USSR

UDC 678.06-419.';677.5217.01:53

VISHNEVSKIY, G. YE., ZHUKOVA, R. I., SHLENSKIY, O. F., and SHKLYAROV, A. YU.

"Effect Which the Porosity, Concentration and Properties of Components Have on the Thermal Conductivity of Fiberglass Plastics"

Moscow, Plasticheskiye Massy, No 11, Nov 70, pp 34-38

Abstract: The article presents the results of formal analysis and the use of Maxwell's electrothermal analogy for the thermal conductivity of dispersed media in studying the effect of porosity, cracks, gas inclusions and the mutual arrangement of the filler and binder elements on the processes of thermal conductivity in the primitive cells of the structural elements of fiberglass plastics. It was found that two- and three-dimensional electrothermal modeling can be used to refine the results of formal analysis.

1/1

USSR

UDC: 539.376:548.55

AKSEL'ROD, Ye. I., VISHNEVSKIY, I. I., DOBROVINSKAYA, Ye. R., TAL'YANSKAYA, N. D., Ukrainian Scientific Research Institute of Refractories, Khar'kov

"High-Temperature Creep of Corundum Single Crystals Subjected to Pure Bending"

Moscow, Doklady Akademii Nauk SSSR, Vol 213, No 2, 11 Nov 73, pp 331-334

Abstract: The authors study the mechanical behavior of corundum single crystals subjected to steady-state creep under conditions of stress of the pure bending type and forbidden basis slip in an effort to obtain information on the principles which govern plastic flow in non-basis systems on the temperature interval of 1650-1970°C (83-97% of the melting point). It was found that the nature of steady-state creep in corundum single crystals of zero orientation is the same as with deformation in the basis plane. The energies of creep activation in corresponding temperature intervals are in close agreement. This confirms the similarity of creep mechanisms for these orientations. At the same time, there is a pronounced difference in

USSR

AKSEL'ROD, Ye. I. et al., Doklady Akademii Nauk SSSR, Vol 213, No 2, 11 Nov 73, pp 331-334

strain rates: at 1900°C a tensile stress of 0.327 kg/mm^2 along an axis making an angle of about 45° to the basis plane gives a creep rate of $1.4 \cdot 10^{-5}$ s^{-1}; in the zero-orientation experiments at the same temperature, ten times this tensile stress produced a creep rate of only 10^{-5} s^{-1}. Since the dependence on stress is the same ($v \sim \sigma^{3/2}$), the creep rates under equal tensions differ by a factor of at least 10^7. The authors thank A. N. Galagurya for taking part in the experiments.

2/2

USSR

UDC: 666.6:620.174.05

AKSEL'ROD, Ye. I., VISHNEVSKIY, I. I., KOVALEV, A. I., and TARASOV, V. A.

"Machine for Measuring High-Temperature Deformation in Ceramic Materials by the Pure Bend Method"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 110-111

Abstract: The machine described in this article tests for creep, at temperatures up to 1900° C, densely sintered ceramic specimens by subjecting them to a pure bend. The specimen is heated in a sealed, water-cooled chamber in an electric-resistance oven, and is deformed by a dynamometer consisting of a spring of special steel in the shape of the arc of a circle. Its deformation is measured at the center and at two supporting points by three indicators which can be read through a window in the chamber wall. The temperature of the specimen is measured at its center and its ends by two calibrated tungsten-rhenium thermocouples, type VR5/20. A diagram of the machine, its parts identified by callouts, is given as well as curves of the creep in specimens made of polycrystalline corundum. The authors are members of the Ukrainian Scientific Research Institute of Refractory Materials.

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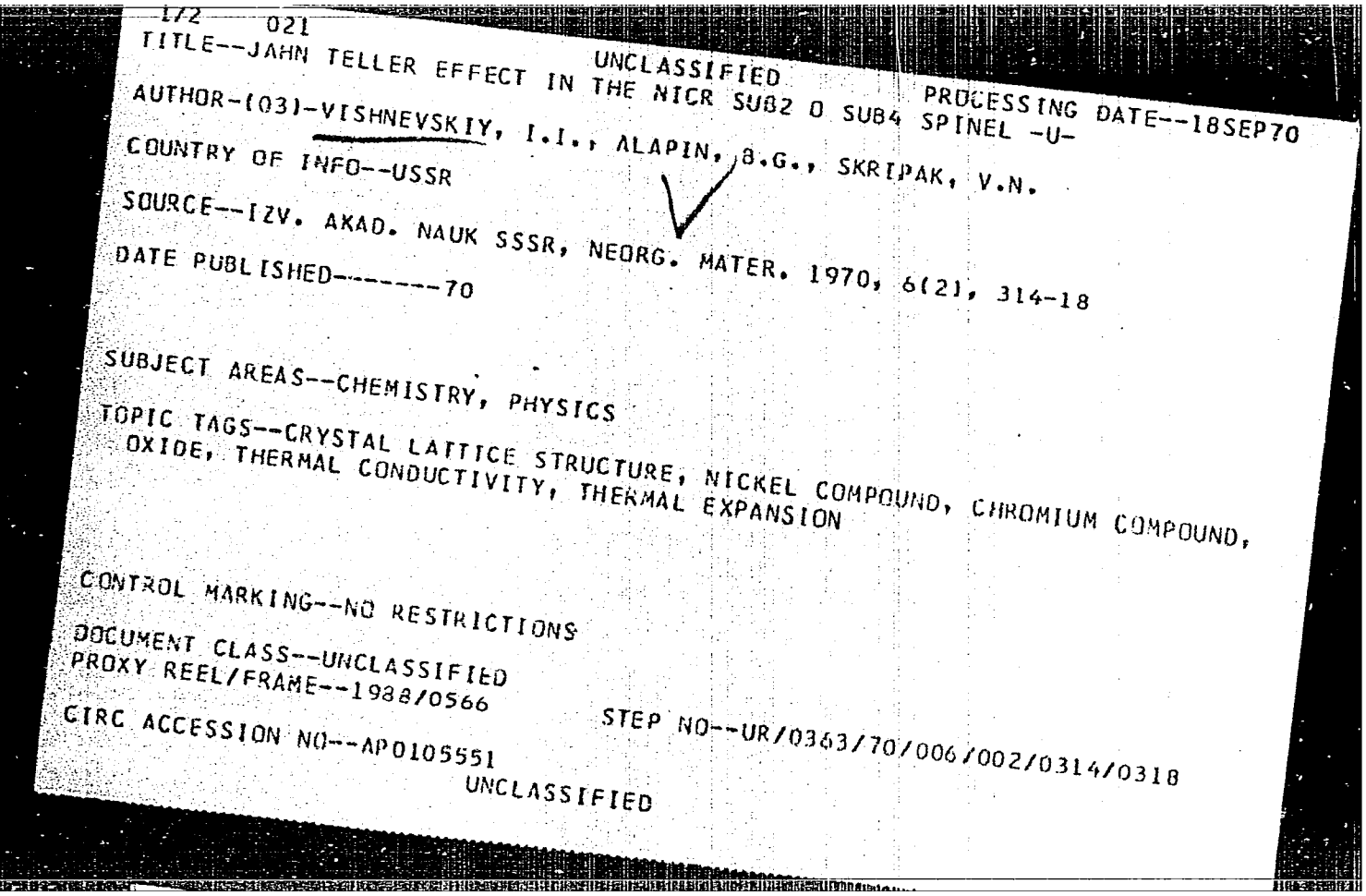

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--JAHN TELLER EFFECT IN THE NICR SUB2 O SUB4 SPINEL -U-

AUTHOR-(03)-VISHNEVSKIY, I.I., ALAPIN, B.G., SKRIPAK, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 314-18

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTAL LATTICE STRUCTURE, NICKEL COMPOUND, CHROMIUM COMPOUND, OXIDE, THERMAL CONDUCTIVITY, THERMAL EXPANSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0566

STEP NO--UR/0363/70/006/002/0314/0318

CIRC ACCESSION NO--AP0105551

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105551

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN THE NICR SUB2 O SUB4 STRUCTURE, AS WELL AS IN ITS THERMAL COND. AND THERMAL EXPANSION, DURING THE TRANSITION FROM THE TETRAGONAL TO THE CUBIC PHASE WAS STUDIED. THE SAMPLES WERE PREPD. BY CONVENTIONAL CERAMIC TECHNOLOGY. THE TRANSFORMATION OF NICR SUB2 O SUB4 FROM THE TETRAGONAL TO THE CUBIC PHASE IS A 1ST ORDER TRANSITION, AND IT PROCEEDS AT 300DEGREES K. THE CHANGE IN THE SP. VOL. WAS SMALLER THAN 0.001. THE THERMAL COND. FOR NICR SUB2 O SUB4 WAS MEASURED AT 130-900DEGREES K, AND THE THERMAL EXPANSION WAS MEASURED AT 350, 2000DEGREES K. THE MIN. ON THE CURVE SHOWING THE TEMP. DEPENDENCE OF THERMAL COND. NEAR THE TRANSITION TEMP. IS CAUSED BY THE PHONON LATTICE INTERACTION DURING A CHANGE IN THE SYMMETRY OF THE CRYSTAL LATTICE.

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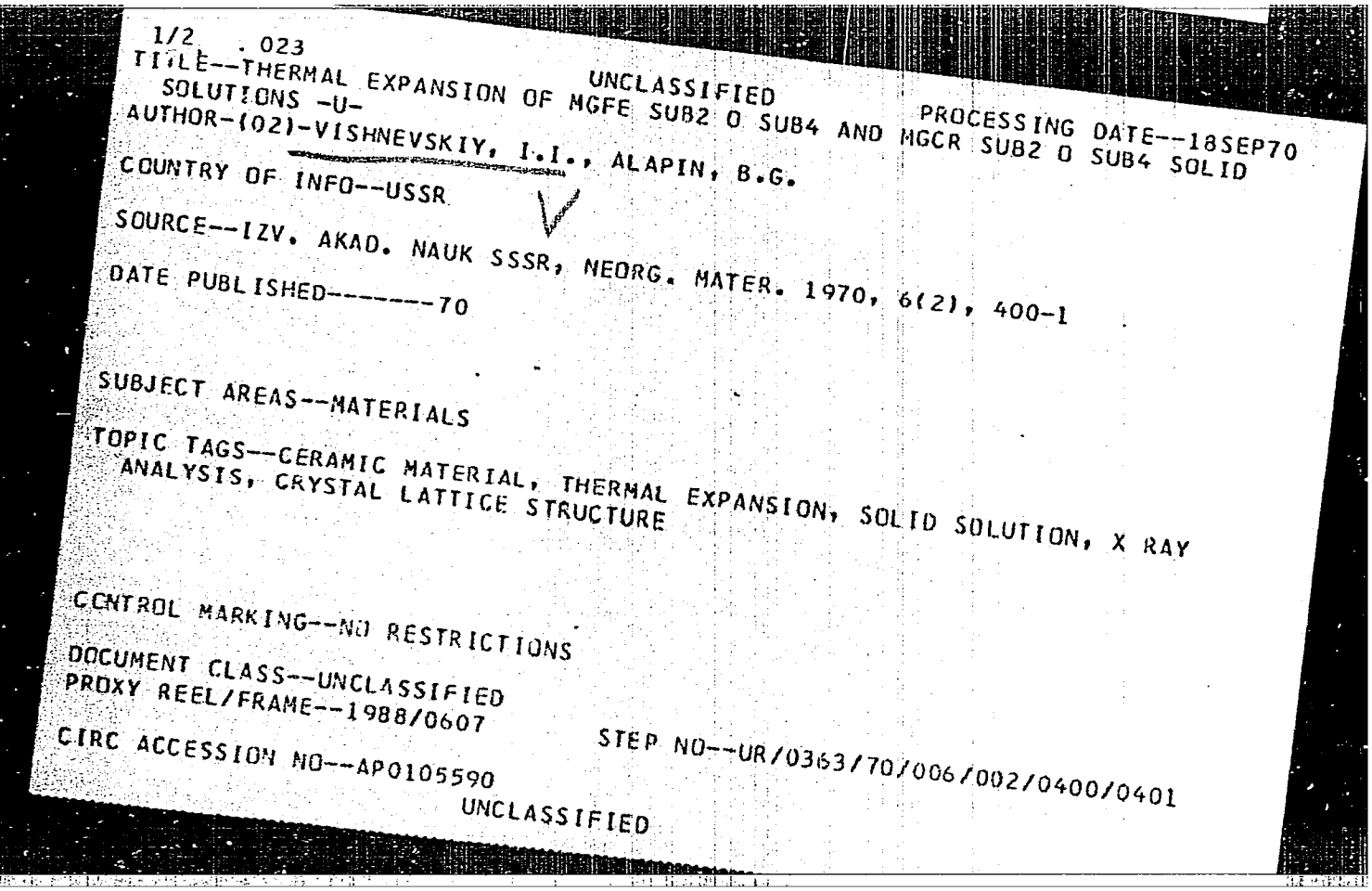


