

UNCLASSIFIED

PROCESSING DATE--09DCT70

2/3 041

CIRC ACCESSION NO--AP0112924

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF CHEM. COMPN. OF FERRITIC ANNEALED CAST IRONS CONTG. GLOBULAR GRAPHITE ON THE RESISTIVITY OF THE DIES TO THERMAL FATIGUE DURING THE MOLDING OF ARTICLES FROM PYREX TYPE GLASS WAS INVESTIGATED. THE EXPTL. CAST IRONS WERE MELTED IN AN INDUCTION ELEC. FURNACE AND WERE TWICE SUBJECTED TO GRAPHITIZING ANNEALING UNDER SIMILAR CONDITIONS (HEATING TO 1000DEGREES, HOLDING THERE FOR 4 HR, COOLING AT A RATE OF 50DEGREES PER HR TO 700DEGREES, HOLDING THERE FOR 4 HR, COOLING IN THE FURNACE TO 350DEGREES, AND COOLING IN AIR). AFTER THE ANNEALING, A SMALL PORTION OF THE PEARLITE REMAINED ONLY IN THE PHOSPHIDE EUTECTIC INCLUSIONS. ALL CAST IRONS STUDIED CONTAINED SMALLER THAN 0.01PERCENT S, 0.25-0.35PERCENT MN, AND SIMILAR TO 0.8PERCENT NI. THE C, SI, AND P CONTENT, IN ORDER TO INVESTIGATE THEIR EFFECT ON THE THERMAL STABILITY, WERE VARIED WITHIN THE FOLLOWING LIMITS: C 3.35-3.7, SI 1.7-2.1, AND P 0.05-0.35PERCENT. IN ORDER TO OBTAIN GLOBULAR GRAPHITE, THE CAST IRONS WERE MODIFIED WITH MG. PLUNGERS WERE PREPD. FROM THE EXPTL. CAST IRONS, AND THERMAL STABILITY OF THE CAST IRONS WAS STUDIED. THE CAST IRON CONTG. THE LEAST AMT. OF SI AND P WAS THE MOST STABLE THERMALLY. SI AND P ARE THE ELEMENTS WHICH DECREASE THE THERMAL STABILITY OF FERRITIC MOLDING CAST IRONS. ALLOYING WITH NI INCREASED THE THERMAL STABILITY OF THE CAST IRON WITH INCREASED P CONTENT. ANALOGOUS RESULTS WERE OBTAINED WHEN TESTING CASTINGS OF UNALLOYED CAST IRONS CONTG. GLOBULAR GRAPHITE AND MODIFIED WITH CE-MG 1.

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PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112924

ABSTRACT/EXTRACT--THERMAL FATIGUE CRACKS WERE OBSD. PRIMARILY ALONG THE BOUNDARIES OF THE FERRITE GRAINS AT THE SPOTS OF THE DEPRESSIONS IN THE SURFACE OF THE PLUNGERS AND AT THE SPOTS WHERE GRAPHITE GLOBULES WERE CLOSE TO THE SURFACE. AS THEY PROPAGATE, THE CRACKS INTERSECT THE GRAINS. THE HARMFUL EFFECT OF SI AND P ON THERMAL STABILITY OF ANNEALED CAST IRONS IS APPARENTLY ASSOC. WITH THE ENRICHMENT OF THE GRAIN BOUNDARIES BY THESE ELEMENTS. WITHIN THE RANGE INDICATED IN THIS WORK, P SHARPLY REDUCES THE PLASTICITY OF CAST IRON. FACILITY: VSES. ZAOCH. POLITEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

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KROTKOVA, Ye. Ye., FOR CITATION, I. M., KROTKOVA, Ye. Ye., and ...
I. S.

"Properties and Structure of 40Kh Steel with Thermally Induced ..."

Moscow, Metallovedeniye i Tsvetnashaya Promyshlennost' Metallurgiya, No. 12, 1964, pp. 10-19
64-65

Abstract: A study was made of electrically melted steel of the following composition: 0.43% C; 0.64% Mn; 0.33% Si; 0.96% Cr; 0.65% Ni; 0.1% Cu; 0.005% S; and 0.020% S. The application of nitrogen (10-20 l) ... the process of tempering at 100-350° C results in higher hardness and increased resistance of 40Kh steel, which can be explained by the ... martensite decomposition and the state of the carbide phase. ... tempering does not eliminate the irreversible temper brittleness, but reduces the extent of the zone -- 150° C as compared to 350° C at ordinary tempering. Minimum impact toughness is observed at 150° C regardless of the type of tempering

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1/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF ALLOYING WITH NITROGEN ON THE PROPERTIES OF THE AL4 ALLOY

-U-

AUTHOR--(02)-DYACHENKO, L.I., POGODINA ALEKSEYEVA, K.M.

COUNTRY OF INFO--USSR

SOURCE--LITEINDE PROIZVOD. 1970, 2, 24-5

DATE PUBLISHED-----70

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

TOPIC TAGS--ALUMINUM ALLOY, ALLOY DESIGNATION, NITROGEN CONTAINING ALLOY, MECHANICAL PROPERTY, DUCTILITY, IMPACT STRENGTH, GRAIN SIZE, FOUNDRY TECHNOLOGY, NITRIDE/(U)AL4 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1736

STEP NO--UR/0128/70/002/000/0024/0025

CIRC ACCESSION NO--AP0118714

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 027

CIRC ACCESSION NO--AP0118714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL4 WAS ALLOYED WITH 0.01-0.02PERCENT N SUB2 BY THE ADDN. OF 0.5PERCENT AL HEXACHLORAMINE (SIC) (ON MIXING WITH THE MELT IT DECOMP. INTO NH SUB3 AND ALCL SUB3) INTO A 400 KG MELT. THE METAL WAS CAT INTO A CHILL MOLD AND WAS FREE OF CAVITIES, PORES, AND BLISTERS. THE N SUB2 INCREASED THE YIELD STRENGTH FROM 14.0 TO 17.2 KG-MM PRIME2 AND THE DUCTILITY FROM 1.65 TO 2.4PERCENT IN THE AS CAST STATE. AFTER HEAT TREATMENT THE BENEFICIAL EFFECT OF THE N SUB2 REMAINED, AND N SUB2 ALSO INCREASED THE IMPACT STRENGTH OF THE ALLOY. NO SEP. NITRIDE PHASES WERE OBSO. IN THE MICROSTRUCTURE. THE N DECREASED THE GRAIN SIZE OF THE ALLOY.

UNCLASSIFIED

USSR

POGORELKO, I. A., ed., Lektsii po ekonomiko-matematicheskim metodam. Ch. 1. Elementy matematicheskogo programmirovaniya i modelirovaniya na EVM. Spetsial'nyy kurs dlya ekonomistov, Moscow, 1972

With Respect to a Time Criterion. Chapter 9. Application of Methods of Solving Transport Problems. Chapter 10. Nonlinear and Other Forms of Programming. Chapter 11. Dynamic Programming. Chapter 12. Computer Modeling.

2/2

- 60 -

UDC 513.731

USSR

POCORELOV, A. V., Corresponding Member of the Academy of Sciences USSR,
Low-Temperature Physicotechnical Institute, Academy of Sciences Ukrainian
SSR, Khar'kov

"Existence of Closed Convex Hypersurface With Prescribed Function of
Principal Radii of Curvature"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 3, 1971, pp 526-528

Abstract: The article considers the problem of the existence of a closed
convex hypersurface in an (n + 1)-dimensional Euclidean space with a pre-
scribed elementary symmetric function of the principal radii of curvature.
It is shown that for the existence of such a hypersurface i.e., a hyper-
surface satisfying the equation

$$S_k(R_1, R_2, \dots, R_n) = \varphi(v) > 0$$

it is sufficient that the following two conditions be fulfilled:

$$\int_{\sigma} v \varphi(v) d\sigma = 0;$$

$$\varphi > \sqrt{1 - \frac{1}{2^n} \max_{x,y} [\varphi^{1/k} + (\varphi^{1/k})_y]^k}.$$

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Acc. Nr:

AP0048029

Abstracting Service: *5170*
INTERNAT. AEROSPACE ABST.

Ref. Code:

ZR0041

(A70-23120 # Solvability of mixed problems for one-dimensional quasi-linear hyperbolic equations (O raznashimosti smeshannykh zadach dlia odnomernykh kvaziliniinykh giperbolicheskikh uravnenii), P. E. Sobolevskii and V. A. Popovchenko (Voronezhskii Gosudarstvennyi Universitet, Voronezh, USSR). *Ukrainskii Matematicheskii Zhurnal*, vol. 22, no. 1, 1970, p. 114-121; 5 refs. In Russian.

Derivation of L, sub p and C estimates of solutions to mixed problems for one-dimensional hyperbolic equations. With the aid of these estimates the solvability of linear problems with minimal constraints on smoothness is demonstrated. The solvability of mixed problems for quasi-linear equations with nonlinearities figuring in both the equation coefficients and the boundary conditions is proven.

A.B.K.]

ACS

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REEL/FRAME
19791711

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--KINETICS OF EPSILON CAPROLACTAM VINYLATION -U-
 AUTHOR--(05)-KCNNOV, N.F., ZARUTSKIY, V.V., POGORELOV, A.G., PISARENKO,
 V.N., KOSMINSKAYA, G.A.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 412-15
 DATE PUBLISHED--70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--REACTION KINETICS, CAPROLACTAM, VINYL COMPOUND, ORGANIC
 SYNTHESIS, ACTIVATION ENERGY
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--2000/0893
 CIRC ACCESSION NO--AP0124556
 STEP NO--UR/0076/70/044/002/0412/0415
 UNCLASSIFIED

P

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--A0124556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE SYNTHESIS OF N-VINYLCAPROLACTAM (I) FROM C SUB2 H SUB2 AND CAPROLACTAM (II) WITH NA CAPROLACTAM CATALYST AT 125-45DEGREES WERE STUDIED. EXPTL. CONDITIONS WERE CHOSEN TO PROVIDE A NON RANDOMIZED COMPLETE FACTORIAL PLAN FOR THE VARIABLE TEMP., REACTION TIME, AND CATALYST CONC. AT 2 LEVELS. WITH THE USE OF AN ITERATIVE METHOD, VALUES WERE CALCD. FOR THE PRE EXPONENTIAL FACTORS, ACTIVATION ENERGIES, AND REACTION ORDERS WITH RESPECT TO THE REACTANTS, FOR THE REACTIONS INVOLVED IN THE SCHEME II PLUS C SUB2 H SUB2 YIELDS I; II YIELDS RESINOUS PRODUCTS.
FACILITY: INST. ORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 513.731

