972, pp 36-39.

density and low mosaic block dimensions. The increase in dislocation
density reduces the diffusion of mobility of the carbon atoms, resulting from
their capture by structural defects, the concentration of which increases
with decreasing dynamic hot-pressing temperature.

2/2

1/2 017
 UNCLASSIFIED
 PROCESSING DATE--04DECTO
 TITLE--SYNTHESIS OF COLORED POLYESTERS BASED ON 2,2-BIS(4-HYDROXYPHENYL
 PROPANE AND PHTHALIC ACIDS -U-
 AUTHOR-(04)-SMIRNOVA, O.V.; LAMM, V.N.; MIKITAYEV, A.K.; KOLESNIKOV, G.S.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 313-16
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--INTERFACIAL POLYCONDENSATION, HYDROXYL RADICAL, NAPHTHALENE,
 AZO COMPOUND, CARBONATE, POLYESTER RESIN, PROPANE, COLOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAHE--3007/0736

STEP NO--UR/0460/70/012/004/0313/0316

CIRC ACCESSION NO--AP0136175

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLORED (ORANGE) POLYESTERS WERE
PREPD. BY INTERFACIAL POLYCONDENSATION IN C SUB2 M SUB2 CL SUB4 OF
2,2-BIS(4, HYDROXYPHENYL)PROPANE, BIS(4, (2, HYDROXY,
1, NAPHTHYLAZO)PHENYL)CARBONATE (I), AND TEREPHTHALOYL OR ISOPHTHALOYL
CHLORIDES AT 20DEGREES. THE M.P. AND REDUCED VISCOSITIES OF BOTH
POLYESTERS WERE DETD. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IN.
MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 533.6.015.42

LAMPER, R. Ye.

"Computing the Natural Oscillations of Cisterns by the Ritz Method with a Varying Parameter"

Tr. VII Vses. Konferentsii po teorii obolochek i platinok, 1969
(Transactions of the 7th All-Union Conference on the Theory of Shells and Plates, 1969) Moscow, "Nauka," 1970, pp 351-354 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2W430)

Translation: In the determination of the frequencies and shapes of the natural oscillations of an axially symmetrical elastic cistern of arbitrary contour partially filled with a liquid by the Ritz method, in cases where the height of the cistern is less than its diameter, use is made of the coordinate functions

$$\varphi_m = e^{-m\lambda x} J_n(m\lambda r) \cos n\theta \quad (m = \pm 1, \pm 2, \dots)$$

1/2

USSR

LAMPER, R. YE., Tr. VII Vses. konferentsii po teorii obolochek i plastinok, 1969, 1970, pp 351-354 (from RZh-Mekhanika, No 2, Feb 71, Abstract No. 2V439)

x , r , and θ are cylindrical coordinates (x coincides with the axis of symmetry of the cistern); n is the number of waves in the peripheral direction; $J_n(m\lambda r)$ is the Bessel function of the first real argument; λ is a variable parameter. It is proved that in the determination of the value of parameter λ , the selected system of functions is complete. Determination of the value of λ and the required number of coordinate functions is carried out on the electronic computer. The results are given of the computation of the axially symmetrical oscillations of a sphere and spherical segments partially filled with a liquid. Yu. G. Salakirev

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USSR

UDC: 8.74

LAMPIGA, V. V., GOLOPEROVA, L. I., ABRAMOV, V. A.

"Decimal Printout of a Number With a Variable Quantity of Digital Places in the Mantissa on the Alphanumeric Printer of the 'Ural-4' Computer"

[Sb. tr.] In-t gorn. mekh. i tekhn. kibernet im. M. M. Fedorova ([Collected Works], Institute of Mining Mechanics and Technical Cybernetics imeni M. M. Fedorov), 1972, vyp. 25, pp 114-117 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V537)

[No abstract]

1/1

72 047 UNCLASSIFIED PROCESSING DATE--180170
 FILE--POLYMER MICRODEFECTS AS THE CENTRES OF DESTRUCTIVE CRACKS INDUCED
 BY LASER IRRADIATION -U-
 THOR-(OSI)-AGRANAT, M.B., CHERNIAVSKIY, F.N., NOVIKOV, N.P., SALUENIA,
 S.S., LAMPOLSKIY, P.A.
 COUNTRY OF INFO--USSR