1/2 . 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THERMAL EXPANSION OF MGFE SUB2 O SUB4 AND MGCR SUB2 O SUB4 SOLID SOLUTIONS -U-

AUTHOR-(02)-VISHNEVSKIY, I.I., ALAPIN, B.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 400-1

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERAMIC MATERIAL, THERMAL EXPANSION, SOLID SOLUTION, X RAY ANALYSIS, CRYSTAL LATTICE STRUCTURE

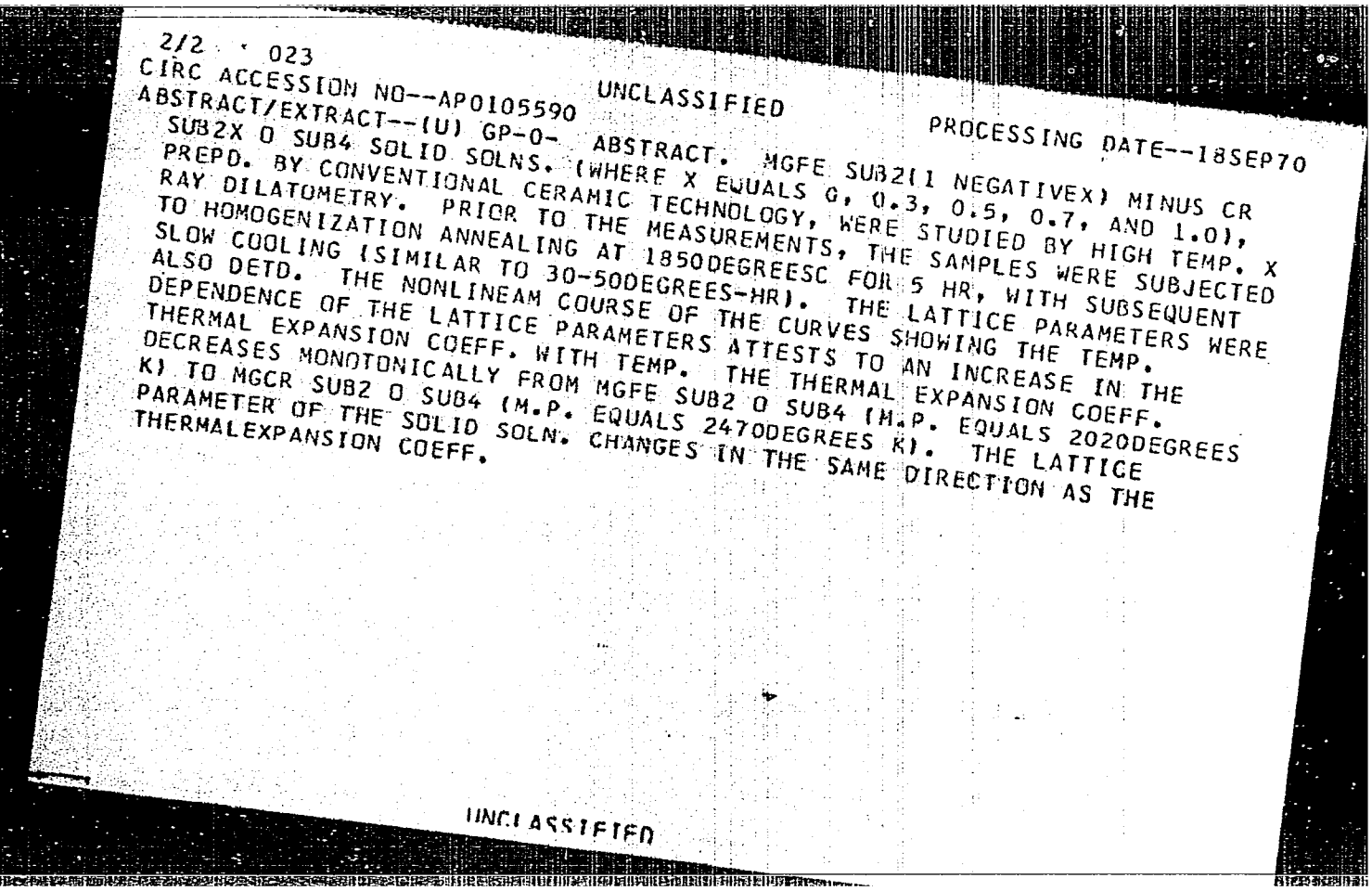
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0607

CIRC ACCESSION NO--AP0105590 STEP NO--UR/0363/70/006/002/0400/0401

UNCLASSIFIED



2/2 · 023
CIRC ACCESSION NO--AP0105590 UNCLASSIFIED PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MGFE SUB2(1 NEGATIVEX) MINUS CR SUB2X O SUB4 SOLID SOLNS. (WHERE X EQUALS 0, 0.3, 0.5, 0.7, AND 1.0), PREPD. BY CONVENTIONAL CERAMIC TECHNOLOGY, WERE STUDIED BY HIGH TEMP. X RAY DILATOMETRY. PRIOR TO THE MEASUREMENTS, THE SAMPLES WERE SUBJECTED TO HOMOGENIZATION ANNEALING AT 1850DEGREESC FOR 5 HR, WITH SUBSEQUENT SLOW COOLING (SIMILAR TO 30-50DEGREES-HR). THE LATTICE PARAMETERS WERE ALSO DETD. THE NONLINEAM COURSE OF THE CURVES SHOWING THE TEMP. DEPENDENCE OF THE LATTICE PARAMETERS ATTESTS TO AN INCREASE IN THE THERMAL EXPANSION COEFF. WITH TEMP. THE THERMAL EXPANSION COEFF. DECREASES MONOTONICALLY FROM MGFE SUB2 O SUB4 (M.P. EQUALS 2020DEGREES K) TO MGCR SUB2 O SUB4 (M.P. EQUALS 2470DEGREES K). THE LATTICE PARAMETER OF THE SOLID SOLN. CHANGES IN THE SAME DIRECTION AS THE THERMALEXPANSION COEFF.

UNCLASSIFIED

USSR

UDC: 620.186.4

VISHNEVSKIY, I. I., TAL'YANSKAYA, N. D., BOYARINA, I. L., Ukrainian Scientific Research Institute of Refractories, Khar'kov

"Change of the Microstructure of Polycrystalline Corundum in the Process of High-Temperature Creep"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 5, 11 Feb 72, pp 1046-1048

Abstract: The most extensively employed method of processing measurement results during the investigation of creep (deformation flow in time) is an analysis of the relationships of a steady deformation rate to temperature and time. Information thus obtained permits a judgment to be made concerning the mechanisms which control creep. However, interpretation of the experimental data is substantially complicated by deviation of the structural state of the material from its initial state. In the present work a study is made, by means of optical microscope facilities, of change of the polycrystalline structure of corundum samples that have been tested for creep at high temperatures. Under test conditions, the linear boundaries are found to be unbalanced, and become distorted with recrystallization. The authors noted no predominant movement of boundaries with a specific curvature, although possibly migration of the convex boundary is preferential. Three figures. Eight references.

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USSR

UDC 539.121.72/75

VISHNEVSKIY, I. N., GAVRILYUK, V. I., KUPRYASHKIN, V. T., LATYSHEV, G. D., MAKOVETSKIY, YU. V., and KHALOV, V. G., Institute of Nuclear Research Academy of Sciences, Ukrainian SSR

"Annihilation of Positrons in Copper and Brass Subjected to Different Heat Treatments"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, October 1973, pp 1599-1604

Abstract: Using a high-resolution magnetic spectrometer, the authors find the distributions of the annihilation quanta by energy $\varrho(E)$ and the distribution of electrons by impulses n (p_z) in samples of copper and brass subjected to different heat treatments. They find that for the annealed samples of copper and brass, broader distributions are produced for $\varrho(E)$ and $n(p_z)$ than for the quenched ones. This effect may be

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VISHNEVSKIY, I. N., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, Oct 73, pp 1599-1604

used for studying the influence of the technological procedure of producing the samples on their properties. After defining the problem in the introduction, the authors give a detailed account of the method used in the investigation, after which they analyze the results. The article contains 8 figures and 6 bibliographic references.

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Photoelectric Effect

USSR

UDC 621.385.831 (088.8)

VISHNEVSKIY, N.K., LAPSHIN, V.G., RYKALIN, V.I., SOLYANIK, V.I., KHROMOV, V.P.

"Method For Determining The Point Of Impact On A Photocathode Of Short Light Pulses"

USSR Author's Certificate No 266083, filed 2 Oct 68, published 2 July 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A261P)

Translation: A method is proposed, consisting of the determination of the time of flight of photoelectrons, and differing from the known in increased precision, attainable by the fact that the input chamber of the photomultiplier is placed in a crossed electrical and magnetic field (the vector of the magnetic field intensity lies in the plane of the photocathode). The resolving power is ~5 bands per mm. N.S.

