UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 035

TITLE--CORRELATION OF THE STRUCTURE, ELECTRICAL RESISTANCE, AND IMPACT STRENGTH OF CHROMIUM AND MANGANESE STEELS -U-

AUTHOR-(02)-LYAKHOVICH, L.S., RISHCHEV, I.A.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ.-TEKH. NAVUK 1970, (1), 98-101

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE STEEL, CHROMIUM STEEL, IMPACT STRENGTH, STEEL HEAT TREATMENT, COOLING RATE, STEEL TEMPERING, RESISTIVITY, TEMPERATURE DEPENDENCE, CARBIDE PHASE, STEEL MICROSTRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0759 STEP NO--UR/0201/70/000/001/0098/0101

CIRC ACCESSION NO--AP0104207

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS WERE STUDIED OF ALLOYING ELEMENTS, TEMPERING TEMP., AND THE RATE OF SUBSEQUENT COOLING ON THE MICROSTRUCTURE, ELEC. RESISTIVITY, AND IMPACT STRENGTH OF STEEL. THE INVESTIGATION WAS PERFORMED ON SAMPLES OF STEEL 40, ALLOYED WITH 0.9-2.04PERCENT CR AND 1.0-2.23PERCENT MN. CR AND MN INCREASE THE ELEC. RESISTIVITY OF MEDIUM C STEEL, WITH THE CR ADDNS. HAVING A SOMEWHAT GREATER EFFECT THAN THE MN ADDNS. WITH INCREASING TEMPERING TEMP. THE ELEC. RESISTIVITY OF STEEL 40KH2 CONTG. 2.04PERCENT CR DECREASES. A 500-50 AND 600-50DEGREES THERE IS OBSD. A SLIGHT DECREASE OF THE ELEC. RESISTIVITY AND A SLIGHT INCREASE IN IMPACT STRENGTH FOR STEEL 40KH2 AS WELL AS FOR STEEL 40KH (CONTG. 0.9PERCENT CR). ANALOGOUS RESULTS WERE OBTAINED FOR STEEL 40G (CONTG. 1.0PERCENT MN) AND STEEL 40G2 (CONTG. 2.23PERCENT MN). HOWEVER, THE ELEC. RESISTIVITY VALUES HERE DECREASE MORE SMOOTHLY. AS A RESULT OF SLOW COOLING AFTER TEMPERING THE ELEC. RESISTIVITY OF THESE STEELS DECREASES. AT 550-650DEGREES THERE APPARENTLY TAKES PLACE COAGULATION OF THE CARBIDES, WHICH IS ACCOMPANIED BY A SIGNIFICANT DECREASE IN ELEC. RESISTIVITY AND AN ANALOGOUS INCREASE IN THE IMPACT STRENGTH OF THY STEEL. THE DECREASE IN THE IMPACT STRENGTH VALUES FOR STEEL TEMPERED AT 550DEGREES IS APPARENTLY CAUSED BY THE ISOLATION OF THE CARBIDES. THE NON UNIFORM DISTRIBUION OF THE CARBIDE PHASE WITH RESPECT TO GRAIN SIZE AND THE ENRICHMENT OF THE NEXT TO THE BOUNDARY ZONES OF THE GRAINS WITH P DET. THE IMPACT STRENGTH OF STEEL COOLED AFTER TEMPERING IN THE FURNACE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201830007-8"

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 038

TITLE--COMPOSITION FOR LOW TEMPERATURE ELECTROLYTIC BORON PLATING -U-

AUTHOR-(05)-LYAKHOVICH, L.S., VOROSHNIN, L.G., KARPENKO, O.P., KOSACHEVSKIY, L.N., DOLMANOV, F.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 261,086

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--06JAN70

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

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, METAL PLATING, BORON, LEAD OXIDE, BORON COMPOUND

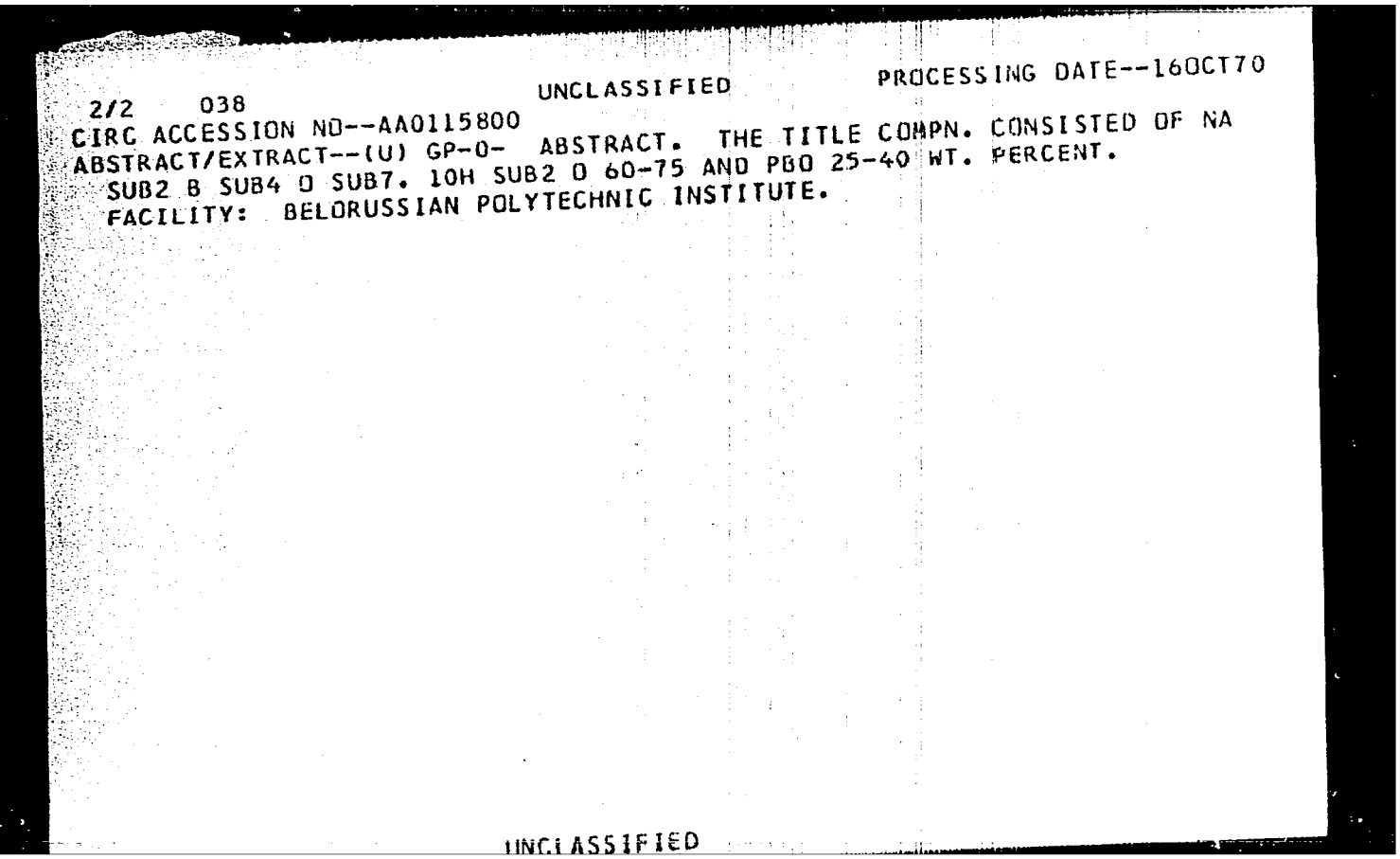
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/2001 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115800

UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 038

CIRC ACCESSION NO--AA0115800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPN. CONSISTED OF NA SUB2 B SUB4 O SUB7. 10H SUB2 O 60-75 AND PBO 25-40 WT. PERCENT.

FACILITY: BELORUSSIAN POLYTECHNIC INSTITUTE.

UNCLASSIFIED

USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G.

"Siliconizing of metals and Alloys"

Silitsirovaniye metallov i splavov (English version above), Minsk, Nauka i Tekhnika Press, 1972, 280 pp

Translation of Foreword: With the broad application of high temperatures and pressures, corrosive media, vacuum, etc. in modern machines, parts and units must frequently meet a combination of demands which cannot or should not be met from the economic standpoint by volumetric alloying of steels or creation of new alloys. In this case, the solution to the problem is frequently the creation of various protective coatings on the surfaces of products.

Diffusion coatings play a leading role in this respect. Chemical and heat treatment radically changes the physical and chemical properties of surface layers, i.e., of those layers in which breakdown processes are primarily developed.

This book analyzes the methods and technological principles of siliconizing of ironcarbon alloys, and the regularities of formation, structure, and properties of diffusion layers. Silicide coatings on steels and alloys allow significant increases in corrosion resistance, high-temperature oxidation resistance, and hardness and wear resistance, and sometimes allow these pro-

USSR

LYAKHOVICH, L. S., et al., Silitsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972, 280 pp

perties to be produced in favorable combinations.

Siliconizing is presently used very little in industry. Probably the main reason for this is the lack of suitable technological methods for applying diffusion coatings, as well as the limited information available on the properties of these coatings. Therefore, the authors have turned their attention to the development and description of new methods of saturation and compositions of saturating mixtures and to the study and systematization of the properties of silicon-containing diffusion coatings on metals and alloys.

Due to the limited volume of this monograph, the authors were not able to describe fully the problems of siliconizing of nonferrous and refractory metals, so important from the practical point of view. However, the general principles of formation of diffusion coatings and compositions of saturating mixtures presented in the work can be used for the treatment of nonferrous and refractory metals and alloys.

This book also discusses certain little-studied problems of the thermodynamics and mechanism of formation of diffusion coatings by electrolytic and liquid saturation of metals and alloys from melts of salts and oxides. The authors hope that these materials will be useful in the development and study of processes of diffusion saturation with other elements.

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USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G., Silitsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972, 280 pp

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LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBZKOV, E. D., and PANICH, G. G., Silitsirovaniye metallov i splavov, Minak, Nauka i Tekhnika Press, 1972, 280 pp

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USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G., Silitsirovaniye metallov i splavov, Minsk i Tekhnika Press, 1972, 280 pp

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USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G., Siilitsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972, 280 pp

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USSR

LYAKHOVICH, V. F.

"Realization of a DNF Corrector"

Abstraktn. i Struktur. Teoriya Releyn. Ustroystv. [Abstract and Structural Theory of Relay Devices -- Collection of Works], Moscow, Nauka Press, 1972, pp 43-49 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V453, by the author).

Translation: A method is presented for construction of a DNF corrector using correcting codes with minimal and nonminimal redundancy, and a method is presented for determination of estimates of the complexity of the corrector in this case.

USSR

GAVRILOV, M. A., OSTIANU, V. M., LYAKHOVICH, V. F.

"The Status of the Theory of Construction of High-Reliability Relay Devices as of the Beginning of 1970"

Abstraktn. i Struktur. Teoriya Releyn. Ustroistv. [Abstract and Structural Theory of Relay Devices -- Collection of Works], Moscow, Nauka Press, 1972, pp 113-128 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V632).

Translation: A review article. 177 Biblio. Refs.

1/1

UDC 51:621.391

USSR

LYAKHOVICH, V. F.

"Method of Construction of 1-failure Proof Relay Structures"

Sovrem. Probl. Kibernet. [Modern Problems of Cybernetics -- Collection of Works], Moscow, Nauka Press, 1970, pp 245-250 (Translation from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V359).

Translation: A method is studied for construction of systems with 2-layer correction of errors of circuit elements in the base &, V, ¬ using a quadrupling code.