SOURCE--NATURE, VOL. 226, APR. 25, 1970, P. 349-351

DATE PUBLISHED--25APR70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--LASER RADIATION, CRACK PROPAGATION, DIELECTRIC MATERIAL,
 POLYMETHYLMETHACRYLATE, POLYSTYRENE RESIN, POLYCARBONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 COPY REEL/FRAME--1997/0433

STEP NO--UK/0000/70/226/000/0349/0351

ARC ACCESSION NO--AP0119369

UNCLASSIFIED

/2 047

UNCLASSIFIED

PROCESSING DATE--18OCT70

RC ACCESSION NO--AP0119369

STRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SIZE, LOCATION, STRUCTURE, AND PROPERTIES OF MICRODEFECTS IN POLYMERS WHICH ACT AS CENTERS OF DISK SHAPED DESTRUCTIVE CRACKS INDUCED IN THESE MATERIALS BY LASER IRRADIATION. IRRADIATED TRANSPARENT DIELECTRICS INCLUDING POLYMETHYLMETHACRYLATE, POLYSTYRENE, AND POLYCARBONATE ARE CONSIDERED, AND THE EXPERIMENTAL PROCEDURE IS DESCRIBED. THE EXPERIMENTAL RESULTS SUGGEST THAT THE MICRODEFECT NUCLEI ARE MICROPORES OF THE EXAMINED MATERIALS. FACILITY: AKADEMIJA NAUK SSSR, INSTITUT PROBLEM MEKhanIKI. MOSCOW, USSR.

1/2 037 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--CHEMICAL EFFECTS OF ELECTRON CAPTURE BY CERTAIN IODINE-125
COMPOUNDS STUDIED BY THE MOSSBAUER EFFECT ON TELLURIUM-125 -U-
AUTHOR--(04)--BABESHKIN, A.M., LAMYKIN, C.V., LEBEDEV, V.A., NESMEYANOV,
A.N.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV. KHIM. 1970, 11(1), 117-18
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SPECTROSCOPIC ANALYSIS, MOSSBAUER EFFECT, TELLURIUM, IODINE,
FROZEN FLOW, NITRIC ACID, AQUEOUS SOLUTION, ELECTRON CAPTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0615 STEP NO--UR/0189/70/011/001/0117/0118
CIRC ACCESSILN NO--AP0107212

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--07OCT70

2/2 037

CIRC ACCESSION NO--A0107212

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

ABSTRACT. A STUDY WAS MADE OF THE MOESSBAUER EFFECT OF PRIME125 TE, WITH THE ABSORBER BETA PRIME125 TED SUB3 AND THE SOURCE PRIME125 I, IN VARIOUS CHEM. FORMS (NAI, NAI.2H SUB2 O, KIO SUB3, NA SUB3 H SUB2 IO SUB6, FROZEN SOLNS. OF NAI IN H SUB2 O, AND OF NA SUB3 H SUB2 IO SUB6 IN 0.1 N HNO SUB3). FOR NAI A SINGLET LINE OF REGULAR SHAPE AND WITHOUT BROADENING WAS FOUND. FOR NAI.2H SUB2 O AND THE FROZEN SOLN. OF NAI IN H SUB2 O, A SPECTRUM WITH QUADRUPOLE SPLITTING WAS OBTAINED, DELTA IS GREATER THAN 10 MM-SEC. FOR KIO SUB3 THE SPECTRUM WAS BROADENED GREATLY, ASYM., AND SEPD. INTO 2 SINGLETs WITH AN INTENSITY RATIO OF SIMILAR TO ONE HALF, INDICATING THAT, AFTER ELECTRON CAPTURE IN KIO SUB3, THE TE IS STABILIZED IN MORE THAN 1 FORM. FOR THE FROZEN SOLN. OF NA SUB2 H SUB2 IO SUB6 IN 0.1 N HNO SUB3, THE SPECTRUM WAS GREATLY BROADENED AND ASYM. DUE TO THE PRESENCE OF MORE THAN 1 STABILIZED FORM OF TE.