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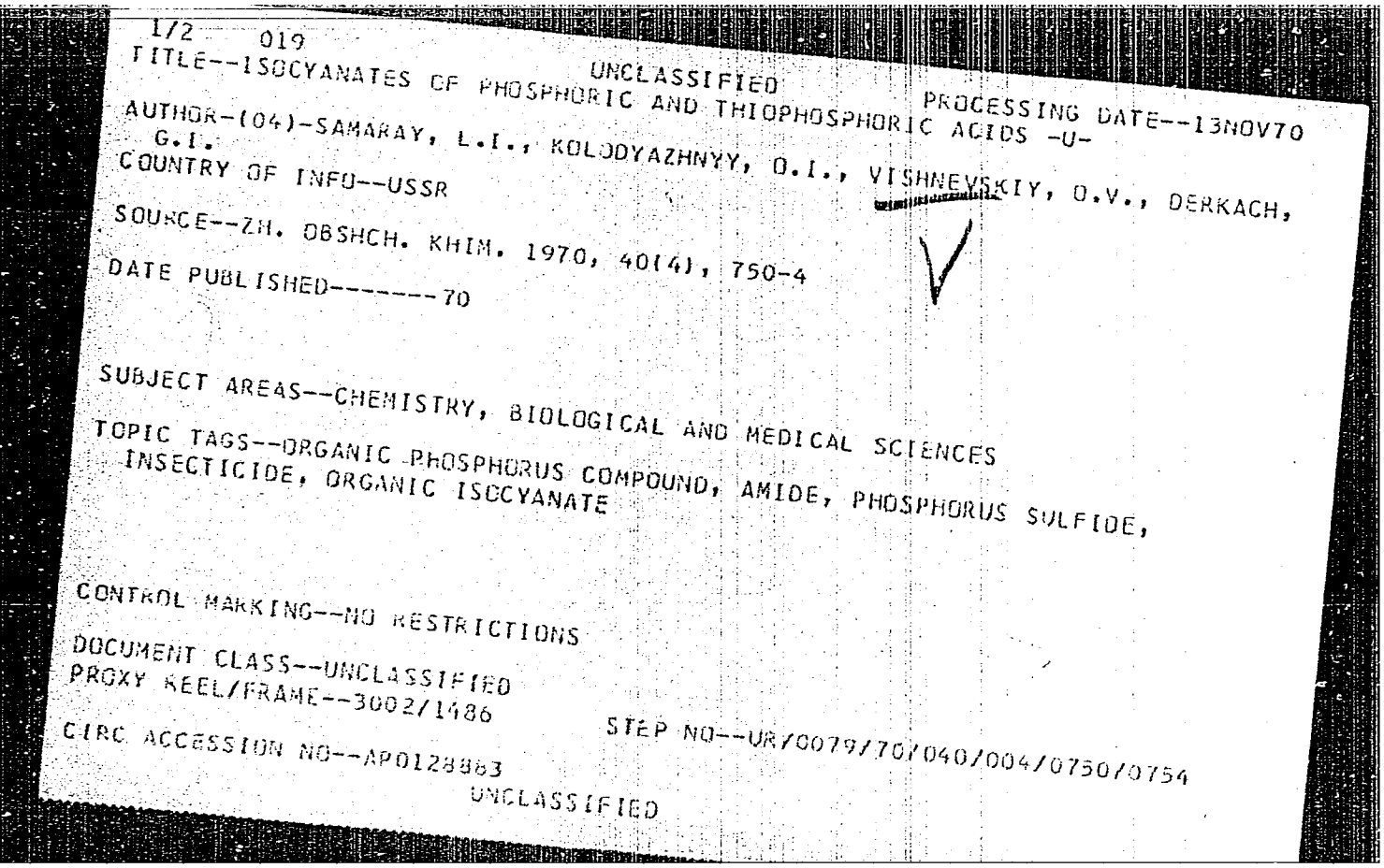


1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ISOCYANATES OF PHOSPHORIC AND THIOPHOSPHORIC ACIDS -U-

AUTHOR-(04)-SAMARAY, L.I., KOLODYAZHNYY, O.I., VISHNEVSKIY, O.V., DERKACH, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 750-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, AMIDE, PHOSPHORUS SULFIDE, INSECTICIDE, ORGANIC ISOCYANATE

CONTROL MARKING--NO RESTRICTIONS

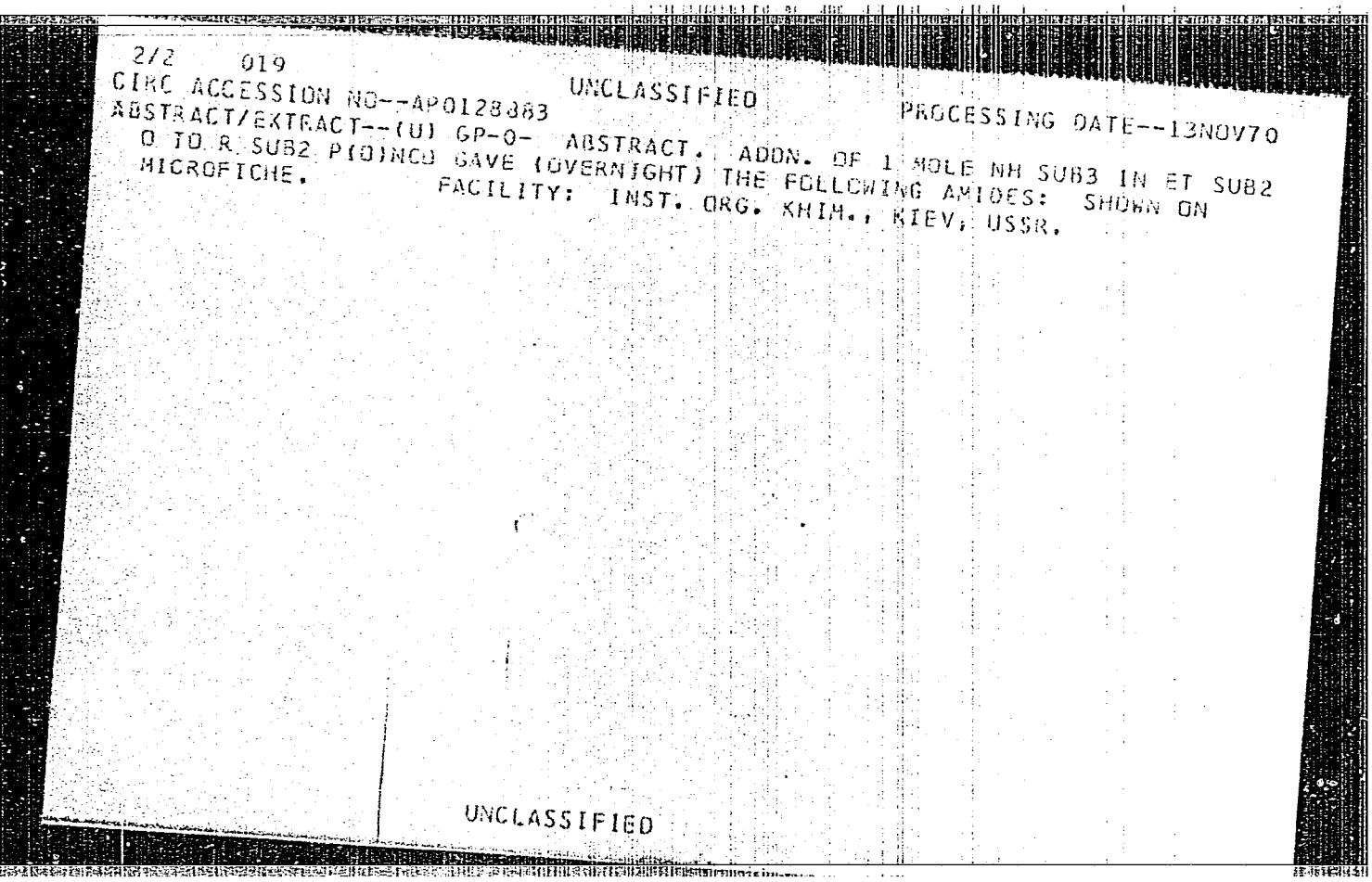
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1486

STEP NO--UR/0079/70/040/004/0750/0754

CIRC ACCESSION NO--AP0128863

UNCLASSIFIED



2/2 019 UNCLASSIFIED
CIRC ACCESSION NO--AP0128863 PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 1 MOLE NH SUB3 IN ET SUB2 O TO R SUB2 P(O)NCO GAVE (OVERNIGHT) THE FOLLOWING AMIDES: SHOWN ON MICROFICHE.
FACILITY: INST. ORG. KHIM., KIEV, USSR.

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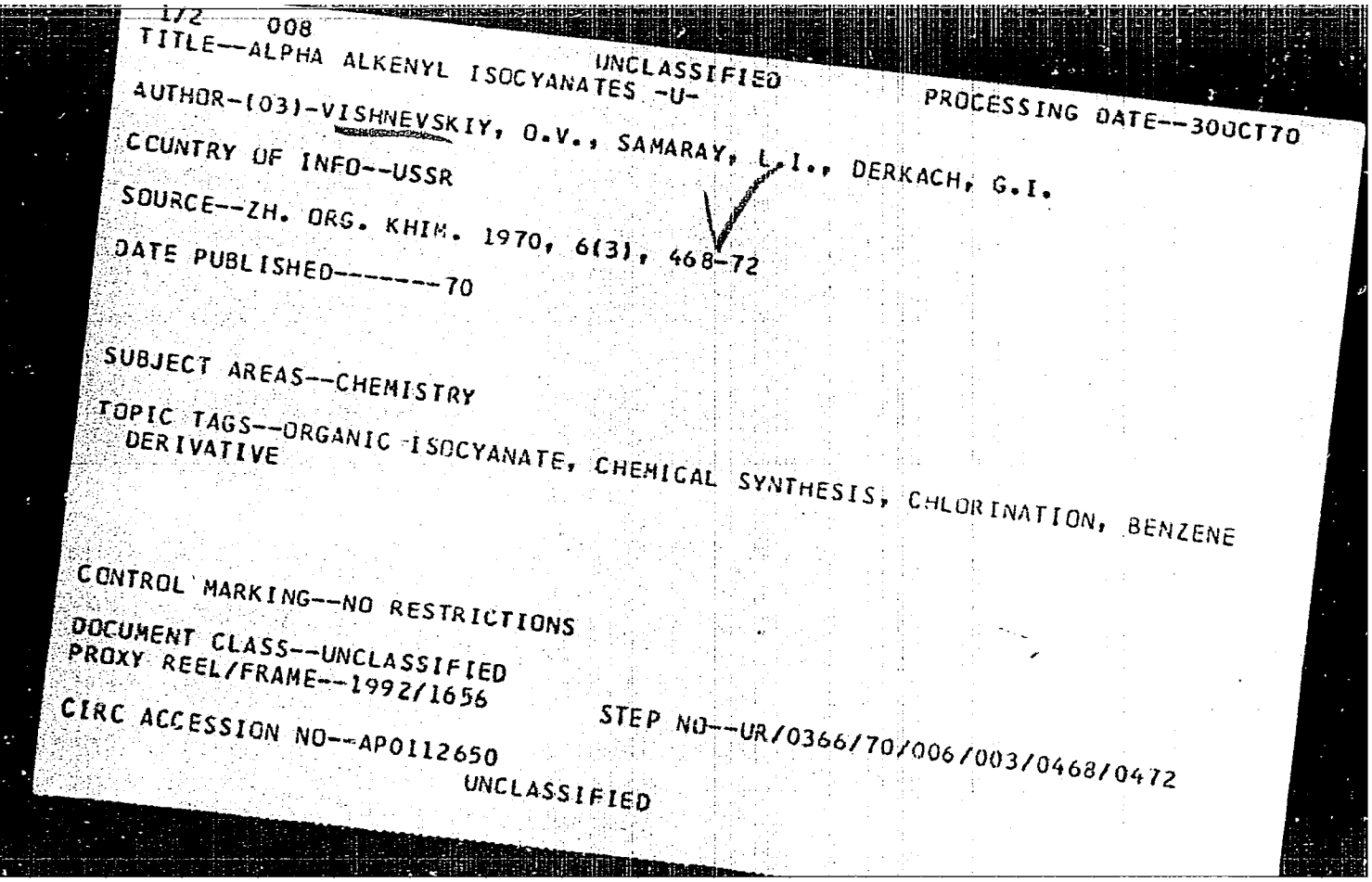


1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ALPHA ALKENYL ISOCYANATES -U-

AUTHOR-(03)-VISHNEVSKIY, O.V., SAMARAY, L.I., DERKACH, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 468-72

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ISOCYANATE, CHEMICAL SYNTHESIS, CHLORINATION, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