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USSR UDC 621.382.82

GORYUSHKIN, M. I., ZAIKA, V. V., KERZNESNER, I. P., LYAKHOVICH, V. V., PETIN, Yu. A., SEMENOVA, N. V.

"Integrated Circuit of a Low-Frequency Amplifier Based on MOS Transistors"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 1(27), pp 14-19 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8D91)

Translation: The paper describes integrated amplifiers with high input impedance which can be realized on the basis of MOS transistors which ensure high input impedance, temperature stability of high input impedance, high packing density and low power consumption. Resumé.

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1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF TEMPERATURE, ELECTRIC FIELD, AND ILLUMINATION ON THE ABSORPTION OF ULTRASOUND IN SBSI IN THE PHASE TRANSITION TEMPERATURE

AUTHOR-(05)-ZAPOROZHETS, O.I., LYAKHOVITSKAYA, V.A., PEKAR, S.I., POLOTSKIY, I.G., SILVESTROVA, I.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 671-2

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ULTRASONIC ABSORPTION, THERMAL EFFECT, ELECTRIC FIELD, PHASE TRANSITION, TRANSITION TEMPERATURE, PARAELECTRIC MATERIAL, FERROELECTRIC MATERIAL, ILLUMINATION, IODIDE, SULFUR COMPOUND, ANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0061 STEP NO--UR/0181/70/012/002/0671/0672

CIRC ACCESSION NO--AP0105158

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105158

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY WAS MADE OF THE EFFECT OF TEMP., EXTERNAL STATIC ELEC. FIELD, AND ILLUMINATION ON ABSORPTION OF LONGITUDINAL ULTRASOUND VIBRATIONS IN SBSI CRYSTALS AT TEMPS. NEAR THE 1ST ORDER PHASE TRANSITION (SIMILAR TO 20DEGREES). THE DEPENDENCE IS GIVEN OF THE ABSORPTION COEFF. OF ULTRASOUND ON THE MAGNITUDE OF EXTERNAL ELEC. FIELD AT INITIAL TEMP. OF 17DEGREES AND AN ELEC. FIELD INCREASING AT 0.4 KV-MIN. THE ABSORPTION COEFF. INCREASES WITH INCREASING FIELD, PASSES THROUGH A MAX. AND STARTING WITH A FIELD OF 5 KV-CM, DECREASES. ILLUMINATION IN THE PRESENCE AND ABSENCE OF AN ELEC. FIELD DECREASES ABSORPTION BY LESS THAN 15PERCENT IN THE FERROELEC. PHASE AND HAS LITTLE EFFECT IN THE PARAELEC. PHASE. FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DOMAIN STRUCTURE OF SBSI CRYSTALS -U-

AUTHOR-(02)-KLIYA, M.O., LYAKHOVITSKAYA, V.A.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 75-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, ANTIMONY SULFIDE, IODIDE, ETCHED CRYSTAL, PHASE TRANSFORMATION, MAGNETIC DOMAIN STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0755 STEP NO--UR/0070/70/015/001/0075/0077

CIRC ACCESSION NO--AP0107297
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107297

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF SEMICONDUCTOR FERROELECS. WAS STUDIED BY USING THE METHOD OF SBI SUB3 SELECTIVE CRYSTN. TO OBSERVE THE MICRORELIEF OF CRYSTALLOGRAPHIC EDGES AS WELL AS BY USING THE CLASSICAL ETCHING METHOD. THESE METHODS CAN ALSO BE USED TO DETECT THE CHARACTERISTIC FEATURES OF THE DOMAIN STRUCTURE ON NONFERROELEC. CROSS SECTIONS. AS A RESULT OF A PHASE TRANSFORMATION OF CRYSTALS OF SBSI (22-25DEGREES), EQUIV. TO THE CHANGE OF SYMMETRY MMM YIELDS TO MM SUB2, THE OCCURRENCE WAS NOTED OF INTERFACES OF THE (HKO) TYPE WITH A ZERO CHARGE AS WELL AS INTERFACES OF THE (101) TYPE NOT ENCOUNTERED IN DIELEC. FERROELECS. THE DIPOLE CHARGE OF THESE SURFACES WAS COMPENSATED FOR BY THE FREE CURRENT CARRIERS.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF COMPOSITION ON THE GROWTH, DIELECTRIC AND PHOTOELECTRIC PROPERTIES OF SBSI CRYSTALS -U-

AUTHOR-(03)-BELYAYEV, L.M., LYAKHOVITSKAYA, V.A., SILVESTROVA, I.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 429-33

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--CRYSTAL GROWTH, PHOTOELECTRIC PROPERTY, ANTIMONY COMPOUND, SULFUR COMPOUND, IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0831 STEP NO--UR/0363/70/006/003/0429/0433

CIRC ACCESSION NO--AP0118007

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118007

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GROWTH FEATURES OF SBSI CRYSTALS IN THE PRESENCE OF SBI SUB3, I SUB2, SB SUB2 S SUB3, AND S SUB2 IMPURITIES WERE STUDIED IN ORDER TO DET. THEIR EFFECT ON THE DIELEC. AND PHOTOELEC. PROPERTIES OF THESE CRYSTALS. THE SBSI CRYSTALS WERE GROWN FROM THE GAS PHASE AND THE MELT. THE FUNDAMENTAL PROCESS COMPLICATING THE CRYSTAL GROWTH IS THE DISSOCN. OF SBSI. THE TEMP. DEPENDENCE OF DIELEC. CONST. AND THE SPECTRAL DISTRIBUTION OF PHOTOSENSITIVITY OF THE CRYSTALS WITH THE NAMED IMPURITIES PRESENT WERE STUDIED. THE ADDN. OF SB TO SBSI CRYSTALS RESULTS IN A SIGNIFICANT INCREASE IN THE COND. OF 10 PRIME NEGAVITE6 OHM PRIME NEGATIVE1-CM PRIME NEGATIVE1 AND A DECREASE IN THE PHOTOSENSITIVITY OF THE CRYSTALS. THE ADDN. OF THE NAMED IMPURITIES INTO SBSI CRYSTALS IN CONCNS. OF LESS THAN 1 MOLE PERCENT DOES NOT CHANGE SIGNIFICANTLY THE ELEC. PROPERTIES OF THE CRYSTALS.

FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

UDC 621.396.677.73

USSR

BUTAKOVA, S. V., GOROBETS, N. N., LYAKHOVSKIY, A. F.

"Range Characteristics of a Horn Antenna with Circular Polarization Based on a Three-Decibel Slot Waveguide Bridge"

Antenno-fidern. i izmerit. ustroystva svedkhvysok. chastot -- V sb. (Superhigh Frequency Antenna Feeder and Measuring Devices -- Collection of Works), Khar'kov, Khar'kov University, 1971, pp 22-29 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B55)

Translation: The results of calculating the parameters of a three-decibel slot waveguide bridge with a common narrow wall in a broad frequency range on the M-20 computer are presented. A nomogram is given for determining the geometric dimensions of the coupling range of the slot waveguide bridge insuring equal division of the power in the output arms at the given wave length with respect to one of the dimensions (length or width) of the coupling range. The frequency dependencies of the ellipticity factor and the angle of orientation of the polarization ellipse at the main radiation peak of the horn antenna with circular polarization executed on the basis of a three decibel slot waveguide bridge are presented. It is demonstrated that the ellipticity factor of the antenna

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USSR

BUTAKOVA, S. V., et al., Antenno-fidern. i izmerit. ustroystva sverdkhvysok. chastot, Khar'kov, Khar'kov University, 1971, pp 22-29

remains high in a broad frequency range. The antenna efficiency also remains high (≈ 98%) in the wavelength range of 25-40 cm. There are 7 illustrations and a 6-entry bibliography.

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UDC 629.12:532

USSR

LYAKHOVITSKIY, A. G., BOROZNA, D. I., STEPANYUK, Ye. I.

"Investigation of the Hydromechanical Properties of Double-Hull Low-Draft Ship With Supercritical Velocity"

V sb. Materialy 25 Nauch.-tekhn. konferentsii. Leningr. in-t vodn. transp. 1971. T. 2 (Materials of the 25th Scientific and Technical Conference. Leningrad Institute of Water Transportation, 1971. Vol 2), Leningrad, 1971, pp 61-65 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B408)

Translation: Two models of a water-displacing catamaran differing with respect to the stern contours were tested in an experimental tank to evaluate the maneuverability of a ship on a limited depth, the resistance of the water to motion, and the possibility of attaining supercritical velocities. It is shown that with practically identical resistance to motion, the model having a bent transom is able to pass through a channel 0.35 meter shallower (as adjusted to full-scale) than the other model. As a result of the study, a theoretical blueprint is developed for a double-hull low-draft ship which will be navigable in water 1.3-1.4 m deep at the critical velocity, and ~1 m deep at supercritical velocity. G. A. Alchudzhan.

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UDC 621.372.8

USSR

LUN'KOV, A. YE., LYAKHOVETSKIY, B. A.

"Analysis of the Operation of a Prism Power Divider in Multimode Wave Guides"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1902-1905

Abstract: A study was made of the passage of a plane electromagnetic wave through two dielectric 45° prisms placed at the cross of multimode wave guides. Relations are obtained for the transmission coefficients of the wave in each of the arms of the device as a function of the width of the gap between the prisms considering internal reflections from the faces of the prisms and the specific nature of variation of the gap in the wave guides. The calculated relations were checked experimentally on wavelengths of 2.2 and 4 mm. Satisfactory approximation of the characteristics of the prism power divider by the relations calculated for the plane electromagnetic wave polarized perpendicularly to the plane of incidence on the diagonal face of the prism occurs with an increase in the wave guide cross section by no less than 10 times by comparison with the basic dimensions. Increasing the dielectric constant of the prism improves the indicated approximation, for as a result of decreasing the wavelength in the prism by $\sqrt{\varepsilon}$ times, the wave incident on the diagonal face

USSR

LUN'KOV, A. YE., et al., Izvestiya vysshikh uchebnvkh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1902-1905

better approximates a plane wave. The effect of the internal reflections, which increase with an increase in the dielectric constant of the prism, can be considered on the basis of the presented procedure. The interference nature of the relation D(d/λ) caused by the specific nature of variation of the gap between the prisms placed in the wave guides permit power division to be obtained with high directionalness.