POGORELOV, A. V., Corresponding Member of the Academy of Sciences of the USSR, Physicotechnical Institute of Low Temperatures, Academy of Sciences of the UkrSSR, Khar'kov

"On Regularity of Generalized Solutions of the Equation $\det(\partial^2 u / \partial x^i \partial x^j) = \varphi(x^1, x^2, \dots, x^n) > 0$ "

Moscow, Doklady AN SSSR, Vol 200, No 3, 1971, pp 534-537

Abstract: The author considers the equation

$$\det(\partial^2 u / \partial x^i \partial x^j) = \varphi(x^1, x^2, \dots, x^n) > 0 \quad (1)$$

in the region G of variables x^1, x^2, \dots, x^n . Let $u(x^1, x^2, \dots, x^n)$ be a convex function given in G , and let $F: x = u(z)$ be a hypersurface given by this function. A normal mapping of a hypersurface F consists in putting into one-to-one correspondence with a point (x, z) of the hypersurface the points p whose Cartesian coordinates are the angular coefficients of the reference hypersurfaces at the point (x, z) . If the hypersurface F is smooth, then the image of point (x, z) for normal mapping is unique and

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USSR

POGORELOV, A. V., Doklady AN SSSR, Vol 200, No 3, 1971, pp 534-537

$$p_1 = \partial z / \partial x^1, \quad p_2 = \partial z / \partial x^2, \dots, \quad p_n = \partial z / \partial x^n.$$

The image of a Borelian set in the case of normal mapping of a convex hypersurface is itself a Borelian set. The convex function $u(x^1, x^2, \dots, x^n)$ is called a generalized solution of equation (1) in region G if for any Borelian set M on hypersurface $F: z = u(x)$ the condition

$$\int_{u(M)} dp_1 dp_2 \dots dp_n = \int_{\bar{M}} \varphi dx^1 dx^2 \dots dx^n \quad (2)$$

is satisfied, where $u(M)$ is the normal mapping of set M , and \bar{M} is its projection on the hypersurface $z = 0$. The authors study the regularity of generalized solutions of equation (1) as a function of the regularity of the right-hand member of the equation. The following theorems are proved.

Theorem 1: If the right-hand member of equation (1) is positive and belongs to the class $C^k, k \geq 3$, then any strictly convex generalized solution of this equation belongs to at least the class $C^{k+\alpha}, 0 < \alpha < 1$.

Theorem 2: Let $u(x)$ be a regular solution of equation (1) in a finite convex region G which satisfies the boundary condition

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POGORELOV, A. V., Doklady AN SSSR, Vol 200, No 3, 1971, pp 534-537

$$u = c_1 x^1 + c_2 x^2 + \dots + c_n x^n + c_0$$

where $c_1, c_2, \dots, c_n, c_0$ are constants. Then for the second derivatives of the solution within region G an evaluation may be made as a function of the maximum absolute value of the solution and its first-order derivatives, the maximum and minimum of the function ϕ and its derivatives up to second order, and the distance to the boundary.

The first theorem is dependent for its proof on the second. The following theorem and corollary are given without proof.

Theorem 3: Theorem 1 holds if the linear boundary condition at the boundary of region G

$$u = c_0 + c_1 x^1 + \dots + c_n x^n$$

is substituted for the condition of strict convexity of the solution.

Corollary. Theorem 1 holds if the requirement of completeness of the surface given by the solution is substituted for the requirement of strict convexity of the solution.

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UNCLASSIFIED

PROCESSING DATE--20NDV70

1/2 016

TITLE--HOMEOMORPHISM OF CONVEX SURFACES WHICH PRESEKVES VARIATIONS IN
POINTS OF INFLEXION OF CURVES -U-

AUTHOR--PCGLRELOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--MCSCGW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 1, 1970, PP 25-26

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HOMEOMORPHISM, CONVEX BODY, SURFACE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY RELL/FRAME--1993/0489

STEP NO--UR/0020/70/191/001/0025/0026

CISG-ACCESSION NO--A10115360

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NDV70

2/2 C16

CIRC ACCESSION NO--ATC113580

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

ABSTRACT. THE ARTICLE PROVES THE THEOREM THAT THE HOMEOMORPHIC POINT CORRESPONDENCE BETWEEN CONVEX SURFACES WHICH PRESERVES VARIATIONS IN POINTS OF INFLEXION OF CURVES IS A SIMILARITY.

FACILITY: LOW TEMPERATURE PHYSICSTECHNICAL INSTITUTE, ACADEMY OF SCIENCES USSR, KHAR'KOV.

UNCLASSIFIED

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UDC 513.731

USSR

POGORELOV, A. V., Corresponding Member of the Academy of Sciences USSR, Low-Temperature Physicotechnical Institute, Academy of Sciences USSR, Khar'kov

"Homeomorphism of Convex Surfaces Which Preserves Variations in Points of Inflexion of Curves"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 1, 1970, pp 25-26

Abstract: The article proves the theorem that the homeomorphic point correspondence between convex surfaces which preserves variations in points of inflexion of curves is a similarity.

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Radar

UDC 621.396.961

2

USSR

BARANOV, I. M., DYMOVICH, N. L., SKVORTSOV, S. M., SOKOLOV, P. M., MOROZ, V. G.,
POGORELOV, B. P.

"Radar Display for Determining the Parameters of Atmospheric Inhomogeneities"

USSR Author's Certificate No 253178, Filed 11 Dec 67, Published 24 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 96517)

Translation: A radar display containing a video amplifier and a plan position indicator has been patented for determining the parameters of atmospheric inhomogeneities. In order to represent the radar image of atmospheric inhomogeneities in the form of a series of concentric black and white rings, a coding tube is included between the video amplifier and the plan position indicator via a pulse amplifier. This coding tube converts the video signals from the atmospheric inhomogeneities into a train of pulses equal with respect to magnitude and different with respect to width and duty factor depending on the distribution of the instantaneous values of the video signal voltage. The joint effect of radial-circular scanning of the plan position indicator and rectangular pulse voltage create concentric black and white circles on the screen. The width of each circle corresponds to a defined interval of atmospheric inhomogeneity intensity. This facilitates determination of the inner structure of the inhomogeneity at the given point in time, and it permits

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USSR

BARANOV, I. M., et al., USSR Author's Certificate No 253178, Filed 11 Dec 67,
Published 24 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G51F)

information about the intensity of precipitation with respect to area to be
obtained and zones safe for aircraft flights to be determined. There are
two illustrations.

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- 145 -

USSR

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UDC 616.981.455-036.2(571.6)

SHAPIRO, S. Ye., BUSOYEDOVA, N. M., and POGORELOV, M. Ye., Clinic of Infectious Diseases, Khabarovsk Medical Institute, ~~and Khabarovsk~~ Plague-Control Station

"Some Results of Tularemia Studies in the Soviet Far East"

Moscow, Sovetskaya Meditsina, No 11, pp 98-101

Abstract: Sporadic cases of tularemia were reported in the mid-1950s in the Khabarovsk region of the Soviet Union. Several investigations since then have confirmed that these cases were not accidental. Isolation of tularemia bacteria from ticks, serologic studies, and detection of numerous cases of the disease throughout the 1960s using improved diagnostic methods led to the conclusion that the Khabarovsk region is part of an extensive natural tularemia focus embracing Eastern Siberia, Yakutia, the Maritime Province, and Sakhalin. Further research will probably confirm the existence of local tularemia on Kamchatka and natural foci of the infection in Amur and Magadan Oblasts, on the Kuril Islands, and elsewhere in the Far East.

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Immunology

USSR

UDC 619-002.73-085.371-039.71(47)

TORSUYEV, N. A., Donetsk, POGORELOV, V., and DAVLERAMOVA, F., Astrakham' and KHARABADZHAKHOV, K., Rostov-na-Donu

"Experience with Active Immunoprophylaxis of Leprosy with BCG Vaccine in the USSR"

Moscow, Vestnik Dermatologii i Venerologii, No 1, 1970, pp 76-78

Abstract: Prophylactic inoculation of children and adults with BCG vaccine in recent years has produced excellent results in protecting the population against leprosy in various endemic areas of the USSR. For example, in the Muynak region of the Kara-Kalpak ASSR, only 1 or 131 children inoculated in 1967 with BCG vaccine developed a tuberculoicid element (which soon regressed), whereas 15 of 231 nonvaccinated children contracted the disease (both groups of children had leprosy parents). Some 70,000 persons in the Kazakh SSR were vaccinated and followed up for 5-10 years. An average of 197 new cases were detected annually in this republic from 1956 to 1960, but only 74 cases from 1960 to 1965. These data confirm the experience gained with BCG vaccine in other parts of the world, i.e., the incidence of leprosy is much lower in vaccinated populations than in nonvaccinated ones.

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USSR

TORSUYEV, N. A., et al., Moscow, Vestnik Dermatologii i Venerologii,
No 1, 1970, pp 76-78

The authors strongly recommend the compulsory vaccination of all
newborn infants in endemic zones, with reimmunization at definite
intervals of time thereafter. The vaccine produces no complications.

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USSR

UDC: 669.25:532.67

BAR'YAKHAR, F. G., DNISHKO, O. I., KUSENEV, V. I., PILIPIKO, N. P.,
POGORELOV, V. A. and YABLUKOV, B. G., Donetsk Physicotechnical Institute.

"Study of the Internal Friction of Cobalt Near 300°C"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 32, No 5, Nov 71,
pp 1101-1104

Abstract: Earlier research indicates the 300°C region as the position of low-frequency maximum internal friction for cobalt. Described here is an attempt to explain its nature and properties. The experiment involved machined specimens of 99.98% pure Co measuring 3x40 mm and specimens additionally deformed by drawing (by 5%). The specimens were gradually annealed at 300, 600 and 900°C and cooled down to room temperature. The measurements included internal friction (150-350°C), oscillation frequency (7 cps) and maximal shearing strains ($2 \cdot 10^{-6}$). Interrupted anneal of the material appears to lower the maximum friction temperature position which is most pronounced at 900°C and particularly manifest on the drawn specimen. The relationship between the temperature position of maximum internal

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SSR

BAR'YAKHTAR, P. G., et al, Fizika metallov i metallovedeniye, Vol 32, No 5, Nov 71, pp 1101-1104

friction of Co, the thermomechanical treatment of the material and the conditions of polymorphous transformation indicate its close association with crystal lattice defects, i.e., the maximum internal friction of Co at 300°C is of deformational nature. It is most likely to be caused by the plastic deformation of the material, including polymorphous transformation of Co. (2 illustrations, 3 bibliographic references).

