

USSR

UDC 629.78.002

BASHKATOV, A. F., SINYAYEV, V. I., OREKHOV, V. B.

"Influence of Seated Structural Elements of Circular Parts on Coaxial Error in a Joint"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], No 21, 1971, pp 7-13, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972, Abstract No 2.41.224 from the Resume).

Translation: This work states the problem of determining the influence of basic errors in the manufacture of parts (eccentricity of seated surfaces, radial clearance  $\Delta$  and end skew) on bending of axes with certain assembly plans. Evaluation of the these plans from the standpoint of maximum possible skew of the axes is of significant interest for designers in selecting plans for joints and assigning tolerances for their manufacture. 4 Figures.

1/1

- 33 -

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--STRUCTURE OF A COLLOID BAND IN THE ABSORPTION OF SILVER HALIDES -U-  
AUTHOR--(03)--LATYSHEV, A.N., NECHAEVA, T.A., DREKHOVA, L.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NALCH. PRIKL. FOTOG. KINEMATOGR. 1970, 15(1), 68-9  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SILVER COMPOUND, HALIDE, ABSORPTION BAND SPECTRUM,  
OSCILLATION, COLLOID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0284 STEP NO--UR/0077/70/015/001/0068/0069  
CIRC ACCESSION NO--A0124043  
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSION NO--AP0124043  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REAL PART OF THE AV. N OF AG  
WAS TAKEN AS 0.065. THE ABSORBANCE CURVE IS OF THE GREATEST INTEREST  
FOR THE SYSTEM AG-AGCL WHERE A VERY STRONG OSCILLATION IS OBSD. THIS  
OSCILLATION SHOULD APPEAR IN THE FORM OF A STRUCTURE IN THE COLLOID BAND  
FOR PARTICLES 100-200 NM IN DIAM. IN THIS CASE THE BAND HAS 2-3 MAX.  
AN INCREASE IN THE PARTICLE DIAM. SHOULD INCREASE THE NO. OF MAX. AND  
DECREASE THEIR INTENSITY. WITH A PARTICLE SIZE OF 600-700 NM THE NO.  
OF MAX. IS 5. FACILITY: VORONEZH. GOS. UNIV., VORONEZH, USSR.

UNCLASSIFIED

OREKHOVA N.I.

AA0046414

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

242477 DETERMINING THE RESISTANCE OF POLYMERS TO CORROSIVE MEDIUM, where samples of articles (5) are fixed to clamps (3) and (4). Clamps (3) are mounted on the revolving disc (7), clamps (4) are moving in the groove in the immobile plate (8) which is of sinusoidal or similar form in order to change the distance between the clamps in suitable manner. Chamber (2), housing the clamps and discs, can be filled with corrosive media, and disc (7) is revolved by motor (6) causing the clamps to put oscillating loads on the samples. The measurement data can be obtained by suitably placed strain gauges.

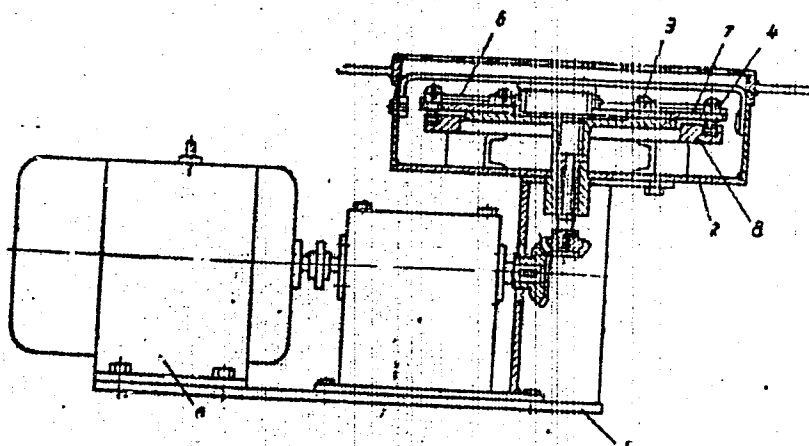
2.2.66 as 1053420/23-5. A.N.GORDEEV et al. RUBBER & LATEX RES. INST. (8.9.69) Bul 15/25.4.69. Class 42k. Int.Cl.G 01 n.

1/3

7

19781618

AA0046414



2/3

MT

19781619

AA0046414

AUTHORS: Gordeyev, A. N.; Kozlov, I. I.; Orekhova, N. I.; Reznikovskiy, M. M.;  
Smirnova, T. N.; Suzdal'nitskaya, Zh. S.; Fedyukin, D. I.; Shmulev, Yu. S.

Nauchno - Issledovatel'skiy Institut Rezinovykh i Lateksnykh Izdeliy

19781620

142 028 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--EFFECT OF ELECTRON DONOR COMPOUNDS ON BUTADIENE POLYMERIZATION IN  
THE PRESENCE OF PI ALLYLNICKEL CATALYSTS -U-  
AUTHOR--(05)-KRISTALNYY, E.V., ORENHOVA, N.V., ZABOLUTSKAYA, YE.V.,  
GANTMAKHEN, A.R., MEDVEDEV, S.S.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 836-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL REACTION KINETICS, BUTADIENE, POLYMERIZATION, METAL  
CATALYST, NICKEL, TITANIUM CHLORIDE, CHEMICAL REACTION RATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1382 STEP NO--UR/0459/T0/012/C04/0836/0840  
CIRC ACCESSION NO--AP0135056  
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BUTADIENE WAS POLYMD. IN THE PRESENCE OF PI ALLYLNICKEL CHLORIDE (I) PLUS TlCl SUB4 AND ELECTRON DONOR ADDITIVES E.G., ME SUB2 S, ET SUB2 O, AND PHOME, IN ORDER TO DET. THE EFFECTS OF THE ADDITIVES ON THE POLYMN. RATE. ME SUB2 S INHIBITED THE POLYMN. RATE, BUT PHOME HAD THE OPPOSITE EFFECT. KINETIC STUDIES SUGGESTED THAT THE DONOR ADDITIVES ADDED TO I INSTEAD OF TlCl SUB4. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.



USSR

UDC 539.23:541.139

ANDRYUSHCHENKO, F. K., OREKHOVA, V. V., and GRITSENKO, T. I., Khar'kov Polytechnical Institute Imeni V. I. Lenin.

"Preparation of Thin Magnetic Films With Special Properties by an Electrochemical Method"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 1, Jan 73, pp 52-56

Abstract: Since magnetic properties of the films obtained by the electrochemical method are affected by their composition, thickness, conditions of the electrolysis, acidity of the electrolytes and by other parameters, a study was undertaken of the effects of these parameters on thin magnetic films. It was established that lowering the coercive force to 3e and improvement in the anisotropy of these films may be achieved by depositing them in pulsed mode using interstitial layers of copper, and a brass base. The use of the pulsed mode may promote directional orientation of the crystals and by keeping them in a fine crystalline form improve their magnetic properties.

1/1

USSR

UDC 621.357.7:669.15'24(088.8)

ANDRYUSHCHENKO, F. K., OREKHOVA, V. V., GRITSENKO, T. I., TRUNOVA, A. I.

"Method of Electrolytic Deposition of a Nickel-Iron Alloy"

USSR Author's Certificate No 308098, filed 22 Oct 68, published 26 Aug 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 61316P)

Translation: A procedure for electrolytic deposition of Ni-Fe alloy has been patented. It is distinguished by the fact that in order to obtain the magnetic anisotropy of thin films, the process is realized with the application of a square-pulse direct current with a period of 11-20 seconds, a pulse time of 10-15 seconds, an off-duty factor of 1.1-1.5 and an amplitude of 3-5 a. The films obtained are characterized by magnetic anisotropy with a coercive force of 4-8 oersteds and an anisotropy field of 3-7 oersteds. The minimum values of the coercive force and the anisotropy field (2-4 oersteds) are achieved for a pulse period of 15 seconds (the pulse time was 10 seconds, the off-duty factor was 1.5) and an amplitude of 4 a/dm<sup>2</sup> during the electrolysis process with D<sub>c</sub> 1 a/dm<sup>2</sup>.

1/1

- 19 -

Thin Films

USSR

UDC 669.24.018.9(088.8)

ANDRYUSHCHENKO, F. K., ~~OREKHOVA, V. V.~~ GRITSENKO, T. I., TRUNOVA, A. I.

"Method of Electrolytic Precipitation of Nickel-Iron Alloy"

USSR Author's Certificate No 308098, filed 22 Oct 68, published 26 Aug 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G317P)

Translation: This is a supplement to the primary patent (RZh--Metallurgiya, 1969, 5G402P). In order to obtain magnetic anisotropy of thin films, this process is realized with deposition on a direct current of square pulses with an 11-20 second period, a pulse time of 10-15 seconds, an off-duty factor of 1.1-1.5, and an amplitude of 3-5 amps/decimeter<sup>2</sup>. The alloy films obtained are characterized by magnetic anisotropy with a coercive force of 4-8 oersteds and an anisotropy field of 3-7 oersteds.

1/1

172 028 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--PREPARATION OF MAGNETIC ALLOYS WITH SPECIAL PROPERTIES BY AN  
ELECTROCHEMICAL METHOD -U-  
AUTHOR-(03)-ANDRYUSHCHENKO, F.K., OREKHOVA, V.V., GRITSENKO, T.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 573-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--MAGNETIC ALLOY, ELECTROCHEMISTRY, IRON ALLOY, NICKEL  
CONTAINING ALLOY, ELECTRODEPOSITION, METAL FILM, ELECTROLYTE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/0739 STEP NO--UR/0080/70/043/003/0573/0577  
CIRC ACCESSION NO--AP0111932

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE COMPN. OF NI-Fe ALLOY FILMS, DEPOSITED FROM K SUB4 P SUB2 O SUB7 AND NA SALICYLATE SOLN., ON THE ELECTROLYTE CONCN. AT VARIOUS C.DS. WAS ESTABLISHED. THE EFFECTS OF COMPLEX FORMING METALS (NI AND FE) AND LIGANDS WERE STUDIED. NA SALICYLATE IS CHOSEN BECAUSE OF ITS INSTABILITY CONSTS., 3.24 TIMES 10 PRIME NEGATIVE28 AND 4.9 TIMES 10 PRIME NEGATIVE36. THE FE SALICYLATE COMPLEXES ARE SO STRONG THAT ELECTRODEPOSITION OF FE CAN BE ATTAINED ONLY BE CODEPOSITION WITH NI. FOR NI, K SUB4 P SUB2 O SUB7 IS MORE SUITABLE THAN THE SALICYLATE LIGANDS. INCREASE OF THE COMPLEXING METAL CONCN. SHIFTS THE POLARIZATION CURVES TOWARDS MORE ELECTROPOS. ELECTRODE POTENTIAL VALUES, WHICH CAUSES THE ENRICHMENT OF THE ALLOY WITH THAT METAL WHOSE COMPN. IN THE SOLN. INCREASES. AT THE SAME TIME, AN INCREASE OF THE LIGAND CONCN. SHIFTS THE DEPOSITION POTENTIAL TOWARDS MORE ELECTRONEG. VALUES. AN OPTIMUM ELECTROLYTE COMPN. IS NiCl SUB2 TIMES 6H SUB2 O 70, FeCl SUB3 TIMES 6H SUB2 O 2-3, K SUB4 P SUB2 O SUB7 3.30, NA SALICYLATE 20 G-1. AT 0.5-4 A-DM PRIME2, MIRRORLIKE NI-Fe ALLOY FILMS ARE DEPOSITED FROM THIS ELECTROLYTE. ELECTROLYSIS DURATION OF 1.5-3 MIN PROVIDES A NI CONTENT IN THE DEPOSIT OF 80-83.5PERCENT, AND THE FILM THICKNESS IS INCREASED FROM 300 TO 800 ANGSTROM.