UNCLASSIFIED

USSR

UDC 621.791.927.019:621.984

LAMZIN, A. G., and RUBENCHUK, YU. I.,

"Wear Mechanism of Deposited Metal With Different Structure Under Thermal Shocks"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 40-42

Abstract: The wear mechanism of the surface of deposited metal operating under conditions of the simultaneous effect of significant specific pressures, friction, and alternating heat and cold was studied. Deposited metal types 3Kh2V8, 3Kh4V3F, U10Kh15M, 1Kh18N10T, and U25Kh7RT were selected for the study. Comparative tests were made for thermal fatigue strength, hot hardness, and frictional wear at increased temperature. A schematic is presented for the wear mechanism of an operating surface of deposited metal type 3Kh2V8 and U10Kh15M under thermal shocks and friction. Of the two investigated steels of the martensitic-carbide class with close values of hot hardness, the U10Kh15M type metal had higher frictional wear resistance during alternating hot and cold. This metal has a clearly expressed heterogeneous structure.

1/1

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USSR

UDC 669.16

TAVADZE, F. N., Academician, Georgian Academy of Sciences,
LANCHAVA, M. D., MIROTADZE, Sh. A., Academy of Sciences of
the Georgian SSR, Institute of Metallurgy

"Selecting Heat-Treat Conditions for Iron Castings With Modular
Graphite"

Tbilisi, Soobshcheniya, Akademii Nauk Gruzinskoy SSR, Vol 64,
No 1, Oct 71, pp 121-124

Abstract: In an attempt to determine precisely the heat
treatment conditions which give a predetermined microstruc-
ture, the authors studied rates of graphitization as a func-
tion of temperature and the cross section of castings of
metal with the following chemical composition: C--3.3-3.5%,
Si--2.4-2.4%, Mn--0.5-0.6%, P0.1-0.15%, S--0.01-0.012%, Mg--
0.045-0.055% and the remainder Fe. The kinetics of graphiti-
zation was studied at 850, 900 and 950°C. The results show
that the rate of graphitization of primary cementite is chief-
ly a function of temperature. The first stage of graphiti-

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USSR

TAVADZE, F. N. et al., Soobshcheniya, AN GSSR, Oct 71, pp
121-124

zation should be done at 920-930°C. A study of the rate of graphitization of secondary cementite showed that wall thickness has an appreciable effect along with temperature and cross section. However, holding for 4-5 hours at 750 and 720°C results in satisfactory microstructure in all cases. Secondary cementite in iron with modular graphite in the cast state with no subsequent heat treatment is rapidly graphitized in contrast to normalized specimens; a reduction in the concentration of carbon and silicon noticeably reduces the rate of graphitization of secondary cementite. Three figures, one table, bibliography of three titles.

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Acc. Nr.

AT0050275

Abstracting Service:
CHEMICAL ABST. 3/70

Ref. Code

UR0020

L

104916f Structure of the complex anion $[\text{Co}(\text{SO}_3)_2(\text{NH}_3)]^-$.
 Ablov, A. V.; Landt, I. I.; Simonov, Yu. A.; Malinitskii,
 T. I.; Tevbis, A. B. (Inst. Khim. Kishinev, USSR). Dokl.
 Akad. Nauk SSSR 1970, 190(3), 530-51 [Chem] (Russ). X-ray
 anal. of the dark-brown form of $\text{NH}_4[\text{Co}(\text{SO}_3)_2(\text{NH}_3)] \cdot 3\text{H}_2\text{O}$ indi-
 cates that the SO_3 groups are in the cis-position and are bonded
 to the Co atom through S. The interat. distances and valence
 angles are tabulated. C. J. Steinberg

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USSR

UDC 539.213

BREKHOVSKIN, S. M., VIKTOROVA, Yu. N., GRINSHTEYN, Yu. L., and
LANDA, L. M.

"Bases of Radiation Behavior of Glass and Ceramics"

Stroyizdat (Construction Publications) 1971, 256 pages, illustrated, price
1 ruble 52 kopeks (from RZh--Fizika, No 9, 1971, Abstract No 9E231K)

Translation: This is a monograph on the effect of radiation on glass and
ceramics, designed for engineers and technicians. Principal attention is
given to the dependence of the degree of radiation destruction on the
structure, chemical, and phase state of the material. T. Kh.

1/1

USSR

LANDA, L. N.