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Powder Metallurgy

USSR

UDC 621.791.75.001:537.523.5

STEL'MAKH, G. P., CHESNOKOV, N. A., POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

"Change in Properties of Dispersed Aluminum Oxide During the
Process of Plasma Spheroidization"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

Abstract: A study was made of the influence of the initial
particle size on the formation of the α , κ , and λ modifica-
tions in the process of plasma spheroidization of dispersed
aluminum oxide. As a result of processing of the aluminum oxide
in an argon plasma, the quantity of volatile impurities in the
spheroidized particles was decreased, while the particle di-
mensions changed only slightly.

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Powder Metallurgy

USSR

UDC 621.791.75.001:537.523.5

STEL'MAKH, G. P., CHESNOKOV, N. A., POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

"Change in Properties of Dispersed Aluminum Oxide During the
Process of Plasma Spheroidization"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

Abstract: A study was made of the influence of the initial
particle size on the formation of the α , β , and λ modifica-
tions in the process of plasma spheroidization of dispersed
aluminum oxide. As a result of processing of the aluminum oxide
in an argon plasma, the quantity of volatile impurities in the
spheroidized particles was decreased, while the particle di-
mensions changed only slightly.

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USSR

UDC 669.295.48

KHUDAYBERGENOV, T. YE., RUBAN, N. N., NISEL'SON, L. A., POGORELOV, V. I., GOLUBKOV, YU. V.

Pererabotka pul'p chetyrekhkhlorigo titana i mednovanadiyevykh kekcy (Processing Titanium Tetrachloride Pulp and Copper-Vanadium Cakes), Institute of Metallurgy and Beneficiation of the Kazakh SSR Academy of Sciences, Alma-Ata, 1971, 21 pp, 19-entry bibliography (No2694-71 Dep) (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G241 DEP)

Translation: This is a survey. The published information about the methods of processing $TiCl_4$ pulp and Cu-V cakes to extract $TiCl_4$ and V and Cu compounds is classified. A critical analysis is performed, and it is demonstrated that all the proposed procedures have a number of essential deficiencies both with respect to equipment and technological process. These deficiencies make it impossible to introduce them into industrial production. It is recommended that scientific research work be continued in this area. The bibliography has 19 entries.

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Acc. Nr:

AT0048078

Abstracting Service:

INTERNAT. AEROSPACE ABST

Ref. Code:

F-78 21R0057

A70-25122 # Criteria for modeling the force exerted by a supersonic jet on an obstacle (O kriteriakh modelirovaniia silovogo vozdeistviia sverkhzvukovoi strui na prazhdu). M. V. Susichikh, V. I. Pogorelov and D. E. Tikhonov-Bugrov (Mekhanicheski Institut, Leningrad, USSR). *Zhurnal Tekhnicheskoi Fiziki*, vol. 40, Feb. 1970, p. 395-397. In Russian.

Analysis of the parameters which define the force exerted by a jet on a target. These dimensionless parameters are determined with the aid of Sedov's (1954) dimensional analysis. It is shown that for a practical range of variation of the dimensionless parameters, the ratio of the axial force acting on the target to the nozzle thrust remains constant, and that it is independent of the number of nozzles. This result is verified experimentally, using air and argon jets. V.P.

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REEL/FRAME
19791767

21

USSR

UDC: 535.31

VOROB'YEV, K. I., KARPENKO, S. G., KOROTKOV, P. A., and POGORELOV, V. Ye.

"Electro-Optical Modulator Using Barium Titanate"

Tomsk, Izvestiya VUZ--Fizika, No 7, 1973, pp 35-38

Abstract: A fundamental parameter of electrooptical modulators is the controlling critical intensity of the electric field to provide close to 100% modulation. In this first article, subtitled "Estimation of the Controlling Critical Intensities," of the series with the general title given above, the authors describe research to determine these critical intensities for a BaTiO₃ crystal for various mutual orientations of the crystal's optical axis, the vector of the controlling field intensity, and the vector of the modulated radiation wave, for the cases of linear and square electro-optical effect. The phase shift between oscillations in the two beams propagated in the crystal is determined for various directions of the external electric field in the linear effect, and a table of the results obtained in investigating the linear effect is given. It is concluded that the linear effect in the BaTiO₃ crystal should be good for modulating lasers operating in the visible spectrum.

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POGORELOV, V. Ye.

STUDY OF THE INTERMOLECULAR INTERACTION OF SMALL QUANTITIES OF FISH MUCUS AND DISTILLED WATER

[Article by L. I. Kondilenko, V. Ye. Pogorelov and V. D. Koshinskaya, Kiev; Kiev. Zhurnal. Khimii, No. 3, 1971, 140-142; ~~Khim. Zh.~~ pp 140-142]

JPRS 55412
15 May 72

At present there are several different models of water structure under normal conditions explaining the appearance of molecular interactions in the water. Its infrared absorption spectra and the spectra of combined scattering of light [4, 5, 7].

All these models assert that there is a special kind of interaction among water molecules, hydrogen bonds. It has been established that with an increase in temperature and also with the dissolving of some substances in water (such as the bioid-bearing compounds NaI, LiI, and others) there is a breaking of the hydrogen bonds. Such a break with an increase in temperature is accompanied by a decrease in viscosity and a change in the infrared absorption spectra and combination scattering.

The band in the combined scattering spectrum lying in the region 2700-4000 cm⁻¹ and having a complex structure is particularly sensitive to a temperature increase. This band consists of a number of combined scattering lines caused by intramolecular oscillations.

The band components can be interpreted in the following way [7]. The band maximum, situated near 3210 cm⁻¹ (Fig. 1), can be associated with the symmetric oscillation of water molecules bound to adjacent molecules by hydrogen bonds. With the breaking of these bonds one must expect a displacement of the maximum in the direction of the high frequencies, as is experimentally observed (Fig. 1) with a temperature increase. The maximum at 3450 cm⁻¹ belongs to the symmetric oscillation of

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIMENTAL EVALUATION OF THE NATURE OF ROTATIONAL BROWNIAN MOTION
BASED ON THE WIDTH OF VIBRATIONAL BAND CONTOURS IN MOLECULAR SPECTRA -U-
AUTHOR-(02)-BOLDESKUL, A.YE., POGORELOV, V.YE. P
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(3), 462-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BROWNIAN MOTION, ACETONE, PYRIDINE, CHLOROBENZENE, SPECTRUM,
DIPOLE MOMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1129 STEP NO--UR/00517/07028/00170462/0464
CIRC ACCESSION NO--AP0124734
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124784

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTER OF THE ROTATIONAL BROWNIAN MOTION OF ACETONE, PYRIDINE, AND CHLOROBENZENE MOLES. IN LIQS. WAS ESTD. BY COMPARING THE WIDTHS OF THE IR BANDS WITH THOSE OF THE RAMAN LINES. FOR MOLES. WITH ORIENTATION RELAXATION TIMES OF THE MOL. DIPOLES OF 10 PRIME NEGATIVE11 TO PRIME NEGATIVE12 SEC., THE BROWNIAN REORIENTATIONS HAVE A DIFFUSION CHARACTER.

UNCLASSIFIED

AAO 044298

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

243099 WAVEGUIDE FILTER is a half-wave resonator in the shape of a metallised dielectric parallel-piped which has a length of half the resonant wavelength and the same cross section as the waveguide in which it is to be installed. The coupling apertures at the resonator input and output faces are produced by removal of the metal coating along a slit-like area. 18.10.67. as 1191528/26-9 Yu.S.BONDARTSEV et al. (16.9.69.) Bul.16/5.5.69. Class 21g. Int.Cl. H03h.

AUTHORS: Bondartsev, Yu. S., Pogorelov, Ye. A., Rusakov, Yu. V.

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19770852

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CONDITIONED INFLUENCES ON EXCITATION THRESHOLDS OF HUMAN CUTANEOUS
ANALYSER -U-
AUTHOR--(02)-PANKRATOV, M.A., POGORELOVA, P.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL VYSSNEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 1, PP
71-77
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SENSORY PHYSIOLOGY, CONDITIONED REFLEX, SKIN,
ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1982/0809

STEP NO--UR/0247/70/020/001/007L/0077

CIRC ACCESSION NO--AP0052245

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 015

CIRC ACCESSION NO--AP0052245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXCITATION THRESHOLDS OF THE CUTANEOUS ANALYSER WERE DETERMINED IN FOURTEEN SUBJECTS (BY VERBAL AND VEGETATIVE REACTIONS) BEFORE AND AFTER ELABORATION OF A CONDITIONED REFLEX TO A SOUND, REINFORCED BY SHOCKS OF SINUSOIDAL CURRENT OF 50 TO 2000 C-S. CONDITIONING TO SOUNDS REINFORCED BY CURRENT OF LOW (100 TO 400 C-S), MEDIUM (1000 C-S) AND HIGH (1600 C-S) FREQUENCIES WAS ACCOMPANIED BY A DECREASE IN THRESHOLDS. EXTINCTION OF CONDITIONED REFLEXES LED TO HIGHER THRESHOLDS IN CASE OF REINFORCEMENT WITH LOW FREQUENCY CURRENT AND TO LOWER THRESHOLDS IN THE OTHER TWO CASES. THE DATA OBTAINED INDICATE THAT ELECTRICAL STIMULI OF DIFFERENT FREQUENCY ACTIVATE DIFFERENT FUNCTIONAL STRUCTURES OF THE CUTANEOUS ANALYSER.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--PARADAY EFFECT IN HOT ELECTRONS IN THE UHF, ULTRAHIGH FREQUENCY
 REGION -U-
 AUTHOR-(03)-GEREZIKOV, L.D., POGDRELSKIY, A.M., BARANOVSKIY, S.N.
 COUNTRY OF INFO--USSR
 SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 779-80
 DATE PUBLISHED-----70

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SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARADAY EFFECT, GERMANIUM SEMICONDUCTOR, ELECTRON TEMPERATURE,
 ELECTRON TRANSITION, ULTRAHIGH FREQUENCY, ELECTROMAGNETIC INTERACTION,
 ELECTROMAGNETIC WAVE POLARIZATION, DIELECTRIC CONSTANT, HALL MOBILITY,
 CRYSTAL ORIENTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/087

STEP NO--007049779/0070079/070710

CITATION ACCESSION NO--AP014177

UNCLASSIFIED

PROCESSING DATE--JUNE 77

2/2 035

CIRC ACCESSION NO--AP0131979

ABSTRACT/EXTRACT--(U) CP-- ABSTRACT. THE ROTATION OF THE PLANE OF POLARIZATION OF A HIGH INTENSITY UHF ELECTROMAGNETIC WAVE WAS MEASURED. THE LATTER PASSES THROUGH THE SAMPLE (IN-GE, RHO EQUALS TO 10¹⁹ CM⁻³) AND HEATS UP THE ELECTRONS. THE DEPENDENCE OF THE PARAMETER ROTATION ON THE INTENSITY OF THE HEATING FIELD AT ROOM TEMP. IS PLOTTED. AT THE FREQUENCY EMPLOYED (OMEGA EQUALS 2 PI 9.4 TIMES 10¹⁰ PERIOD-SEC), THE CONDITION OMEGA TAU LESS THAN 1 (TAU IS THE RELAXATION TIME) IS SATISFIED, AND THE GILLET. CONST. HAS THE SAME VALUES IN A STATIC FIELD. THE DEPENDENCE DELTA THETA OVER IMETHA EQUALS 3 OVER 2 DELTA MU SUBH OVER MU SUBH (THETA IS THE ROTATION ANGLE, MU SUBH IS THE HALL MOBILITY) DERIVED FOR HIGH FIELDS IS EXPTL. CONFIRMED FOR A FIELD VECTOR PARALLEL TO (111) AND AN INDUCTION VECTOR OF THE MAGNETIC FIELD PARALLEL TO (110). THE RESULTS AGREE WITH HALL MOBILITY MEASUREMENTS IN STRONG ELEC. FIELDS. FACILITY: NOVOSIBIRSK, ELECTROPHYS. INST., NOVOSIBIRSK, USSR.