UNCLASSIFIED

USSR

UDC 621.357.7:669.35'.5(088.8)

OREKHOVA, V. V., ANDRYUSHCHENKO, F. K., and KOMAR', L. P., Kharkov University

"Electrolytic Plating of Copper-Zinc Alloys"

USSR Author's Certificate No 305207, Filed 20 Dec 69, Published 13 Jul 71  
(From Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21L312P  
by E. Z. Napukh)

Translation: This method differs from other by the presence of the ligand  $K_4P_2O_7$  and sodium sulfosalicylate which make it possible to obtain shiny coatings. Example: the alloy containing 67-72% Cu is electrodeposited from the electrolyte consisting of (in g/liter) 55-60  $ZnSO_4$ , 5-10  $CuSO_4$ , 240-250  $K_4P_2O_7$ , 28-33 sodium sulfosalicylate at pH 8.9-9.2, 18-25°C, and  $D_c$  of 0.5-1 a/dm<sup>2</sup>.

1/1

Miscellaneous

USSR

UDC: 517.9

OREL, A. A.

"The Application of Variational Methods to Solution of Boundary Value Problems for Equations of Mixed Type in Near-Sonic Gasdynamics"

Kazan', Izvestiya VUZov: Matematika, No 9(124), Sep 72, pp 76-83

Abstract: The calculation of many near-sonic flows of ideal gas leads to boundary value problems for equations of mixed type. In S. G. Mikhlin's book "Variational Methods in Mathematical Physics" (Moscow, "Nauka", 1970) variational methods were applied to the solution of boundary value problems for equations of elliptical type -- the problem of integrating a differential equation was reduced to the problem of finding a function which minimizes a certain integral. In this paper the author considers a boundary value problem for an equation of mixed type which is a generalization of the approximate near-sonic equation for a stream function and the equation for the transformed stream function. The article comprises four sections. In the first, the solution of the boundary value problem is reduced to finding a function which minimizes some quadratic functional defined on the set of partial solutions of the differential equation. In the second section a

1/2

USSR

OREL, A. A., Izvestiya VUZov: Matematika, No 9(124), Sep 72, pp 76-83

system of partial solutions is found and used in constructing a solution of the boundary value problem with a continuous boundary condition. The problem with a discontinuous boundary condition is considered in section 3. In section 4 the results are applied to solving the problem of near-sonic flow of an ideal gas through a Laval nozzle with given walls which become two parallel straight lines at infinity upstream; a condition is found which defines the flow of gas through the given nozzle. The author thanks S. V. Fal'kovich for guidance and continued interest in the work.

a/a



USSR

UDC 669.14.018.29-414

GOL'DSHTEYN, M. I., BLYUM, E. E., GRIN', A. V., SELETKOV, A. I., LITVINENKO, D. A., LEYKIN, I. M., RUDCHENKO, A. V., OREI, E. I., VAYNTRAUB, S. S., LOKTIONOV, P. Ya., LASHCHEV, V. Ya., MOSIOSHVILI, V. V., MIROSHNICHENKO, S. I., and KONDRASHOV, M. M., Ural Scientific Research Institute of Ferrous Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, and Kommunarsk Metallurgical Plant

"Adoption of the Industrial Production of 15G2AF Sheet Steel"

Moscow, Stal', No 9, Sep 70, pp 828-830

Abstract: An investigation of the 15G2AF plate steel (10-25 mm), commercially produced at the Kommunarsk Metallurgical Plant, revealed that alloying of the manganous structural steel with nitrogen and vanadium increases the strength and plasticity properties of the normalized rolled steel. Normalizing of the metal effects a size reduction of the grain (to 10-12), which assures a low (-100°C to -120°C) cold brittleness threshold. The strength of the 15G2AF steel was found to be at least 60 kg/mm<sup>2</sup> and the yield stress at least 45 kg/mm<sup>2</sup>. Use of 15G2AF steel for welded structures decreased weight, in comparison with steel 10G2S1, by 13.6%.

1/1

- 52 -

1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CHANGES IN THE ACTIVITY OF LACTATEDEHYDROGENASE OF THE BLOOD SERUM  
AND URINE IN ACUTE RENAL INSUFFICIENCY -U-  
AUTHOR-(03)-TSERINGER, T.B., MARKELOV, I.M., OREL, S.G.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 77-80  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--LACTATE DEHYDROGENASE, BLOOD SERUM, URINE, RENAL FAILURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1986/0819 STEP NO--UR/0504/70/042/003/0077/0080  
CIRC ACCESSION NO--AP0102780  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102780

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 54 PATIENTS WITH ACUTE RENAL INSUFFICIENCY OF VARIOUS ETIOLOGY WERE EXAMINED. TOTAL ACTIVITY OF LACTATEDEHYDROGENASE AND ACTIVITY OF ISOENZYMES OF LACTATEDEHYDROGENASE IN THE BLOOD PLASMA DURING OLIGOANURIA WAS DETERMINED IN 39 PATIENTS. ISOENZYMES OF LACTATEDEHYDROGENASE OF THE BLOOD PLASMA AND URINE DURING RESTORATION OF THE RENAL FUNCTION WERE STUDIED IN 15 PATIENTS. AN INCREASE OF THE LACTATEDEHYDRATE ACTIVITY IN THE BLOOD AND URINE MAINLY AT THE EXPENSE OF RAPID MOVING ISOENZYMES WAS NOTED. THE TOTAL ACTIVITY OF LDG OF THE BLOOD WAS NOT CHARACTERIZED BY THE EXTENT OF THE RENAL TISSUE INJURY. ALL FIVE ISOENZYMES OF LDG WERE REVEALED IN THE URINE. WITH RESTORATION OF THE RENAL FUNCTION THE ACTIVITY OF ISOENZYMES IN THE BLOOD AND URINE BECAME NORMALIZED. THE DYNAMIC OBSERVATION OVER THE CHANGE IN THE ACTIVITY OF LDG MADE IT POSSIBLE TO JUDGE UPON THE RESTORATION OF THE RENAL FUNCTION.

UNCLASSIFIED

USSR

OREL, T. Ya.

"One Method of Solution of the Problem of Distribution of Cargos from a Central Refrigeration Unit to Stores"

Teoriya i Praktika Sbora Peredach i Obrabotki Ekon. Inform. [Theory and Practice of Collection, Transmission and Processing of Economic Information -- Collection of Works2, Moscow, 1971, pp 100-112, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V477).

NO ABSTRACT.

1/1

USSR

UDC: 51:330.115

OREL, T. Ya., ROGOV, G. A.

"On the Problem of Setting up Optimum Routes for Shipments on Refrigerated Trucks"

V sb. Teoriya i praktika mashin. obrab. ekon. inform. (Theory and Practice in Computer Processing of Economic Information--collection of works), Moscow, 1971, pp 96-103 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V534)

[No abstract]

1/1

OREL, V. I.

SPRS 57208  
6-73

XIII-6. EFFECT OF THE SUBSTRATE ORIENTATION ON THE GROWTH AND PROPERTIES OF EPITAXIAL LAYERS

Article by S. A. Grahov, F. P. Krasovskiy, V. F. Kovalenko, I. Ye. Meremennik, B. T. Mamonko, V. I. Orel, N. N. Puzoskiy, Svetlovodsk: Novosibirsk. *III Simpozium po Prolivaniyu, Nostri i Sintezu Poluprovodnikov* Kristalloy i Pionov. Moscow, 12-17 June 1972, p 187

The epitaxial layers of solid solutions of  $Al_{x}Ga_{1-x}As$ ,  $Al_{x}Ga_{1-x}As_{1-x}$  were grown from a solution in a pallium melt in a hydrogen flux on gallium arsenide plates with an orientation of 100, 111, 111A and on the 100 planes disoriented to 111B by 3° and 10°.

The effect of the orientation plane on the growth rate, morphology, electrical parameters and photoluminescence intensity was investigated. The layers most improved with respect to morphology were obtained on singular planes. The distribution of the composition in the  $Al_{x}Ga_{1-x}As$  layers with respect to thickness is observed as a function of the substrate orientation plane. The most uniform layers were obtained for growth on substrates oriented in the 111B plane. In pure layers of  $Al_{x}Ga_{1-x}As$  with a concentration of less than  $5 \cdot 10^{15} \text{ cm}^{-3}$ , a deep level is observed (for example, for  $x = 0.3$  the activation energy of the level  $E = 0.12$  electron volts). On the basis of the layers of solid solutions of  $Al_{x}Ga_{1-x}As$ ,  $Ca_{x}Mg_{1-x}As$  obtained, like diodes were manufactured with a brightness to 1,000 at for a current of 10 milliamperes.

USSR

UDC 531.76/77

2

RYAPOLOV, V. A., KRYUKOV, L. V., KULIKOV, S. V., CHISTYAKOV, B. V.,  
PERFIL'YEV, L. M., and OREL-KHOMYAKOV, G. A.

"A Device for Indicating the Direction of Rotation of a Stepping Motor"

USSR Author's Certificate No 363922 kl G 01 p 13/00, filed 17 Oct 70,  
published 21 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya  
Tekhnika, No 11, Nov 73, abstract No 11 A 387P)

Translation: A device is proposed for indicating the direction of rotation of a stepping motor, containing a differentiating element and valves. To simplify and improve the reliability of the apparatus, one of the valve inputs is connected to each phase winding of the step motor; the other input is connected through the differentiating element to the following phase winding of the stepping motor, while the outputs of the valves are combined and connected to the output terminal. One illustration.

1/1

ORENBAKH, M. S.

1. S. Zhukovskiy, Vozrastnaya dinamika (The Dynamics of Age and Intelligence), Moscow, 1971, 16 pages with 1111.

A. M. Yaglom and I. M. Yaglom, Vozrastnaya i informatsionnaya (Probability and Information), Moscow, 1973, 512 pages, 50,000 copies, 1 r 11 k.

Chemical Science

Y.M. Alyankovich  
L.I. Galimov, B. Z. Ibra, and L. K. Churhalin, Perspektivy razvitiya kompleksov metallov (Evolution of Metal Complexes of Metals), Institute of Geochemistry and Analytical Chemistry Imeni V. I. Vernadskiy, Moscow, 1971, 200 pages, 2000 copies, 1 r 97 k.

Obzornyye besedy i (Concentration of Pear Ores), Collection of Articles, Scientific Council for Physical and Chemical Problems of Mineral Concentration, Moscow, 1973, 156 pages, 1100 copies, 1 r 06 k.

M. S. Orenbakh, Reaktsionnaya sverkhmat' pri geterogennom goreni tverdogo stantsiya durnye intergenoznykh (Reaction of Physicochemical Principles of the Processing of Mineral Raw Material, Siberian Department, Novosibirsk, 1973, 200 pages, 1450 copies, 1 r 23 k.

Protsessy vzaimnoy diffuzii v splavakh (Processes of Mutual Diffusion in Alloys), Moscow, 1973, 350 pages, 3500 copies, 2 r 01 k.

Radiatsionnaya khimiya polimerov (Radiation Chemistry of Polymers), Collective Monograph, Scientific Council for the Chemistry of High Energies, Moscow, 1973, 454 pages with 111, 2100 copies, 3 r 25 k.

Struktura splavov tsirkoniya (Structure of Zirconium Alloys), Collective of Authors, Institute of Metallurgy Imeni A. A. Buz'kov, Moscow, 1973, 200 pages with 111, 1200 copies, 1 r 92 k.