"Principle of Algorithmization in the Learning of Foreign Languages"

Vopr. algoritmiz. i programmir. obuch. [Problems of Algorithmization and Programming of Learning -- Collection of Works], No 2, Moscow, Pedagogika Press, 1972, pp 118-168 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V744 by V. Gushchin)

Translation: This article presents a broad review of the method of algorithmization in studies of communicative-speech and speech-communicative processes by means of language, i.e., processes of conversion of thoughts to speech in a given language and proper understanding of speed respectively. The general principles of construction of learning algorithms are studied. The difficulties arising in the process of performance of communicative-speech and speech-communicative tasks are discussed. The material presented is illustrated by a large number of specific examples. The basic functions of algorithms in the study of unfamiliar languages are discussed, and certain problems of methods of their application are studied.

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USSR

LANDA, L. N.

"The Problem of Automation of Certain Aspects of Programming"

Vopr. Algoritmiz. i Programmir. Obuch. [Problems of Algorithmization and Programmed Learning -- Collection of Works], No 2, Moscow, Pedagogika Press, 1973, pp 28-41 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V793)

Translation: The question of the possibility of partial automation of the process of composition of programs for the selection and composition of exercises for the formation of certain intellectual abilities and skills and certain related qualities of mental activity is discussed. The primary stages in the process of composition and formalization of exercises are demonstrated. The discussions presented are illustrated with an example of the composition of exercises for the formation of certain grammatical skills and habits based on the material of the Russian language section "isolation of matched definitions."

1/1

USSR

UDC 621.791.75.04

VERBITSKIY, V. G., and LANDA, M. I., Candidates of Technical Sciences, and
TUKHMETOV, R. YU., Engineer Ufa Aviation Institute imeni S. Ordzhonikidze);
SHNAYDER, B. I., Candidate of Technical Sciences (Institute of Electric
Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR)

"Use of Ceramics in Microplasma Welding Torches"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 70-71

Abstract: The requirements of microplasma welding torches are discussed from the viewpoint of using nozzles made of ceramics. Analysis of the physico-chemical, thermomechanical, and electrical properties of ceramic materials showed that materials of the following modifications are required for welding torches: volumetrically constant with a porous ceramic structure for making parts testing the sharp thermal shocks and action of high temperature; volumetrically constant with a high gas permeability for gas lenses, and dense ceramic materials providing laminar flow of the shielding gas for mechanically and electrically loaded parts. It is advantageous to use materials of the $Al_2O_3-ZrO_2$ system to produce ceramics of the described modifications.

1/2

USSR

VERBITSKIY, V. G., et al., *Avtomaticheskaya Svarka*, No 2, Feb 74, pp 70-71

Materials made of MgO, HfO₂ and others also show promise for use in the design of microplasma welding torches. Three figures, three bibliographic references.

2/2

USSR

LANDA, P. S., PONOMAREV, Yu. V.

"Influence of the Fuselage on Loss of Oscillating Stability of a Long Wing in a Stream of Air"

4-ya Vses. Konf. po Probl. Ustoychivosti v Stroyit. Mekh. Tezisy Dokl. [Fourth All-Union Conference on Problems of Stability in Structural Mechanics, Theses of Reports -- Collection of Works], Moscow, 1972, p 173, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B414).

Translation: A study is presented of the stability of a long wing with a fuselage on the assumption of unstable aerodynamic action. The fuselage is considered a distributed system. The problem of loss of oscillating stability of the system is reduced to the certain two-parameter problem of Eigen values, described by a system of differential equations in full derivatives. The Eigen values (frequency of oscillations at flutter boundary and flutter speed) are the nulls of the characteristic determinant. The values of the determinant are calculated using a fundamental system of partial solutions. This fundamental system is produced on a computer by numerical integration of differential equations. The stability both of symmetrical and of antisymmetrical oscillations of the system are studied over a broad range of frequencies and velocities as functions of

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USSR

LANDA, P. S., PONOMAREV, Yu. V., 4-ya Vses. Konf. po Probl. Ustoychivosti v Stroyit. Mekh. Tezisy Dokl., Moscow, 1972, p 173.

fuselage parameters and of point of attachment of the wing to the fuselage. The solution of the problem is compared to the results of calculation by the Bubnov-Galerkin method.

USSR

LANDA, P. S.