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1/2 018 UNCLASSIFIED PROCESSING DATE--19SEP70

TITLE--X RAY SPECTRA OF BORON IN BORON NITRIDE AND BORON OXIDE -U-

AUTHOR-(03)-FOMICHEV, V.A., ZIMKINA, T.M., LYAKHOVSKAYA, I.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1) 156-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--X RAY EMISSION, X RAY ANALYSIS, BORON NITRIDE, BORON OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0245 STEP NO--UR/0181/70/012/001/0156/0159

CIRC ACCESSION NO--AP0046524 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 018

CIRC ACCESSION NO--AP0048524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BEHAVIOR WAS INVESTIGATED OF SELECTED MAX. IN THE K SPECTRA OF B IN BN AND B SUB2 O SUB3 LOCATED AT THE SHORT WAVELENGTH SIDE OF THE MAIN BAND. ON VARIATION OF THE ANODE VOLTAGE OF THE X RAY TUBE, EMISSION SPECTRA IN THE REGION OF THE ABOVE MAX. FOR BN UNDERGOES VARIATIONS RELATED TO THE PRESENCE OF B SUB2 O SUB3 IMPURITY ON THE SURFACE OF BN. IN THE SPECTRA OF B SUB2 O SUB3 SUCH VARIATIONS WERE NOT OBSD.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 028

TITLE--K SPECTRA OF BORON IN TRANSITION METAL DIBORIDES AND IN LAB SUB6, BAB SUB6, AND ASB COMPOUNDS -U-

AUTHOR-(03)-LYAKHOVSKAYA, I.I., ZIMKINA, T.M., FOMICHEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 174-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--BORIDE, LANTHANUM COMPOUND, BARIUM COMPOUND, ARSENIC COMPOUND, TITANIUM CARBIDE, EMISSION SPECTRUM, TRANSMISSION METAL, ABSORPTION EDGE, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0204 STEP NO--UR/0181/70/012/001/0174/0180

CIRC ACCESSION NO--AP0055000
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 028

CIRC ACCESSION NO--AP0055000

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X RAY EMISSION AND PHOTOELECTRON K SPECTRA OF B IN DIBORIDES WERE OBTAINED FOR THE TRANSITION METAL DIBORIDES TIB SUB2, ZNB SUB2, HFB SUB2, AND TAB SUB2 AND FOR BAB SUB6, LAB SUB6, AND ASB. IN ALL BORIDES THE EMISSION K BANDS OF B HAVE A COMPLEX STRUCTURE AND APPROX. THE SAME SHAPE. IN THE ABSORPTION SPECTRA OF ALL BORIDES INVESTIGATED, WITH THE EXCEPTION OF ASB, IN THE REGION OF K EDGE ABSORPTION, A SHARP SELECTIVE MAX. IS OBSD. WHICH CAN APPARENTLY BE RELATED TO A TRANSITION INTO AN EXCITED STATE OF B. THE ABSORPTION EDGE IN THE K SPECTRUM OF B IS SEPD. FROM THE SHORT WAVELENGTH EMISSION EDGE BY A DISTANCE OF THE ORDER OF 3 EV FOR ALL THE BORIDES. IN THE SPECTRA OF THE METAL OF THESE SAME COMPDS., THE ABOSRPTION EDGE COINCIDES WITH THE SHORT WAVELENGTH EDGE OF EMISSION. THE PRESENCE OF AN ENERGY GAP IN THE SPECTRA OF B CAN BE RELATED TO THE PRESENCE OF FREE 3D STATES AT THE BOTTOM OF THE CONDUCTION BAND OF THE TRANSITION METAL. FROM COMPARISON OF THE K SPECTRA OF B WITH K AND L SUBII, III SPECTRA OF TIB SUB2, THE ENERGY DISTRIBUTION OF THE STATES OF DIFFERENT SYMMETRY IN THE VALENCE BAND AND IN THE CONDUCTION BAND OF TIB SUB2 IS DETD.

UNCLASSIFIED

AA0051848 LYAKHTEROV M.N. AR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239597 INDUCTIVE LEVEL METER where a float can move freely along the inductive coils indicating its position corresponding to the measured level. The float has been improved, it has two flanges which make it possible to obtain a parallel reading from two independent coils.

12.12.66 as 1119046/26-10. A.S. ABRAMOV et al. (28.7.69) Bul 11/18.3.69. Class 42e. Int.Cl.G 01f.

AUTHORS: Abramov, A. S.; Zotov, S. V.; Maslov, G. S.; Vargin, B.A.; Shorin, N. I.; Kornyushin, P. M.; Mirskov, B. I.; Chistyakov, N. N.; Mosyakov, V. A.; Kozlovskiy, G. V.; Chichigin, I. B.; Batov, V. A.; Golovachev, V. T.; Lyakhterov, M. N.; Kobelev, Yu. M.

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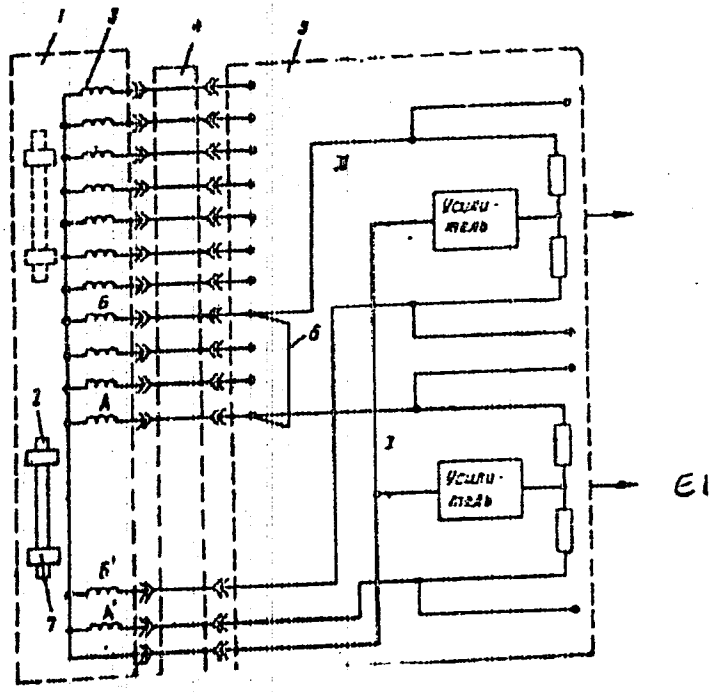
AA0051848



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1/2 006 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--LEVEL OF PRODUCT STANDARDIZATION ESTIMATED -U-

AUTHOR-(02)-LYAKIN, V.N., SLEPOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 2, PP 46-48

DATE PUBLISHED--------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INDUSTRIAL STANDARD, INDUSTRIAL PRODUCTION, INDEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/2015 STEP NO--UR/0422/70/000/002/0046/0048

CIRC ACCESSION NO--AP0100580
UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNOWN METHODS FOR ESTIMATION OF STANDARDIZATION LEVELS OF INDUSTRIAL PRODUCTS ARE USED AS A BASIS FOR FINALIZATION AND COMPLETION OF INDICES EMPLOYED IN THIS ESTIMATION.

89

UNCLASSIFIED

USSR UDC 669.293:168

LYAKISHEV, N. P., PLINER, Yu. L., and RUBINSHTEYN, Ye. A.

Niobium in Ferrous Metallurgy (Niobiy v chernoy metallurgii), Moscow, "Metallurgiya" Press, 1971, 216 pages, 103 illustrations, 66 tables, 446 bibliographic references.

Translation of Annotation: The book outlines the physicochemical properties of niobium and its compounds with elements contained in various steels produced by the home industry as well as of slag systems with niobium oxides. The effects of niobium as an alloy component on the service properties of various steel groups are discussed. Data are presented on ores with niobium concentrations and on the characteristics of their reduction with carbon, silicon, and aluminum. Contemporary techniques of smelting ferroniobium and other niobium-containing alloys are considered, including methods of their addition to the steel bath. A technical-economic evaluation of various methods for producing ferroniobium is proposed. The book is intended for engineering and technical personnel of metallurgical plants and may be of interest to students in related specializations.

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LYAKISHEV, N. P., et al., Niobium in Ferrous Metallurgy (Niobiy v chernoy metallurgii), Moscow, "Metallurgiya" Press, 1971, 216 pages, 103 illustrations, 66 tables, 446 bibliographic references.

UDC 669.292.003

USSR

SLOTVINSKIY-SIDAK, N. P., and LYAKISHEV, N. P.

"Some Problems of the Production of Vanadium in the USSR"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 202-205

Translation: Problems involved in the production of vanadium pentoxide abroad and in the USSR, the raw material base of the USSR and the possibility of its utilization for the production of vanadium are discussed. Methods are presented for extracting vanadium from iron ore raw material, and their improvement is considered. Various methods of production of ferrovanadium and alloys with vanadium are studied.

1/1

UDC 669.187

USSR

TARAKANOV, L. A., and LYAKISHEV, N. P.

"Cathode Ray Remelting of Nickel-Niobium Master Alloy"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals -- Collection of Works), No 75, Metallurgiya Press, 1970, pp 158-161

Translation: Results are presented from an experimental work involving refining of nickel-niobium master alloys using remelting in a cathode ray furnace. It is established that the content of lead, tin, and copper in the nickel-niobium master alloy produced from niobium concentrate after cathode ray remelting is equal to or lower than that in a master alloy produced from niobium pentoxide, a more expensive raw material. 3 tables.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DECALCIFICATION OF POLYOLEFINS -U-

AUTHOR-(05)-IVANYUKOV, D.V., KRYMOV, P.V., KUDRYAVTSEV, V.B., LYAKUMOVICH, A.G., BOBUK, N.S.

COUNTRY OF INFO--USSR

SOURCE--USSR 263,141

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DECALCIFICATION, ALKENE, CATALYTIC POLYMERIZATION, CHEMICAL PATENT, SURFACE ACTIVE AGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1474 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128873

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128873

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYOLEFINS PREPD. ON ZIEGLER NATTA CATALYSTS WERE DECALCIFIED BY BEING WASHED WITH HOT SOFT WATER CONTG. DISSOLVED SURFACTANTS, SUCH AS K OR NA SALTS OF STIROMAL. A SOLN. OF THESE SALTS WAS PASSED THROUGH AN A. C. OR D. C. ELECTROMAGNETIC FIELD BEFORE IT WAS USED IN THE WASHING PROCESS.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF STEREOREGULAR SYNTHETIC RUBBERS -U-

AUTHOR-(05)-LYAKUMOVICH, A.G., KONSTANDI, B.V., SULTANOVA, M.KH., ZAYTSEV, V.S., IRKH~~IN, V.L.~~

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 236,002

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CONJUGATED POLYMER, SYNTHETIC RUBER, POLYISOPRENE, PARAMAGNETISM, TITANIUM CHLORIDE, ORGANOALUMINUM COMPOUND, ELECTROMAGNETIC FIELD, POLYMERIZATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1443 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128842

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 033

CIRC ACCESSION NO--AA0128842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEREOREGULAR SYNTHETIC RUBBERS WERE OBTAINED BY POLYMG. CONJUGATED DIENES, SUCH AS ISOPRENE, IN CATALYTIC SYSTEMS CONTG. SUCH PARAMAGNETIC COMPONENTS AS TICL SUB4 AND ISO BU SUB3 AL. TO INCREASE THE NO. OF CIS,1,4 UNITS AND TO IMPROVE THE PROPERTIES, POLYMN. WAS DONE IN A VARIABLE OR CONST. ELECTROMAGNETIC FIELD.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INHIBITION OF DIMETHYLFORMAMIDE HYDROLYSIS -U-

AUTHOR-(04)-LYAKUMOVICH, A.G., PANTUKH, B.I., BAIBURINA, Z.S., ZAKHAROVA, N.V.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 182-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FORMIC ACID, AMIDE, HYDROLYSIS, AUTOCATALYSIS, FURFURAL, AMINE DERIVATIVE, HEXAMETHYLENETETRAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0825 STEP NO--UR/0064/70/046/003/0182/0183