Splava-vyamn (Antimony-Bismuth), Collection of Articles, Moscow, 1973, 208 pages with 111, 35,000 copies, 35,000 copies, 1 r 04 k.

Titaniy bariya (Barium Titanate), Collection of Articles, Scientific Council for the Complex Problem "Physics and Chemistry of Semiconductors", Moscow, 1973, 264 pages with 111, 1500 copies, 2 r 57 k.

- 183 -

JRS G661  
30 Nov 75  
Kuznetsov, Zhukovskiy, Moskva 555K  
#19 July 75



USSR

UDC 629.734.7

OSMOLOVSKIY, I. V.

"A Catch for Disconnecting the Free Ends of the Suspension System of a Parachute"

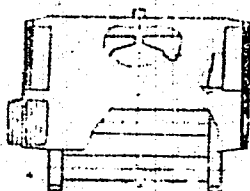
Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 21, Jul 73, Author's Certificate No 380537, Division B, filed 9 Apr 71, published 15 May 73, p 67

Translation: This Author's Certificate introduces a catch for disconnecting the free ends of the suspension system of a parachute. The device contains a housing with a cover on which trigger releases and a safety lock are mounted. Enclosed in the housing are fasteners which hold the free ends of the parachute suspension lines. As a distinguishing feature of the patent, locking reliability of the catch is improved by making the safety lock in the form of a spring-loaded pushbutton installed on the cover perpendicular to the plane of the housing.

1/2

USSR

OSMOLOVSKIY, I. V., USSR Author's Certificate No 380537



2/2

USSR

UDC 621.983

OVCHINNIKOV, A. G., BOYKO, E. I., BOYKO, S. V.

"Study of Cold Heading with Ultrasound"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1973,  
pp 127-129.

Abstract: The problem of the use of ultrasound as an activating factor during cold heading is studied. It is demonstrated that the use of ultrasound increases the ductility of the material and reduces the static deformation force required. Also, the use of ultrasound facilitates softening of the material and decreases residual stresses.

1/1

USSR

UDC 666.192

RUSAN, V. G., ORESECHENKO, I. P., STEPANCHUK, V. N.,

"Development of a New Brand of Optical Quartz Glass"

Leningrad, Optiko-Mekhanicheskaya Proymshlennost', No 12, December 1971,  
pp 42-45

Abstract: To satisfy a recently arisen requirement for quartz glass having high transparency, it became necessary to produce an especially pure synthetic raw material, with a total admixture content not exceeding  $1 \times 10^{-5}$  to  $1 \times 10^{-6}\%$ . At an unnamed plant there was tested a number of lots of silicon dioxide, obtained by hydrolysis of the ethyl ester of orthosillicic acid. On the basis of an investigation of the optical properties of the obtained samples of glass, it was shown that the best raw material is the "Irea" band of silicon dioxide. The melting of quartz glass directly from a "cake" of crystalline silicon dioxide improves the production process, and shortens the technological cycle of the creation of the intermediate products, without decreasing their quality. 1 figure. 4 tables. 3 references.

1/1

172 022 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--ELECTRIC STIMULATION OF THE DUODENUM IN THE DIAGNOSIS AND TREATMENT  
OF CHRONIC PANCREATITIS -U-  
AUTHOR-(03)-SOKOLOV, V.I., SMIRNOV, V.F., DRESHENKOV, M.M.  
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 2, PP 104-111  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DIAGNOSTIC METHODS, ELECTROPHYSIOLOGY, DUODENUM, PANCREAS,  
BILE, SECRETION, ENZYME ACTIVITY, GALL BLADDER, COLON  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/1312 STEP NO--UR/0531/70/000/002/0104/0111  
CIRC ACCESSION NO--AP0054196  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REDUCED MOTORICITY OF THE DUODENUM IS ONE OF THE MAIN CHAINS IN THE PATHOGENESIS OF CHRONIC PANCREATITIS. IN CONDITIONS OF HYPOKINESIS OF THE INTESTINAL WALL THERE OCCUR PREREQUISITES FOR STASIS OF BILE AND PANCREATIC JUICE ABOVE THE ODDI'S SPHINCTER. ON THE OTHER HAND, DUODENAL HYPOTENSION CAUSES SECONDARY DILATATION OF THE SPHINCTER OF ODDI, THIS LEADING TO CONSTANT INFECTION OF THE DUCTS WITH ENZYME ACTIVE INTESTINAL CONTENTS. THUS, CHRONIC RECURRENT PANCREATITIS IS MAINTAINED. FOR THE TREATMENT OF HYPOKINETIC STATES OF THE DUODENUM IN 42 PATIENTS THE AUTHORS EMPLOYED ELECTRIC STIMULATION OF ITS MOTORICITY WITH A WEAK ELECTRIC DISCHARGE. ACTING UPON THE INTESTINAL PACEMAKER, SITUATED IN THE ZONE OF VATER'S PAPPILLA, THE AUTHORS INTENSIFIED THE INTESTINAL MOTOR ACTIVITY IN PATIENTS WITH EARLY FUNCTIONAL STAGES OF CHRONIC PANCREATITIS, ATTAINING A POSITIVE CLINICAL EFFECT. THE TECHNIQUE OF ELECTRIC STIMULATION OF THE DUODENUM IS SIMPLE, SAFE, WELL TOLERATED BY PATIENTS AND MAY BE USED FOR NORMALIZATION OF THE MOTORICITY OF ALL INTESTINAL REGIONS. ELECTRIC STIMULATION IS DEEMED PERSPECTIVE IN THE TREATMENT OF POSTOPERATIVE PARESIS, FUNCTIONAL DUODENOSTASIS, DISKINESES, PANCREATOPATHIA, SOME FORMS OF NONCLACULOUS CHOLECYSTITIS, DUDDENITIS AND PERSISTENT CHRONIC COLITIS.

UNCLASSIFIED

USSR

UDC 612.215.014.2-014.481/.482

KITAYEV, E. M., ORESHINA, A. F., TARASOV, S. I., and YAS'KOVA, V. Z., Laboratory of Radiation Genetics and Remote Radiation Pathology, Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Laboratory of Hygiene of the Air, Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Morphological Changes in the Lungs Produced by Single Hot Particles Experimental Study"

Moscow, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

Abstract: About 100 hot particles (particles of  $\text{Co}^{60}$  10-20 microns in size with an activity of  $10^{-8}$  to  $10^{-9}$  C) in 0.2 ml of physiological saline were injected into the jugular vein of rats. Morphological changes in the lungs were studied 5-30 days thereafter. No significant changes were observed in the energy absorption zone. The zone of absorption of doses of  $10^2$  and  $10^6$  rads occupied a space with a radius of 200 microns, while destructive changes appeared only within a radius of 15-20 microns. Although there was an absence of focal necrosis, changes were noted in the blood vessels containing particles - homogenization and loss of structure of the walls, swelling of collagenous and argyrophil fibers. The intensity of the destructive processes was unrelated to the size of the radiation

1/2

USSR

KITAYEV, E. M., et al, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

dose. After 20-30 days, besides the vascular changes, desquamation and necrobiosis of endothelial cells, there were signs of proliferation of cellular elements in the adventitia. The radioactive particles had no effect on the adjacent structures. Thus, the changes observed appear to be comparatively insignificant from the standpoint of injury to lung tissue and impairment of respiratory function.

2/2



1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS IN THE ACTION OF SINGLE  
FIXED HOT PARTICLES (EXPERIMENTAL RESEARCH) -U-  
AUTHOR-(04)-KITAYEV, E.M., ORESHINA, A.F., TARASOV, S.I., YASKOVA, V.Z.  
COUNTRY OF INFO--USSR  
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 52-56  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--MORPHOLOGY, LUNG, RAT, COBALT ISOTOPE, RADIATION BIOLOGIC  
TISSUE EFFECT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/0955 STEP NO--UR/0241/70/015/004/0052/0056  
CIRC ACCESSION NO--AP0109112  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09UCT70

CIRC ACCESSION NO--AP0109112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER SETS FORTH THE RESULTS OF EXPERIMENTAL STUDY OF MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS UNDER THE EFFECT OF SINGLE FIXED HOT PARTICLES. PARTICLES OF CO PRIME60 OF MICROSCOPIC SIZE WITH AN ACIVITY OF 10 PRIME NEGATIVE9 CURIE WERE USED. THE AUTHORS DEMONSTRATE THE ABSENCE OF FOAL NECROSIS AT THE SITES OF FIXATION OF SINGLE HOT PARTICLE IN IRRADIATION DOSES OF THE SURROUNDING TISSUES OF 10 PRIME NEGATIVE4-10 PRIME NEGATIVES RAD DURING A PERIOD FROM 5 TO 30 DAYS. THERE WERE FOUND SOME MORPHOLOGICAL CHANGES IN VESSELS AT THE SITE OF FIXATION OF PARTICLES AND IN INTERALVEOLAR MEMBRANES WITHOUT A DEFINITE RELATION WITH THE VALUE OF THE RADIATION EFFECT.

UNCLASSIFIED

USER

GUBIN, V. Ye., ISUPOV, Yu. G., ORESHINA, M. D., KHAZIYEV, N. N., SHEMYAKINA, G. N.

"Free Convection in a Horizontal Cylinder"

Tr. VNII po Sboru, Podgotovke i Transp. Nefti i Nefteproduktov [Works of All-Union Scientific Research Institute on the Collection, Preparation and Transportation of Oil and Petroleum Products], No 8, 1971, pp 104-116, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B647 by Ye. M. Zhukhovitskiy).

Translation: Free, unstable convection in an infinite horizontal circular cylinder is studied. The wall temperature of the cylinder is maintained constant and differs from the temperature of the fluid. The temperature difference and size of the cavity are assumed sufficiently great that convection occurs in the boundary-layer mode. The problem is solved on the assumption of quasistability of the process: it is considered that the structure of the flow is determined at a given moment in time by the instantaneous temperature difference between the walls and the fluid and is independent of the rate of change of temperature with time.

The equations for planar, stable convective motion in the boundary layer approximation are solved by the Karman-Polhausen method. Laminar and turbu-

USSR

GUBIN, V. Ye., ISUPOV, Yu. G., ORESHINA, M. D., KHAZIYEV, N. N., SHEMYAKINA, G. N., Tr. VNII po Sboru, Podgotovke i Transp. Nefti i Nefteproduktov, No 8, 1971, pp 104-116.

lent flow modes are studied. The velocity and temperature are approximated by polynomials. The Reynolds analogy is used in the turbulent case. The solution of the nonlinear systems of equations for the velocity and thickness of the boundary layer is produced by the method of power series using a longitudinal coordinate. Furthermore, an analytic solution in the area of large Prandtl numbers is found in the laminar case. The boundary layer characteristics and heat flow through the surface of the cylinder are calculated. Results are presented from an experimental study performed using two models with diameters of 30.5 and 97.5 cm and lengths of 15 and 27 cm respectively. The working fluids were gasoline and distilled water. Processing of the experimental data produced on heat transfer produces the dependence  $N = 0.340 (GP)^{0.25}$  in the laminar case and  $N = 0.092 (GP)^{0.40}$  in the turbulent case (Nusselt number  $N$  and Grashoff number  $G$  defined through diameter of cylinder and temperature difference between wall and fluid;  $P$  is the Prandtl number). Heating time of the fluid is estimated.

2/2

- 45 -

USSR

ORESHINA, M.D., SAVEL'YEVA, L.I., KHAZIYEV, N.N., SHEMYAKINA, G.N. (Ufa)

"Free Convection of a Fluid With an Initial Vertical Density Gradient,  
With Heating on the Side"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1971,  
pp 123-126

Abstract: Some results of experimental research on free convection in solutions with nonuniform density with respect to height are presented. It is shown that in the presence of a vertical density gradient and side heating, the convective motion in solution is of a cellular character. The relationship of the height of individual cells to the temperature pressure and the density gradient is ascertained. 2 figures, 5 bibliographic entries.