"Peculiarities of the Operation of a Ring Laser with a Mixture of Active Gas Isotopes"

Leningrad, Optika i Spektroskopiya, Feb 72, pp 333-337

ABSTRACT: The author finds the detuning region of the oscillation frequency with respect to the center of the amplification line, in which in addition to the standing wave mode there exists a mode of two counterwaves with different intensities. It is shown that in a laser with a 50% mixture of isotopes such a region exists only for fairly small pumping excesses over the threshold. The dependence of the width of the synchronization region on the detuning and pumping excess over the threshold was studied. It is shown that for lasers with pure isotopes and mixtures of isotopes these relationships are substantially different from each other. The nature of the relationships found agrees qualitatively with experimental data.

1/1

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USSR

UDC 621.373:530.145.6

KLOCHAN, YE. L., LANDA, P. S.

"Frequency Characteristics of a Ring Laser Considering Natural Fluctuations"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 10, 1971, pp 1518-1525

Abstract: A study was made of the effect of natural fluctuations on the average beat frequency of the opposing waves in a ring laser as a function of the rotation rate under the assumption that the amplitude fluctuations are small. The phase fluctuations were studied by the Fokker-Planck equation method. The effect of natural fluctuations on the frequency characteristic depends on the generation power especially near the generation threshold.

In studying the problems of limiting sensitivity of a laser gyroscope [N. N. Rozanov, Optika i spektroskopiya, Vol 28, No 4, 740, 1970; P. S. Landa, Optika i spektroskopiya, Vol 29, No 5, 1971] it was demonstrated that the mean square deviation of the beat frequency as a function of the mean frequency characteristic decreases with an increase in observation time T as $\sqrt{D/T}$ where D is the width of the beat signal line. Here, the mean frequency characteristics are calculated for a frequency difference on the order of and much larger than the synchronization band width. Equations are derived for the phase difference
1/2

USSR

KLOCHAN, YE. L., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
Vol XIV, No 10, 1971, pp 1518-1525

fluctuations, the frequency characteristic of the ring laser near the synchroni-
zation band and the frequency characteristic far from the synchronization region.

2/2

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1/1

USSR

UDC 518.5:681.3.06

ARONOV, V. I., BELYAYKOV, N. Ye., GORDIN, V. M., LANDA, T. I., SHIRGINOVA, A. I.

"System for Automatic Processing of Anomalies in Three Dimensional Potential Fields Fixed in a Plane or Nonhorizontal Surface"

Tr. Vses. n.-i Geologorazved. Neft. in-t [Works of All-Union Scientific Research Institute for Geological Prospecting and Petroleum], No 103, 1971, pp 161-180, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V819 by the author's).

Translation: A description is presented of the algorithm and system of programs entitled "Reduction -- perpendicular" for the BESM-4 computer, designed to solve a broad range of problems in prospecting gravimetry and magnetometry: interpolation of observations from an arbitrary network of points to units in a right network, reduction of anomalies on external planes, filtration of random errors and calculation of various transformants of three dimensional potential fields. The technological characteristics of a system of programs and results of experimental calculations of three dimensional theoretical models are presented.

1/1

Acc. Nr: AP0054291-LANDA Ref. Code: VIP 2199115

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye,
1970, Nr 3, pp 44-46

METHOD OF ROENTGENOGRAPHIC ANALYSIS OF THE BONE TISSUE

V. A. Landa and L. A. Malnikov

The possibilities of the method of roentgenographic analysis in studying of the bone tissue are briefly exposed in the article. The necessity of local examinations during study of pathological processes in the bone is stressed. A description is submitted of the camera constructed by the authors which permits to carry out local roentgenographic examinations, and to control the accuracy of focusing the section of specimen under study on the primary roentgen ray beam.

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REEL/FRAME
19831429

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Crystals & Semiconductors

UDC: 621.373.5

USSR

BIDIKHOV, S. A., LANDA, P. S., Department of General Physics
for Specialists in Mechanics and Mathematics

"Investigation of the Conditions of Excitation of a Piezoelec-
tric Semiconductor Oscillator by the Method of Electronic
Modeling"

Moscow, Vestnik Moskovskogo Universiteta, Seriya III, Fizika,
Astronomiya, Vol 14, No 1, Jan/Feb 73, pp 102-104

Abstract: Ultrasonic and electrical oscillations close to
monochromatic may be stimulated in a piezoelectric semicon-
ductor crystal when the velocity of electron drift exceeds
the speed of sound. The equation for the emission threshold
in the linear approximation, with boundary conditions corre-
sponding to a mechanically unloaded crystal with ideally con-
ductive weightless metal contacts, is studied by the method of
analog simulation for the case of a short resonator and large
conductivities. It is shown that an exact solution is neces-
sary, under these conditions, for determining the critical rate