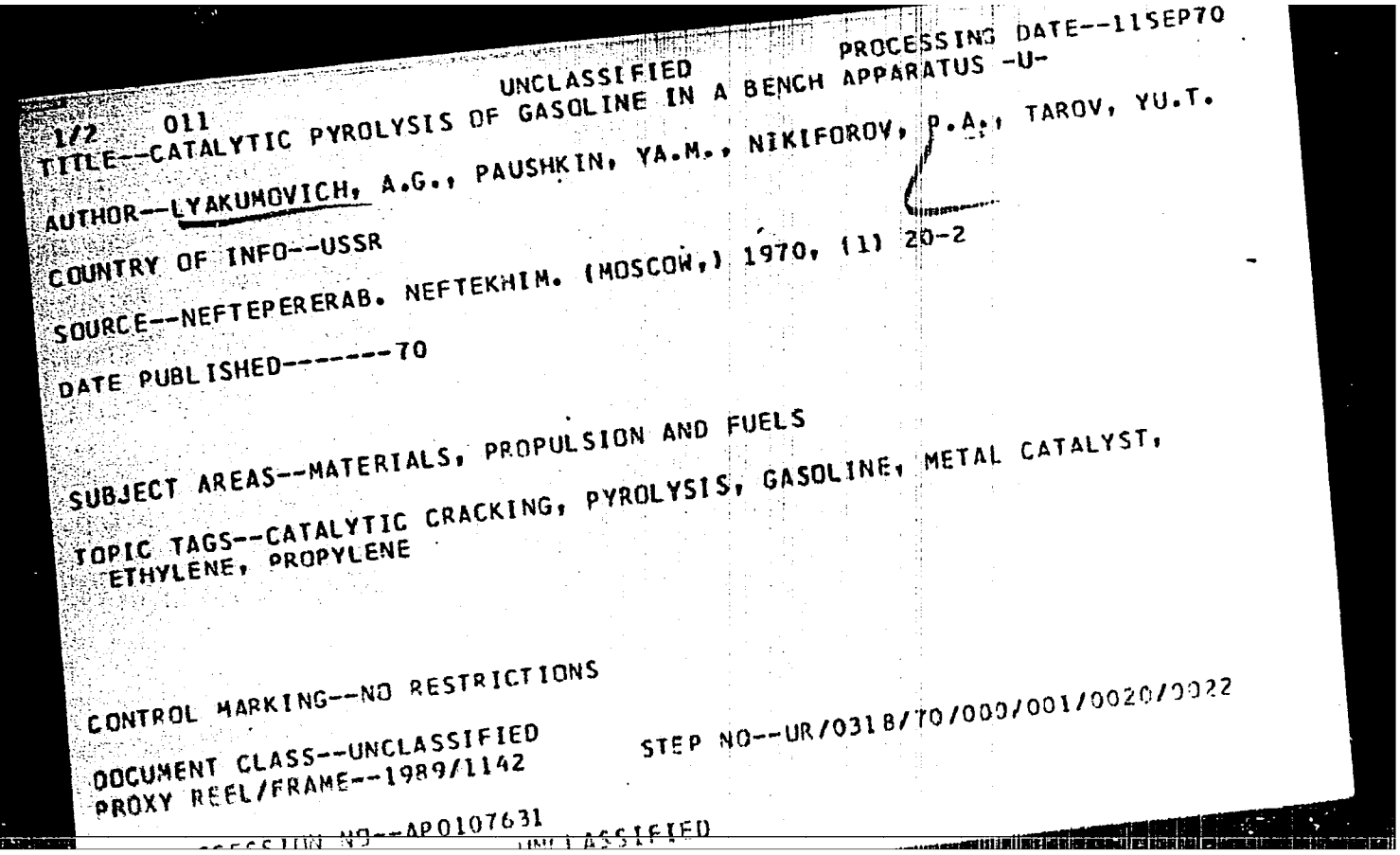
CIRC ACCESSION NO--AP0124492
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROLYSIS OF HCONME SUB2 IN THE PRESENCE OF 10PERCENT OF H SUB2 O AT 120DEGREES IS AUTOCATALYTIC AND THE CONCN. OF HYDROLYSIS PRODUCTS RAPIDLY INCREASES WITH TIME, TO SIMILAR TO 0.5 MOLE-L. AFTER 3 HR. THE ADDN. OF UROTROPINE (0.2PERCENT) TOGETHER WITH SOME METALLIC FE INHIBITS THE HYDROLYSIS OF HCONME SUB2 E.G., NO HCO SUB2 H IS FORMED IN THE SYSTEM AFTER UP TO 30 DAYS AT 125DEGREES; FURFURAL (AND TO A LESSER EXTENT BZH) ALSO INHIBIT THE HYDROLYSIS OF I, WHILE PHNO SUB2 AND OTHER NITRO COMPDS. ARE EFFECTIVE INHIBITORS.

UNCLASSIFIED



1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CATALYTIC PYROLYSIS OF GASOLINE IN A BENCH APPARATUS -U-

AUTHOR--LYAKUMOVICH, A.G., PAUSHKIN, YA.M., NIKIFOROV, P.A., TAROV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW,) 1970, (1) 20-2

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS

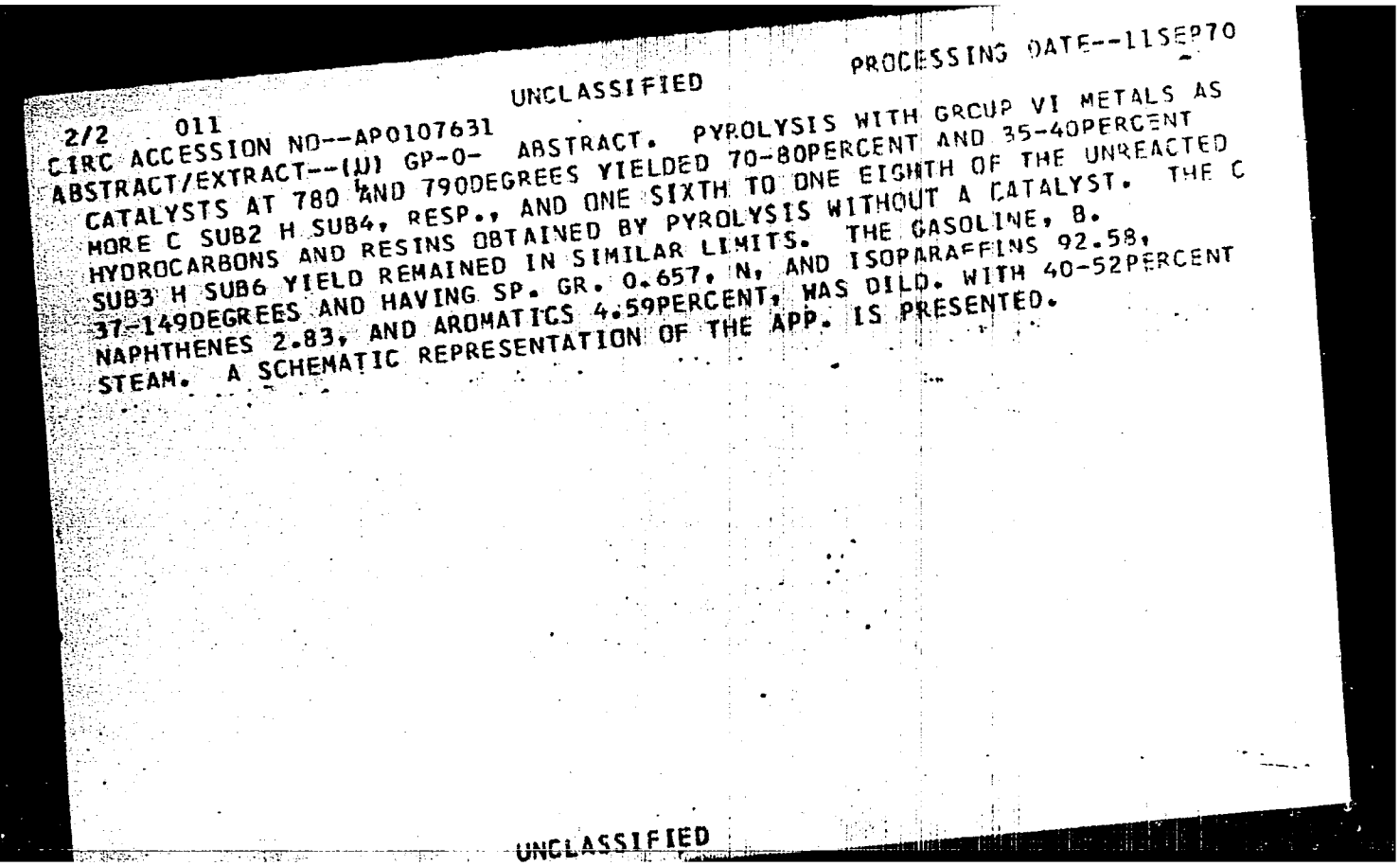
TOPIC TAGS--CATALYTIC CRACKING, PYROLYSIS, GASOLINE, METAL CATALYST, ETHYLENE, PROPYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0318/70/000/001/0020/0022

PROXY REEL/FRAME--1989/1142

ACCESSION NO--AP0107631 UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 011

CIRC ACCESSION NO--AP0107631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PYROLYSIS WITH GROUP VI METALS AS CATALYSTS AT 780 AND 790DEGREES YIELDED 70-80PERCENT AND 35-40PERCENT MORE C SUB2 H SUB4, RESP., AND ONE SIXTH TO ONE EIGHTH OF THE UNREACTED HYDROCARBONS AND RESINS OBTAINED BY PYROLYSIS WITHOUT A CATALYST. THE C SUB3 H SUB6 YIELD REMAINED IN SIMILAR LIMITS. THE GASOLINE, B. 37-149DEGREES AND HAVING SP. GR. 0.657, N, AND ISOPARAFFINS 92.58, NAPHTHENES 2.83, AND AROMATICS 4.59PERCENT, WAS DILD. WITH 40-52PERCENT STEAM. A SCHEMATIC REPRESENTATION OF THE APP. IS PRESENTED.

UNCLASSIFIED

USSR UDC: 621.396.677(088.8)

AYZENBERG, G. Z., ZHURBENKO, E. M., KLIGER, G. A., LYALIKOV, V. V.

"A Long-Wave Impedance Antenna"

USSR Author's Certificate No 247362, filed 20 May 68, published 11 May 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B61 P)

Translation: The proposed antenna system consists of an antenna tower, and log-periodic zig-zag arrays hung on rails which are fastened to the antenna tower. A switch is used to connect the transmitter either to the antenna tower or to one of the zig-zag elements. When the transmitter is connected to the antenna tower, the antenna system is an impedance antenna with undirected radiation pattern in the horizontal palne; in this case, the zig-zag log-periodic arrays are passive elements which act as guides. In the case where one of the log-periodic arrays is fed, the antenna system is a directional frequency-independent average-wave antenna. The direction of maximum radiation depends on which log-periodic array the transmitter is connected to. In case it is necessary to serve several sectors with maximum radiation in the direction of the vertex of the log-periodic structures, a transmitter is connected to each of them. One illustration. A. K.

1/1

USSR UDC: 621.396.677.75

AYZENBERG, G. Z., ZHURBENKO, E. M., KLIGER, G. A., and LYALIKOV, V. V.

"Impedance Antenna With Delay Structure Consisting of Zigzag Wire Lines"

Moscow, Radiotekhnika, Vol. 25, No. 11, 1970, pp 39-48

Abstract: Impedance antennas contain two elements, exciters and directors, the latter being an impedance surface which is usually a ribbed metallic surface. The purpose of this article is to analyze antennas of this type and to show how their present form, which is complex and difficult to produce especially at increased wavelengths, can be imitated by replacing the solid metal surface with ribbons or wires bent in rectangle-toothed fashion. In their analysis, the authors limit themselves to considering an asymmetrical vibrator and impedance structure in the form of a grating of radial zigzag lines with vertical and horizontal elements of varying length. They conclude by asserting that such antennas are promising for medium and high-frequency use, and recommend that further investigations into film and wire impedance structures be made. Theoretically and experimentally determined directional diagrams in the vertical and horizontal planes are shown.

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USSR

UDC: 621.396.677.3

AYZENBERG, G. Z., ZHURBENKO, E. M., KLIGER, G. A., LYALIKOV, V. V.