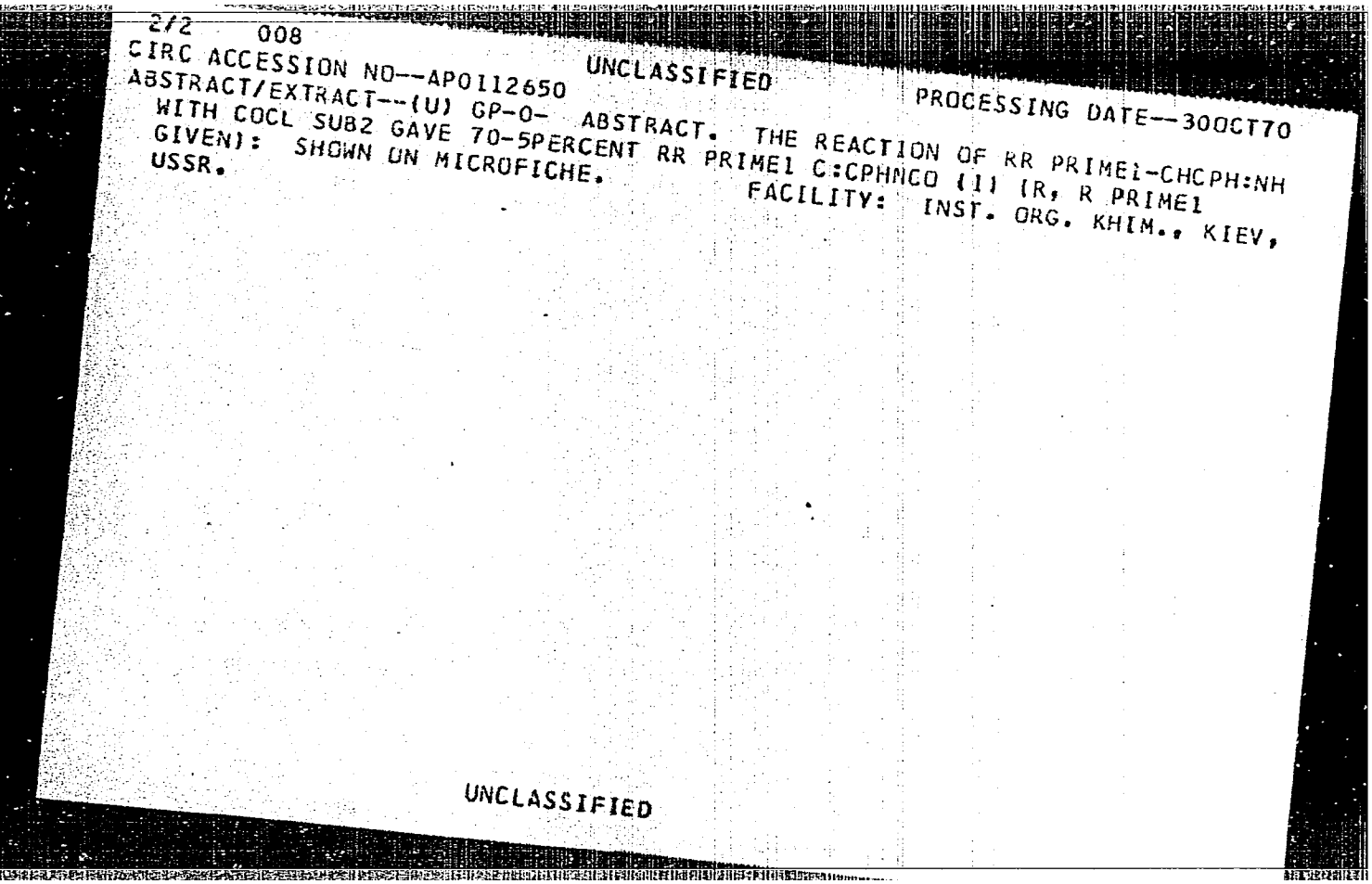
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1656

STEP NO--UR/0366/70/006/003/0468/0472

CIRC ACCESSION NO--AP0112650

UNCLASSIFIED



2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0112650
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF RR PRIME1-CHCPH:NH WITH COCL SUB2 GAVE 70-5PERCENT RR PRIME1 C:CPHNCO (I) (R, R PRIME1 GIVEN): SHOWN ON MICROFICHE. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 547.26'118

SAMARAY, L.I., KOLODYAZHNYY, O.I., VISHNEVSKIY, O.V., and DERKACH, G.I. (Deceased)
Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Isocyanates of Phosphoric and Thiophosphoric Acids. III"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 750-754

Abstract: Isocyanates of phosphoric acids react with hydrazoic acid to give N-azidocarbonylphosphamides. The latter readily enter into oxidative imination reactions with phosphines and phosphites to give corresponding phosphazo compounds. Isocyanates of phosphoric acid esters interact with ∈-caprolactam on heating in a benzene solution to give N-phosphonocarbamoyl-∈-caprolactams. Isocyanates of dialkyl- thio- and dialkylphosphoric acid react with alcohols (mercaptans) to give N-phosphorylated urethanes and thiolurethanes possessing high insecticidal activity, both systemic and contact. N. I. LIPTUGA took part in the work.

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1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--OXIDATIVE THERMAL DEGRADATION OF SOME OLIGOSILOXANES -U-

AUTHOR--SOBOLEVSKIY, M.V., CHERNYSHEV, E.A., LOTAREV, M.B., VISHNEVSKIY, P.N., NAZAROVA, D.V.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 26-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DEGRADATION, OXIDATION, SILOXANE, MOLECULAR STRUCTURE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1057

STEP NO--UR/0191/70/000/002/0026/0027

CIRC ACCESSION NO--AP0104455

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE OXIDATIVE THERMAL DEGRADATION OF OLIGOHETEROCYCLOSILOXANES, OLIGODIMETHYLSILOXANES, OLIGODIETHYLSILOXANES (I), AND OLIGOMETHYLPHENYLSILOXANES OF STRUCTURE II WAS STUDIED BY THERMOGRAVIMETRIC ANAL. UNDER ISOTHERMAL CONDITIONS AT 200-350DEGREES. II HAD THE MAX. RESISTANCE TO OXION., WHEREAS I WAS LEAST RESISTANT TO OXIDN. AND ABSORBED O AT 200DEGREES. THE ABSORPTION RATE OF O WAS PROPORTIONAL TO TEMP. FOR ALL OF THE SILOXANES TESTED.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CHOLEDOCHODUODENOSTOMY -U-

AUTHOR-(02)-VINOGRADOV, V.V., VISHNEVSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 79-85

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, GALLBLADDER, BILE, PANCREAS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1230

STEP NO--UR/0531/70/000/004/0079/0085

CIRC ACCESSION NO--AP0054125

UNCLASSIFIED

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0054125 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SURGICAL TREATMENT OF BENIGN DISEASES OF THE BILIARY TRACT CHOLEDOCHODUODENOSTOMY DURING THE LAST YEARS FIND EVER GREATER ATTENTION. THIS TECHNIQUE WAS EMPLOYED IN 150 PATIENTS DURING 410 OPERATIONS ON THE COMMON BILE DUCT OUT OF THE TOTAL 1300 SURGICAL INTERVENTIONS FOR CHOLECYSTITIS AND ITS COMPLICATIONS CHOLEDOCHOLITHIASIS, PANCREATITIS, STENOSIS OF THE PAPILLA OF VATER, STENOSIS OF THE CHOLEDOCHUS SERVED AS INDICATIONS TO THIS OPERATIONS. IN 141 PATIENTS SUPRADUODENAL AND IN 9 PATIENTS TRANSDUODENAL CHOLEDOCHODUODENOSTOMY WAS PERFORMED. CHOLEDOCHODUODENOSTOMY SHOULD BE CARRIED OUT IN ACCORDANCE WITH STRICT INDICATIONS DEPENDING ON THE CHARACTER OF PATHOLOGICAL CHANGES AND ON CONDITIONS OF THE OPERATION, THE MAIN OF WHICH SHOULD BE THE FEASIBILITY OF FORMING A WIDE ANASTOMOSIS. THIS IS ACHIEVED BY A SPECIAL OPERATIVE TECHNIQUE PROPOSED BY THE AUTHORS. IN 150 PATIENTS THE LETHALITY AMOUNTED TO 7.3 PER CENT OF CASES. A GOOD REMOTE RESULT WAS OBSERVED IN 76 PER CENT, A SATISFACTORY, IN 21 PER CENT AND UNSATISFACTORY IN 3 PER CENT OF CASES. IN RESPECTIVE INDICATIONS AND PROPER OPERATIVE TECHNIQUE CHOLEDOCHODUODENOSTOMY YIELDS GOOD IMMEDIATE AND REMOTE RESULTS, AND SHOULD BE CONSIDERED AS A NORMAL METHOD OF SURGICAL INTERVENTION ON THE BILIARY TRACT.

UNCLASSIFIED

USSR

UDC 621.314.58

LABUNTSOV, V. A., BELOV, G. A., VISHNEVSKIY, V. A.

"Investigation of a D-C Pulse Converter With a Blocking Thyristor Because of Oscillatory Character of Current"

Kiev, V sb. Ustroystva preobrazovat. tekhn. (Converter Technology Devices -- collection of works), No 2, 1969, pp 260-267 (from RZh -- Elektronika i yeye primeneniye, No 2, Feb 70, Abstract No 2B522)

Abstract: A d-c converter is considered which consists of one thyristor connected in series with a commutating choke coil; to the latter the following is joined, connected among themselves in parallel: the load which contains counter emf, resistance and inductance, a commutating capacitor and a counter-connected semiconductor diode. Differential equations are formulated and solved which describe the changes of voltage and current. Curves of currents and voltages are given and also the characteristic curves of the converter. 4 ill. 3 ref. I.R.

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1/2 006 UNCLASSIFIED

TITLE--COMPLEXES OF GERMANIUM, IV. WITH MANDELIC ACID -U-

PROCESSING DATE--20NOV70

AUTHOR-(04)-SHAGISULTANOVA, G.A., KURNEVICH, G.I., VISHNEVSKIY, V.B., BOGDANOVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 648-51

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GERMANIUM COMPOUND, COMPLEX COMPOUND, CESIUM COMPOUND, COBALT COMPLEX, PLATINUM COMPLEX, GLYCOLLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1705

STEP NO--UR/0076/70/015/003/0648/0651

CIRC ACCESSION NO--AP0125326

UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--AP0125326

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. M(GE(BZCO SUB2)SUB2.PHCH(OH)CO SUB2.H SUB2 O), WHERE M EQUALS K PRIME POSITIVE, NH SUB4 PRIME POSITIVE, CS PRIME POSITIVE, (CO(EN)SUB2CL SUB2)PRIME POSITIVE, (PTINH SUB3)SUB4)PRIME2 POSITIVE, OR (CO (NH SUB3)SUB6)PRIME3 POSITIVE SEPD. AS SOLIDS DURING REACTION OF GE(IV) WITH MANDELIC ISOMOLAR SERIES SHOWED FORMATION OF COMPLEXES OF DIFFERENT COMPN. STRUCTURES ARE PROPOSED FOR THE COMPLEXES OF GE(IV) WITH I.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520007-0"

Acc. Nr.: AP0029816

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 91-94

A STUDY OF SERUM PROTEINS AND EVALUATION OF SOME TISSUE REACTIONS IN LYMPHOGRANULOMATOSIS

Vishnevskiy, V.G. (Kiev)

Serum proteins have been studied by means of paper electrophoresis and immuno-electrophoresis in agar gel in 30 patients with lymphogranulomatosis.

Results showed dysproteinemia manifested in a reduction of the albumin content, increase of alpha-1 and alpha-2 globulins and a tendency to an increase of gamma-globulins at later stages of the disease. No significant changes of the immunoglobulin content have been found. It is suggested that dysproteinemia in lymphogranulomatosis is of different nature than in malignant tumours.

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REEL/FRAME
19681502

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UDC 532.517.2

USSR

DORFMAN, A. Sh., VISHNEVSKIY, V. K.

"Boundary Layer in Non-Newtonian Exponential Fluids with Arbitrary Pressure Gradients"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 3, Mar. 71, p. 398-404.