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USSR

BIDIKHOV, S. A., LANDA, P. S., Vestnik Moskovskogo Universiteta, Seriya III, Fizika, Astronomiya, Vol 14, No 1, Jan/Feb 73, pp 102-104

of electron drift. The method proposed in this paper for solution on an analog computer can be used to study the equation for emission, with arbitrary boundary conditions. For a resonator with ideally reflecting boundaries, losses on the ends of the crystal may be accounted for by equivalent scaling of conductivity.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--BEAT AND SYNCHRONIZATION MODES OF OPPOSED WAVES IN A ROTATING GAS
RING LASER -U-
AUTHOR-(02)-LANDA, P.S., LARIONTSEV, YE.G.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, JUNE 1970, P. 1214-1226

DATE PUBLISHED----JUN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS LASER, LASER SYNCHRONIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1022

STEP NO--UR/01097/0/015/000/1214/1226

CIRC ACCESSION NO--AP0136449

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136449

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE FREQUENCY CHARACTERISTICS OF A GAS RING LASER, WITH EMPHASIS ON THE DEPENDENCE OF THE FREQUENCY DIFFERENCE OF OPPOSING MODES ON THE MISMATCH BETWEEN INTRINSIC FREQUENCIES WHICH IS PROPORTIONAL TO THE ROTATIONAL VELOCITY. THE ASYMPTOTIC BEHAVIOR OF THE FREQUENCY RESPONSE IS STUDIED FOR ARBITRARY COUPLING COEFFICIENTS BEYOND THE MODE SYNCHRONIZATION REGION. IT IS SHOWN THAT FOR THE CASE OF WEAK COUPLING THE FREQUENCY RESPONSE CURVE INTERSECTS ITS ASYMPTOTE AND EXTENDS ABOVE IT AT LARGE MISMATCH CONDITIONS. IT IS SHOWN THAT UNDER SPECIFIC CONDITIONS THERE CAN BE TWO BEAT MODES DIFFERING FROM EACH OTHER BY THE MEAN INTENSITIES OF THE OPPOSING WAVES AND BY THE AMPLITUDE OF INTENSITY FLUCTUATIONS. IN THE STRONG COUPLING APPROXIMATION, HYSTERESIS OF THE FREQUENCY RESPONSE TAKES PLACE.

UNCLASSIFIED

1/2 046 UNCLASSIFIED
TITLE--FLUCTUATIONS IN RING LASERS -U-

PROCESSING DATE--27NOV70

AUTHOR--LANDA, P.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1651-1661

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER, WAVE FUNCTION, SPECTRAL ENERGY DISTRIBUTION, LINE
INTENSITY, LINE WIDTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0005

STEP NO--UR/0056/70/058/005/1651/1661

CIRC ACCESSION NO--AP0127655

UNCLASSIFIED

272 046

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127655

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

ABSTRACT. FLUCTUATIONS OF THE AMPLITUDES AND PHASES OF OPPOSITE WAVES IN A RING LASER ARE CONSIDERED BY TAKING INTO ACCOUNT COUPLING BETWEEN THEM BY MEANS OF BACK SCATTERING. THE CALCULATIONS ARE PERFORMED FOR SINGLE, MODE OPERATION AND VARIOUS LEVELS OF OUTPUT POWER LYING BETWEEN NEAR, THRESHOLD VALUES AND SUCH HIGH FIELD STRENGTHS THAT SATURATION BECOMES IMPORTANT. CONCRETE EXPRESSIONS ARE OBTAINED FOR THE SPECTRAL DENSITIES, MOMENTS AND AMPLITUDE CORRELATION COEFFICIENT FOR THE OPPOSITE WAVES. EXPRESSIONS ARE ALSO DERIVED FOR THE LINE WIDTHS OF EACH OF THE WAVES AND FOR THE LINE WIDTH OF THE DIFFERENCE FREQUENCY. THE INFLUENCE OF COUPLING BETWEEN WAVES ON THE SHAPE OF THE AMPLITUDE AND PHASE SHIFT FLUCTUATION SPECTRA IS ELUCIDATED. IT IS FOUND THAT IN THE PRESENCE OF COUPLING THE WAVE WIDTH IS NOT COMPLETELY DEFINED BY THE MAGNITUDE OF THE FREQUENCY FLUCTUATION SPECTRAL DENSITY AT ZERO FREQUENCY.