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANISOTROPY OF THE ULTRAHIGH FREQUENCY OF FARADAY ROTATION IN N
GERMANIUM IN STRONG ELECTRIC FIELDS -U-
AUTHOR--(04)-BARANOVSKIY, S.N., BEREZIKOV, D.D., GORLOV, B.B., POGORELSKIY,
A.M.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 589-91
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ANISOTROPY, ULTRAHIGH FREQUENCY, ROTATION, GERMANIUM, ELECTRIC
FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1720 STEP NO--UR/0449/70/004/003/0589/0591
CIRC ACCESSION NO--AP0120432
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120432

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANISOTROPY OF THE ULTRAHIGH FREQUENCY (UHF) OF FARADAY ROTATION IN STRONG ELEC. FIELDS WAS STUDIED ON N-GE TO DET. THE ANISOTROPY OF THE HALL MOBILITY. FARADAY ROTATION EXPTS. WERE PERFORMED AT ROOM TEMP. AND A FREQUENCY OF 9.4 GHZ. DISK SHAPED, ROTATABLE SAMPLES OF N-GE (P SIMILAR TO 10 OHM-CM) WERE PLACED IN A ROUND WAVE GUIDE, THE DIRECTION OF THE UHF WAVE BEING PARALLEL TO THE (110) DIRECTION OF THE DISK. MAGNETIC FIELD IN SAMPLES WAS INDUCED BY A SOLENOID. THE DEPENDENCE OF FARADAY ROTATION ANGLE (θ) ON THE STRENGTH OF ELEC. FIELD OF THE INCIDENT WAVE WAS TAKEN FOR FIELD DIRECTIONS PARALLEL TO (111) AND (100). FROM THESE CURVES, ANISOTROPY AND SATN. OF FARADAY ROTATION IN STRONG FIELDS WAS DETD. THE ANGULAR DEPENDENCE OF FARADAY ROTATION ON DIRECTION OF A MEAN ELEC. FIELD IN THE SAMPLE (E EQUALS 1300 V-CM) WAS ALSO EXAMD. A RELATION BETWEEN FARADAY ROTATION AND HALL MOBILITY ANISOTROPY WAS FOUND. FACILITY: NOVOSIBIRSK. ELEKTROTEKH. INST., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.375:621.3.064(088.8)

~~POGOREL'SKIY, A. Ye.~~, ROL'NIK, M. A., SEMENENKO, V. A.

"A Device for Making Inductively Coupled Circuits Spark-Safe"

USSR Author's Certificate No 259981, filed 26 Sep 65, published 4 May 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D123 P)

Translation: This Author's Certificate introduces a device for making inductively coupled circuits such as the output transformers of amplifiers spark-safe when there is intermittent interruption of the DC circuit in the primary winding. To increase the maximum spark-safe power, a choke in series with a DC source is connected in the primary circuit of the transformer with a capacitor which shunts the DC source and the choke. Resumé.

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USSR

UDC 621.373:530.145.6

VOLEK, T. B., KAYTMAZOV, S. D., MEDVEDEV, A. A., POGORELSKIY, I. V.

"Obtaining Single Picosecond Pulses in a Laser with a Thin Translucent Laser"

Kratk. soobshcheniya po fiz. (Brief Reports on Physics), 1970, No 4, pp 15-19
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D185)

Translation: This article contains descriptions of experiments in generating single picosecond pulses by a neodymium glass laser. It is demonstrated that in obtaining such pulses, wedge-shape mirrors, a container located at the Brewster angle, the pumping level close to threshold and corresponding choice of type and concentration of phototropic dye are necessary. Pulses 1 picosecond long are obtained both with thick and thin containers. Replacement of a thick container by a thin one increases the probability of obtaining pulses from 30 to 45%. Use of a reflecting container increases the stability of operation of the laser.

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1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SOLUBILITY OF IRON IN INDIUM -U-
AUTHOR-(02)-MALYUGIN, A.S., POGORELY, A.O. P
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 107-110
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--SOLUBILITY, IRON, INDIUM, X RAY DIFFRACTION ANALYSIS, PHASE ANALYSIS, PHASE DIAGRAM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1497 STEP NO--UR/0149/70/000/002/0107/0110
CIRC ACCESSION NO--AT0130425
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0130426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLUBILITY OF FE IN IN WAS STUDIED BY X RAY DIFFRACTION WITH SPECIAL REF. TO THE QUESTION OF PRODUCING EXCEEDINGLY PURE IN FOR TECHNOLOGICAL PURPOSES. THE X RAY PATTERNS ALWAYS EXHIBITED TWO PHASES, NO INTERMETALLIC COMPOUNDS BEING FORMED. THE SOLUBILITY OF IN IN FE WAS NOT GREATER THAN 0.04 WT. PERCENT AT ROOM TEMP.; NO DISSOLUTION OF FE IN IN WAS OBSERVED. ANALYSIS OF THESE RESULTS, TOGETHER WITH EXISTING DATA, LED TO A CLEARER PICTURE OF THE FE-IN PHASE DIAGRAM THAN THAT HITHERTO ACCEPTED.

UNCLASSIFIED

USSR

UDC 669-405:538

LESNIK, N. A., POGORELYY, A. N.

"Influence of Phase Composition and Temperature on NMR in Cobalt Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 1, Jul 72, pp 67-70.

Abstract: This work studies the influence of the dependence of resonance parameters on structural peculiarities of a ferromagnetic material in thin films. The experiments were performed using polycrystalline specimens produced by precipitation of cobalt in a vacuum of at least 10^{-5} mm hg onto mica, common salt and glass substrates at various substrate temperatures. The line shape, intensity and resonant frequency of the nuclear magnetic resonance signal were studied at various substrate temperatures and as functions of the annealing temperature of the specimens in a vacuum. The parameters studied are related to the phase composition and packing defects of the thin films. Based on existing theoretical calculations and the experimental data produced, it is concluded that crystallographic anisotropy begins to influence the NMR signals during annealing of specimens in place of the induced anisotropy which determines the motion of the nuclear magnetic moment before annealing. The lines produced have one or two maxima, resulting from the existence of two modifications of the cobalt. The expansion and displacement

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USSR

UDC 669-405:538

LESNIK, N. A., POGORELYY, A. N., Sverdlovsk, Fizika Metallov i Metallovedeniye,
Vol 34, No 1, Jul 72, pp 67-70.

ment of the hexagonal peak is caused by the presence of the packing defects
primarily in the hexagonal phase. A film annealed in a vacuum becomes similar
to a massive material in its resonant properties.

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- 35 -

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LUBRICATING COOLING LIQUID FOR COLD WORKING OF METALS -U-

AUTHOR--(05)--NIKITIN, YU.I., SKRIPKO, G.F., SOKHIN, S.M., POGORELYY, B.V.,
KOMOLAYEVA, L.V.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,799
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE INAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, METALWORKING LUBRICANT, COLD WORKING,
CHEMICAL COMPOSITION, BORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0844

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131437

UNCLASSIFIED

2/2 021
CIRC ACCESSION NO--AA0131437 UNCLASSIFIED PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LUBRICATING COOLING LIQ. HAS THE
FOLLOWING COMPN.: CALCD. SODA 0.1-0.8, H SUB2 D SOL. CELLULOSE ESTER
SALT 0.03-0.3, NH SUB4 CL 0.05-0.1, NA TETRABORATE 0.2-0.5, NANO SUB3
0.1-0.3, PARAFFIN OIL 0.1-0.5, AND H SUB2 D 97.5-99.42PERCENT.
FACILITY: UKRAINIAN SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENTS AND
SYNTHETIC EXTRAHARD MATERIALS.

UNCLASSIFIED

USSR

BREY, V. V., DOROGOVTSSEV, A. Ya., MAKOVETSKIY, O. A., POGORELYY, L. V.

"Optimal Selection of a Cutting Interval"

Teoriya Veroyatnostey i Mat. Stat. Mezhd. Nauch. sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], 1972, No 7, pp 14-22 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 VI42 by the authors).

Translation: Let $\xi_1, \xi_2, \dots, \xi_n, \dots$ be a sequence of independent, identically distributed random quantities, having exponential distribution and sequence $\xi_1, \xi_1 + \xi_2, \xi_1 + \xi_2 + \xi_3, \dots, \xi_1 + \xi_2 + \dots + \xi_n, \dots$ of points in $[0, \infty)$; let ν be the number of points in the sequence of partial sums falling in the intervals

$$\begin{aligned} &(\sigma, \sigma + \tau), (2\sigma + \tau, 2\sigma + 2\tau), \dots \\ &\dots (N\sigma + (N-1)\tau, N\sigma + N\tau) \quad (N(\sigma + \tau) = L \end{aligned}$$

fixed, N is a positive integer). The problem is studied of determining the minimum value of τ for which the inequality $P(\nu \geq k) \geq p$ (k and p are fixed), and also the definition of the minimum τ for which there is at least one point in each of the intervals with a fixed probability.

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USSR

UDC: 519.2

BREY, V. V., NAGORNYI, V. N., POGORELYI, L. V., YADRENKO, M. I.

"On Modeling Some Classes of Random Processes"

Vychisl. i prikl. mat. Mezhd. nauch. sb. (Computational and Applied Mathematics. Interdepartmental Scientific Collection), 1972, vyp. 17, pp 39-50 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V199 [authors' abstract])

Translation: Computational formulas are presented for digital computer modeling of Gaussian stationary processes with correlation functions

$$R(t) = e^{-at}, \quad h(t) = e^{-at} \cos bt,$$

$$R(t) = e^{-at} \left(\cos bt + \frac{a}{b} \sin bt \right).$$

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USSR

KRAVCHENKO, V. N., POGORELYY, O. N., SMIRNOV, A. A., SOSKIN, M. S.