Abstract: The boundary layer equations are solved for non-Newtonian fluids with an exponential rheological rule by a semi-integral method based on simultaneous solution of the equation of linearized motion and an integral relationship. Formulas and tables of coefficients are presented for various powers of non-Newtonian behavior of the fluid n, allowing calculation of the shear stress profiles with arbitrary distribution of velocity outside the layer. The distribution of shear stress over the surface of a circular cylinder at various values of n is obtained. The position of the stall point on the cylinder is calculated as a function of power n.

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1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ELIMINATION OF CERTAIN ADMIXTURES IN THE PROCESS OF ISOLATION AND CHEMICAL PURIFICATION OF STREPTOMYCIN -U-

AUTHOR-(04)-BOGATSKIY, M.A., VISHNEVSKIY, V.M., AKHONTOVA, L.F., BRUNS, B.P.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 406-411

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOMYCIN, CHEMICAL PURIFICATION, FERMENTATION, CATION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0154 STEP NO--UR/0297/70/015/005/0406/0411

CIRC ACCESSION NO--AP0114550 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 009
CIRC ACCESSION NO--AP0114550
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF ELIMINATION OF CERTAIN ADMIXTURES, SUCH AS MAGNESIUM, STREPTIDINE AND STREPTOBIOZAMINE PRESENT IN STREPTOMYCIN FERMENTATION BROTH FILTRATES DURING THE ANTIBIOTIC SORPTION BY CARBOXYLIC CATION EXCHANGE RESINS WAS STUDIED. IT WAS SHOWN THAT THE EFFICACY OF ELIMINATION OF THE ADMIXTURES SORBED BY THE RESINS DEPENDED ON THE SOLUTION COMPOSITION USED FOR THEIR SORPTION. THE STAGE OF THE ADMIXTURE SORPTION WAS IMPROVED.
FACILITY: KIEV PLANT OF MEDICAL PREPARATIONS, NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

UDC 533.92:621.039.61

USSR

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

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

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

Abstract: After an initial section devoted to a review of the literature on the magnetic surfaces of toroidal stellarators and the principles of stellarators in general, the authors analyze the "Uragan" specifically. In particular, this paper is concerned with the problems involved in choosing the parameters of the magnetic system for the racetrack stellarator to obtain magnetic surfaces with high shear. This last term is defined as the extent of crossing of the magnetic lines of force. The synthesis and adjustment of the magnetic system are also examined, and

USSR

ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, "Naukova dumka," No 3, 1972, pp 73-112

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

2/2

USSR

UDC 533.951.7/.8

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

"Development and Creation of the "Uragan" Stellarator Magnetic System and Study of High-Shear Magnetic Surfaces"

Fiz. Plazmy i Probl. Upravl. Termoyader. Sinteza. Resp. Mezhved. Sb. [Plasma Physics and Problems of Controlled Thermonuclear Synthesis. Republic Interdepartmental Collection], No 3, 1972, pp 73-112, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B178 by the author's).

Translation: This work is dedicated to the study of the magnetic system of the three-pass "Uragan" stellarator. A report is presented on the selection of the optimal parameters of the magnetic system of the stellarator. The "Uragan" complex is briefly described. Experimental studies of magnetic surfaces using low-energy electron beams have shown that the "Uragan" stellarator with individually controllable cylinders produces closed magnetic surfaces with high shear values (=0.09) and high rotary conversion angle

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520007-0"

USSR

UDC 533.951.7/.8

ALEKSIN, V. P., BIRYUKOV, O. V., et. al., Fiz. Plazmy i Probl. Upravl. Termoyader. Sinteza. Resp. Mezhved. Sb., No 3, 1972, pp 73-112.

(=240°). The experimental data are compared with calculated data produced on the BESM-6 computer. 51 Biblio. Refs.

2/2

UDC 621.373.531

USSR

VISHNEVSKIY, V. N., IZOKH, V. V., and KUBASOV, A. A.

"Nanosecond Range Pulse Shaper Based on Semiconductor Devices"

V sb. Tunnel'n. diody v vychisl. i izmerit. tekhn. (Tunnel Diodes in Computer and Measurement Technology — collection of works), Riga, "Zinatne", 1972, pp 217-223 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 G134)

Translation: The authors study the possibility of forming nanosecond duration pulses from voltage differentials. Real shaper circuits are given based on tunnel diodes, semiconductor diodes with charge accumulation, and their combinations with semiconductor triodes. Comparative characteristics are presented for the shapers along with their experimental data. Resume.

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--AFFINOR STRUCTURES OF SPACES OF AN AFFINE CONNECTION -U-

AUTHOR--VISHNEVSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--KAZAN', IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, MATEMATIKA, NO 1, JAN 70, PP 12-23

DATE PUBLISHED----JAN70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--EIGENVALUE, MATHEMATIC SPACE, ALGEBRAIC EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0484 STEP NO--UR/0140/70/000/001/0012/0023

CIRC ACCESSION NO--AT0113376

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 007
CIRC ACCESSION NO--AT0113376
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE ATTEMPTS TO EXPRESS ANY INTEGRABLE AFFINOR STRUCTURE AS A STRUCTURE DEFINED BY AN ALGEBRA, USING RESULTS AND SYMBOLS OF AN EARLIER ARTICLE BY THE AUTHOR ON STRUCTURES OF PROJECTIVE SPACES GENERATED BY AFFINORS. AN ALGEBRA OF PLURAL NUMBERS AND ANALYTIC FUNCTIONS OVER IT ARE CONSIDERED. AS WELL AS A STRUCTURE GENERATED BY AN AFFINOR WITH ONE EIGENVALUE. THE SET OF ADMISSIBLE TRANSFORMATIONS OF THE SPACE OF TORSION FREE AFFINE CONNECTION A SUBN IS SIGMORPHIC TO THE SET OF TRANSFORMATIONS OF THE DIFFERENTIABLE SPACE R OF MEASUREMENTS OVER THE ALGEBRA OF PLURAL NUMBERS, DESIGNATED X SUBR (E PRIMEMMINUS1). ANY INTEGRABLE AFFINOR STRUCTURE GENERATED BY AN AFFINOR WITH ONE EIGNEVALUE IS, AT THE SAME TIME, A STRUCTURE DEFINED BY THE ALGEBRA R(E PRIMEMMINUS1). SOME SPECIAL TYPES OF CONNECTIONS A SUBR (E PRIMEMMINUS1) AND STRUCTURES DEFINED BY AN ARBITRARY AFFINOR ARE CONSIDERED.

UNCLASSIFIED

UDC 513.015

USSR

VISHNEVSKIY, V. V., Kazan'

"Affinor Structures of Spaces of an Affine Connection"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 1, Jan 70, pp 12-23

Abstract: The article attempts to express any integrable affinor structure as a structure defined by an algebra, using results and symbols of an earlier article by the author on structures of projective spaces generated by affinors. An algebra of plural numbers and analytic functions over it are considered, as well as a structure generated by an affinor with one eigenvalue. The set of admissible transformations of the space of torsion-free affine connection A_n is isomorphic to the set of transformations of the differentiable space r of measurements over the algebra of plural numbers, designated $X_r(\varepsilon^{m-1})$. Any integrable affinor structure generated by an af-

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USSR

VISHNEVSKIY, V. V., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 1, Jan 70, pp 12-23

finor with one eigenvalue is, at the same time, a structure defined by the algebra $R(\mathcal{E}^{m-1})$. Some special types of connections $A_r(\mathcal{E}^{m-1})$ and structures defined by an arbitrary affinor are considered.

2/2

USSR

UDC 541.182.2/.3:546.45

VISHNEVSKIY, Ye. P., and MOSHKOVA, L. P.

"Nomographic Method of Estimating the Intensity of Aerosol Emanations When Beryllium is Heated"

Moscow, Gigiyena i Sanitariya, No 7, 1973, pp 84-87

Abstract: When heated, beryllium evaporates and then condenses upon coming into contact with the surrounding cold air. Using formulas that take into account the temperature, thickness of the oxide film, and pressure of saturated vapor, the authors prepared a nomogram that permits quick determination of the intensity of aerosol emanations at the various temperature levels to which beryllium may be heated. The procedure is illustrated with two examples.

1/1

Beryllium

USSR UDC 669.725-151

VISHNEVSKIY, Ye. P., Leningrad

"The Intensity of Aerosol Separation on Heating Beryllium"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 5, Sep-Oct 72, pp 205-209

Abstract: An investigation was made of the intensity of aerosol spearation on heating beryllium in the 1000-1300°C temperature range. The effect of the thickness of the oxide film on the saturation of beryllium vapors and the thickness of the oxide film developing on heating beryllium specimens for 2 hrs are shown. The intensity of beryllium separation was found to be related to diffusion through the layer of the oxide film which exerts the main resistance against vaporization of the metal in air. Four figures, eleven formulas, one table, seven bibliographic references.

1/1

USSR

UDC 612.019+612.273.2

LAUER, N. V. and VISHNYAK, S. M., Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences UkSSR

"Role of Respiration in Regulating Oxygen Parameters in Young Animals After Exposure to Hypoxia"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 12, 1971, pp 1,823-1,831

Abstract: Experiments with puppies 2- to 3-weeks old, 1.5 to 2.5 and 5 to 6 months old and adult dogs given hypoxic mixtures to breathe showed that hypoxia resulted in a small increase in the puppies' ventilation compared with the older animals. It also the efficiency of respiration in metabolism brought about a prolonged period of stabilization of the oxygen paramters, and prevented adequate O_2 saturation of the blood, despite the comparatively large amount of O_2 ventilated in the lungs and alveoli and a high paO_2. As the puppies aged, the relationships between external respiratory function and oxygen demand improved and they became more resistant to disruption by hypoxia. Slowing of the rhythm and decrease in intensity of ventilation increased the functional reserves and strengthened their role in regulating homeostasis in an altered gaseous medium.

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USSR

UDC: 669.183-14.046.5

ANDREYEV, V. I., VISHNYAKOK, A. V., and DUBROVIN, A. K.

"Influence of Gases on Welding of Cavities during the Rolling Process"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 67-70

Abstract: Available data indicate that the main reason for layer separation in rimmed, semikilled and killed steels is contamination of shrinkage cavities, bubbles, and cracks of the ingot with various products. Sometimes, layer separation is accompanied by convexity of the metal, with formation of cavities filled with gas under significant pressure. This gas might be separated in the shrinkage cavity during crystallization of the ingot, and might prevent welding of cavities. The influence of hydrogen, carbon dioxide, and nitrogen, the most common gases found in these cavities, on the quality of welding was studied as a function of temperature and degree of deformation of gas-filled specimens. Artificial cavities were created in steel type 3sp (0.20% C, 0.17% Si, 0.56% Mn, 0.026% S, 0.016% P, 0.05% Cr, 0.04% Ni), occupying 2.5% of the volume of the specimen. It was established that the gases prevent welding of the metal. Higher quality welding can be achieved with lower degree of deformation of the specimen by increasing the temperature of the metal before rolling.

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USSR

UDC: 531.36

VISHNYAKOV, A. F.