1/1

- 66 -

USSR

UDC 621.382.2

ORESHKIN, P.T., SEMENOV, V.A., MITROFANOV, O.V.

"Active Elements Based On Chalcogenide Glasses (Short Communication)"

Elektron.tekhnika. Nauch.-tekh.n.sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, No 3(29), pp 35-37  
(from RZh:Elektronika i yeye urimneniye, No 2, Feb 72, Abstract No 2-165)

Translation: The switching parameters are considered of bead elements based on glasses with a different temperature of softening, in the composition of which Ge, Se, As, Si, and Ga enter. V.K.

1/1

- 96 -

1/2 035

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--BOLT AMPERE CHARACTERISTICS OF AMORPHOUS LAYERS BASED ON A PRIMEII  
B PIMEIV-C PRIMEV TERNARY SYSTEMS -U-

AUTHOR--(05)-BARYSHEV, V.G., BOLTIYETS, N.A., BORSCHEVSKIY, A.S.,

GORYUNOVA, N.A., QRESHKIN, P.T.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 372-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--AMORPHOUS SEMICONDUCTOR, VOLT AMPERE CHARACTERISTIC, THIN FILM  
SEMICONDUCTOR, ARSENIDE, GERMANIUM COMPOUND, CADMIUM COMPOUND,  
PHOSPHIDE, PULSE SIGNAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1988/0088

STEP NO--UR/0449/70/004/002/0372/0375

CIRC ACCESSION NO--AP0105174

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105174

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMORPHOUS LAYERS (2-6 MU THICK) WERE PREPD. BY VACUUM SPUTTERING OF CDGEAS SUB2, ZNGEAS SUB2, AND CDGEP SUB2 ON GALSS SUBSTRATES AND WERE PROVIDED WITH EVAPD. METAL ELECTRODES (SN, PB). THE FILM COMPNS. DID NOT CORRESPOND TO THOSE OF THE INITIAL SUBSTANCES; THE CONTENT OF THE LEAST VOLATILE COMPONENT (GE) WAS DECREASED. ON THE DYNAMIC CURRENT VOLTAGE CHARACTERISTICS OF THE FILMS, SWITCHING FROM THE CUTOFF TO THE OPEN STATE WITH MEMORY WAS FOUND. THE CHARACTERISTICS WERE NOT AFFECTED BY CHANGES IN FREQUENCY OF 3 ORDERS OF MAGNITUDE. THE THRESHOLD OF NEG. RESISTANCE IN THE FILMS STUDIED WAS SIMILAR TO 2 TIMES 10 PRIME4 V-CM. THE CURRENT VOLTAGE CHARACTERISTICS STUDIED WITH RECTANGULAR PULSES SHOWED THAT THE MEMORY IS PRESENT FOR PULSE DURATION GREATER THAN 4 TIMES 10 PRIME NEGATIVE6 SEC AND THAT THE BREAKDOWN VOLTAGE INCREASES WITH DECREASING PULSE DURATION. THE SWITCHING FROM THE CUTOFF TO THE OPEN STATE IS DETD. BY AN ACCUMULATED CHARGE; I.E., IT DEPENDS ON BREAKDOWN VOLTAGE AS WELL AS ON BREAKDOWN CURRENT. FACILITY: FIZ. TEKH. INST. IN. IOFFE, LENINGRAD, USSR.


UNCLASSIFIED



1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ELECTRICAL CONDUCTIVITY AND RELAXATION PROCESSES IN ALUMINUM OXIDE  
AT HIGH TEMPERATURE -U-  
AUTHOR--(02)-ANDREYEVA, L.P., ORESHKIN, P.T.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 57-61  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--RELAXATION PROCESS, ELECTRICAL CONDUCTIVITY, ALUMINUM OXIDE,  
PLATINUM ELECTRODE, HIGH TEMPERATURE EFFECT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/1560 STEP NO--UR/0139/70/013/003/0057/0061  
CIRC ACCESSION NO--AT0130472  
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AT0130472  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF AL SUB2 0 SUB3 WERE  
PRODUCED BY COMPACTING POWDER (3.4 TIMES 10 PRIME8 N-M PRIME2) AND  
ANNEALING AT 1550-1600DEGREES FOR 2 HR. A D. C. POTENTIAL (300 V) WAS  
SUPERIMPOSED BY A PT ELECTRODE. THE SPECIMENS WERE HEATED  
800-1200DEGREES IN NORMAL AND 0 ATMS. THE TIME DEPENDENCE OF CURRENT  
DROP, POTENTIAL DISTRIBUTION IN THE SPECIMENS (4 TIMES 5 MM AND 20 MM  
LONG) AND THE TEMP. DEPENDENCE OF RESISTANCE (SPECIMENS 5 TIMES 5 MM AND  
2 MM THICK) WERE MEASURED. ONLY CATIONS TAKE PART IN COND. CURRENT  
DROP TAKES 30-60 MIN, AND THE FINAL VALUE IS 4-25PERCENT OF THE INITIAL.  
CURRENT DROP AT HIGHER TEMPS. IS LOWER THAN AT LOW TEMPS. POTENTIAL  
DROP IS STEEPEST NEAR THE PLATE, AND IT IS CAUSED BY THE NEG. LAYERS  
SITUATED NEAR THE PLATE. INCREASE OF THE RESISTANCE DURING HEATING IN O  
IS OBSD. ONLY AT LOWER TEMPS. FACILITY: SIB. MET. INST. IM  
ORDZHONIKIDZE, NOVOKUZNETSK, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PREPARATION AND STUDY OF LOCAL HETEROGENEITIES IN OXIDE  
SEMICONDUCTORS -U-  
AUTHOR-(02)-PERLYGIN, A.I., ORESHKIN, P.T.   
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 16-18  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ZINC FERITE, IMPURITY LEVEL, ELECTROLYTIC DEPOSITION, METAL  
ION, CRYSTAL DEFECT, MICROHARDNESS, SEMICONDUCTOR CONDUCTIVITY,  
DIELECTRIC CONSTANT, DIELECTRIC LOSS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/0194 STEP NO--UR/0139/70/013/002/0016/0018  
CIRC ACCESSION NO--AT0105270  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0105270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HETEROGENEITIES WERE PRODUCED BY USING THE METHOD OF METAL ION ELECTROTRANSFER IN AQ. SOLN. DIFFERENT CONCNS. OF  $CrO$  SUB3,  $CoSO$  SUB4.5H SUB2 O, AND  $CoSO$  SUB4.7H SUB2 O WERE USED WITH A POLYCRYST. FERRITE, COMPN. FE SUB2 O SUB3 68.5, NIO 18.5, AND ZNO 13PERCENT. AFTER COATING THE SAMPLE SURFACE WITH A POLYSTYRENE MASK, THE ELECTROTRANSFER WAS CARRIED OUT AT DIFFERENT C.DS. (5-50 MA-CM PRIME2) FOR 10 HR. MICROHARDNESS, MICROSTRUCTURE, AND ELEC. PROPERTIES WERE DETD. THE INTRODUCED IMPURITEIS CONC. ON THE EDGES OF PORES AND OTHER DEFECTS. THE IMPURITY REGIONS ARE CHARACTERIZED BY INCREASED MICROHARDNESS (2 OR MORE TIMES). IN MOST CASES THE REGIONS HAVE N TYPE COND. THE AV. RESISTIVITY AFTER ELECTROTRANSFER DECREASES, WHILE DIELEC. LOSS AND DIELEC. CONST. INCREASE, IN PARTICULAR AT LOW FREQUENCIES.

FACILITY: RYAZAN. RADIOTEKH. INST., RYAZAN, USSR.

UNCLASSIFIED

USSR

UDC 539.293.294.537

ORESHKIN, P. T., STARCHENKOV, B. K., ANDREYEVA, L. P.

"Concerning Migration Polarization in Dielectrics and Semiconductors"

Tomsk, Izvestiya Fizika, No 5, 1970, pp 13-16

Abstract: It is shown that in migration polarization the relaxation time is determined by the lifetime of the carriers in a fixed state, by the thickness of the layer through which the migration transpires, and by the drift velocity. For ion migration a formula is obtained as a generalization of the ion-relaxation polarization formula. Experimental data are presented with regard to the determination of ion mobility in  $Al_2O_3$  by the Ioffe method, and a comparison was made with the values of mobility that were determined by the author's method with the use of formulas for the relaxation time. The necessity was pointed out for examining migration polarization when analyzing the mechanism of excess noise and some cases of current fluctuations in semiconductors, relaxation dielectric losses, relaxation phenomena in active film elements, etc.

1/1

- 69 -

1/2 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--S TYPE NEGATIVE RESISTANCE IN FILM ELEMENTS BASED ON OXYGEN FREE  
COMPOUNDS SPRAY COATED BY AN EXPLOSIVE METHOD -U-

AUTHOR--(03)-DRESHKIN, P.T., BARYSHEV, V.G., PETROV, I.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 123-5

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--EXPLOSIVE BONDING, SEMICONDUCTING FILM, CHALCOGENIDE GLASS,  
VOLT AMPERE CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1993/0486

STEP NO--UR/0139/70/013/002/0123/0125

CIRC ACCESSION NO--ATJ113377

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0113377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIATIONS WERE STUDIED FOR THE TECHNOLOGY OF PREPG. SWITCHES WITH S TYPE NEG. RESISTANCE. THE ELEMENTS WERE PREPD. BY USING THE "EXPLOSIVE" SPUTTERING OF O FREE COMPS. (CHALCOGENIDE GLASS CONTG. TE 47.7, AS 29.9, SI 12.64, AND GE 9.76PERCENT) OR A MECH. MIXT. OF GE AND SE. THE FILM THICKNESS WAS 4-7 MU AND THE V-A CHARACTERISTICS WERE STUDIED. THE USE OF MECH. MIXTS. IS OF INTEREST AS IT AVOIDS THE SYNTHESIS OF THE GLASS. FACILITY: RYAZAN. RADIOTEKH. INST., RYAZAN, USSR.

UNCLASSIFIED

USSR

PERELYGIN, A. I., ORESHKIN, P. T. (Ryazan' Radio Engineering Institute)

"Production and Investigation of Local Inhomogeneities in Oxide Semiconductors"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, February 1970, pp 16-18

Abstract: The introduction of impurities into oxide semiconductors by a method of electron transfer is described. It is shown that in electron transfer it is possible to produce local inhomogeneities in the samples. Several physical properties of the samples are studied, and it is found that electron transfer leads to a change in these properties.

1/1



USSR

UDC 531.43.621.791.92

2  
ORESHKIN, V. D., SVETLOPOLYANSKIY, V. I., and SEREBRYAKOVA, T. I., (Institute of Materials Science Problems, Academy of Sciences, Ukrainian SSR)

"Study of Wear Resistance of Surfaces Hard Faced with Borides"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 78-82

Abstract: High-alloy hard faced layers formed of the borides of titanium, chromium, and tungsten were studied, as well as titanium-chromium diboride with a molar ratio  $TiB_2; CrB_2=4:1$ . All of the coatings were subjected to x-ray phase analysis. X-ray analysis indicated that the initial powders consisted of titanium diboride, a dual titanium-chromium diboride, a mutual solid solution based on  $TiB_2$  and chromium diboride, a mixture of the phases  $CrB_2$  and  $Cr_3B_4$ , as well as  $W_2B_5$ . The boride facings have excellent use properties resulting from the exceptionally high alloying ability of the facing layer, produced by introducing several refractory components which have different influences on the general properties of the alloy but give it an excellent structure.