"Concerning the Nature of Constrained Radiation Spectra of Organic Molecules"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 6, 1970, pp 1,294-1,296

Abstract: A study was made of the generation spectra of a solution of rhodamine 6Zh in isoamyl alcohol, pumped by the second radiation harmonic of a neodymium glass laser. With purely longitudinal pumping, a study was made of powerful forced radiation in a cuvette with Brewster faces without supplementary mirrors as well as with one mirror. The bright-line structure of the spectra was studied, and the mechanisms of its origin are discussed. The interaction of generation at various sectors of the working band of luminescence was studied by means of an adjustable dispersion resonator, simultaneously tuned to several frequencies.

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USSR

UDC 669.184.266:14.018.2

KACHUR, B.K., ~~KIRILICHENKO, I.S.~~, NIKIFOROV, B.V., TARAEVROV, N.P., USHCOV, V.D.
~~LOGOBYLYI, V.P.~~, GALATON, YE.G., KEARCHENKO, B.V., and PECKHINKI, V.A.
(Ukrainian Scientific Research Institute of Metals, Krivoy Rog Metallurgical Plant)

"Smelting of Low-Alloy Steel in a 130-ton Converter"

Moscow, Metallurg, No 9, Sep 71, pp 14-16

Abstract: A description is given of the technology of smelting low-alloy steels (OST-1, OST-2, 25G2C, and 35GC) in 130-ton oxygen converters at the Krivoy Rog Metallurgical Plant. Pig iron (881 kg per ton of steel) containing 0.6-0.9% Mn, 0.4-0.8% Si, not more than 0.06% S, and not more than 0.1% P, is poured into the converter at 1250-1350°C. Fresh burnt lime (65 kg), limestone (15-20 kg), and fluorspar (2-5 kg) per ton of steel were used as slag forming materials. The use of liquid alloying elements (75% FeMn, 65% FeSi and SiMn) in the ladle makes it possible to reduce the expenditure of ferroalloys, to improve the macro- and microstructure of the metal, and to minimize the content of nonmetallic inclusions. The steel obtained satisfies the requirements of GOST 5058-65.

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1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SPACE ANGULAR CHARACTERISTICS OF LIQUID LASER OF THE POOL SUBB:ND
PRIME3POSITIVE BASE -U-
AUTHOR-(03)-SALKOVA, YE.N., SOSKIN, M.S., POGURETSKIY, P.P.
COUNTRY OF INFO--USSR
SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 824-6 (MAY 1970)
DATE PUBLISHED----MAR 70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LIQUID STATE LASER, RESONATOR, METAL ION, NEODYMIUM,
PHOSPHOROUS COMPOUND, OXYGEN COMPOUND, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3005/1802 STEP NO--UR/0185/70/015/005/0324/0826
CIRC ACCESSION NO--AP0133707

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO -AP0133707

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPACE ANGULAR CHARACTERISTICS OF A LIQUID LASER ON THE POOL SUBBOND PRIME POSITIVE BASE WERE INVESTIGATED EXPERIMENTALLY. THE DATA OBTAINED ARE EXPLAINED WELL ON THE BASIS OF THREE MODELS OF THE LIQUID LASER EQUIVALENT RESONATOR.

UNCLASSIFIED

1/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--USE OF NONLINEAR ABSORPTION TO CORRECT THE RADIATION WAVEFRONT OF
SOLID STATE LASERS -U-

AUTHOR--(05)--SUSKIN, M.S., PUGDRETSKIY, P.P., GRYAZNEV, YU.M., LEBEDEV,
G.L., CHASTOV, A.A.

COUNTRY OF INFO--USSR

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SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, APR. 1970, P. 740-742

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, LASER RADIATION FILTER, NONLINEAR EFFECT, LASER
BEAM DIVERGENCE

CGNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1317

STEP NO--UR/0368/70/012/000/0740/0742

CIRC ACCESSION NO--AP0124568

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE USE OF A LOCAL NEGATIVE FEEDBACK TO IMPROVE THE SPATIAL AND TEMPORAL CHARACTERISTICS OF SOLID STATE LASERS WITH OPTICALLY IMPERFECT ACTIVE MEDIA. THE POSSIBILITY OF IMPROVING THE CHARACTERISTICS OF A RUBY LASER WITH A BLEACHABLE DYE FILTER IS SHOWN EXPERIMENTALLY. A PRACTICALLY CONTINUOUS REGIME WITH A SIMULTANEOUS DECREASE IN BEAM DIVERGENCE FROM 50 TO 10 MIN TO 2 TO 3 MIN IS OBTAINED.

UNCLASSIFIED

1/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--QUALITATIVE AND QUANTITATIVE COMPOSITION OF PHOSPHOLIPIDS IN A STAPHYLOCOCCUS CULTURE -U-
AUTHOR--(02)-KARAGEZYAN, K.G., POGOSBENKOVA, S.D.

P

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(1), 209-11

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS, CONTINUOUS CULTURE, PHOSPHOLIPID, BIOSYNTHESIS, PAPER CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1601

STEP NO--UR/0020770/190/001/0209/0211

CIRC ACCESSION NO--AT0128991

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0123991

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

ABSTRACT. PAPER CHROMATOGR. WAS USED TO SEP. THE PHOSPHOLIPIDS OF STAPHYLOCOCCI (STANDARD NONPATHOGENIC STRAIN). THESE WERE IN DESCENDING AV. CONCN.: POLYGLYCEROPHOSPHATIDES, LYSOLECITHINS, SERINEPHOSPHATIDES, MONOPHOSPHODIBUTYLPHOSPHATIDES, LECITHINS, AND UNIDENTIFIED FORMS. NEUTRAL COMPODS. WERE APPROX. HALF THE CONCN. OF THE ACIDIC FORMS. FACILITY: INST. BIOKHM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 613.34

POGOSOV, D. P., OMEL'YANETS, N. I., Candidate of Medical Sciences, Grigor'yeva, L. V. Doctor of Medical Sciences, MEDVEDEV, I. N., Candidate of Medical Sciences, MIRONETS, N. V., Kiev Institute of Public and Communal Hygiene Ireni A. N. Marzeyev

"Hygienic Evaluation of Materials for Decontamination and Enrichment of Demineralized Water with Salt"

Moscow, Gigiyena i Sanitariya, No 8, 1972, pp 19-22

Abstract: Results are presented from a hygienic evaluation of AV - 7 x 8ch S anion-exchange resin in bicarbonate form and the contact granulated M-16 mineralizer for enrichment of desalinated water with salt and the asbestos-silver sterilizer for decontamination of desalinated water. The use of water which has been enriched with salt and decontaminated by the mentioned materials for drinking purposes is acceptable for a period of no more than 30 days. The procedures for applying the indicated materials for the mentioned purposes and testing the water obtained are described. The results of the sanitary-chemical, sanitary-bacteriological and sanitary-toxicological studies provide a basis for recommending AV-17-8chS anion-exchange resin (in bicarbonate form) and the M-16 granulated contact mineralizer as reagents for enriching water with salt for short-term utilization of it for drinking purposes. In connection
1/2

- 72 -

USSR

POGOSOV, D. P, et al., *Gigiyena i Sanitariya*, No 8, 1972, pp 19-22

with absence in the mineralizer of fluorine compounds, the water cannot be used for drinking purposes over a prolonged period of time. The investigated asbestos-silver sterilizer is in need of further improvement in that its present output of silver ions is low and unstable. White rats were used to study the physiological effects of drinking the treated water.

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Acc. Nr: AP0049036

Ref. Code: UR 0607

PRIMARY SOURCE: Vestnik Otorinolaringologii, 1970, Nr / ,
pp 57-61

THE RESULTS OF PROSPIDINE TREATMENT OF PATIENTS WITH LARYNGEAL
CANCER

V. S. Pogosyan, V. A. Chernov, V. F. Antonin (Moscow)

In 52 patients with laryngeal cancer (II, III and IV stages) a new antitumor preparation — prospidine — was employed. Most of the patients were treated clinically, some outpatiently. The preparation was administered intravenously. In relapses of the tumor, after surgery and cancer metastases into cervical lymph nodes, prospidine could be introduced directly into the neoplastic tissue. The preparation is endowed with a markedly marked antitumor and antiphlogistic effect. In 36 patients out of 52 a positive therapeutic effect was achieved — a significant reduction of the primary tumor, almost complete disappearance of metastatic lymph nodes, decrease of peritumoral inflammation, rejection of necrotic masses. Metastases and low-differentiated forms of cancer were most sensitive to the preparation.

Prospidine is superior to other antitumor agents (endostan, sarcocollin, dopamine, dapan, etc.), since its toxicity is insignificant in comparison with these preparations. It is well tolerated by patients, does not depress the hematopoietic function, in combination with actinotherapy it intensifies the antitumor action of rays.

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19800820

all 2

Acc. Nr:

AP0049777

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UK0191

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101972k Determination of acyl groups in cellulose acetate-butyrate. Mironov, D. P.; Grishin, E. P.; Zhurkov, V. V.; Pogosov, Yu. L. (USSR). *Plast. Massy* 1970, (1), 64-5 (Rus).
 The total content of acyl groups in cellulose acetatebutyrate (I) was detd. by sapon., whereas the content of PrCO groups was detd. by ir spectroscopy at 2970 cm^{-1} . Thus, I was placed in a conical flask and mixed with Me_2CO and set aside for 30-60 min. The mixt. was shaken, and 0.5N aq. MeOH soln. of NaOH was added; the mixt. was refluxed at 65° for 3 hr. The sapond. sample was neutralized with 0.5N HCl and titrated with 0.5N KOH. Optical d. of I was measured at 2970 cm^{-1} and of a std. at 1430 cm^{-1} . The content of PrCO groups was detd. from the ratio D_{2970}/D_{1470} and from the corresponding adsorption coeffs. The content of Ac groups was calcd. from a general equation. CKJR ✓

REEL/FRA
19801695

USSR

UDC 678.5.01:537.311

RATNIKOV, E. N., POGOSOV, Yu. L., MEL'NIKOVA, G. A.

"Electrically Conducting Polymer Materials Based on Cellulose Esters"

Moscow, *Plasticheskiye Massy*, No 1, 1973, pp 34-35

Abstract: The results of studying electrically conducting materials based on various cellulose esters -- acetyl and acetobutyrate and acetopropionate cellulose -- are described. Data are presented on the effect of the graphite content, the thickness of the electrically conducting layer and the type of cellulose ester on the electrical conductivity of the cellulose ester and graphite system. A study is made of the thermal coefficient of the resistance of the system as a function of the modifying additives.