"Investigating the Stability of the Programmed Motion of a Body of Variable Mass"

Sb. Nauchn. rabot aspirantov. Un-t druzhby narodov im. Patrisa Lumumby. Fak. fiz.-matem. i yestestv. n. (Scientific Works of Aspirants. The Patrice Lumumba University of International Friendship. Department of Physics-Mathematics and Natural Sciences--collection of works) 1970. No. 7, pp 148-154 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2A109)

Translation: The motion of a body of variable mass is considered in a uniform field under the action of a resistive force of the medium, a function of the velocity and height, and a reactive force which is always directed along the tangent to the trajectory of the body's center of mass, assumed to be a flat curve. Equations of perturbed motion which are close to some programmed movements are derived. By setting up the Lyapunov function, sufficient conditions for the stability of the programmed motion of the body in a finite time interval are secured. A. L. Kunitsyn

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1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF EXTERNAL PRESSURE AND GAS SATURATION OF A METAL ON THE FORMATION OF GAS BUBBLES IN A KILLED STEEL INGOT -U-

AUTHOR-(02)-ANDREYEV, V.I., VISHNYAKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 91-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--KILLED STEEL, INGOT CASTING, METAL CONTAINING GAS, METAL CRYSTALLIZATION, GAS PRESSURE, ALLOY COMPOSITION, CARBON, SILICON, HYDROGEN, NITROGEN, METAL POROSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0811 STEP NO--UR/0148/70/013/004/0091/0096

CIRC ACCESSION NO--AT0132905

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREPN. OCNDITIONS FOR A DENSE BUBBLE FREE INGOT DURING DEOXIDN. OF CARBONACEOUS METAL BY SI HAVE BEEN STUDIED PREVIOUSLY, BUT ALTHOUGH THE DEPENDENCE OF THE POSITION OF THE BOUDNDARY BETWEEN THE REGIONS OF THE DENSE AND THE RISING METAL ON THE RELATION OF THE DEOXIDIZING CAPABILITIES OF SI AND C WITHIN THE ENTIRE CRYSTN. RANGE HAS BEEN ESTABLISHED, THE EFFECT OF THE EXTERNAL PRESSURE AND THE STATE OF GAS SATN. OF THE STEEL ON THE POSITION OF THIS CURVE HAVE NOT BEEN TAKEN INTO CONSIDERATION. AT A C CONTENT OF 0.10-0.16PERCENT THE SI CONCN. NECESSARY FOR THE RISING OF THE METAL DOES NOT CHANGE, SINCE THE COMPN. OF THE MATRIX XOLN. AND THE TEMP. IN THIS REGION REMAIN CONST. WITHIN THE 0.16-0.20PERCENT C RANGE THE CRIT. SI CONTENT DECREASES WITH INCREASING STATE OF GAS SATN. AS A RESULT OF THIS, THE DEGREE OF LIQUATION OF THE GASES IN THE MATRIX SOLN. BEING IN EQUIL. WITH FE, AND CONSEQUENTLY ALSO THE PARTIAL PRESSURE OF H AND N ABOVE THIS SOLN. ALSO DECREASE. ALONG WITH THIS, THE AMT. OF FE IN THIS REGION INCREASES IN THE HARDENING SOLN. AND THE DEGREE OF C LIQUATION IN THE MAXTRIC SOLN. ALSO SHARPLY INCREASES. FOR THE 0.20-0.39PERCENT C REGION THE CRIT. CONCN. OF SI SHARPLY INCREASES ASSOCD. WITH INCREASED LIQUATION OF C, H, AND N IN THE MATRIX SOLN. BEING IN EQUIL. WITH SOLID FE. AT 0.39-1.35PERCENT C THE CRIT. SI CONCN. AGAIN DECREASES, WHICH IS MORE NOTICEABLE ON MELTS WITH INCREASED H AND N CONCN. FOR 1.35-4.3PERCENT C, THE SI VALUE GRADUALLY DECREASES. THE MOST HARMFUL FOR FORMATION OF GAS BUBBLES IS H. FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF ELECTRON IRRADIATION ON THE THERMAL DECOMPOSITION OF MOLYBDENUM HEXACARBONYL -U-

AUTHOR-(02)-VISHNYAKOV, B.A., OSIPOV, K.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (1), 151-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL CARBONYL, CARBIDE, MOLYBDENUM COMPOUND, THERMAL DECOMPOSITION, CHEMICAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0903 STEP NO--UR/0472/70/000/001/0151/0152

CIRC ACCESSION NO--AP0118072

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118072

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPOSITION RATE OF MO SUB2 C FILMS ON GLASS SUBSTRATES BY THERMAL DECOMPN. OF MO(CO) SUB6 AT 10 PRIME NEGATIVE3 TORR AND 170-350DEGREES IS INCREASED SEVERAL FOLD BY IRRADIATING THE SUBSTRATE WITH 600-EV ELECTRONS AT 3-5 MA-CM PRIME2.

UNCLASSIFIED

USSR

UDC 621.382.002:539.234:539.216.22

PAVLOVA, Z. V., VISHNYAKOVA, Z. P., VINOGRADOV, G. B., and VISHNYAKOV, B. A.

"Production of Dielectric Films of Titanium Dioxide"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2207-2208

Abstract: TiO_2 films were produced by the method of pyrolysis of organotitanium compounds. The structure and composition of the films produced were tested by an electronographic method. Films were produced by pyrolysis of tetrabutoxy-titanium (TBOT) in an atmosphere of nitrogen at 350-450°C. Substrates used were Ge, Si, and NaCl. The quality of the film is greatly influenced by the cleanliness of the initial surface. Dust and dirt on the substrate produce pores and defects in the film. The best properties were those of TiO_2 films grown at a substrate temperature of 350-400° C, t_{ev} = 120°C with a nitrogen flow rate of 80 l/hr.

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1/2 043 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ELECTRON BEAM METHOD OF PRODUCING THIN FILMS FROM CHEMICAL COMPOUNDS -U-

AUTHOR-(02)-VISHNYAKOV, B.A., OSIPOV, K.A.

COUNTRY OF INFO--USSR

SOURCE--ELECTRON BEAM METHOD OF PRODUCING THIN FILMS FROM CHEMICAL COMPOUNDS (ELEKTRONNOLUCHEVOY METHOD POLUCHENIYA TONKIKH PLENOK IZ

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS, MATERIALS

TOPIC TAGS--CARBIDE, SEMICONDUCTOR MATERIAL, REACTION KINETICS, GLOW DISCHARGE, DIELECTRIC MATERIAL, ELECTRON BEAM, METAL FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1751 STEP NO--UR/0000/70/000/000/0001/0143

CIRC ACCESSION NO--AM0130595

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AN0130595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I. ELECTRON BEAM METHOD OF IMMEDIATE BREAK DOWN OF CHEMICAL COMPOUNDS 5. II. PRODUCTION OF DIELECTRIC FILMS UNDER THE INFLUENCE OF ELECTRONS AND GLOW DISCHARGE 21. III. PRODUCTION OF METALLIC, SEMICONDUCTOR AND CARBIDE FILMS 89. IV. BREAKDOWN OF HARD INORGANIC COMPOUDNS BY ELECTRON BOMBARDMENT 125. LITERATURE 136. THE BOOK GIVES A DETAILED REVIEW OF DOMESTIC AND FOREIGN INVESTIGATIONS OF A COMPARATIVELY NEW METHOD OF PRODUCING THIN FILMS, IN WHICH BREAK DOWN OF INITIAL CHEMICAL CONPOUNDS OF VARIOUS SUBSTANCES IS ACCOMPLISHED IMMEDIATELY FY ELECTRON BEAM. THEORETICAL PRINCIPLES OF THE METHOD ARE PRESENTED; LINE DIAGRAMS ARE GIVEN OF THE APPARATUS NECESSARY FOR ACCOMPLISHING THE PROCESS OF BREAKDOWN OF COMPOUNDS AND PRECIPITATION OF FILMS; RESULTS OF EXPERIMENTAL WORK FOR THE PURPOSE OF PRODUCING BY THIS METHOD FILMS OF VARIOUS MATERIALS ARE DESCRIBED IN DETAIL. BASIC PARAMETERS ARE PRESENTED OF THE KINETICS OF THE PROCESS OF PRECIPITAITON, ON WHICH DEPENDS THE RATE OF FILM GROWTH. THE PUBLICATION WAS WRITTEN FOR INVESTIGATORS, DESIGNERS, ENGINEERS AND TECHNICIANS, METAL PHYSICISTS AND OTHER SPECIALISTS OF VARIOUS BRANCHES OF INDUSTRY (INSTRUMENT MAKING, ELECTROVACUUM, CHEMICAL, ETC.), AND ALSO FOR TEACHERS AND STUDENTS OF CHEMICAL AND TECHNICAL UNIVERSITIES, STUDYING PROBLEMS OF PRODUCING THIN FILMS AND THEIR PRACTICAL APPLICATION.

UNCLASSIFIED

USSR

UDC:621.9-418:537.533.004.14

VISHNYAKOV, B. A., and OSIPOV, K. A.

"Cathode-Ray Method of Production of Thin Films of Chemical Compounds"

Elektronno-Luchevoy Metod Polucheniya Tonkikh Plenok Iz Khimicheskikh Soyedineniy [English Version Above], Moscow, Nauka Press, 1970, 144 pages

Translation: This book presents an objective review of domestic and foreign investigations of the comparatively new method of production of thin films in which the decomposition of the initial chemical compounds of various materials is achieved directly by a beam of electrons. The theoretical principles of the method are outlined and diagrams are presented of the devices necessary for the application of the process of decomposition of compounds and precipitation of films. The results of experimental work performed with the purpose of producing films of various materials by this method are described in detail. The principal parameters of the kinetics of the process of precipitation which determine the rate of film growth are presented.

This book is designed for researchers, designers, engineers and technicians, metal physicists, and other specialists in various branches of industry

USSR

VISHNYAKOV, B. A., and OSIPOV, K. A., Elektronno-Luchevoy Metod Polucheniya Tonkikh Plenok Iz Khimicheskikh Soyedineniy, 1970, 144 pages

(instrument building, electric-vacuum, chemical, etc.) as well as teachers and students in chemical and technical colleges studying problems of the production of thin films and their practical applications. Fourteen tables; thirty illustrations; 232 biblio.refs.

Table of Contents

USSR

VISHNYAKOV, B. A., and OSIPOV, K. A., Elektronno-Luchevoy Metod Polucheniya Tonkikh Plenok Iz Khimicheskikh Soyedineniy, 1970, 144 pages

USSR

VISHNYAKOV, B. A., and OSIPOV, K. A., Elektronno-Luchevoy Metod Polucheniya Tonkikh Plenok iz Khimicheskikh Soyedineniy, 1970, 144 pages

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USSR

VISHNYAKOV, B. A., and OSIPOV, K. A., Elektronno-Luchevoy Metod Polucheniya Tonkikh Plenok Iz Khimicheskikh Soyedineniy, 1970, 144 pages

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USSR

VISHNYAKOV, D. Ya., PONOMAREVA, N. A. UDC 539.4

"The Effect of High-Speed Deformation on the Structure and Properties of High-Strength Steels"

V sb. Teoriya i prakt. vysokoskorost. deformatsii metal. materialov (Theory and Practice of High-Speed Deformations of Metal Materials -- Collection of Works), Moscow, 1971, pp 14-15 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6V1031)

Translation: The effect of the set of pulse loading, heating, and cooling on the structure and properties of high-strength steels is investigated. The initial structure before deformation was a martensite or sorbite of tempering and deformation was carried out by explosion in water with degrees of deformation up to 25%. It was found that thermo-impulse working at a deformation rate of 225 m/sec and a degree of deformation of 2.5% leads to an increase of 70 kg/mm^2 in the strength limit while maintaining high plasticity (residual lengthening was 7.5% and relative contraction was 24.5%). It was shown by metallographic, x-ray and electron microscope methods that a laminar structure arises under the working and that there occur a decrease in the

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USSR

VISHNYAKOV, D. Ya., PONOMAREVA, N. A., Teoriya i prakt. vysokoskorost. deformatsii metal. materialov, Moscow, 1971, pp 14-15

width of the interference lines of the steel with the structure of the annealing martensite and an increase in the width of the lines of the steel with the structure of the annealing sorbite. There were observed an increase in the dimensions of the martensite plates, a change in the dimensions of particles of the second phase, and the absence of deformation aging under annealing after deformation. An explanation is advanced for changes in the mechanical properties of high-strength steels under impulse working that is based on the structural changes observed. L. I. Mirkin.