FACILITY: MOSKOVSKIY
GOSUDARSTVENNYI UNIVERSITET IM. M. V. LOMONOSOVA.

UNCLASSIFIED

1/2 044 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AUTOOSCILLATION REGIMES IN AN ANNULAR GAS LASER -U-
AUTHOR-(03)-BIDIKHOV, S.A., LANDA, P.S., LARIONTSEV, YE.G.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, 1970, PP 529-538
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GAS LASER, LASER EMISSION COHERENCE, LASER PUMPING, LASER STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1351 STEP NO--UR/0109/TC/000/003/0529/0538
CIRC ACCESSION NO--AP0123309

UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0123309

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPETITION OF COUNTERBEAMS IS STUDIED IN AN ANNULAR GAS LASER DURING CONTACT DUE TO SCATTERING. STABILITY OF SINGLEWAVE AND DOUBLEWAVE REGIMES IS INVESTIGATED AND CONDITIONS ARE OBTAINED WHICH ARE ACCOMPANIED BY PERIODIC PUMPING OVER OF ENERGY FROM ONE WAVE TO THE OTHER. A STUDY WAS ALSO MADE OF AUTOOSCILLATION INTENSITIES OF THE PHASE DIFFERENCE OF COUNTERBEAMS. BASIC CHARACTERISTICS OF STEADY STATE REGIMES ARE DETERMINED AND THEIR STABILITY INVESTIGATED.

UNCLASSIFIED

1/2 048 UNCLASSIFIED PROCESSING DATE--3000170
TITLE--SOURCES OF NATURAL FLUCTUATIONS IN RING LASERS -U-

AUTHOR--(02)--KLIMONTOVICH, YU.L., LANDA, P.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 4, PP 1367-1376

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHASE SHIFT, LASER PROPERTY, OSCILLATION, TRAVELING WAVE,
ELECTROMAGNETIC FIELD, ASYMPTOTIC SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1566

STEP NO--UR/0056/70/058/004/1367/1376

CIRC ACCESSION NO--AP0106312

UNCLASSIFIED

2/2 048
CIRC ACCESSION NO--AP0106312
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE INTENSITIES OF NATURAL FLUCTUATION SOURCES IN RING LASERS ARE CALCULATED BY TAKING INTO ACCOUNT THEIR DEPENDENCE ON THE FIELD STRENGTH. THE CALCULATION IS PERFORMED FOR A SINGLE TRAVELING WAVE REGIM AND ALSO FOR TWO OPPOSITE WAVES WITH APPROXIMATELY EQUAL AMPLITUDES. ASYMPTOTIC EXPRESSIONS FOR FLUCTUATION SOURCE INTENSITIES ARE CONSIDERED FOR THE LIMITING CASES OF WEAK AND STRONG FIELDS. FORMULAS ARE DERIVED FOR THE CORRELATION COEFFICIENT OF SOURCES ENTERING THE EQUATION FOR OPPOSITE WAVE AMPLITUDES AND PHASE SHIFTS.

V. LOMONOSOVA.

FACILITY: MOSKOVSKIY GOSUDARSTVENNIY UNIVERSITET I. M.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PRODUCTIONS DATE--20NOV70
TITLE--STATE OF THE BONE MINERAL COMPONENT IN THE PROCESS OF REPARATIVE
REGENERATION -U-
AUTHOR--LANDA, V.A.
COUNTRY OF INFO--LSSR L
SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 5, PP 33-37
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ORTHOPEDIC SURGERY, BONE REGENERATION, CRYSTALLIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0740 STEP NO--OR/9115/10/0001005/0033/0037
CIRC ACCESSION NO--AP0131335
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A00121335
ABSTRACT/EXTRACT--(U) GP-O-