With an increase in the amount of graphite introduced into the system (to 55%) the contact resistance drops noticeably after which an insignificant decrease is observed. This content of electrically conducting additive is sufficient to stabilize the values of the contact resistance. The application of insulating layers of cellulose esters to a conducting polymer doubles the electrical resistance of the specimen which can be explained by the penetration of polymer molecules from the insulating layer into the conducting layer and destruction of the conducting chains.

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USSR

UDC 616-036.882-08:616.12-73]-092.9-07:616-008.9-074

~~BOGOSOVA, A. V.~~, KOROTKINA, R. N., and CHERNYAK, V. A., Biochemistry Laboratory,
and Center of Experimental Research, Institute of Surgery Iment A. V. Vishnevskiy,
Academy of Medical Sciences USSR

"Metabolism of Dogs Revived by Extracorporeal Circulation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5,
Sep/Oct 70, pp 28-31

Abstract: Dogs were revived after heartbeat had stopped for 5 and 17 min. by two types of extracorporeal circulation (circulation of donor blood and coronary carotid perfusion). Various metabolic indices were monitored, including electrolyte (K and Na) content, sugar, lactic and pyruvic acid, and SH group content. In the state of clinical death, the K and Na concentrations were practically unchanged, the lactic acid content was substantially increased and the pyruvic acid and sugar levels were somewhat elevated. Lactate dehydrogenase activity and SH group content dropped sharply. With coronary-carotid perfusion, the lactic acid and pyruvic acid concentrations in the blood rose 30 min after perfusion had been started. Lactate dehydrogenase activity and SH group content were somewhat elevated. After 1 hour, when the animals were switched over to their own blood circulation, the lactic acid and blood sugar levels dropped slightly but remained

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PGGOSOVA, A. V., et al, *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, Vol 14, No 5, Sep/Oct 70, pp 28-31

at almost twice the initial levels. The pyroracemic acid level remained practically unchanged. Lactate dehydrogenase activity dropped and remained below that measured during clinical death. All indices monitored returned to normal within 24 hours after clinical death. After 30 min resuscitation by donor blood perfusion, the lactic acid level was relatively high (but lower than had been noted in animals revived by coronary-carotid perfusion). The SH group concentration varied only slightly. The pyroracemic acid content was slightly above that of the controls but considerably lower than the corresponding levels found in the other group of test animals. After 1 hour the pyroracemic and lactic acid contents, although still shifting toward normal, were 60% above the starting value. The sugar content remained unchanged. It was concluded that there is a breakdown in the oxidation processes, as indicated by the enhanced lactic and pyroracemic acid levels of the blood. The sharp drop in SH groups indicates that during clinical death there is a change in the tertiary structure of albumin.

2/2

- 77 -

USSR

KONIKOVA, A. S., Director, Biochemistry Laboratory, Institute of Surgery named
A. V. Vishnevskiy, Academy of Medical Sciences USSR, ~~POGOSOVA, A. V.~~, Doctor
of Biological Sciences, and NIKULIN, V. I., Surgeon

"Delayed Death"

Moscow, Znaniye-Sila, No 7, 1972, pp 6-7

Abstract: The purpose of the research described is to determine the mechanism of death. The authors are concentrating on the biosynthesis of proteins from amino acids, upon which function the life of the organism depends. Protein exists in two states simultaneously: assimilation and dissimilation. Since circulation stops at death, no amino acids are furnished to cells for biosynthesis; does biosynthesis stop because it lacks material or because it is the mechanism of death? With an isotopic tracer, radioactive amino acids, and an artificial circulation-respirator, it is possible to determine which body organs continue biosynthesis and to what degree compared with a normal living being. It is known from animal experiments that protein biosynthesis stops in the brain and spleen first, in the pancreas last. Animals have been fully reanimated up to 15 minutes after death, but after more than 15 minutes biosynthesis of some tissue cannot be reanimated. When the body temperature of animals was lowered to 15-16°, biosynthesis ceased, and complete anabiosis was possible. In both death and hypothermia, assimilation ceases, but in

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KONIKOVA, A. S., et al., Znaniye-Sila, No 7, 1972, pp 6-7

death dissimilation continues. Rabbits with induced hypothermia for 2 hours, and rabbits which have been dead for ten minutes and then undergone hypothermia for 1 hour, have been completely reanimated. Chemical and electrical methods for stopping dissimilation are being sought. Electrical shock has been used to help stimulate more complete biosynthesis in the reanimation of rabbits. Biosynthesis of protein in tissue removed from organisms up to 4 hours after death has resumed when the tissue was placed in a solution containing amino acids.

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- 8 -

USSR

UDC 576.858

KHACHATRYAN, A. B., and POGOSYAN, A. A., Armenian Scientific Research Institute of Animal Husbandry and Veterinary Medicine

"Immunobiological Characteristics of Epizootic Newcastle Disease Virus Attenuated in Tissue Culture"

Yerevan, Biologicheskij Zhurnal Aracnii, Vol 23, No 7, 1970, pp 71-75

Abstract: A virulent strain of Newcastle disease virus isolated from infected poultry was grown in monolayer cultures of primary trypsinized cells (chick embryo fibroblast, fetal pig kidney, and rabbit kidney; 110, 107, and 125 passages, respectively). Virulence remained unchanged for chick embryos but decreased for chicks with an increasing number of passages on chick embryo fibroblasts and fetal kidney cultures. Virulence did not decrease in the cultures of rabbit kidney cells, even after 125 passages. In a farm test, 1500 previously unvaccinated 80-day-old chicks were injected intramuscularly with dried cultural virus of the 77th passage on chick embryo fibroblasts. None of the animals exhibited symptoms of Newcastle disease during the following 3 months. Two and 3 months after immunization, 20 of the vaccinated chicks and 10 nonvaccinated controls were brought to the laboratory and inoculated with a virulent strain of Newcastle disease virus. All of the control chicks, but only one of the vaccinated chicks, died.

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172 020

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--POTENTIATION OF VAS DEFERENS CONTRACTIONS WITH CATECHOL AMINES -U-

P

AUTHOR--(02)-AVAKYAN, D.M., POGOSYAN, A.V.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSICOL. (MUSCOW) 1970, 33(1), 25-8

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATECHOLAMINE, REPRODUCTIVE SYSTEM, ADRENALINE, NORADRENALIN, GUINEA PIG, RESERPINE

CONTROL MARKING--NO RESTRICTIONS

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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115194

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADRENALINE AND NORADRENALINE AT 8
MUG-ML SIGNIFICANTLY INCREASED CONTRACTION OF ISOLATED GUINEA PIG VAS
DEFERENS DURING ELEC. STIMULATION OF THE HYPOGASTRIC NERVE. AFTER
REMOVAL OF GANGLIAR FORMATIONS, THE CATECHOL AMINES CONTINUED TO
INCREASE VAS DEFERENS RESPONSES BY MEANS OF TRANSMURAL STIMULATION. THIS
EFFECT WAS MORE SIGNIFICANT AFTER RESERPINE (0.5 MG-KG ADMINISTERED I.P
48 HR BEFORE TREATMENT AND 1 MG-KG ADMINISTERED 24 HR BEFORE TREATMENT)
INDUCED DEPLETION OF NORADRENALINE RESERVES. FACILITY: LAB.
ADRENERG. MERKHAIZMOV, INST. TONKOI ORG. KHIM, EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 615.711.7

AVAKYAN, O. M., POGOSYAN, A. V., and KALTRIKYAN, A. A., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR

"The Search for New Sympatholytics and Adrenolytics"

Yerevan, Biologicheskly Zhurnal Armenii, Vol 23, No 6, June 70, pp 14-20

Abstract: In their quest for sympatholytic and adrenolytic compounds, the authors studied 694 synthetic compounds, with many divergent structures. Among the many groups of substances and their derivatives which were tested on animals in the laboratory, amidine and guanidine derivatives were found to possess the desired properties. Adrenolytic properties were found in the derivatives of p-alkoxybenzyl-1,4-benzodioxane-*o*-methylamine and 2(N-p-alkoxybenzylpiperazinomethyl)-1,4-benzodioxane. Sympatholytic properties were found in the derivatives of N-alkyl-N-(4-alkoxybenzyl)-aminoalkylguanidine and N-(*p*-alkoxybenzylmercaptoalkyl)guanidine. Study of the mechanism of their action will promote understanding of the mechanism of the transmission of stimulation from nerve endings to the receptors.

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USSR

BRUYAN, Kh. K., POGOSYAN, E. M.

"Some Properties of the Search for a Reduced Description of Sets"

Sb. tr. Tsentr. N.-i. lab. Avtomatizip. Sistem upr. nar. kh-ven [Collected Works of Central Scientific Laboratory for Automation of Control Systems of the National Economy], No 1, 1971, pp 32-41 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V391).

NO ABSTRACT.

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- 6 -

Acc. Nr.

AP0041531

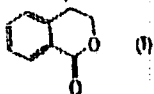
Abstracting Service:
CHEMICAL ABST.

4/70

Ref. Code

LLR0366

89985g Styrene derivatives. XV. Synthesis of 2-vinylbenzoic acid and its derivatives. Pogosyan, G. M.; Kalyanet-yan, T. G.; Matsuyan, S. G. ~~Inst. Org. Chem. USSR, USSR~~ (USSR). Zh. Org. Khim. 1970, 6(1), 139-41 (Russ). The condensation of PhCH₂CH₂OH with HCHO in the presence of HCl, followed by oxidn. gives isochroman-1-one (P. Matte, 1961) (I). Heating I with KOH powder at 175-80° gave o-H₂C=CH-



C₆H₄COX (X = OK) (II), which was converted to II (X is OH). Std. reactions applied to II (X is OH or Cl) gave other II (X is OMe, OPh, NH₂, NHMe, NMe₂, or NPh). CPJR

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REEL/FRAME

19751399

USSR

UIC: 8.74

POGOSYANTS, G. M.

"Time Operators of FOROS and their Realization in FOROS M"

Tr. In-ta Elektron. Uprovl. Mashin [Works of the Institute of Electronic Control Machines], 1971, No 18, pp 23-25 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V557, by E. Lyubimskiy).

Translation: A brief description is presented of the time operators of FOROS: VREMYA, PUSK, CHEREZ, ZHDAT' A, ZHDAT' L, ZADERZHKA, BLOKIROVKA, LZ [Translations: TIME, START, THROUGH, WAIT A, WAIT L, DELAY, BLOCK, DL (Delay Line)]. The principles of the ir realization in the FOROS M interpreting system are described.

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USSR

BRODI, S. M. and POGOSYAN, I. A.