1/1

USSR

UDC 531.43.621.791.92

ORESHKIN, V. D., SVETLOPOLYANSKIY, V. I., and SEREBRYAKOVA, T. I., (Institute of Materials Science Problems, Academy of Sciences, Ukrainian SSR)

"Study of Wear Resistance of Surfaces Hard Faced with Borides"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 78-82

Abstract: High-alloy hard faced layers formed of the borides of titanium, chromium, and tungsten were studied, as well as titanium-chromium diboride with a molar ratio  $TiB_2$ ;  $CrB_2=4:1$ . All of the coatings were subjected to x-ray phase analysis. X-ray analysis indicated that the initial powders consisted of titanium diboride, a dual titanium-chromium diboride, a mixture of the solution based on  $TiB_2$  and chromium diboride, a mixture of the phases  $CrB_2$  and  $Cr_3B_4$ , as well as  $W_2B_5$ . The boride facings have excellent use properties resulting from the exceptionally high alloying ability of the facing layer, produced by introducing several refractory components which have different influences on the general properties of the alloy but give it an excellent structure.

1/1

Acc. Nr.: AM 0106707



Sheyenko, I. N.; Oreshkin, V. D.; Repkin, Yu. D.

Ref. Code: UR 0000

Contemporary Build-Up Materials Based on Refractory Compounds (Sovermennyye naplavochnyye materialy na osnove tugoplavkikh soyedineniy) Kiev, Naukova Dumka, 1970, 235 pp (SL:2078)

TABLE OF CONTENTS:

Introduction		
Chapter I	Theoretical Principles and Characteristics of the Build-Up Process	3
II	Build-Up Methods and Their Essence	7
III	Electrodes for Build-Up Operations	34
IV	Classification of Build-Up Materials	59
V	Methods for Production of Highly Wear-Resistant Build-Up Materials	99
VI	New Carboboride and Silicide Build-Up Materials	133
VII	Hardening of Parts of Metallurgical Equipment by Means of Alloys Based on Refractory Compounds	133
	<u>Reel/Frame</u>	206
	<b>19890025</b>	
		18

1/2

Acc. Nr.: AMC106707

Conclusion  
Bibliography

225  
228

The book deals with theoretical principles and characteristics of the build-up process...  
- It was written for a wide circle of engineers, technicians and scientists specializing in the field of welding and surfacing in machine construction, ship building, agriculture and construction; it can be useful also to students.

7/2

pu

Reel/Frame  
19890026

USSR

UDC 539.4.015

ORESHKINA, A. A., Moscow

"Effect of Composition on the Strength of Mg-Nd Alloys by the Method of High Temperature Thermomechanical Treatment"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 72, pp 144-146

Abstract: Results are presented on investigations into the effect of neodymium content on the mechanical properties and structure of Mg-Nd alloys subjected to both high temperature thermomechanical treatment (HTTMT) and conventional heat treatment-T6. HTTMT consisted of heating ingots to 535°C and soaking for two hours, air cooling to 300°C and then extruding the alloy at this temperature into rods 10.5 mm in diameter. The degree of hot deformation was 87%. For the T6 treatment the ingots were extruded at 450°C, heated to 535°C for one hour, water quenched, and then aged at 200°C for eight hours. Mechanical tests were performed at room temperature and at 250°C.

At room temperature the highest tensile strength was about 32 kG/mm<sup>2</sup> for the alloy with 3% Nd; the highest yield strength and elongation were also exhibited at this Nd content. At 250°C, the highest tensile strength was still at 3% Nd but only amounted to 19 kG/mm<sup>2</sup>; however, at 250°C and a Nd content of almost 4% the elongation was 40% as compared to 8% for the

1/2

- 23 -

USSR

ORESHKINA, A. A., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 72, pp 144-146

alloy containing 3% Nd and tested at room temperature. It was concluded that the optimum Nd content in Mg-Nd alloys to obtain the best combination of properties was 3-3.4% Nd. The author thanks M. Ye. DRITS and Z. A. SVIDERSKAYA for their consultation. 2 figures, 1 table, 5 bibliographic references.

2/2

Thermomechanical Treatment

USSR

UDC 669.721.5:539.377:539.4

DRITS, M. YE, SVIDERSKAYA, Z. A., ORESHIKINA, A. A.

"High Temperature Thermomechanical Treatment of Deformable Magnesium-Neodymium Alloys"

V sb Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 127-136 (from Kzh-Metallur-giya, No 4, Apr 72, Abstract No 41701)

Translation: A study was made of the effect of high-temperature thermomechanical treatment on the mechanical properties and structure of deformable Mg-alloys alloyed with Nb: MA11 (Mg-Nd-Mn-Ni) and MA12 (Mg-Nd-Zr). With a degree of deformation of 87%, the optimal conditions of high-temperature thermomechanical treatment for the MA11 alloy is heating the ingots to 490° for two hours, partial cooling and pressing at 350°, and for the MA12 alloy, heating the to 530° for two hours, partial cooling and pressing at 300°. Utilization of the indicated high-temperature thermomechanical treatment conditions by comparison with the T6 conditions used for these alloys at the present time (quenching and aging) offers significant advantages with respect to strength characteristics at room temperature and defined advantages (especially with respect to  $\sigma_T$ ) at 250°:  $\delta$  of the alloys after high-temperature thermomechanical treatment is

1/1

USSR

DRITS M. E., et al., Struktura i svoystva legk. splavov, Moscow, Nauka Press, 1971, pp 127-136

found to be higher than after low-temperature thermomechanical treatment. A study of the structural variations taking place as a result of high-temperature thermomechanical treatment by the microstructural method, measuring the specific electrical resistance, and the x-ray method demonstrated that the observed hardening is connected with distortions of the crystal lattice of the solid solution rich with Mg and variation of the kinetics of the processes of recovery, recrystallization, and decomposition of the supersaturated solid solution. Four illustrations, one table, and a 7-entry bibliography.

1/1

- 12 -



008  
 UNCLASSIFIED  
 TITLE--EFFECT OF THE COMPOSITION OF THE MEDIUM ON ALDEHYDES DURING SECONDARY FERMENTATION. -U-  
 AUTHOR--(C2)--DRESHKINA, A.YE., KUORYASHOVA, N.A. PROCESSING DATE--16OCT70  
 THE FORMATION OF  
 COUNTRY OF INFO--USSR  
 SOURCE--VINODEL. VINOGRAD. SSSR 1970, 30(1), 11-15  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--FERMENTATION, SULFUR OXIDE, SACCHARIDE, ALDEHYDE  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1996/0660  
 CIRC ACCESSION NO--AP0117885  
 STEP NO--UR/0505/70/030/001/0011/0015  
 UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--AP0117895  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT. ADDN. OF SO SUB2 BEFORE THE 2ND  
FERMENTATION INCREASED FORMATION OF TOTAL ALDEHYDES, BUT DID NOT AFFECT  
FORMATION OF FREE ALDEHYDES. NO CORRELATION BETWEEN SUGAR CONTENT IN  
THE MEDIUM AND FORMATION OF ALDEHYDES WAS OBSD. CHANGES IN TOTAL AND  
FERMENTED SUGAR AFFECTED FORMATION OF ALDEHYDES. FORMATION OF ALDEHYDES  
INCREASED WITH DECREASE OF FERMENTED SUGAR. FACILITY: VSES.  
ZAOCH. INST. PISHCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.317.725

KARLINER, M. H., NIFONTOV, V. I., ORESHKOV, A. D., Novosibirsk

"Precision Digital-to-Analog Converter"

Novosibirsk, Avtometriya, No 2, 1972, pp 88-92

Abstract: The control system for the VEPP-3 storage element using the computer described previously [M. M. Karliner, et al., Avtometriya, No 2, 1972] requires digital-to-analog converters of the potentiometric type which satisfy the following requirements: one digital-to-analog converter must insure a relative error of the division factor of less than  $\pm 1 \cdot 10^{-4}$  with a factor varying from 0.1 to 1; the remaining digital-to-analog converters must insure an error of the division factor of less than  $\pm 3 \cdot 10^{-4}$  for the input voltage varying from 0.5 to 5 volts. The converters must have galvanic decoupling of the analog part from the control circuits. The circuitry of the digital-to-analog converters, the procedure used in selecting their elements and checking them are described. The converters are executed on the basis of the chmic decoding grid R-2R [P. Campiche, Etude d'un convertisseur numerique analogique. JSR-PO/70-22, Geneva, 1970] and two-position transistor switches. The digital-to-analog converter is selected by means of an address decoder circuit. The characteristics of the 1KT011A and 1KT621 integral breakers used as the switching elements are presented. The results of checking a 16-bit digital-to-analog

USSR.

KARLINER, H. M., et al, Avtometriya, No 2, 1972, pp 88-92

converter are tabulated in the form of the voltage at the output from the converter at the "elongated transition" points. The developed converters have the following parameters: input and output voltage range +6.3 volts for the converter with 1KT011A switches, +30 volts for the converter with 1KT621 switches, the number of bits for the converter with 1KT011A switches is 12, and for the converter with the 1KT621 switches, 16, the division factor error for the converters of the first type is  $\pm 10^{-4}$  (for input voltages from 0.5 to 5 volts) and for converters of the second type it is  $\pm 1 \cdot 10^{-5}$ ; the temperature drift of the division factor in the temperature range from 20 to 60° C for the converter of the first type is less than  $\pm 3 \cdot 10^{-6}$ /degree and for the converter of the second type it is on the order of  $\pm 2 \cdot 10^{-1}$ /degree; the zero temperature drift is  $\leq 5$  microvolts/degree, the buildup time constant of the output voltage at the converter output is on the order of 2 microseconds; the output impedance of the converter is 10 kilohms; the digital part of the converter is made from integrated circuits series 217. The converter is executed on one printed textile plate.

2/2

USSR

UDC 621.396:6-181.5

KOLESNIKOV, D. P., ORESHKOV, YU. YE., PERLICH, YU. L., BUTUZOV, V. S.

"Electron Pulse Adjustment of Thin-Film Resistors"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronics Industry. Scientific and Technical Collection), 1971, No 4, pp74-75 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5V273)

Translation: An adjustment method based on eliminating unstable lattice defects arising on condensation of the vapors of the initial material by controlled annealing with transmission of short current pulses through the resistor is described. The results of studying the magnitude of the change in resistance as a function of the amplitude, duration and the number of pulses are presented. There are 3 illustrations and a 2-entry bibliography.

1/1

- 51 -

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH N,CYCLOHEXYL,N  
PRIME, BE, 4, METHYLMORPHOLINIUM, ETHYLCARBODIIMIDE --U--

AUTHOR--(04)--GIRSHOVICH, A.S., GRACHEV, M.A., ORESHKOVA, S.F., RIVKIN, M.E.