ABSTRACT. THE MINERAL CRYSTALLINE SUBSTANCE OF THE CALLUS WHICH FORMED AFTER OSTECTOMY OF THE RADIAL BONE HAS BEEN INVESTIGATED WITH AID OF METHOD OF ROENTGENOGRAPHIC ANALYSIS. THE MINERAL CRYSTALLINE SUBSTANCE AT ALL PERIODS WAS FOUND TO BE ONLY REPRESENTED BY HYDROXYLAPATITE. CRYSTALLITES OF HYDROXYLAPATITE WERE DISCLOSED ON THE 3RD DAY IN THE ENDOSTEAL CALLUS, ON THE 15TH DAY IN THE PERIOSTEAL, AND ON THE 7TH DAY IN THE INTERMEDIARY CALLUS. GROWTH OF THE CRYSTALLITE SIZES CONTINUED UP TO THE 21TH-30TH DAY IN THE ENDOSTAL CALLUS, AND UP TO THE 21TH DAY IN THE PERIOSTEAL CALLUS. FOLLOWED THEREAFTER BY DECREASE OF THE CRYSTALLITE SIZES IN THESE AREAS OF CALLUS. THE CRYSTALLITE ORIENTATION ALONG THE LONG AXIS OF BONE GROWS UP TO THE 21ST DAY IN THE ENDOSTEAL AND PERIOSTEAL CALLUS, AND THEN THE DEGREE OF ORIENTATION TENDS TO DECREASE. BUT IN THE INTERMEDIARY CALLUS THE DEGREE OF CRYSTALLITE ORIENTATION ALONG THE LONG AXIS OF BONE TOWARD THE 6TH DAY AFTER FRACTURE DOES NOT REACH VALUES CHARACTERISTIC OF THE INTACT BONE.

FACILITY: TSENTRALNOGO INSTITUTA TRAVMATOLOGII I ORTOPEDI.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--27/11/70
TITLE--COEFFICIENT OF THE TEMPERATURE CONDUCTIVITY OF ALUMINOSILICATE
REFRACTORIES AT 200-1600DEGREES -U-
AUTHOR-(03)-LITOVSKIY, YE.YA., LANDA, YA.A., MILSHENKO, R.S.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(5), 17-19
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--THERMAL CONDUCTIVITY, REFRACTORY MATERIAL, ALUMINA, SILICA,
ANISOTROPY, TEMPERATURE DEPENDENCE/(U)KMI7 FURNACE REFRACTORY, (U)DZ
BLAST FURNACE REFRACTORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0645 STEP NO--UR/0131/70/035/005/0017/0019
CIRC ACCESSION NO--AP0134407
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NDV70

CIRC ACCESSION NO--AP0134407

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE DATA IN THE LITERATURE ON THERMAL COND. AND HEAT CAPACITY COEFFS. OF ALUMINOSILICATE REFRACTORIES IN THE 300-1100DEGREES RANGE, BUT SUCH DATA ARE NOT AVAILABLE AT HIGHER TEMPS. IN GLASS FOUNDRY FURNACES, AS WELL AS IN MANY APP. USED FOR STEEL MAKING, SUCH REFRACTORIES ARE NEEDED CAPABLE OF OPERATING AT 1550-1600DEGREES. THE TEMP. DEPENDENCE OF THERMAL COND. COEFF. OF ALUMINOSILICATE REFRACTORIES OF VARIOUS TYPES WAS INVESTIGATED WITHIN THE 200-1600DEGREES RANGE. THE DETN. OF THE TEMP. COND. COEFF. OF THE REFRACTORIES WAS PERFORMED BY TAKING INTO CONSIDERATION THE POSSIBLE ANISOTROPY OF THE ARTICLES IN THE DIRECTIONS PERPENDICULAR AND PARALLEL TO THE PRESSING DIRECTION. NO SIGNIFICANT DIFFERENCES WERE OBSERVED BETWEEN THE REFRACTORIES INVESTIGATED. THE TEMP. DEPENDENCE OF TEMP. COND. FOR THE MAJORITY OF THE SAMPLES INVESTIGATED HAS FOUND TO BE THE SAME: UP TO 400-600DEGREES A DECREASE IN TEMP. COND. IS OBSD., UP TO 1100-1300DEGREES ITS INCREASE, AND ABOVE 1200-1300DEGREES AGAIN ITS DECREASE. THE VERY HIGHEST TEMP. COND. DURING THE INVESTIGATION WAS OBSD. IN CASE OF ROOFING TILING KM-17, AND THE LOWEST IN CASE OF THE BLAST FURNACE TYPE D-2. FACILITY: VSES, INST. OGNEUPOR., LENINGRAD, USSR.

UNCLASSIFIED