"Imbedded Stochastic Processes in Queueing Theory"

Vlozhennyye Stokhasticheskiye Protsessy v Teorii Massovogo Obsluzhivaniya [English version above], Kiev, Nauk. Dumka Press, 1973, 127 pp (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V67K)

Translation: The specifics of queueing theory problems have made it necessary to construct new classes of Markov processes and various modifications of the processes, allowing them to be solved by the most effective means. These processes include embedded Markov chains, line processes, semi-Markov processes, processes with semi-Markov case interference, embedded semi-Markov processes, etc. This book studies a class of problems of queueing theory which can be studied by methods of embedded random processes. Since many processes encountered in queueing theory are not Markov processes by nature, in many cases their investigation can be simplified by application of embedded processes. The possibility of using embedded processes for the solution of queueing theory problems was first demonstrated by A. YA. Khinchin, and was later developed in the works of D. Kendall and L. Takach. In these works, the authors studied the behavior of systems at specially selected moments when the states of the systems form a homogeneous Markov chain, or an embedded Markov chain. Thus, by using the well-

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BRODI, S. M. and POGOSYAN, I. A.. Vlozhennye Stokhasticheskiye Protsessy v Teorii Massovogo Obsluzhivaniya, Kiev, Nauk. Dumka Press, 1973, 127 pp

developed apparatus of Markov chains, many problems of queuing theory can be solved without the application of multidimensional Markov processes. Embedded processes also include semi-Markov processes defined by P. Levi, using which a number of important indicators of the operation of queuing systems can be determined.

The transition from the initial processes to embedded processes leads to a certain loss of information, but in many cases the characteristics of the embedded processes are sufficient for determination of the required parameters of the processes studied. The possibility of solution of queuing models by methods of embedded Markov chains and semi-Markov processes has dictated the expediency of development of new classes of embedded processes for analysis of a broader range of problems. This book presents methods of construction of embedded semi-Markov processes which are used to study processes with discrete case interference. Particular attention is given to the application of such processes to the description of systems with variable operating modes, systems whose behavior is controlled by a semi-Markov process. The introduction of a random process, virtual waiting time, is used to find solutions for queuing models with limitations. This approach allows the authors to study priority systems.

From the foreward

USSR

UDC 519.271

POGOSYAN, I. A.

"A Queuing Model With a Bounded Queue Length and With Unreliable Service Equipment"

Mat. metody v kibernet. tekhnike-Sbornik (Mathematical Methods in Cybernetic Equipment - Collection of Works), Kiev, No 6, 1970, pp 58-65 (from Referativnyy Zhurnal - Matematika, No 8, Aug 11, Abstract No 8V104 by Yu. Kashafutdinova)

Translation: A one-channel queuing system with an Erlang input flow, Erlang service time, and unreliable service equipment with a limited number of waiting stations equal to m is discussed. The distribution function of the time of uninterrupted operation and recovery time, in particular, can also be Erlangian. The concepts of recovery theory and semi-Markovian processes are used. Stationary probability of the rejection of service demands is defined: namely, the probability that the equipment is free of maintenance and is in working condition; an estimate of the mean waiting time in a queue is given.

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USSR

UDC 519.217

~~POGOSYAN, I. A.~~

"One System with Failures and Unreliable Servicing of the Device"

Kibernet. Tekhnika. Vyp. 2, [Cybernetic Equipment, No 2--Collection of Works], Kiev, 1970, pp 91-95, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V68 by Ye. Kashafutdinova).

Translation: A single-line queuing system with failures with Erlang flow of requests and Erlang servicing time with unreliable servicing of the device, which may fail both in the free state and when servicing requests, is studied. If the device fails during servicing of a request, the request is lost. In this article, using the theory of repair, formulas are concluded for the mathematical expectation of the total down time of the servicing device and the mathematical expectation of total busy time of the servicing device. The probability is determined that at moment t the device will be free, as well as the probability of a failure during servicing. The author assumes that the life time and repair of the servicing device can generally have Erlang distribution.

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USSR

UDC:62-50.001.5

MALINOVSKIY, V. N., Corresponding Member of Acad. Sci. URSSR, EGIPKO, V. M.,
Candidate of Technical Sciences, and ~~POGOSYAN, I. A.~~

"Problem of Planning Systems for Automation of Experimental Studies"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70,
pp. 14-18

Abstract: Systems for automation of scientific experiments are complex systems, formalized by methods from queueing theory. These systems are analyzed from this standpoint, considering any actual automation object as a "supplier" of primary information, while the technical devices act as servicing devices. A classification plan is presented for the parts of a system for processing experimental data. This classification plan, in contrast to earlier published plans, considers the specific features of these complex systems. The classification plan is an aid in selecting the type of mathematical system model to be used on the basis of preliminary experimental results. The process of planning of systems for automation of experimental studies is thus divided into individual stages in

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USSR

MALINOVSKIY, V.N., EGIPKO, V.M., POGOSYAN, I.A., Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep-Oct 70, pp 14-18

which successive determination, clarification, and optimization of the required technical characteristics of the system are performed. A broad range of standard machine algorithms can be developed on the basis of the classification plan presented, allowing automation of all stages in planning.

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USSR

UDC:62-50.001.5

MALINOVSKIY, B. N., Corresponding Member, Acad. Sci. UKSSR, YEGIPKO, V. M.,
Candidate of Technical Sciences, and POGOSYAN, I. A.

"Calculation of Certain Information Characteristics in Systems for Auto-
mation of Complex Experiments"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70,
pp. 34-37

Abstract: The information characteristics of automation systems include the parameters describing the functioning of the system and determining its information handling capabilities, including throughput capacity, average speed of information processing devices and input-output devices, average time spent by an individual message in the servicing system, required memory volume (main memory, buffer memory, external storage, etc.), memory volume utilization factor, and average waiting time of an individual message before servicing is begun. The system calculated is designed for automation of collection and processing of data during testing of complex products under series production; the main purpose of this system is to

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USSR

UDC:62-50.001.5

MALINOVSKIY, B. N., YEGIPKO, V. M., POGOSYAN, I. A., Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70, pp. 34-37

increase the productivity of labor during the performance of complex experiments, to increase the quality of testing, and to reduce the time required for the production cycle of the products involved. The operation of the system, which includes a Dnepr prime computer and a Minsk-22 backup computer, is described. The information characteristics of the system are calculated.

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AP9048860

UR 0431

PRIMARY SOURCE: Izvestiya, AN ArmSSR. Fizika, Vol 4, Nr 1,
pp 19-24

THE MAGNETIZATION REVERSAL PROCESS OF INVERSION
FILMS NEAR THE AXIS OF HARD MAGNETIZATION
DIRECTION

S. A. POGOSSIAN, Ya. M. POGOSSIAN, V. A. MANIAN

This paper deals with the electron microscopical investigations of some particularities of a magnetization reversal process of inversion parallel films near the axis of hard magnetization direction. It is shown that configuration of magnetization vector near "hard" axis which is typical for process of magnetization reversal of inversion films cannot be only due to Neel's walls formation at the breaking into narrow domains, the magnetization ripple being taken into account. It is pointed out by the fact of less and less deviation of magnetization vector from the direction of a first saturation field after saturation near the direction of "hard" axis with decreasing of the investigated anisotropy of the films.

41 1977 HW 1606 16

USSR

UDC 621.365.82

POGOSYAN, K. P., and ABRAMYAN, A. S.

"Selection of Axial Types of Oscillation in a $\text{CO}_2 - \text{N}_2$ -He Laser with a 3-Mirror Resonator"

Yerevani amalsaran. Gitikan tegekagir. Bnakan gitutyunner, Western Section, Yerevan University. Natural Sciences, No 3, 1972, pp 143 - 147 Abstract in Armenian), RZh-Fizika, No 9, Sep 73, Abstract No. 9D753

Translation: A 3-mirror resonator system is considered, made up of two connected resonators of greatly differing lengths: $L = 1400\text{mm}$, $l = 0.5\text{mm}$. It was assumed that the small resonator would work as a selectively reflecting mirror. The selection of axial types of oscillation was obtained experimentally. A single-frequency mode of oscillation was established with the possibility of operating at any of the most intensive lines of luminescence of the CO_2 molecule. The method makes it possible to achieve rapid tuning from one radiation frequency to another, with the maximum speed of retuning depending on the properties of the piezo-ceramics used. Author's abstract.

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POGOSYAN, Kh. P.

UDC 544.507.02(062.4)

ON THE NATURE OF THE SEMI-ANNUAL WIND CYCLICITY IN THE UPPER STRATOSPHERE OF THE EQUATORIAL ZONE

Article by Professor Kh. P. Pogosyan, USSR Hydrometeorological Scientific Research Center, Moscow, *Gidrometeorologiya i Gidrologiya*, Russian, No. 3, 1972, submitted 15 November 1971, pp. 16-23

The results of studying the nature of the semiannual wind cyclicality in the upper atmosphere and lower mesosphere of the equatorial zone are discussed. It is demonstrated that the easterly and westerly winds characteristic of the basic seasons are determined in the transition seasons not by the significant temperature variations on the equator itself as many researchers proposed, but by the seasonal variations of the temperature field in high and, especially, medium latitudes. The author arrives at the conclusion that the six-month cyclicality is the same periodic phenomenon as the summer westerly circulation and the winter easterly circulation in the Earth's atmosphere.

The semiannual wind cyclicality detected in recent years in the upper atmosphere usually is considered to be a large-scale phenomenon. It is known that it is expressed in the fact that during the first half of the year in the upper atmosphere there is a predominance of the easterly westerly winds and in the second half of the year of the westerly winds. On going away from the equator their amplitude decreases, and within the limits of 10-15 degrees of latitude, westerly transfer is better exhibited during the same half of the year and easterly transfer during the second half. Although on Antigua Island located at 17° N of north latitude, semiannual wind cyclicality is still traced.

The nature of the semiannual just as the quasi-biennial wind cyclicality is still not known. In published papers a great deal of attention has been given to obtaining different characteristics of it, and proposals have been stated regarding the causes of its existence.

This article contains a discussion of some results of studying the nature of the six-month wind cyclicality in the upper atmosphere of the equatorial

Approved 5/5/89 - 16 -
5 May 82

USSR

UDC 542.91+547.752

POGOSYAN, S. A., TERSYAN, A. G., VAKUNTS, O. I., TATEVCSYAN, G. T., Institute of Fine Organic Chemistry Imeni A. L. Mndzhoyan, Academy of Sciences of the ArmSSR, Yerevan

"Indole Derivatives. XLIII. 2(3)-Chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-Chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisindolo(1,2-a)indolo(2,3-c)azepine"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 2, 1973, pp 153-158

Abstract: The paper describes synthesis of 2(3)-chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisindolo(1,2-a)indolo(2,3-c)azepine. The biological properties of salts (hydrochlorides and methiodides) of these bases were studied. The results of these studies will be given in a future paper.