2/2

USSR

UDC 620.192.43:541.12.014

KARPINOS, D. M., TUCHINSKIY, L. I., and VISHNYAKOV, L. R., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Selection of a Matrix for a Composite Material Which Does Not Dissolve the Reinforcing Fiber"

Kiev, Poroshkovaya Metallurgiya, No 5, May 73, pp 68-72

Abstract: On the basis of concepts of alloy thermodynamics, the composition of a multicomponent matrix of a composite material was calculated for a matrix which does not dissolve single-component reinforcing fibers. A calculation was made for the case when the matrix forms a solid solution with the fibers with limited solubility of the components. An experimental check of one of the calculated compositions of a four-component Ni-Cr-W-Al matrix, reinforced with tungsten fibers, confirmed the correctness of the obtained relationships. The experimental check showed that the tungsten fibers were not dissolved in the matrix after 100 hours of annealing at 1200°C. 2 figures, 9 bibliographic references.

1/1

USSR

UDC 620.181.4:536.4

KARPINOS, D. M., TUGHINSKIY, L. I., MIROSHNIKOVA, T. K., and VISHNYAKOV, L. R., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Calculation of the Thermal Expansion of Reinforced Metals"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 74, pp 80-84

Abstract: A method was proposed for calculating the thermal expansion of composites, reinforced by unidirectionally oriented fibers, in which one or both of the materials in the composite possesses plastic rather than elastic propertes. Tungsten wire of alloy KhN60V (VZh98) was used as the experimental material where the reinforcing fiber used was tungsten wire VA with its content in VZh98 varied. Tests showed that pure tungsten has a very low coefficient of thermal expansion and alloy VZh98 has a relatively high coefficient between 300 and 1200° C and increases with temperature. When reinforced with VA fibers, the thermal expansion is not as high as for the unreinforced alloy and starts decreasing between 700 and 900°C, depending on the VA content. The reason for this that at comparatively low temperatures the matrix has a yield strength high enough to cause substantial tensile stresses in the tungsten

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USSR

KARPINOS, D. M., et al., Poroshkovaya Metallurgiya, No 1, Jan 74, pp 80-84

fibers and, consequently, to cause additional temperature deformation in them. At high temperatures the matrix assimilates an ideal plastic body, its yield strength remains small and, therefore, the coefficient of thermal expansion of the composite is basically determined by the thermal expansion of the fibers. Thus, the matrix (VZh98) coefficient is greater than tungsten (fibers) and at low temperatures the coefficient increases, but as temperature rises the pure matrix becomes plastic, and the coefficient is governed then by the fibers, and the overall coefficient diminishes. Three figures, one table, five bibliographic references.

2/2

USSR

UDC 669.71:669.24.27.28

KARPINOS, D. M., TUCHINSKIY, L. I., VISHNYAKOV, L. R., PERESELENTSEVA, L. N., KLIMENKO, L. N., and DEYMONTOVICH, V. B., Kiev

"Effect of Alloying a Nickel Matrix With Reinforcing Metal Fibers on the Structural Stability of Ni-W and Ni-Mo Composites"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 72, pp 107-113

Abstract: The problem of creating structurally stable composites for the Ni-W and Ni-Mo system was examined. By alloying the nickel matrix with tungsten up to the maximum saturation of the nickel solid solution, reinforced tungsten fibers were obtained in which the fibers did not dissolve at 1000-1200°C. At these temperatures the Ni-Mo composite was not so stable because an intermetallic compound is formed at the fiber-matrix interface and the maximum saturation of the nickel matrix with molybdenum does not prevent dissolution of the molybdenum fibers. Four figures, 2 tables, and 8 bibliographic references.

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USSR

UDC 911.3.616.61-002.151(47)

POVALISHINA, T. P., KUDRYSHOVA, N. I., and VISHNYAKOV, S. V.

"The Fauna of Trombiculid Mites and Their Hosts in a Number of Foci of Hemorrhagic Fever with Renal Syndrome in European USSR"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 82-83 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.65)

[No abstract]

1/1

USSR

UDC: 621.771.23

POLUKHIN, V. P., VISHNYAKOV, YA. D., POTEMKIN, V. K., and CHUVILEK, V. P.,
Moscow Institute of Steels and Alloys

"Effect of the Temperature Conditions of Hot Rolling on Both Structure and Mechanical Properties of 08 kp Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp 82-85

Abstract: This study concerns the causes of quality impairments of thin hot-rolled strip up to 3 mm in thickness designed to be cold converted to 0.8-0.6 mm. The study involved the effect of temperature conditions of hot rolling on the structure and mechanical properties of 08 kp steel strip rolled for 2.8 mm under four sets of temperature conditions. Investigation of the strip along its length and width has found the central sections to have lower characteristics than those at the edges. The data given here are therefore referred to the middle sections along the width.

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USSR

POLUKHIN, V. P., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp 82-85

Figures in the original article show changes in the grain size, the strength properties, and plasticity along the length of the strip. It has been demonstrated that the optimum structure and mechanical properties-to-plasticity ratio are attained at 880°C at the end of rolling and 610°C for coiling.

2/2

USSR

USSR

Analysis and Testing

UDC 621.771:539.4

VISHNYAKOV, YA. D., VLADIMIROV, S. A., and IGNAT'YEVA, YE. G., Moscow

"Change in the Dislocation Structure of Nickel and Its Alloy with 20% Cobalt During High-Reduction Rolling"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 93-97

Abstract: Samples of nickel and nickel with 20% Co, deformed by rolling at room temperature with degrees of reduction from 50 to 90%, were investigated by x-ray diffraction analysis. Calculations of the fine structure parameters were made using a Nairi computer with the calculation error amounting to 5% for the magnitudes of relative mean-square microdeformations $\langle \varepsilon^2 \rangle$. It was found that, in the course of cold rolling samples of pure nickel and the Ni-Co alloy, a decrease occurs in the internal stresses for 6-65 and 75-80% deformations which leads to an "anomalous" change in the magnitudes of H_{100} (microhardness), $\langle \varepsilon^2 \rangle$ and $\bar{t}$ (average cell size). The observed process is a consequence of dislocation redistribution during plastic deformation leading to growth of the average cell size. The formation of stretched configurations is apparently the result of

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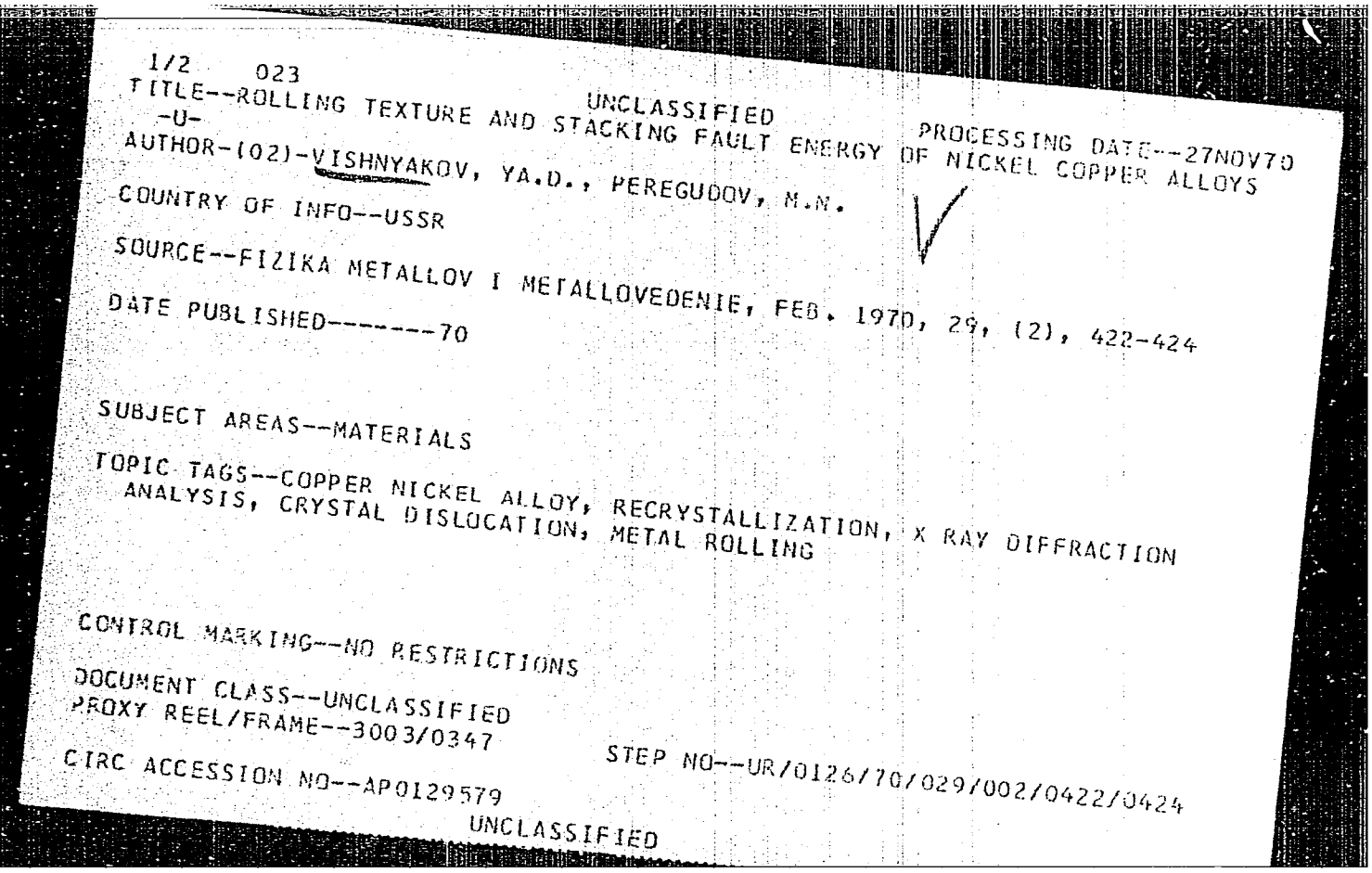
UKSR

VISHNYAKOV, YA. D., et al., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-aug 73, pp 93-97

the union of several equiaxial cells in directions $\langle 100 \rangle$, $\langle 110 \rangle$ and $\langle 111 \rangle$. The change in stacking fault energy from 250 erg/cm^2 for nickel down to 160 erg/cm^2 for the Ni-20% Co alloy did not have any substantial effect on the external characteristics of the process of internal stress diminution. Two figures, five bibliographic references.

2/2



1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ROLLING TEXTURE AND STACKING FAULT ENERGY OF NICKEL COPPER ALLOYS -U-

AUTHOR-(02)-VISHNYAKOV, YA.D., PEREGUDOV, M.N.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 422-424

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER NICKEL ALLOY, RECRYSTALLIZATION, X RAY DIFFRACTION ANALYSIS, CRYSTAL DISLOCATION, METAL ROLLING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0347

STEP NO--UR/0126/70/029/002/0422/0424

CIRC ACCESSION NO--AP0129579

UNCLASSIFIED

2/2 023 UNCLASSIFIED

CIRC ACCESSION NO--AP0129579 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROLLING AND RECRYSTALLIZATION TEXTURES OF NI,CU ALLOYS CONTG. CU 40-47 AT. PERCENT WERE STUDIED BY X RAY DIFFRACTION AND COMPARED WITH EXISTING DATA, AND THE RESULTS WERE INTERPRETED IN TERMS OF THE CORRESPONDING STACKING FAULT ENERGIES. THE STACKING FAULT ENERGIES OF PURE NI AND CU ARE 300 AND 70 ERG-CM PRIME2, RESP., WHILE THAT OF NI 40PERCENT CU IS ONLY 25 ERG-CM PRIME2, THE ENERGY COMPOSITION CURVE PASSING THROUGH A MIN. POSSIBLE REASONS FOR THIS EFFECT ARE CONSIDERED.