"A Long-Wave Impedance Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 193, patent No 247362, filed 20 May 68

Abstract: This Author's Certificate introduces: 1. A long-wave impedance antenna which consists of a driver (made in the form of a mast) and director elements. As a distinguishing feature of the patent, the antenna is designed for use in the middle wavelength range as a frequency-independent unit with controllable radiation pattern. The director elements are made in the form of log-periodic zigzag structures suspended on rails. 2. A modification of this antenna whose distinguishing feature is that several attended sectors are provided with maximum emission in the direction of the vertex of the log-periodic zigzag structures by connecting a transmitter to each of these structures.

1/1

USSR UDC 632.95

LYALIKOV, YU. S., and KITOVSKAYA, M. I., Institute of Chemistry of the Academy of Sciences Moldavian SSR

"Method for Quantitative Determination of Zinc Ethylene-bis-dithiocarbamate in Fungicides"

USSR Authors' Certificate No 317973, Cl. G 01n 31/16, G01 n 31/00, filed 5 May 68, published 22 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N520P by I. A. REVEL'SKIY)

Translation: The method of determining Zn ethylene-bis-dithiocarbamate (I), based on the decomposition of I to CS_2, on the absorption of the CS_2 by an alkaline solution and on analysis of the resultant xanthate by a known method, is unique in that the sample of analyzed fungicide undergoes thermal decomposition at a temperature of 170-180°. Under these conditions a molecule of I eliminates one molecule of CS_2.

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UDC 632.95

USSR

LYALIKOV, Yu. S., and DRANOVSKAYA, L. M.

"Spectrophotometric Determination of DDT and α-HCCH in Certain Products"

Izv. AN MoldSSR. Ser. biol. i khim. n. (News of the Academy of Sciences Moldavian SSR: Biological and Chemical Sciences Series), 1970, No 3, pp 69-73 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N548)

Translation: To determine DDT in sunflower seeds, sunflower oil and ground sunflower seeds, an extract is purified by the BRECHFIL'D and STORS [transliterated from the Russian] method, evaporated (10 ml), and the optical density of the solution measured at 236 mm. This solution is then evaporated to 2 ml, and the concentrate chromatographed on a layer of silica gel. From part of the layer α-HCCH (I) is washed out, dechlorinated, and the optical density of the solution measured at 255 nm. Sensitivity of DDT determination: 2 mcg; sensitivity of I determination: 5 mcg per sample.

1/1

USSR

UDC 543.8:632.951

LYALIKOV, YU. S. (Editor-in-Chief), Academician of Academy of Sciences Moldavian SSR, VAYNTRAUB, F. P., VYLEGZHANINA, G. F., Candidates of Agricultural Sciences, SISTER, YU. D., Candidate of Chemical Sciences (Editors) Metody Analiza Pestitsidov (Analysis Methods of Pesticides), Moscow, Izdatel'stvo Nauka, 1972

Translation: Annotation: This book includes articles presented at the All-Union Conference on Analysis Methods of Pesticides in Preparations, Food Products, Soil, and Water.

Many analytical problems of pesticides in commercial products are considered, including the determination of their concentration in different objects. The latter is of particular importance for the environment and food products from the point of view of the sanitary and hygiene engineering.

Different analysis methods of pesticides are suggested, including gas and thin-layer chromatography, spectrophotometry, and polarography.

The book is intended for researchers, personnel of industrial laboratories, and sanitary-epidemiological stations.

Foreword: An intensive development of agriculture requires a maximal decrease of losses caused by insects, diseases, and weeds. In order to meet these requirements, chemical protection of plants is needed.

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USSR

LYALIKOV, YU. S., et al., Metody Analiza Pestitsidov, Izdatel'stvo Nauka, 1972

However, a wide application of pesticides and herbicides causes many unwanted aftereffects. Some compounds, chiefly the chlorine-containing organic compounds (DDT, HCCH [hexachlorocyclohexane], heptachlor, and others) are preserved for a long time in plants in a crop. They are also capable of accumulating in organisms of man and animals in quantities dangerous for health. Other compounds (derivatives of carbamic, thio- and dithiophosphoric acids) are highly toxic during their application and they are capable of penetrating the plant and animal organisms and migrate in plants.

Thorough studies must be conducted before wide application of effective compounds. Research scientists of ministries of agriculture, health, and chemical industry are working on problems to find new low-toxic and selective compounds, to establish acceptable residue doses of pesticides in different products of animal and plant origin, and to investigate their behavior in the biological materials.

Solution of the majority of these problems requires the use of highly sensitive and specific analytical methods.

A development of these methods is complicated by the presence of high amounts of the coextractive substances together with the micro-quantities of active substances in samples subjected to analysis. This requires the use of the newest analytical instruments.

USSR

LYALIKOV, YU. S., et al., Metody Analiza Pestitsidov, Izdatel'stvo Nauka, 1972

This collection of conferences papers on analysis of pesticides is the first attempt to put together the most widely used methods for the analysis of insecticides, fungicides, and herbicides.

The authors of papers in this book have used extensively the thin-layer chromatography, colorimetry, spectrophotometry in visible, ultraviolet, and infrared spectral regions, polarography, and gas chromatography for the analysis of these compounds. Gas chromatography makes it possible to increase considerably the sensitivity of analytical methods.

Articles published in this book will be useful for many analytical chemists working in cooresponding laboratories.

The editors thank K. F. Novikova, S. V. Makarova, and G. S. Supin for their help during the collection of materials.

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LYALIKOV, YU. S., et al., Metody Analiza Pestitsidov, Izdatel'stvo Nauka, 1972

8/8

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COMPARISON OF THE PROPERTIES OF VARIOUS TYPES OF BUTADIENE STYRENE RUBBERS -U-

AUTHOR-(02)-LYALIN, A.A., KARMIN, B.K.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(5), 3-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BUTADIENE STYRENE RESIN, POLYMER PHYSICAL PROPERTY, RUBBER, STYRENE/(U)SKMS30ARK STYRENE RUBBER, (U)SKMS27ARKM STYRENE RUBBER, (U)SKMS30ARKM15 STYRENE RUBBER

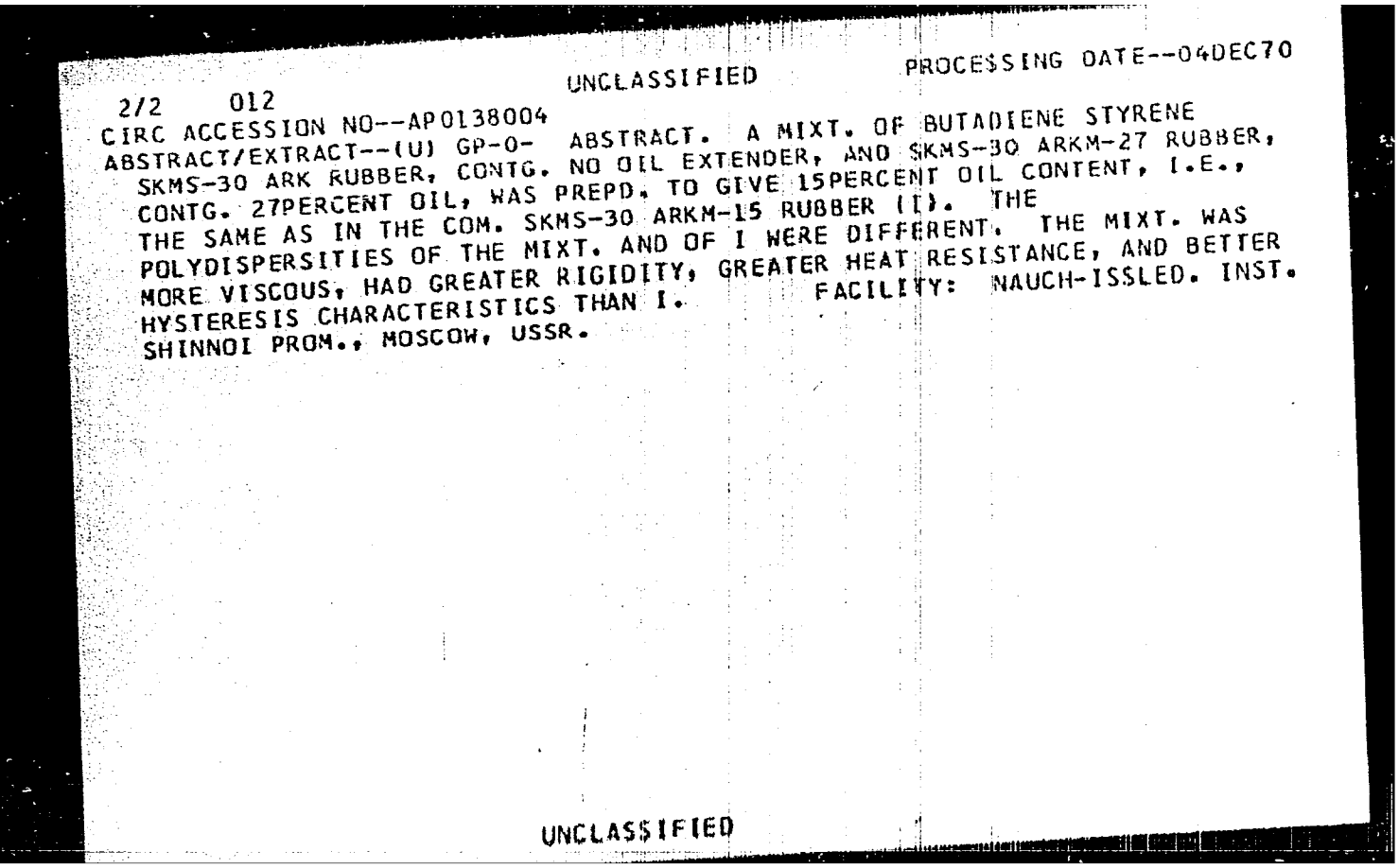
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0976 STEP NO--UR/0138/70/029/005/0003/0005

CIRC ACCESSION NO--AP0138004

UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 012

CIRC ACCESSION NO--AP0138004

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF BUTADIENE STYRENE SKMS-30 ARK RUBBER, CONTG. NO OIL EXTENDER, AND SKMS-30 ARKM-27 RUBBER, CONTG. 27PERCENT OIL, WAS PREPD. TO GIVE 15PERCENT OIL CONTENT, I.E., THE SAME AS IN THE COM. SKMS-30 ARKM-15 RUBBER (I). THE POLYDISPERSITIES OF THE MIXT. AND OF I WERE DIFFERENT. THE MIXT. WAS MORE VISCOUS, HAD GREATER RIGIDITY, GREATER HEAT RESISTANCE, AND BETTER HYSTERESIS CHARACTERISTICS THAN I. FACILITY: NAUCH-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr. AP0053626 Abstracting Service: CHEMICAL ABST. 5730 Ref. Code UR0366

110915w Difluoroiodine derivatives of organic compounds. Lyalin, V. V.; Orda, V. V.; Alekseeva, L. A.; Yagupol'skii, L. M. (Inst. Org. Khim., Kiev, USSR). *Zh. Org. Khim.* 1970, 6(2), 329–32 (Russ). The reaction of RI:O or $RI(O_2CCF_3)_2$ (R is Ph, *p*-MeC_6H_4, *o*-$O_2NC_6H_4$, *m*-FC_6H_4, *p*-FC_6H_4, β-pyridyl, C_6F_5, or F_3CCF_2) with SF_4 in CH_2Cl_2 at −20° gave 59–100% RIF_2. CPJR