COUNTRY OF INFO--USSR

SOURCE--IZV. SIB. OTD. AKAD. NAUK SSSR, SER. KHIM. NAUK 1970, (11), 90-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOSIDE, CHEMICAL REACTION, UV SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0542

STEP NO--UR/0289/70/000/001/0090/0097

CIRC ACCESSION NO--AP0137631

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF N,CYCLOHEXYL,N PRIME, (BETA, (4, METHYLMORPHOLINYL)ETHYL; CARBODIIMIDE (I) AS THE P-MEC SUB6 H SUB4 SO SUB3 H SALT WITH GUANOSINE (II) AND INOSINE (III) WAS FOLLOWED BY USING LABELED I. A SOLN. OF 29.6 MG I SALT, 10 MG II IN 15 ML H SUB2 O SUB 0.1N KOH TO PH 8.4 WAS KEPT 24 HR AT 37DEGREES. THE REACTION OF I WITH III WAS PERFORMED SIMILARLY. KINETICS OF THE CONDENSATIONS, FOLLOWED BY UV SPECTRA, WAS FIRST ORDER IN BOTH COMPONENTS. THE CONDENSATION PRODUCT OF I WITH II (PK 3.8) AND OF I WITH III (PK 3.5, H SUB2 O, 23DEGREES) ARE STABLE BETWEEN PH 2 AND 7. IN AN ALK. SOLN., HYDROLYSIS OCCURS. THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS WERE DETD. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--THE CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH  
N,CYCLOHEXYL, N', BETA, (4,METHYLMORPHOLINIUM) ETHYLCARBODIIMIDE -U-  
AUTHOR-(04)-GIRSHOVICH, A.S., GRACHEV, M.A., ORESHKOVA, S.F., RIVKIN, M.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSR, NO 2, SERIYA  
KHIMICHESKIKH NAUK, 1970, NR 1, PP 90-97  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--NUCLEOSIDE, IMIDE, CYCLIC GROUP, MORPHOLINE, CHEMICAL KINETICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/1825 STEP NO--UR/0239/70/000/001/0090/0097  
CIRC ACCESSION NO--AP0100399  
UNCLASSIFIED



272 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100399

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICAL STUDIES HAS BEEN PERFORMED AND THE ARRHENIUS EQUATION PARAMETERS FOUND FOR THE REACTION OF GUANOSINE AND INOSINE WITH CME CARBODIIMIDE IN AN AQUEOUS SOLUTION. THE REACTION PRODUCTS (CME, NUCLEOSIDES) ARE STABLE IN NEUTRAL AND ACIDIC MEDIA DOWN TO PH 1. THEY CONTAIN GROUPINGS WITH PK 3,8 (CME, GUANOSINE) AND 3,5 (CME INOSINE) AT 23DEGREES. THE REACTION KINETICS HAS BEEN ALSO STUDIED OF THE HYDROLYSIS OF CME, NEUCLEQSIDES TO THE STARTING NUCLEOSIDES IN ALKALINE MEDIUM AND THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS DETERMINED.

UNCLASSIFIED

Public Health, Hygiene and Sanitation

USSR

UDC 615.835.5:628.83

ASHBEL', S. I., ORESHKOVICH, I. V., and SOKOLOVA, V. G., Gor'kiy  
Institute of Labor Hygiene and Occupational Diseases

"Ventilation of Aerosol Inhalation Rooms"

Moscow, Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy  
Kul'tury, Vol 36, No 1, 1971, pp 72-76

Abstract: The method of treating various diseases by letting patients inhale the aerosols of alkalis, antibiotics, sulfanilamides, bronchodilators, antihistamine, vitamins, corticosteroids, proteolytic enzymes, and other drugs is becoming increasingly more popular. Twenty inhalation rooms in the city of Gor'kiy were studied and found far from adequate. Each inhalation room accommodates three to six persons, each breathing a different aerosol. Because of poor ventilation, significant residual amounts of various drugs remain in the air, yielding an "aerosol bouquet" and causing chronic diseases among the personnel. In contrast, the authors describe the inhalation room designed by them. It contains several individual chambers.

1/2

USSR

ASHBEL', S. I., ORESHKOVICH, I. V., and SOKOLOVA, V. G.,  
Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy  
Kul'tury, Vol 36, No 1, 1971, pp 72-76

which are closed during treatment, and a ventilation system  
which is properly installed and has enough power to purify the  
air. This inhalation room has been used for 2 years with highly  
satisfactory results.

2/2

USSR

OREVKOVA, O. A."Linear Extrapolation of a Homogeneous Random Field"

Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR [Writings of Scientific Seminars of Leningrad Division of Mathematics Institute, Academy of Sciences, USSR], 1972, Vol 29, pp 9-13 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V130 by M. Yadrenko).

Translation: Suppose  $\xi(t)$ ,  $t \in \mathbb{R}^2$  is a random field (rf), homogeneous in the broad sense, in plane  $H_\xi(M)$ ,  $(M \subset \mathbb{R}^2)$  — is an envelope of random quantities  $\xi(t)$ ,  $t \in M$ , closed in the mean square. A direction in  $\mathbb{R}^2$  refers to the set  $\alpha = (\alpha_1, \alpha_2)$ , where  $\alpha_1$  and  $\alpha_2$  are real numbers such that  $\alpha_1^2 + \alpha_2^2 = 1$ . The rf  $\xi(t)$  is called regular in direction  $\alpha = (\alpha_1, \alpha_2)$

if

$$\bigcap_{-\infty < \rho < +\infty} H_\xi(S_{\alpha, \rho}) = \{0\}$$

and singular with respect to direction  $\alpha$ , if

$$\bigcap_{-\infty < \rho < +\infty} H_\xi(S_{\alpha, \rho}) = H_\xi(\mathbb{R}^2).$$

1/2

USSR

OREVKOVA, O. A., Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR, 1972, Vol 29, pp 9-13.

where  $S_{\alpha, \rho} = \{t: t \in \mathbb{R}^2, (\alpha, t) < \rho\}$ . . The rf  $\xi(t)$  is called regular if it is regular with respect to any direction  $\alpha \in \mathbb{R}^2$ , and singular, if it is singular in at least one direction  $\alpha \in \mathbb{R}^2$ . The necessary and sufficient conditions for regularity and singularity of an rf are presented, expressed in terms of spectral density.

2/2

ORFEYEV, Yu. V.

JPRS 54483  
15 NOV 71

HUMAN MENTAL LABOR AND "MACHINE THOUGHT"

Article by Yu. V. Orfeev, Moscow, Nauchnoye Upravleniye Oshchibestvom, Russian, No. 1971, pp 22-297

According to the predictions of a number of futurologists, the application of electronic computers for automating the creative processes will be quite widespread by 1985. The correct evaluation of the developmental prospects of "machine thought" and its impact on the organization of control entails considering a number of methodological problems connected with the relationship between man's real creative and organized activity.

The first problem involves appraising the areas and limits of the applicability of the functional approach to analyzing control systems. We should dwell on this approach because "machine thought" and human thought are comparable only on the functional plane. The second problem bears on whether machine programs for processing symbolic information can serve as a tool for the construction of paralogic and economic theories. And the third problem pertains to making more specific the criteria for comparing human and machine thought.

Areas and Limits of the Application of the Functional Approach to the Study of Control Systems

The functional approach to studying complex control systems and structures is a productive tool for their analysis. A characteristic feature of the functional approach is the fact that the very specification of the system tends, as it were, on the one hand, while basic attention is focused on the complex of properties determining the behavior of the given system in its interaction with the surrounding environment. The necessity for the functional approach to the study of complex control systems of this type are not directly derived from the structural characteristics of the system. In fact, if the functional properties of machines (turning lathes, arithmometer, watch, and so forth) have

Acc. Nr:

AP0052536

Abstracting Service:

CHEMICAL ABST. 5-76

Ref. Code:

UR 0460

101359r Compatibility of poly(vinyl chloride) with butadiene-acrylonitrile rubbers. Aivazov, A. B.; Mindiyarov, Kh. G.; Zeleney, Yu. V.; Organesov, Yu. G.; Raevskii, V. G. (Mosk. Gos. Pedagog. Inst. im. Lenina, Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 10-14 (Russ). NMR spectroscopy and detn. of the changes of the mech. loss angle in  $-50^{\circ}$  to  $+100^{\circ}$  interval established that the title polymers are miscible and compatible. At some component ratios, the mixts. have characteristics of binary systems. The obsd. phase transitions are due to glass temps. of poly(vinyl chloride) at high temp. and of butadiene-acrylonitrile copolymers at low temps.

CPJR d me

REEL/FRA  
19821179

7

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--DIODES WITH NEGATIVE RESISTANCE BASED ON NICKEL COMPENSATED SILICON  
-U-  
AUTHOR--(03)-AVAKYANTS, G.M., MINASYAN, S.V., URGANESYAN, D.A.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK ARM. SSR, 1970, 50(1), 20-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS  
TOPIC TAGS--DIODE, NICKEL, SILICON, ALUMINUM NICKEL ALLOY, RESISTIVITY,  
ELECTRIC FIELD, VOLT AMPERE CHARACTERISTIC  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/2060 STEP NO--UR/0252/70/050/001/0020/0022  
CIRC ACCESSION NO--AT0122289  
UNCLASSIFIED



2/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0122289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENT VOLTAGE CHARACTERISTICS,  $I(V)$ , WERE STUDIED OF P PRIME POSITIVE-I-N PRIME POSITIVE DIODES (AL-NI DOPED SI WITH RESISTIVITY 2-20 KILOHM,CM,AU PLUS 0.01PERCENT SB; BASE THICKNESS 150-250 MU) AT 228-353DEGREESK. THE CHARACTERISTICS ARE S SHAPED; THE 1ST PART OF THE CURVE OBEYS THE FORMULA  $I$  EQUALS  $BV$  PRIMEN, WHERE 1.5 IS SMALLER THAN OR EQUAL TO N IS SMALLER THAN OR EQUAL TO 2.5 AND B IS A CONST. THE POTENTIAL DISTRIBUTION ALONG THE BASE WAS DETD.; THE MAX. ELEC FIELD INTENSITY OCCURRED NEAR N PRIME POSITIVE AND P PRIME POSITIVE CONTACT, IN P PRIME POSITIVE-N-N PRIME POSITIVE AND P PRIME POSITIVE-P-N PRIME POSITIVE, RESP.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--STABILITY CHANGES IN THE VESTIBULAR APPARATUS PRIOR TO EXHAUSTION  
UNDER GREAT MUSCULAR STRESS -U-  
AUTHOR--GRIGANOVA, I.A. O  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, TEORIYA I PRAKTIKA FIZICHESKOY KULTURY, NO 1, 1970, PP  
40-43  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--VESTIBULAR APPARATUS, EXERCISE, NYSTAGMUS, PHYSIOLOGIC STRESS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD7C/605019/F02 STEP NO--UR/0523/70/000/001/0040/0043  
CIRC ACCESSION NO--AP0140978

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--APO140978

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPERIMENT WAS CONDUCTED TO STUDY CHANGES IN THE VESTIBULAR ANALYSOR DURING GREAT MUSCULAR ACTIVITY UNDER CONDITIONS OF INTENSIVE ACCELERATION. FIFTY WRESTLERS, AGED 15 TO 18, PARTICIPATED IN THE EXPERIMENT. WRESTLING WAS CHOSEN BECAUSE OF ITS GREAT MUSCULAR EXERTION, WHICH REQUIRES BALANCE AND MAXIMUM BODILY STABILITY UNDER ACCELERATION. IT WAS CONCLUDED THAT THE VESTIBULAR REACTIONS WHICH OCCUR UNDER AN INTENSIVE MUSCULAR LOAD ARE CHARACTERIZED BY SEVERAL FEATURES. THE FLOW OF VESTIBULOMOTOR REACTIONS IS CHANGED. THIS OCCURS IF THE NYSTAGMIC REACTION IS GREATLY ACTIVATED, THE LENGTH OF THE NYSTAGMUS INCREASES, AND THE NUMBER OF NYSTAGMIC IMPULSES INCREASES, RESULTING IN INCREASE IN THE FREQUENCY OF NYSTAGMUS. THE VESTIBULCAUTONOMIC REACTION, TOGETHER WITH THE PROCESS OF RECUPERATION, CHANGES AND THE FINAL RESULT OF SUCH SUMMATION DEPENDS ON THE STRENGTH AND THE DEGREE THAT EACH IS PREVALENT. AS A RESULT THERE IS SIGNIFICANT DECELERATION IN THE RECUPERATION PROCESS. THE REACTIVE STABILITY OF THE VESTIBULAR ANALYSOR, BY WHICH WE MEAN THE COMPARATIVE VALUE OF THE REACTION PRODUCED TO THE SHORT, ABOVE THRESHOLD STIMULUS WHEN THE ATHLETE EXERTS MUSCULAR STRESS, DECREASES. THIS IS SEEN IN THE ACTIVATION OF THE VESTIBULOMOTOR REACTION. FINALLY, INTENSIVE PHYSICAL WORK UNDER THE INFLUENCE OF ANGULAR ACCELERATIONS LIMITS TO A GREAT EXTENT THE WORK CAPACITY OF A MAN. FACILITY: ARMENIAN STATE INSTITUTE OF PHYSICAL EDUCATION.