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USSR

ASKAR'YAN, G. A., POGOSYAN, V. A., Physics Institute Imeni P. I. Lebedev,
Academy of Sciences, USSR

"The Heat Track and Self-Focussing of a Powerful Beam in a Medium"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 4, 1971,
pp 1295-1299

Abstract: A solution of an unsteady equation of heat propagation during the absorption of a powerful beam of specific profile with an intensity dip near the axis is obtained and investigated. The dynamics of formation and the profile of nonlinear variations of the refractive index of the medium are investigated. Self-focussing conditions for the near-axial part of the beam are obtained for the case of heat flow in time and space. It is shown that unsteadiness of the process is essential for self-focussing. Unsteadiness provides for satisfaction of the conditions of self-focussing at any moment of time in a continuously decreasing near-axial region. 16 bibliographic entries.

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- 109 -

Acc. Nr: **AP0043777**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 1020-1024

MULTIPHOTON PROCESSES IN THE FOCUS OF A POWERFUL LASER BEAM WITH ALLOWANCE FOR EXPANSION OF THE ACTIVE VOLUME

Arutyunian, I. N.; Askar'yan, G. A.; Poghosyan, V. A.

A multiphoton process in the focus of laser radiation or near the focus points of the modes is considered. It is shown that for high radiation densities saturation and expansion of the active volume occurs. This appreciably modifies the dependence of the number of acts on the field strength, $N(E) \sim E^n$; in particular in very strong fields $N \sim E^3$ and does not depend on quantization of the process. Various types of field distribution, e.g. a cone with a focus constriction or a Gaussian radial distribution are considered. Results and conclusions of experiments on multiphoton ionization of atoms or molecules by a laser beam are critically considered. It is mentioned that the results obtained can be employed for determining the initiating volume of multiphoton ionization in a light spark.

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USSR

ASKAR'YAN, G. A.; ARUTYUNYAN, I. N.; POGOSYAN, V. A. (Lebedev Physics Institute, USSR Academy of Sciences)

"Multiphoton Processes in the Focus of a Powerful Laser Beam with Allowance for Expansion of the Active Volume"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; March, 1970;
pp 1020-4

Abstract: A multiphoton process in the focus of laser radiation or near the focus points of individual modes is considered. It is shown that for high radiation densities saturation and expansion of the active volume occur. This appreciably modifies the dependence of the number of events on the field strength, $N(E) \propto E^k$; in particular, in very strong fields $N \propto E^2$ and does not depend on quantization of the process. Various types of field distribution -- e.g., a cone with a focus constriction or a Gaussian radial distribution -- are considered. Results and conclusions of experiments on multiphoton ionization of atoms and molecules by a laser beam are critically considered. It is noted that the results obtained can be employed for determining the initiating volume of multiphoton ionization in a flash of light.

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Oncology

USSR

UDC 616-006-092.9-022.6:576.858.5SA7(C8)

BRUYAKO, E. T., POGOSYANTS, YE. YE., and LA'TSHTEYN, A. D., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Induction of Tumors in Striped Hairy-Footed Hamsters With Simian Adenovirus SA7(C8)"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 679-681

Abstract: The small rodent *Phodopus sungorus campbelli* Th. was chosen for oncological studies because it has a relatively small number of easily identified chromosomes ($2n=28$), often develops spontaneous tumors, and is susceptible to carcinogenic chemicals. About 65% of the hamsters, inoculated within 24 hours of birth with 0.1 ml of simian adenovirus SA7 solution containing $10^{5.3}$ or $10^{6.2}$ EOU and under the skin of the back, developed sarcomas at the site of inoculation in 30-60 days. The sarcomas consisted of tightly packed spindle-shaped cells with little intercellular substance and little infiltration of the underlying tissues. The tumors grew at a rapid rate, and some became as large as the animals. Eighteen of the 24 hamsters which were not sacrificed for histological tests died within 16 days after the tumors were detected. No metastasis into internal organs was observed.

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LANDAU, I. Ya., POGOSYATS, G. M.

"A Language for Formal Description of Logic Circuits -- FOROS"

Tr. In-t Elektron. Upravl. Mashin [Works of the Institute of Electronic Control Machines], No 10, 1970, pp 3-27, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V669 by V. Mikheyev).

Translation: A language is studied, intended for formal description of the structure and behavior of logical digital devices. The basic objects of the FOROS language are memory elements: triggers and groups of triggers (registers), as well as groups of registers (memory). The description of each element consists of an indication of its name and length (number of digits, words, etc.). Transmission of information between elements is achieved using attachment operators, reflecting the structure of the combination circuits of the device. The dynamic characteristics of the device and its elements are described by means of time operators in a language allowing imitation of the simultaneous operation of various blocks of the device and various rates of operation of the actual elements, as well as indication of the time and logic relationships between the operation of individual blocks. The basic symbols of the language are those used in the set of characters of ATSPU, the letters of the Latin and Russian alphabets, numbers, action signs and punctuation marks. Illustrative examples are presented.

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PRIMARY SOURCE: Izvestiya, AN ArmSSR. Fizika, Vol 4, Nr 1, pp 19-24

THE MAGNETIZATION REVERSAL PROCESS OF INVERSION FILMS NEAR THE AXIS OF HARD MAGNETIZATION DIRECTION

S. A. POGOSSIAN, Ya. M. POGOSSIAN, Y. A. MAYAN

This paper deals with the electron microscopic investigations of some particularities of a magnetization reversal process of inversion permalloy films near the axis of hard magnetization direction. It is shown that conglomeration of magnetization vector near "hard" axis which is typical for process of magnetization reversal of inversion films cannot be only due to Neel's walls formed at the breaking into narrow domains, the magnetization ripple being taken into account. It is related to the fact of less and less deviation of magnetization vector from the direction of initial saturation field after saturation near the direction of "hard" axis with increase of the investigated anisotropy of the films

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UDC 669.295:621.785.53

KIDIN, I. N., ANDRYUSHECHKIN, V. I., OPALEV, S. B., POGOZHEV, A. I., Moscow
Institute of Steel and Alloys

"Calorizing Titanium and VT-14 Alloy in Powders With the Use of Electric Heating"

Moscow, IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 139-1422

Abstract: The authors study diffusion calorizing of technically pure titanium VT1-0 and titanium alloy VT-14 with the use of high-speed electric heating. The specimens were flat strips measuring 60 x 5 mm in thicknesses of 0.3-0.6 mm. Calorizing was done at 1000-1100°C for 3-10 minutes. The specimens were heated at rates of 10 and 500 deg/s by direct passage of electric current through them. Temperature was measured by a chromel-alumel thermocouple accurate within ±5 deg. Calorizing was done in powders consisting of a mixture of aluminum (30-70%), aluminum oxide (67-27%) and ammonium chloride (3%). The process was done in argon to prevent oxidation. The structure, phase composition of the diffusion layers and the aluminum content in these layers were studied by methods of metallographic, x-ray radiographic phase and microscopic x-ray spectral analysis, as well as by

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KIDIN, I. N., et al., IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 139-142

measurements of the microhardness and microthermoelectromotive force. It was found that diffusion layers 50-100 μ m deep can be produced in 5-10 minutes. The use of electric heating intensifies the process of titanium calorizing. Increasing the rate of electric heating forms deeper diffusion layers. Calorizing increased the thermal stability of pure titanium by a factor of 10, and that of VT-14 alloy by a factor of 5.

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USSR

UDC: 620.10

DOSHCHINSKIY, G. A., Candidate of Technical Sciences,
POGOZHEVA, N. V., Aspirant, POGOZHEV, A. M., Instructor,
Tomsk Polytechnic Institute

"Investigation of Anisotropy of Elastic Properties of
Deformed Metal Under Linear Tension"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy,
Mashinostroyeniye, No. 4, 1971, pp 5-9

Abstract: Investigation was conducted on 6 mm thick steel
plate in the original condition and after it was subject
to 1, 2, 4 and 6% elongation in the longitudinal direction.

20 x 120 mm specimens were cut in directions between
longitudinal and transversal in 15° increments. Modulus
of elasticity of these specimens were determined by means
of a precision tension machine.

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DOSHCHINSKIY, G.A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 4, 1971, pp 5-9

The difference between the maximum and minimum modulus is 3.6% in the original condition of the plate, 5% with the plate subject to 1% elongation, 8.5% with the plate subject to 2, 4 and 6% elongation.

The maximum modulus occurs at 50 to 60° from the longitudinal direction.

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UDC 533.92:621.039.61

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ALEKSIIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V.,
GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP,
P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMENOV,
V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation
of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza
(Plasma Physics and Problems in Controlled Thermonuclear Synthesis --
collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature
on the magnetic surfaces of toroidal stellarators and the principles of
stellarators in general, the authors analyze the "Uragan" specifically.
In particular, this paper is concerned with the problems involved in
choosing the parameters of the magnetic system for the racetrack stel-
larator to obtain magnetic surfaces with high shear. This last term is
defined as the extent of crossing of the magnetic lines of force. The
synthesis and adjustment of the magnetic system are also examined, and
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ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koeersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

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USSR

UDC 533.92:621.029.61

ALEK SIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIRIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGORZHEV, D. P., PELETHINSKAYA, V. G., SHEGENTEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., TARAN, V. H.

"Development and Production of the Magnetic System of the 'Uragan' Stellarator and a Study of Magnetic Surfaces With Large Shear"

Fiz. plazmy i probl. uprav. termoyader. sinteza. Resp. nauchn. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 73-112 (from RZh-Fizika, No 11, Nov 72, Abstract No 116279)

Translation: This paper concerns the study of the magnetic system of the three-loop "Uragan" stellarator-racetrack. Considerations concerning the selection of optimal parameters of the magnetic system of the stellarator are discussed. The equipment of the "Uragan" is briefly described. An experimental study of the magnetic surfaces made with the aid of low-current electron beams showed that in the "Uragan" stellarator-racetrack with

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ALEKSIN, V. F., et al, Fiz. plazmy i probl. upravl. termoyad. sinteza.
Resp. mezhved. sb., 1972, No. 3, pp 73-112

Individually controlled cylinders there are closed magnetic surfaces with high shear values (~ 0.09) and angle of rotational conversion ($\sim 240^\circ$). The experimental data are compared with calculated values obtained on the BESM-6 computer.

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USSR

KOGAN, R. D., POGOZHEV, I. B.

"Equivalence of Mutual Problems of Systems Optimization"

Issled. Sistem. Materialy Vses. Simpoz. [Systems Research. Materials of All-Union Symposium], Moscow, 1971, pp 147-170, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V639).

NO ABSTRACT.

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PAVLOV, V.S. to
POGOZHEV, V.A.