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REEL/FRAME
19830681

7

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 023

TITLE--PROPERTIES OF PRIME6 LIL,EU CRYSTALS AT LOW TEMPERATURES -U-

AUTHOR-(03)-VOROBYEV, YU.A., PAVLOVSKAYA, T.F., LYALIN, YE.O.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 90-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LOW TEMPERATURE EFFECT, PHYSICAL CHEMISTRY PROPERTY, LITHIUM COMPOUND, EUROPIUM COMPOUND, CESIUM ISOTOPE, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0120/70/001/000/0090/0091

PROXY REEL/FRAME--1994/1710

CIRC ACCESSION NO--AP0115539

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 023

CIRC ACCESSION NO--AP0115539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN COOLING OF PRIME6 LI(EU) CRYSTALS FROM 25DEGREES TO MINUS 150DEGREES THE SCINTILLATION PULSE AMPLITUDE INCREASES 2.8 TIMES WITH EXCITATION OF THE CRYSTALS BY THERMAL N AND 2.2 TIMES WITH THE EXCITATION BY GAMMA QUANTA OF PRIME137 CS. THE AMPLITUDE RESOLN. IMPROVES FROM 8 TO 5.5PERCENT AND FROM 16 TO 10PERCENT, RESP. AT MINUS 150DEGREES THE PULSE AMPLITUDE IS A LINEAR FUNCTION OF ENERGY OF THE REGISTERED RADIATION FOR GAMMA QUANTA TO 1.85 MEV AND FOR N IN THE ENERGY RANGE FROM THERMAL TO 14 MEV. THE DEEXCITATION TIME CONST. OF THE CRYSTALS AT ROOM TEMP. EQUALS SIMILAR TO 1.0 MU SEC AND AT MINUS 150DEGREES IT INCREASES TO 1.8 MU SEC.

UNCLASSIFIED

USSR

UDC: 621.762+620.194.3+661.322

KOLOBOV, YU. M., LYALIN, YE. V. and MEL'NIKOV, V. G., Ivanova Institute of Chemical Technology

"Study of the Wear Resistance of Metal-Glass Materials in Friction in Aqueous Solutions of Caustic Soda"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 81-84

Abstract: The wear resistance of iron-based sintered materials with 1-10 wt.% BBC glass, graphite and molybdenum disulfide was studied in 5-35% aqueous solutions of caustic soda. The possibility is shown of using metal-glass materials as antifriction materials for friction bearings operating in aqueous solutions of caustic soda. The optimal content of glass is determined, corresponding to the minimum wear and coefficient of friction for the test conditions selected.

1/1

UDC 539.375.6:620.193

USSR

MEL'NIKOV, V. G., Engineer, and LYALIN, Ye. V., Candidate of Technical Sciences

"The Corrosion Factor in the Process of Corrosion-Mechanical Wear of Cyanided Steels"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 70, pages 29-30

Abstract: The corrosion resistance of the cyanided layer applied to friction surfaces of friction bearings was studied using steels selected because of their increased content of carbon and alloying elements. Corrosion tests were performed in solutions of NaOH of various concentrations. The studies showed that corrosion losses of cyanided steels increase only slightly with increasing solution concentration. The corrosion weight loss increased with increasing content of carbon in the steel. The presence of a small quantity of chromium in the steel noticeably increases the corrosion resistance of the layer, since the chromium nitrides formed are more corrosion resistant than iron nitrides.

1/1

1/2 041 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--STRESS RELAXATION IN CROSSLINKED RUBBERLIKE POLYMERS -U-

AUTHOR-(02)-BARTENEV, G.M., LYALINA, N.M.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 368-75

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STRESS RELAXATION, POLYMER CROSSLINKING, BUTADIENE STYRENE RESIN, NATURAL RUBBER, POLYBUTADIENE, SYNTHETIC RUBBER, VISCOUS FLOW, LOW TEMPERATURE EFFECT, HIGH TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0322 STEP NO--UR/0459/70/012/002/0368/0375

CIRC ACCESSION NO--AP0111516

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--020CT70

2/2 041

CIRC ACCESSION NO--AP0111516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE SUPRAMOL. STRUCTURE ON THE STRESS RELAXATION OF BUTADIENE STYRENE RUBBER (UROPRENE-1500) (I), NATURAL RUBBER (II), AND CIS-1,4-POLYBUTADIENE RUBBER (UROPRENE) (III) WERE INFERRED FROM PLOTS OF RELAXATION CURVES OBTAINED BY MEANS OF A POLYANI RELAXOMETER. THE EXPTL. DATA (TREATED BY A METHOD DEVELOPED BY A. V. TOBOLSKY, 1959 AND A. V. BRYUKHANOV, 1960) INDICATED THAT THE SLOW STAGE OF PHYS. RELAXATION CONSISTED OF 3 STEPS HAVING IDENTICAL ACTIVATION ENERGY (PROPORTIONAL TO THE MOL. INTERACTION OF POLYMER CHAINS). THE SLOW STAGE OF PHYS. RELAKATION AND THE VISCOUS FLOW OF I, II, AND III FOLLOWED THE SAME SEGMENTAL MODIFICATION OF THE SUPRAMOL. STRUCTURE. THE RELAXATION TIMES OF THE 3 ELEMENTARY STEPS OF SLOW RELAXATION WERE DIFFERENT, PRESUMABLE DUE TO DISSIMILAR DIMENSION OF THE ORDERED REGIONS IN THE POLYMERS. AT LOW TEMPS., THE RELAXATION TIME WAS MAINLY A FUNCTION OF THE ACTIVATION ENERGY, WHEREAS A HIGH TEMPS. IT WAS A FUNCTION OF THE PREEXPONENTIAL COEFF. (IN THE FORMULA FOR THE RELAXATION TIME). III HAD A SHORTER RELAXATION TIME THAN I AT LOW TEMPS. AND A LONGER RELAXATION TIME AT HIGH TEMPS.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--MECHANISM OF STRESS RELAXATION IN RUBBER FILLED WITH CARBON BLACK

-U-

AUTHOR-(02)-BARTENEV, G.M., LYALINA, N.M.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN, SER. A 1970, 12(4), 922-31

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SUBJECT AREAS--MATERIALS

TOPIC TAGS--STRESS RELAXATION, CARBON BLACK, BUTADIENE STYRENE RESIN, MATERIAL DEFORMATION, ACTIVATION ENERGY, SYNTHETIC RUBBER/(U)SKS30A BUTADIENE STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--2000/1686 STEP NO--UR/0459/70/012/004/0922/0931

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UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125307

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRESS RELAXATION (SIGMA) OF CARBON BLACK FILLED SKS-30A (BUTADIENE-STYRENE RUBBER) AT 20-100DEGREES AND 20-200PERCENT DEFORMATION (EPSILON) RANGES OBEYS A FIVE TERM EQUATION: SIGMA(T)EPSILON EQUALS E SUB1 EXP(T-TAU SUB1) PLUS E SUB2 EXP(T-TAU SUB2) PLUS E SUB3 EXP(MINUS T-TAU SUB3) PLUS E SUB4 EXP(T-TAU SUB4) PLUS E SUB5 EXP(T-TAU SUB5), WHERE T IS THE RELAXATION TIME, E SUB1 A COEFF. INDICATING THE CONTRIBUTION OF THE I TH RELAXATION PROCESS, AND T SUB1 THE RELAXATION TIME OF THE I TH PROCESS. THE 1ST 3 TERMS ARE RELATED TO THE RELAXATION OF NOT FILLED RUBBER, HAVE ASSOCIATED 13 KCAL-MOLE ACTIVATION ENERGY (PER TERM), AND ARE INDEPENDENT OF EPSILON. THE 4TH TERM IS DEPENDENT ON THE FILLER AMT., EPSILON, AND HAS 18 KCAL-MOLE ACTIVATION ENERGY ASSOCD. WITH IT. THE 5TH TERM IS ASSOCD. WITH 38-40 KCAL-MOLE ACTIVATION ENERGY; IT EXPRESSES THE CONTRIBUTION OF S CROSSLINKS TO THE RELAXATION PROCESS. ONLY THE 4TH TERM IS DIFFERENT FOR THE FILLED AND UNFILLED SKS-30A; ITS PRESENCE IS NECESSITATED BY THE UNEVEN DISTRIBUTION OF STRESSES IN THE FILLED RUBBER. FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

MEL'NIKOV, N. N., SHVETSOV-SHILOVSKIY, N. I., LYALYAKINA, N. P., and RUDNEVA, N. I.

"Synthetic Method for β-Substituted Hydrazides of 2,3-Dihydro-6-methyl-1,4-oxathiyncarboxylic Acid"

USSR Author's Certificate No 364615, filed 20 Jul 70, published 20 Feb 73 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N540 P)

Translation: Title compounds with the general formula $R'NHN(R)COCSCH_2CH_2OCO(Me)$ (I), exhibiting biological activity are obtained by reacting 2,3-dihydro-6-methyl-1,4-oxathiyncarboxylic acid chloride with a hydrazine or β-acylhydrazine in presence of an HCl (gas) acceptor, for example excess of the starting hydrazine (R, R', yield of I in %, m.p. in °C being reported): H, H, 99, 184; H, Ph, 86.5 - (oil); Ph, Ac, 26.8, 138-9; Ph, iso-ProCo, 99, 108-9; Ph, EtCO, 67.2, - (oil); Ph, PhCO, 44.3, - (oil).

1/1

UDC 632.95

USSR

LYALYAKINA, N. P., MEL'NIKOV, N. N., SHVETSOV-SHILOVSKIY, N. I.

"Method of Obtaining 1-Alkyl-3-arylhexahydropyrimidinones-4"

USSR Author's Certificate No 250894, Cl. 12 n, 7/01, (C 07 d), filed 22 Mar 68, published 28 Jan 70 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N635) by T. A. BELYAYEVA)

Translation: Substances of the formula $RNCH_2N(R')CH(R'')CH_2CO$ (I) (R = aryl, R', R" = alkyl), which can be employed in the production of herbicides and plant growth regulators, are synthesized by the interaction of anilides of beta-N-alkylamino acids with HCHO in the presence of KOH. To a solution of 1.5 g 3,4-dichloranilide of beta-N-isobutylalanine in 30 ml alcohol, 6 ml 37% formalin and 0.02-0.04 g KOH are added, the mixture is boiled 4 hours and evaporated, and 1.42 g I (R = 3,4-$Cl_2C_6H_3$, R' = iso-Bu, R" = H, $C_{14}H_{18}C_2N_2O$) is obtained, melting point 85°. Also synthesized are the following I (shown are R, R', R", empirical formula, yield in %, boiling point in °C/mm or melting point in °C): 3,4-$Cl_2C_6H_3$,

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USSR

LYALYAKINA, N. P., et al, USSR Author's Certificate No 250894, Cl. 12 n, 7/01, (C 07 d), filed 22 Mar 68, published 28 Jan 70 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N635) by T. A. BELYAYEVA)

iso-Pr, H, $C_{13}H_{16}Cl_2N_2O$, 86, 152/1; p-$CH_3OC_6H_4$, Bu, H, $C_{15}H_{22}N_2O_2$, 60, 165/0.3; m-$CH_3C_6H_4$, Bu, Me, $C_{16}H_{24}N_2O$, 94, 132/0.15, $n^{20}D$ 1.5292; 3,4-$Cl_2C_6H_3$, Pr, Me, $C_{14}H_{18}Cl_2N_2O$, 82, 35.

2/2

Inorganic Compounds

USSR UDC: 541.49:546.195'873'776'

MOROSANOVA, S. A., TUMUROVA, L. V., LYALYULINA, L. A.