UNCLASSIFIED

USSR

ORGANOVA, I. A., et al., Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 1, 1970, pp 40-43.

ficant deceleration in the recuperation process. The reactive stability of the vestibular analysor, by which we mean the comparative value of the reaction produced to the short, above-threshold stimulus when the athlete exerts muscular stress, decreases. This is seen in the activation of the vestibulomotor reaction. Finally, intensive physical work under the influence of angular accelerations limits to a great extent the work capacity of a man.

2/2

- 112 -

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
 TITLE--THE INFLUENCE OF AURANTINE ON THE PHAGOCYTOSIS AND INDUCTION OF  
 SYNTHESIS OF HEMOLUSINS -U-  
 AUTHOR--(02)-GRUTMAN, M.I.; ORGEL, M.YA.  
 COUNTRY OF INFO--USSR  
 SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL. 49,  
 NR. 6, PP. 69-71  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--MACROPHAGE, PERITONEUM, ANTIGEN, PHAGOCYTOSIS, SELECTIVE DRUG  
 EFFECT, INHIBITION  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--3004/0689 STEP NO--UR/0219/70/049/006/0069/0071  
 CIRC ACCESSION NO--AP0131284  
 UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131288

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MACROPHAGES OF THE PERITONEAL EXUDATE OF NORMAL AND IMMUNE RATS IN VITRO CULTIVATION WITH SHEEP ERYTHROCYTES WERE INTRODUCED TO THE SAME ANIMALS FROM WHOM THEY WERE TAKEN. HEMOLYSINS APPEARED IN THE BLOOD OF DONORS RECIPIENTS. MACROPHAGES, PRELIMINARILY INCUBATED WITH ANTIGEN, DID NOT INDUCE THE FORMATION OF HEMOLYSINS AFTER ADMINISTRATION TO IRRADIATED (550 R) AUTOLOGOUS RECIPIENTS. AURANTINE (10 MU G-ML) INHIBITED THE ANTIGEN PHAGOCYTOSIS IN VITRO AND SUPPRESSED THE INDUCTION CAPACITY OF MACROPHAGES IN VIVO. FACILITY: KIEV INSTITUTE OF EPIDEMIOLOGY, MICROBIOLOGY AND PARASITOLOGY.

UNCLASSIFIED

Acc. Nr: AP0036820 0

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 70-75

THE CAPACITY OF MACROPHAGES TO PROVOKE  
THE ANTIBODY SYNTHESIS IN THE LYMPHOCYTE CULTURE  
IN VIVO

Morgunov, I. N.; Orgel', M. Ya.; Grutman, M. I.

The authors studied the role of macrophages of peritoneal exudate of rats in induction of formation of antibodies against sheep erythrocytes or to diphtheritic toxoid under conditions of diffusion chambers present in the irradiated recipients. A conclusion was drawn that marked primary and secondary response in the lymphocyte culture in vivo required macrophage treatment of the antigen. When only the antigen was added to the lymphocyte culture in vivo, the antibody production proved to be less than on addition of macrophages which came in contact with the antigens before.

D.N.

1/1

6

REEL/FRA  
19721737

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PROCESSING AND USE OF TITANIUM BLAST FURNACE SLAGS -U-  
AUTHOR--(04)-DOVGOPOL, V.I., KOCHETOV, N.N., ORININSKIY, N.V., SHKOLNIK,  
YA.SH.  
COUNTRY OF INFO--USSR  
SOURCE--METALLURG (MOSCOW) 1970, 15(3), 39-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--BLAST FURNACE, SLAG, TITANIUM, METALLURGIC RESEARCH FACILITY,  
CEMENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0915 STEP NO--UR/0130/70/015/003/0039/0040  
CIRC ACCESSION NO--AP0133004  
UNCLASSIFIED



2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133004

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USUAL BLAST FURNACE SLAGS ARE MAINLY UTILIZED IN THE PRODUCTION OF PORTLAND CEMENT BUT THOSE CONTG. HIGHER TIO SUB2 CONCNS. (5-13PERCENT) SHOW LESS HYDRAULIC ACTIVITY TO THEIR LOW SOLY. IT IS ASSUMED THAT THE QUALITY OF CEMENT IS NOT POOR IF SLAG CONTAINS SMALLER THAN OR EQUAL TO 4PERCENT TIO SUB2, SP. SURFACE OF CEMENT IS GREATER THAN 4000 CM PRIMEZ -G, AND THE CONTENT OF TI SLAG IN IT IS SMALLER THAN 50PERCENT. THE SWELLING TENDENCY OF TI SLAGS IS GOOD AND THEY CAN BE USED IN THE PRODUCTION OF FOAMED SLAG. MOREOVER, PAVEMENT BLOCKS, CRUSHED SLAG, AND SLAG WOOL ARE PRODUCED. PRODUCTION OF FOAMED SLAG IS THE MOST ECONOMIC AND SUITABLE MEANS OF UTILIZATION OF TI SLAG. FACILITY: URAL. INST. CHERN. METAL., SYERDLOVSK, USSR.

UNCLASSIFIED

ORION, BV.

SPR 5 59208  
4-73

XII-6. PROBLEMS OF OBTAINING EPITAXIAL LAYERS OF SILICON AT REDUCED TEMPERATURES

Article by I. M. Skvortsov, B. V. Orion, Moscow; Novosibirsk, III Stencilium no Professorov Kozla I. Shtetza Poluconditkovykh Kristallov I. Pionov, Russian, 12-17 June 1972, p 197

In the report a study was made of methods of obtaining epitaxial layers of silicon from a mixture of  $SiCl_4$  and  $H_2$  at temperatures below  $1,000^\circ C$ . The experimental results and a comparison of the layer growth methods are presented.

An analysis of the experimental results leads to the following conclusions regarding the causes of worsening of the structure of the layers at reduced temperatures. The basic cause is oxidation of the silicon surface by the moisture contained in the gas mixture. By calculation, the effect of the moisture in the hydrogen on the minimum temperature at which it is possible to have epitaxial growth was determined.

In order to obtain no-defect epitaxial layers at reduced temperatures, various methods of preparing the substrates are proposed which prevent oxidation of the surface. Careful cleaning of the substrate before epitaxial growth of silicon at a temperature of below  $1,000^\circ C$ , bypassing the stages of high temperature growth and high temperature film etching.

USSR

UDC: 53.07/.08+53.001.5

SKVORTSOV, I. M., ORION, B. V.

"Concerning the Effect of Impurities on the Growth of Epitaxial Layers of Silicon at Low Temperatures"

Elektron. tekhnika. Nauch.-tekh. sb. Poluprovodn. pribory (Electronic Technology. Scientific and Technical Collection. Semiconductor Devices), 1971, vyp. 4(61), pp 99-106 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A738)

Translation: The authors consider low-temperature growth of epitaxial layers of silicon from  $\text{SiCl}_4\text{-H}_2$  and  $\text{SiHCl}_3\text{H}_2$  mixtures. The basic cause of impairment of the structure of the layers at low temperatures is surface oxidation of the silicon by water contained in the purified hydrogen. Calculation shows the effect which the dew point of hydrogen and the partial pressure of hydrogen chloride have on the surface oxidation of silicon. From the results of the calculations, conditions were brought about for producing epitaxial layers of silicon at temperatures of 950-1000°C with a stacking defect density of less than 50/sq. cm. Resumé.

1/1

USSR

UDC 535.14

KUKANOV, A. B., ORISA, B. D., Department of Theoretical Physics, Moscow University

"On the Problem of Energy Losses by a Charged Particle in a Gyrotropic Medium"

Moscow, Vestnik Moskovskogo Universiteta, Seriya III, Fizika, Astronomiya, Vol 12, No 4, Jul/Aug 71, pp 363-369

Abstract: The solution of the Fresnel equation for a gyrotropic medium is taken as a basis in deriving general expressions for the vectors of electromagnetic field polarization in this medium. A relation is established between two known approaches to solution of the problem of radiation by a charged particle in the given medium. The resultant general formulas are applied to the case of radiation by a charged particle moving in a helical line in a gyrotropic medium. The authors thank A. A. Sokolov for discussing the results. Bibliography of fifteen titles.

1/1

USSR

UDC: 632.95.028

ORISHCHENKO, A. D. (Department Head), Main Administration of Plant Protection, Ministry of Agriculture USSR

"Abiding Strictly by Regulations for Pesticides Applications"

Moscow, Zashchita Rasteniy, no 12, 70, pp 3-6

Abstract: In recent years, the application and storage of pesticides have been greatly regulated. However, inspections conducted over a number of republics revealed violations. It was observed, for instance, that pesticides have been frequently used without preliminary determination of the degree of contamination of the fields. As a consequence some fields were unnecessarily treated with polychloropinene mixed with DDT. Moreover, the preparation of soil for beets frequently followed immediately without the observance of the waiting period specified by law, thus creating a hazard to the health of the kolkhoz farmers. Control analyses of 85 samples of pesticides taken in kolkhozes and sovkhoses have shown only

1/2

USSR

ORISHCHENKO, A. D., Zashchita Rasteniy, No 12, 70, pp 3-6

25 to be in proper solutions. Names and locations of farms where solutions of insecticides, fungicides and herbicides were incorrectly prepared are given. Such violations involving excessive concentrations of pesticides caused burns of plants over large areas, and damage to grain treatment. Application techniques are equally inefficient. Coordination is lacking between the material, method of application and the weather. Recommendations are made for eliminating these shortcomings, by supplying educational material, better practical training, wider application of agrotechnical, biological as well as other non-chemical techniques for preventing the mass propagation of pests and plant diseases.