"Investigation of the Process of Ascorbic Acid Reduction of 12-Molybdoarsenate in the Presence of Trivalent Bismuth"

Moscow, Vestnik Moskovskogo Universiteta, Ser. II: Khimiya, Vol 13, No 2, Mar/Apr 72, pp 215-219

Abstract: The process of ascorbic acid reduction of 12-molybdoarsenate in the presence of trivalent bismuth was studied by photometric and kinetic methods. The SF-4 spectrophotometer was used for the photometric analysis, and the FEK-M photoelectric colorimeter was used for the kinetic studies. The spectrophotometric study consisted in measuring the optical density of the reaction mixture resulting from the addition of ascorbic acid to a solution of sodium arsenate, bismuth nitrate, sodium molybdate and sulfuric acid. The results of the study show that a mixed molybdenum-bismuth-arsenic compound is formed at the beginning of the reduction process with ratio [As]:[Bi] = 1. After passing through a number of molybdenum-bismuth-arsenic complexes, the reduction reaction yields 12-molybdoarsenate.

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USSR

UDC 621.396.96:681.327.11:681.327.8

LYAMETS, V. N.

"Some Peculiarities of the Transmission of Additional Information by Means of a Graphecon"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 54-56 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G54)

Translation: A study is made of the transmission of additional information as a function of the frequency properties of the graphecon. The minimum duration is determined for the pulse recorded on the target synchronously with the image of the external target so that on readout it will be possible to separate this signal by the frequency amplitude with such accuracy. The expediency of combining the code in frequency methods of transmission is demonstrated. There are 2 illustrations and a 2-entry bibliography.

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UDC 621.385.632(088.8)

USSR

VISKOV, N.N., LYAMICHEVA, S.I., SHENOGIN, A.A.

"Traveling-Wave Tube"

USSR Author's Certificate No 266076, filed 6 Nov 67, published 6 July 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A108P)

Translation: A TWT is proposed which contains a metal screen inside of which is located a spiral delaying system and elements for high-frequency connection with waveguides, made in the form of conductor sections located at a 90° angle to the system axis. With the object of increasing the stability of operation of the tube with reduced dimensions of the area of interaction of the electron stream with the electromagnetic wave, supports for the spiral delaying system which have an oval cross section are positioned along the narrow parts of the spiral cross section and are made in the form of two metal covers, bounding from opposite sides the extent of the area of interaction and covered on the contact surfaces along with the spiral by a layer of dielectric material, e.g., pyroceramic or glaze.

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UDC: 621.385.632

USSR

VISKOV, N. N., LYAMICHEVA, S. I., SHENOGIN, A. A.

"A Traveling Wave Tube"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970, Author's Certificate No 266076, filed 6 Nov 67, pp 69-70

Abstract: This author's certificate introduces a traveling wave tube which contains a metal shield inside which a spiral deceleration system is located, and elements for high-frequency coupling to waveguides made in the form of conductor segments situated at an angle of 90° to the axis of the system. As a distinguishing feature of the patent, the operating stability of the tube is improved when the dimensions of the space of interaction between the electron stream and the electromagnetic wave was reduced. The holders of the helical deceleration system, which has an elliptical cross section, are arranged along the narrow parts of the cross section of the helix and are made in the form of two metal covers which restrict the size of the interaction space from opposite sides, and are covered with a layer of dielectric material such as glass-ceramic or glaze on the surfaces in contact with the helix.

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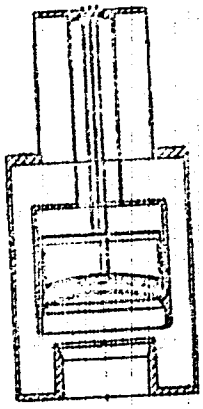
USSR

VISKOV, N. N., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970



2/2

Titanium

UDC: 621.791:669.295

USSR

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOYAROV, B.V. and ISKOZ, B.B. (Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARKAN, Z.M., LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm^2. VT1 alloy was the filler wire (tensile strength 40-43 kg/mm^2). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the share of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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USSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm^2, a yield point of 56.5 kg/mm^2, an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm^2, and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is $\sigma_{t.s.}^{m.} / \sigma_{t.s.}^{w.m.}$

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CATHODIC REDUCTION OF LEAD DIOXIDE. II. REDUCTION OF ALPHA LEAD DIOXIDE IN ALKALI SOLUTIONS -U-

AUTHOR-(03)-LYAMINA, L.I., KOROLKOVA, N.U., GORBUNOVA, K.M.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 394-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CHEMICAL REDUCTION, LEAD OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1137 STEP NO--UR/0364/70/006/003/0394/0397

CIRC ACCESSION NO--AP0121696
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 013

CIRC ACCESSION NO--AP0121696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF PBO SUB2 CATHODIC REDN. WAS STUDIED IN 0.1-7N KOH SOLNS. BY CHARGING CURVE METHOD. THE ALPHA PBO SUB2 DEPOSIT OBTAINED ON THE ANODE FROM ALK. PLUMBITE ELECTROLYTE WAS SUBJECT TO REDN., ITS EXACT COMPN. BEING PBO SUB1.91. THE REDN. PROCESS PROCEEDED IN 2 STAGES; THE 1ST (AT C.DS. OF 0.5-2 MA-CM PRIME2) WAS ASSOCD. WITH THE FORMATION OF AN INTERMEDIATE OXIDE OF COMPN. PBO SUB1.39 INDEPENDENTLY OF THE KOH CONCN. ON ATTAINING THIS STATE THE POTENTIAL INCREASED SHARPLY TO 0.56 V CORRESPONDING TO THE REDN. OF THIS OXIDE TO PB. MEASUREMENTS OF THE COMPONENTS OF IMPEDANCE DURING POLARIZATION OF THE ELECTRODE UNDER GALVANOSTATIC CONDITIONS REVEALED THAT THE REDN. STARTED AT THE PBO SUB2 ELECTROLYTE INTERFACE AND THEN PROCEEDED AT 2 INTERFACES (PBO SUB2 ELECTROLYTE AND INTERMEDIATE OXIDE); AS A RESULT, THIS PROCESS WAS ACCOMPANIED BY A CONCN. POLARIZATION IN THE INTERMEDIATE OXIDE PHASE. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

LYAMIN, V. R.

SOME RESULTS OF USING DISPERSION ANALYSIS FOR EVALUATING THE PHYSIOLOGIC REACTIONS OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-3,' 'SOYUZ-4' AND 'SOYUZ-5' SPACESHIPS

/Article by V. I. Antonova, A. A. Putusov, V. A. Dzerzhanovskaya, A. D. Yegorov, N. A. Ivashkina, G. G. Ignatova, V. R. Lyamin, A. P. Polyakova and I. N. Pristupov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 9-11/

During the space flight of the "Soyuz-3," "Soyuz-4," and "Soyuz-5" ships, radiotelemetric systems were used in registering such physiologic parameters as the electrocardiogram (ECG), seismocardiogram (SCG) and pneumogram (PG). In processing this information it was possible to determine the frequency of cardiac contractions and the respiration rate and the principal ECG and SCG indices for each cosmonaut were measured.

The collected data were grouped in accordance with the stages in training and conducting space flight. The following periods were discriminated:

preflight (PF) period, including data obtained in an examination of crews during ordinary work activity 15-20 days prior to the flight;

prelaunching, including the results obtained during the registry of physiologic parameters several hours prior to the launching (PL-1) and during the periods of the five-one-minute countdown (PL-2);

active segment (AS), the segment in which the spaceship is put into orbit;

orbital flight (OF);

descent segment (D).

JPRS 56499
14 July 72

LYAMIN, V. R.

QUANTITATIVE EVALUATION OF PHYSIOLOGIC INDICES OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-6' - 'SOYUZ-8' SPACESHIPS

/Article by L. Y. Antonenko, A. A. Butusov, V. A. Dzerzhanovskaya, A. D. Yegorov, N. A. Ivashkina, G. G. Ignatova, V. R. Lyamin, A. P. Polyakova and I. B. Svistunov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 7-9/

In conducting medical monitoring an evaluation of the health of cosmonauts during spaceflight is made on the basis of information received during radio conservations and television contacts, by an analysis of the registered physiologic parameters and the microclimatic parameters in the manned compartments, by conducting medical self- and mutual monitoring, etc. (Ye. I. Vorob'yev, et al., 1969; 1970).

In the process of decoding the physiologic parameters the frequency of cardiac contractions and the respiration rate were ascertained and the principal indices of the electrocardiogram and seismocardiogram were measured.

The principal objectives of the quantitative evaluation and the statistical analysis of physiologic data were:

evaluating the significance of the influence of different flight factors on physiologic indices;

determining the direction of change of physiologic indices during different flight periods for different cosmonauts;

evaluating the dynamics of the mean values of the physiologic indices during different flight periods and the individual characteristics of the reactions of cosmonauts;

JPRS 56,499
14 JULY 72

LYAMIN, V. R.

JPRS 56,459

23

14 July 72

PHYSIOLOGIC REACTIONS OF COSMONAUTS REGISTERED DURING FLIGHT OF THE 'SOYUZ-9' SPACESHIP

Article by A. A. Butugov, A. D. Yegorov, V. R. Lyamin, A. P. Polyakova and I. B. Svistunov, Moscow, Aviatsionnyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1972, pp 30-39

The principal peculiarities of flight of the "Soyuz-9" spaceship were its great duration (18 days) and saturation of the flight program with different kinds of scientific investigations. In this connection it is of great interest to consider data on the physiologic reactions of the crew members during prolonged exposure to spaceflight factors.

In addition to the earlier described sources of information on the health of those cosmonauts (Ye. I. Vasil'yev, et al., 1969, 1970; Yu. G. Nefedov, et al., 1970), the reactions of the circulatory apparatus to a special functional test with a carefully measured standard physical load were registered during this flight. In addition, an important place was given to medical self- and mutual monitoring which the cosmonauts carried out aboard the ship during the flight.

As on the earlier manned flights, in the crew members of the "Soyuz-9" ship the frequency of cardiac contractions after the ship had been put into orbit exhibited a well-expressed tendency to a decrease and already on the third-sixth revolutions attained mean values characteristic of the preflight period (70-75 beats per minute). Later this index for both cosmonauts persisted at lower levels, but during the last third of the flight had no statistically reliable difference from the data for one day prior to the flight. During the performance of dynamic operations (spinning, ship orientation, orbital corrections, etc.), as well as physical exercises and some experiments, in a number of cases there was a

UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--ACID PHOSPHATASE MEASUREMENT IN MACROPHAGES WITH THE DELAYED TYPE HYPERSENSITIVITY -U-

AUTHOR--LYAMPERT, I.M., TODER, V.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 2, PP 60-62

DATE PUBLISHED--------70

14
5
19

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOCOCCUS, PHOSPHATASE, ENZYME ACTIVITY, ANTIGEN, HISTOCHEMISTRY, MACROPHAGE

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--1982/0441 STEP NO--UR/0219/70/069/002/0060/0062

CIRC ACCESSION NO--AP0051954

UNCLASSIFIED

Acc. Nr: AP0051954 Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 60-62

ACID PHOSPHATASE MEASUREMENT IN MACROPHAGES WITH THE DELAYED TYPE HYPERSENSITIVITY

I. M. Lyampert, V. A. Toder

N. F. Gamalei Institute of Epidemiology and Microbiology of the Academy of Medical Sciences of the USSR

The activity of the acid phosphatase was studied by various methods in a culture of peritoneal macrophages on glass in the delayed type of hypersensitivity to the group A streptococcus. Incubation of the sensitized animal macrophages with a specific antigen for 24 hours with subsequent application of histochemical procedures without preliminary fixation of cells demonstrated an increased proportion of cells containing the acid phosphatase. This effect is not related to the action of O- or S-streptolysins and can be inhibited with dexamethasone. In the same conditions no substantial increase in the activity of the enzyme could be discovered. The above data bear proof to an elevated permeability of the macrophage lysosome membranes in sensitized animals following the action of a specific antigen on the cells. The increased permeability of the membranes should, apparently, facilitate the liberation of the enzymes from lysosomes. It is suggested that the macrophage lysosome enzymes appear as a factor causing destruction of the tissues in the delayed type hypersensitivity.