2/2

1/2 043 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--POSSIBLE CREATION OF A CARBON DIOXIDE LASER WITH ELECTRON BEAM  
PUMPING -U-  
AUTHOR--(04)-DOLGOVSAVELYEV, G.G., KUZNETSOV, V.V., KOZMINYKH, YU.L.,  
ORISHICH, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 737-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CARBON DIOXIDE LASER, ELECTRON BEAM, LASER PUMPING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0094 STEP NO--UR/0368/70/012/004/0737/0739  
CIRC ACCESSION NO--AP0127721  
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A TRANSVERSE ELECTRON BEAM ON THE OUTPUT POWER  $W$  OF A CO SUB2 PULSED LASER WAS STUDIED BY MEASURING  $W$  OF THE LASER AS A FUNCTION OF CO SUB2 PRESSURE AT A CONST. DISCHARGE VOLTAGE (2 KV) AND THE PULSE DURATION ((1-2) TIMES  $10^6$  PRIME<sup>6</sup> NEGATIVE SEC) WITH AND WITHOUT THE ELECTRON BEAM (0.5 MEV, SIMILAR TO 5 A, AND 2 TIMES  $10^6$  NEGATIVE SEC PULSE DURATION) APPLICATION AND WITH AND WITHOUT THE ADDN. OF XE, AG, NE, HE, AND N. IN PURE CO SUB2 AND DISCHARGE WITH AND WITHOUT THE APPLICATION OF THE ELECTRON BEAM, A STABLE GENERATION WAS OBSD. AT LESS THAN OR EQUAL TO 30 TORR. AT GREATER THAN 30 TORR, THE GENERATION WAS UNSTABLE. A MAX.  $W$  WAS OBSD. AT 8-10 TORR. IN BOTH CASES (WITH AND WITHOUT ELECTRON BEAM APPLICATION)  $W$  INCREASES LINEARLY WITH CO SUB2 PRESSURE, BUT THE INCREASE WAS MARKEDLY HIGHER IN THE PRESENCE OF THE ELECTRON BEAM. THE RATION OF  $W$  WITHOUT THE ELECTRON BEAM TO  $W$  WITH THE ELECTRON BEAM INCREASES WITH PRESSURE FROM 1 TO 2.5-3. THIS RATIO WAS MARKEDLY HIGHER IN THE PRESENCE OF XE OR AG. THE ADDN. OF NE, HE, OR N HAVE PRACTICALLY NO EFFECT ON THE LASER GENERATION. THE MARKED INCREASE IN THE OUTPUT POWER OF THE CO SUB2 LASER WITH THE APPLICATION OF AN ELECTRON BEAM IS ATTRIBUTED TO THE EFFECT OF THE ELECTRON BEAM ON THE ELECTRON ENERGY DISTRIBUTION FUNCTION.

UNCLASSIFIED



USSR

ORISHCHERENKO, A. D., Main Administration for Plant Protection, Ministry of Agriculture USSR

"For High Quality Aerial Spraying of Crops"

Moscow, Zashchita Rasteniy, No 4, 1971, pp 3-5

Abstract: Aerial spraying of toxic chemical to protect crops against pests and diseases is often less effective and more costly than it should be because of the failure to follow the rules set forth by the USSR Ministry of Agriculture. Spraying is often done in disregard of weather conditions, appropriate time of day, and so forth. Both the spraying devices and the planes used are not kept in good working condition. The pesticides are often sprayed in large rather than small drops, a generally wasteful procedure. Moreover, many farm directors, local agricultural agencies, and plant protection stations are negligent and indifferent to the need for proper organization of the work. Specific examples are given to illustrate the shortcomings of present spraying practices in various parts of the country.

1/1

USSR

UDC: 538.4

ORLANOV, V. I.

"An Experimental Stand for Studying Models of Electrogasdynamic Energy Converters"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collected Scientific Works. Kiev Institute of Civil Aviation Engineers), 1971, vyp. 7, pp 34-38 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B68)

Translation: A description is given of the experimental equipment, the technique, and some results of measurements on models of electrogasdynamic generators. Methods of obtaining charged particles for the emitters in electrogasdynamic generators are considered: with an external charge-separating field, the method of electrolytic pulverization, and the condensation method. A charged-particle production scheme is given for an AC electrogasdynamic generator. A diagram is given together with the result of measurement of the load characteristic of an electrogasdynamic generator with formation of a high-resistance film on the channel wall. Current-voltage characteristics are presented for an emitter with applied electric field on a hydrocarbon flame with various coefficients of oxygen excess. Author's abstract.

1/1

Waveguides

USSR

UDC 621.372.853.1

~~ORIZANSKAYA~~, E. V. (Member of the Scientific and Technical Society of Radio Engineering, Electronics, and Communications im. A. S. Popov)

"Use of Circuit Theory Methods for Problems on Waveguides Partially Filled With a Dielectric"

Moscow, Radiotekhnika, Vol 25, No 3, March 70, pp 37-43

Abstract: On the basis of circuit theory methods this paper determines the propagation constant of the principal wave in rectangular and circular waveguides partially filled with a dielectric, such as are widely used in the development of broadband phase-shifting devices. A graph is presented of the dependence of the propagation constant of the principal wave ( $\lambda = 3.2$  cm) on the thickness of a dielectric bar located in the center of a rectangular 23 x 10 mm waveguide. The graph agrees with experimental data from the bibliography. A circular  
1/2

1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--USE OF CIRCUIT THEORY METHODS FOR PROBLEMS ON WAVEGUIDES PARTIALLY  
FILLED WITH A DIELECTRIC -U-  
AUTHOR--ORLEANSKAYA, E.V.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, RADIOTEKHNIKA, VOL 25, NO 3, MARCH 70, PP 37-43  
DATE PUBLISHED---MAR70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.  
TOPIC TAGS--DIELECTRIC WAVEGUIDE, WAVEGUIDE PROPAGATION, CIRCULAR  
WAVEGUIDE, RECTANGULAR WAVEGUIDE, CIRCUIT THEORY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1991/1338 STEP NO--UR/0108/70/025/003/0037/0043  
CIRC. ACCESSION NO--AP0110911

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0110911

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF CIRCUIT THEORY METHODS THIS PAPER DETERMINES THE PROPAGATION CONSTANT OF THE PRINCIPAL WAVE IN RECTANGULAR AND CIRCULAR WAVEGUIDES PARTIALLY FILLED WITH A DIELECTRIC, SUCH AS ARE WIDELY USED IN THE DEVELOPMENT OF BROADBAND PHASE SHIFTING DEVICES. A GRAPH IS PRESENTED OF THE DEPENDENCE OF THE PROPAGATION CONSTANT OF THE PRINCIPAL WAVE ( $\lambda$  EQUAL 3.2 CM) ON THE THICKNESS OF A DIELECTRIC BAR LOCATED IN THE CENTER OF A RECTANGULAR 23 TIMES 10 MM WAVEGUIDE. THE GRAPH AGREES WITH EXPERIMENTAL DATA FROM THE BIBLIOGRAPHY. A CIRCULAR ABSTRACT: WAVEGUIDE OF RADIUS R, WITH DIELECTRIC PLATES OF THICKNESS D AND HEIGHT H, IS REPRESENTED IN THE FORM OF A COLLECTION OF STEPS OF RECTANGULAR WAVEGUIDES. CURVES ARE PRESENTED ON THE DEPENDENCE OF  $K_{SUBZ}$  (PROPAGATION CONSTANT OF THE PRINCIPAL WAVE) ON  $R-\lambda$  FOR A CIRCULAR WAVEGUIDE WITH RECTANGULAR DIELECTRIC INSERTIONS IN A VERY WIDE RANGE OF FREQUENCIES. CURVES ARE ALSO GIVEN FOR THE DEPENDENCE OF  $K_{SUBZ}$  ON THE HEIGHT OF THE DIELECTRIC INSERTION. COMPARATIVE RESULTS OF CALCULATIONS AND EXPERIMENTS ARE PRESENTED. EXPERIMENTALLY,  $K_{SUBZ}$  WAS DETERMINED BY THE MAGNITUDE OF THE PHASE ADVANCE WHICH IS CREATED BY A TEFLON DIELECTRIC INSERTION IN A 46 MM DIAMETER CIRCULAR WAVEGUIDE. THE DIMENSIONS OF THE PLATE: D EQUAL 6 MM; H EQUAL 16 MM. 8 FIG. 5 REF. PAPER RECEIVED 30 OCT 68. FACILITY: SCIENTIFIC AND TECHNICAL SOCIETY OF RADIO ENGINEERING, ELECTRONICS, AND COMMUNICATION IM. A. S. POPOV.

UNCLASSIFIED

USSR

ORLEANSKAYA, E. V., Radiotekhnika, Vol 25, No 3, March 70,  
pp 37-43

Abstract: waveguide of radius  $r$ , with dielectric plates of thickness  $d$  and height  $H$ , is represented in the form of a collection of steps of rectangular waveguides. Curves are presented on the dependence of  $K_z$  (propagation constant of the principal wave) on  $r/\lambda$  for a circular waveguide with rectangular dielectric insertions in a very wide range of frequencies. Curves are also given for the dependence of  $K_z$  on the height of the dielectric insertion. Comparative results of calculations and experiments are presented. Experimentally,  $K_z$  was determined by the magnitude of the phase advance which is created by a Teflon dielectric insertion in a 46-mm diameter circular waveguide. The dimensions of the plate:  $d = 6$  mm;  $H = 16$  mm. 8 Fig. 5 ref. Paper received 30 Oct 68.

2/2

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 021

TITLE--POSSIBLE SUBSTITUTION OF DICUMYL PEROXIDE DURING THE VULCANIZATION  
OF URETHANE RUBBERS WITH SOME ORGANIC PEROXIDES -U-

AUTHOR--(03)-VARNAVITSKAYA, L.A., ORLENKO, G.P., KURANOVA, G.F.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 13-15

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ORGANIC PEROXIDE, VULCANIZATION, FILLER, ELONGATION, HARDNESS,  
ETHYL CARBAMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0460

STEP NO--UR/0138/70/029/002/0013/0015

CIRC ACCESSION NO--AP0119396

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SKU-I RUBERS (I), FILLED WITH 50 PARTS LAMP BLACK, WAS VULCANIZED IN THE PRESENCE OF 2-8 PARTS 2,2,BIS(4,4,BIS(TERT-BUTYLEPEROXY)CYCLOHEXYL)PROPANE (II) OR 1,4,BIS(TERT-BUTYLPEROXYISOPROPYL)BENZENE (III) AT 100-80DEGREES FOR 20-60 MIN. OPTIMUM CONTENTS OF II AND III WERE 5 AND 4 PARTS, RESP.; OPTIMUM VULCANIZATION TEMPS. WERE 130 AND 143DEGREES, RESP. INCREASED FILLER CONTENT AND VULCANIZATION TEMP. GAVE INCREASED HARDNESS AND 100 AND 300PERCENT ELONGATION. I VULCANIZATES HAD SUPERIOR MECH. PROPERTETS AND THE PECULIAR ODOR OF PHAC WAS ELIMINATED. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED



USSR

UDC: 534.222.2

KASHIRSKIY, A. V., ORLENKO, L. P., and OKHITIN, V. N.

"Effect of the Equations of State on the Dispersion of Detonation Products"

Moscow, Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, No 2, 1973, pp 165-170

Abstract: Results are given in this paper of the numerical solution of problems of the dispersion of detonation products for various forms of the equation of state. Recognizing that a number of different equations of state have been advanced by the literature on detonation products, the authors select the simplest form of the equation which provides sufficient accuracy for the practical solution of problems on detonation product dispersion. An expression for the logarithmic slope of the isentrope is also obtained. Curves are plotted for the pressure, density, and mass velocity spectra for plane, cylindrical, and spherical detonation waves. The analysis shows that the equation of state in simple form and the expression obtained for the isentrope can be used for computing explosion problems with a sufficient degree of accuracy.

1/1

Acc. Nr: AP0044599 0

Ref. Code:

UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,  
Nr 2, pp 74-79

**INTENSIFICATION OF THE CLINICAL EFFECTIVENESS  
OF PARENTERAL NUTRITION**

R. M. Glants, Yu. M. Orlenko, F. F. Usikou

**Summary**

During clinical investigations conducted in 89 patients with gastroduodenal ulcers the authors established that during resection of the stomach in the postoperative period there occur a rise of catabolism of nitrogen with its intensified excretion, increase of metabolism and function of the cortical part of the adrenals, etc. These metabolic disturbances limit the volume of utilization of introduced nutritive substances. For intensification of the effect of parenteral nutrition it is necessary to combine the introduced with metabolic regulators: in the administration of carbohydrates — insulin, in the introduction of proteins — anabolic steroids, vitamins. This significantly enhances the assimilation of the substances introduced, normalizes metabolic disturbances, significantly reduces the quantity of required water and, thus, augments the effectiveness of parenteral nutrition.

1/1

REEL/FRA  
19771275

DI 02