REEL/FRAME
19820441

JPRS 60065
18 Sept 73

UDC: 534.2

LYAMSHEV, L.M.

ACOUSTICS OF A CONTROLLED BOUNDARY LAYER

[Article by Doctor of Physical and Mathematical Sciences L. M. Lyamshev; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 7, July 1973, pp 22-31]

A boundary layer forms on the surface of a solid moving in a gas or liquid. Two forms of flow are observed in a boundary layer, laminar and turbulent. During laminar flow, particles of the medium are mixed in an ordered manner, and during turbulent, they are characterized by disordered, random movements along complex trajectories. In most cases laminar flow changes into turbulent, and on practically the entire surface of the body a turbulent boundary layer appears.

The task of control of the boundary layer arose in aerohydrodynamics in connection with the need to reduce the aerohydrodynamic resistance of moving bodies. That resistance depends essentially on the character of the flow in the boudary layer. During laminar it is far smaller than in the case of developed turbulent flow, which is observed in all cases of practical importance. There are a number of methods of controlling the boundary layer. Some are based on the principle of its lamination, that is, prevention of transition of the laminar into the turbulent form of flow, and others on change of the physical properties of the medium in the region directly adjacent to the surface of the body, for example, the water at the side of a ship. An example of methods of the first direction is the suction of gas or liquid from the boundary layer inside an aircraft or ship. The suction is accomplished either through slits arranged on the surface of the body or through separate sections of it, made permeable -- porous or perforated (at times, side by side with suction on separate sections of the surface of a body, liquid or air is blown into the boundary layer). A very characteristic example of the second group of methods is the introduction into the boundary layer, during the motion of the body in water, of a weak aqueous solution of

USSR

UDC 532.526.4

GRESHILOV, Ye. M., YEVTUSHENKO, A. V., LYAMSHEV, L. M.

"Fluctuations in Pressure During Flow of Weak Solutions of Polymers Along Rough Boundaries"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1,288-1,291.

Abstract: Results are presented from studies of spectral characteristics of boundary-layer fluctuations in pressure with turbulent flow of weak solutions of polymers along rough boundaries. The experimental studies were performed in a low-noise hydrodynamic gravitation-type channel. All measurements were performed at the end of the working sector, where the flow was stabilized. Roughness was created by applying grains of sand in two fractions to both of the broad walls of the working sector of the channel. The effect of reduced resistance and damping of small-scale turbulence is retained when the polymer solution flows along rough boundaries even when the roughness appears in a transient mode. This may mean that the mechanism of damping of turbulence and the effect of reduction of resistance when a polymer solution flows along smooth boundaries is not directly related to stabilization of vortices on the boundary of the viscous sublayer as has been earlier assumed. The primary processes occur in the zone of generation of turbulence or the buffer zone of turbulence of the boundary layer.

UDC 534.26

USSR

KURILKIN, Yu. V., and LYAMSHEV, L. M., Acoustics Institute, Academy of Sciences USSR

"Reflection of Ultrasonic Waves by a CdSe Crystal in Water"

Moscow, Akusticheskiy Zhurnal, Vol 27, vyp 1, 1971, pp 74-78

Abstract: This article cites the results from an experimental investigation of the reflection of ultrasonic waves by a CdSe crystal plate in water, for purposes of clarifying the influence of the interaction between elastic oscillations and conduction electrons in a crystal on the reflective characteristics of ultrasonic waves.

The tests were conducted at a frequency of 5 mHz under pulsed conditions with a pulse duration from 20 to 100 μsec and a pulse repetition frequency of 200 Hz. A rectangular plate 3.5 X 3 X 9 mm^3 in size, was cut so that its greatest dimension coincided with the optical axis of the crystal. The polar characteristics of the reflection from the plate were measured in the plane of the optical axis of the crystal.

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USSR

KURILKIN, Yu. V., and LYAMSHEV, L. M., Akusticheskiy Zhurnal, Vol 27, vyp 1, 1971, pp 74-78

It was established that the amplitude of the echo-signal reflection is decreased by illuminating the crystal. When a drift electric field is applied on the crystal, the amplitude of the reflected echo-signal increases, then fluctuates, and diminishes.

The results cited here characterize the attenuation of normal waves in a photoconducting crystal, when the waves are propagated along the optical axis, as a function of crystal illumination.

It is obvious from the article that because of the interaction with conduction electrons, the acoustic waves may either be amplified or absorbed in a liquid when reflected from plates of piezosemiconducting crystals.

The article contains 7 figures; six literature references are cited.

2/2

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 048

TITLE--ESTIMATION OF ACOUSTIC RADIATION IN SLOT SUCTION OF A BOUNDARY LAYER -U-

AUTHOR--LYAMSHEV, L.M.

COUNTRY OF INFO--USSR

SOURCE--AKUSTICHESKII ZHURNAL, VOL. 16, JAN.-MAR. 1970, P. 158,159

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ACOUSTIC FIELD, PRESSURE DISTRIBUTION, SURFACE BOUNDARY LAYER, VORTEX FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1563 STEP NO--UR/0046/70/016/000/0158/1059

CIRC ACCESSION NO--AP0106309

UNCLASSIFIED

2/2 048 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106309

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE CALCULATION OF THE PRESSURE FLUCTUATIONS IN THE ACOUSTIC FIELD OF A BOUNDARY LAYER UNDERGOING SUCTION WITH THE AID OF SLOTS. AN ATTEMPT IS MADE TO ASCERTAIN THE CASES WHEN IT IS NECESSARY TO TAKE INTO ACCOUNT THE EFFECT OF FORCES AND MOMENTS DUE TO VORTEX FORMATION AND SEPARATION ON THE EDGES OF THE SLOTS. IT IS SHOWN THAT THE EFFECT OF FLUCTUATIONS IN THE FORCES AND MOMENTS DUE TO VORTEX SEPARATION FROM THE EDGES OF THE SLOTS MAY BE NEGLECTED IN THE STROUHAL NUMBER RANGE FORM 0.06 TO 0.6 CM.

FACILITY: AKADEMIIA NAUK SSSR, AKUSTICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

LYAN, E. N.

COMPUTERS

SO: FOREIGN PRESS DIGEST
31 AUG 71

UDC 002.513.5:681.3

71. USSR

BALAFANOV, Ye., KACHURINA, O. K., KIRDYASHKIN, A. E., KHIDROV, B., LYAN, E. N., USTINOV, V. A., TASHIBAYEV, S. B., TRET'YAKOV, V. V., and SOKOLOV, V. V.

"The MS-1 Information Retrieval System"

Tr. In-ta Mat. i Mekh. AN KazSSR (Works of the Institute of Mathematics and Mechanics of the Academy of Sciences, Kazakh SSR), No 1, 1970, pp 298-302 (from R-Zh -- Informatika, No 4, Apr 71, Abstract No 71.4.169 (71R--1250))

Translation: An approach to the creation of a system for collection, storage, and processing of technological information from a controlled process is described. One variant of an information retrieval system is presented. It includes technical resources, the organization of information arrays in computer storage, and a complex of programs for processing information.

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UDC 669.721.046.4

LYANDRES, M. B., SOLOMENTSEV, V. A., REZNIKOV, I. L., SOLOV'YEV, Yu. V., ENGEL', E. K.

"Automation of the Process of Dehydration of Carnallite in Fluidized Bed Furnaces"

Avtomatiz. Proizv. Protsessov Tsvet. Metallurgii [Automation of Production Processes in Nonferrous Metallurgy -- Collection of Works], Ordzhonikidze, Ir Press, 1971, pp 78-80, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G244 by G. Svodtseva).

Translation: The production of dehydrated carnallite has been automated at the carnallite shop of the Bereznikovskiy titanium-magnesium combine on the basis of scientific research and planning-design work, allowing a significant technical-economic effect to be produced and the productivity of labor to be increased by 2 times.

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FROM: FBIS Daily Report, Soviet Union, 12 February 1970, Vol III, Nr 30, p D 3

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NEW COMPUTER AUTOMATES CONTROL SYSTEMS

Vilnyus SOVETSKAYA LITVA 15 Jan 70 p 1 X

[Article by K. Lyandzbergas, Lithuanian Telegraph Agency correspondent: "'Ruta-110'-- Automated Control System"]

[Text] The first series of new "Ruta-110" electronic computers, designed for automated production control systems, has been turned out by the "Sigma" Association. These computers, made by engineers of the Computer Special Design Bureau of the association, are very versatile. They can automate the control of industrial, transportation, and commercial enterprises; banks; and supply and statistical organizations. The computers are capable of processing a large volume of business data. By means of special devices it is possible to collect data from operating sources and send it great distances over communications lines to the computer, making the area served by a production control system practically unlimited.

The "Ruta-110" is several times as productive as other domestic computers of like purpose. This is due to an increase in the rate of input and output of data. In

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particular, the electronic equipment reading typewritten and handwritten material has increased the rate of input of data into the new computer. In one second it will recognize up to 200 written characters and convert them ti signals "understood" by the computer. The apparatus which mechanizes the input of data frees as many as 40 operators who would ordinarily be occupied with punching cards.

The unique memory unit insures a highly efficient use of the computer. It stores data on magnetic discs from which it is possible to supply entire libraries of memory containing, for example, all information on the activity of an enterprise necessary for solving problems of production control. Data access is hundreds of times as fast as that with magnetic tape, used until now in computer storage.

Systems for the "Ruta-110" computer have been worked out by specialists of the Control Systems Design Bureau of "Sigma". These systems are capable not only of solving problems in operating control and planning but also of giving advice as to the best means of carrying out a designated program.

The first systems of "Ruta-110" will be installed at the "Sigma" Association at its leading enterprise--the Vilnyus Computer Plant--as well as in the Ministry of Trade and the Main Directorate of Materiel and Technical Supply of the Republic. They will go into operation this year. The economic saving resulting from improving control at these enterprises and organizations will exceed three million rubles a year.

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FROM: FBIS Daily Report, Soviet Union, 12 February 1970, Vol III, Nr 30, p D 3

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NEW COMPUTER AUTOMATES CONTROL SYSTEMS

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LYANE, R., IVANOV, Yu.

"Development of Vortex Flow in a Cylindrical Chamber With Unrestricted Outlet Section"

Izvestiya Akademii Nauk Estonskoy SSR, Fizika, Matematika, Vol. 19, No. 4, 1970, pp. 456-462

Abstract: A vortex flow in a chamber is characterized by a complex aerodynamic structure, requiring experimental study. The best studied examples to date are models of cyclone-vortex combustion chambers with relative length $L_k/D_k < 1.5$-2.0. However, in shorter chambers clarification of a number of regularities in the development of vortex flow is complicated by the imposition of intake and outlet conditions. The possibility of extending the established regularities to chambers of greater length used in practice is debatable. The present work was performed in order to establish the specifics of the evelopment of vortex flow in a chamber without a diaphragm at the outlet section with $L_k/D_k = 8.5$. The