UNCLASSIFIED

USSR

UDC: 550.834

LEV, I. S., GRODZENSKIY, V. A., VISHNYAKOV, Ye. P., KUNAREV, A. A., DUNAYEVA, L. P., All-Union Scientific Research Institute of Geophysical Methods of Prospecting

"A Statistical Seismic Signal Analyzer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333509, Division G, filed 20Aug70, published 21Mar72, p 183

Translation: This Author's Certificate introduces a statistical seismic signal analyzer which contains a magnetic drum, playback heads, a trigger module, amplifiers and kipp oscillators. As a distinguishing feature of the patent, the effectiveness of processing seismic data is improved by adding a program control unit connected to a trip number counter and a channel commutator. The commutator output is connected to the same counter which is connected in turn to a memory device. A code pulse shaper circuit is connected between the channel commutator and the memory device.

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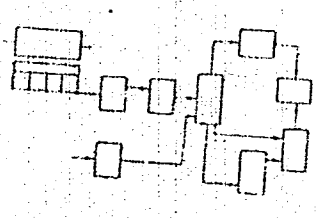
USSR

LEV, I. S. et al., USSR Author's Certificate No 333509



2/2

USSR

UDC 631.859.13.546.47

MUKHAMEDZHANOV, M., KHAKIMOVA, V. K., and VISHNYAKOVA, A. A., Institute of Chemistry, Academy of Sciences Uz. SSR

"Behavior of the Trace Element Zinc During the Production of Ammophos"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 2, 1971, pp 15-16

Abstract: The composition of zinc salts in ammophos bulk was studied by mixing phosphoric acid with zinc sulfate followed by addition of ammonia. It was found that prior to addition of ammonia no reaction took place in the mixture. When ammonia was bubbled in, again no reaction was observed up to pH 2.4. In the range 2.4-3.5 some reaction occurred producing small amounts of $Zn(H_2PO_4)_2$. Only when the pH was increased to above 3.5, solid phase began to appear in the mixture. A product with the formula $ZnNH_4PO_4$ was isolated. Presumably this material was formed in the ammophos due to the microadmixtures of zinc.

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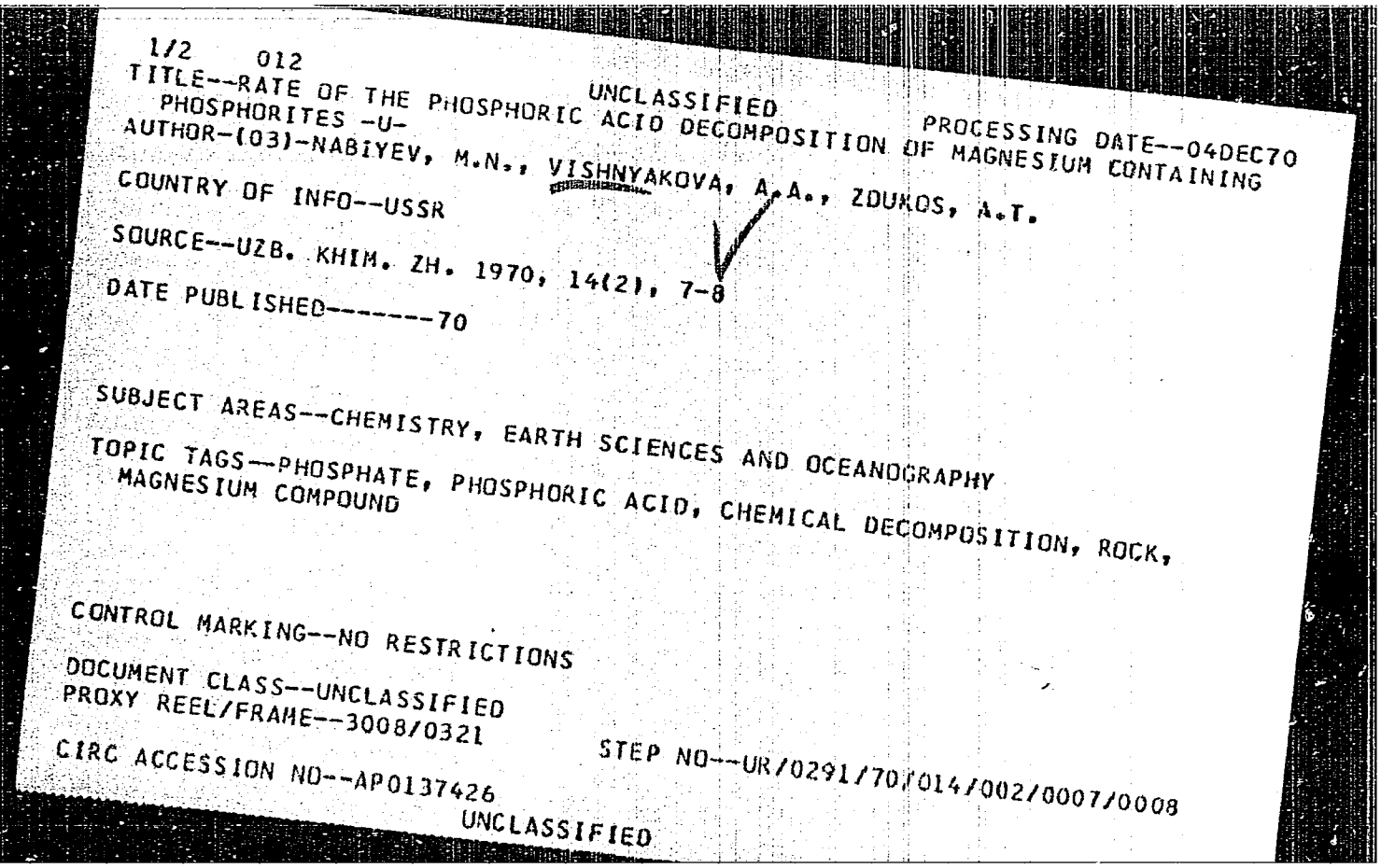

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--RATE OF THE PHOSPHORIC ACID DECOMPOSITION OF MAGNESIUM CONTAINING PHOSPHORITES -U-

AUTHOR-(03)-NABIYEV, M.N., VISHNYAKOVA, A.A., ZDUKOS, A.T.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 7-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--PHOSPHATE, PHOSPHORIC ACID, CHEMICAL DECOMPOSITION, ROCK, MAGNESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0321

CIRC ACCESSION NO--AP0137426 STEP NO--UR/0291/70/014/002/0007/0008

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BETTER UTILIZATION OF THE RAW MATERIAL IN THE PRODUCTION OF DOUBLE SUPERPHOSPHATE BY TREATEMTN OF MG CONTG. PHOSPHATE ROCK CONCS. WITH H SUB3 PO SUB4 WAS STUDIED TO TRY TO ENHANCE THE RATE OF DECOMPN. UNDER MANUFG. CONDITIONS THE DECOMPN. OF THE MG CONTG. SECONDARY PHOSPHATE WAS SMALLER THAN 70PERCENT AND THE REACTION RATE WAS NEGLIGIBLY TIME DEPENDENT. EQUIL. DECOMPN. IS ACHIEVED IN 2-5 MIN AND THEN THE PROCESS IS RAPIDLY SLOWED BY REACTION PRODUCTS FORMING, PROBABLY IMPENETRABLE FILMS ON THE PHOSPHATE GRAINS. THE DESIRED INTENSIFICATION OF DECOMPN. CAN BE ACCOMPLISHED BY AN INCREASE OF THE LIQ. TO SOLID PHASE RATIO WHICH, HOWEVER, ALTERS THE PRODUCTION SCHEME IN PRINCIPLE. THEREFORE, INTRODUCTION OF NO SUB3 PRIME NEGATIVE INTO THE SYSTEM IS PREFERABLE FOR PROMOTING OF THE PROCESS RATE. FACILITY: INST. KHIM., TASHKNET, USSR.

UNCLASSIFIED

Acc. Nr: AP0038101

PRIMARY SOURCE: Fiziologiya Rastenii, 1970, Vol 17, Nr 1, Ref. Code: UR 0326
PP 23-27

ONTOGENETIC CHANGES IN THE RESPIRATORY ACTIVITY OF MITOCHONDRIA IN RICE KERNEL EMBRYOS

I. A. VISHNYAKOVA, N. P. KRASNOOR

Krasnodar Polytechnical Institute

Oxidative phosphorylation of different fractions of mitochondria isolated from rice kernal embryos and variation of the structure of the organoids during ontogenesis is studied. An oval form of mitochondria predominate on the day of fertilization and twenty four hours later. These mitochondria are situated near the nucleus. During this period active oxygen uptake and esterification of mineral phosphorus are observed. After 5 or 6 days of flowering elongated as well as small round mitochondria appear. Their activity is lower. In 10 day old embryos the amount of large elongated mitochondria with constrictions increases. Dumb-bell shaped and twisted mitochondria also appear. By this time the embryo is completely formed and the oxidative phosphorylation rate is minimum. In 18—20 day old embryos the mitochondria are oval-shaped. The amount in the field of view is 5 to 6 times lower than the amount of mitochondria in 24 hour old ovary cells. Phosphorylation is tightly coupled to oxidation in mitochondria of mature embryos.

REEL/FRAME
19731150

02

USSR

VISHNYAKOVA, L. A., Leningrad Scientific Research Institute of Epidemiology and Microbiology imeni Pasteur

"A Study of Antigenic Components of Ornithosis and Psittacosis Pathogens" (Preliminary Communication)

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, p 491

Translation: In order to study the antigenic properties of strains of viruses of ornithosis (6) and psittacosis (3), absorbed hyperimmune sera of guinea pigs were investigated in cross tests by the indirect fluorescent antibody method. The presence of various species-specific antigenic components in the strains of ornithosis and psittacosis pathogens investigated was revealed. Antigenic heterogeneity of the two species as well as the presence of ornithosis cultures having antigenic properties similar to those displayed by some psittacosis strains were established.

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USSR

UDC: 616.24-002-022.6-02:616.988.73-092.9

TOLYBEKOV, A. S., MARGOLINA, F. A., and VISHNYAKOVA, L. A., Laboratory of Pyrogens and Nonspecific Resistance, Division of General Pathology, Laboratory of Infectious Pathology, Division of Pathological Anatomy, Institute of Experimental Medicine, Academy of Medical Sciences USSR, and Division of Especially Dangerous Infections, Leningrad Institute imeni Pasteur

"Morphogenesis of Experimental Ornithosis Pneumonia"

Moscow, Arkhiv Patologii, Vol 32, No 11, 1970, pp 26-29

Abstract: Within 24 hours of intranasal infection of mice with the agent of ornithosis, the virus was found in the alveolar phagocytes, where it multiplied to form microcolonies of elementary particles. The virus was also found in the epithelial cells of the bronchi. The virus-containing cells at first showed no signs of degeneration, and there was no reaction in the adjacent cells. The polymorphonuclear leukocytes reacted only after the virus-filled macrophages were destroyed. They engulfed the viral particles released from the macrophages and then died themselves. The repeated cycles of viral growth in the macrophages and phagocytosis by the polynuclear leukocytes accounts for the protracted course of ornithosis pneumonia.

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VISHNYAKOVA O.N.

Source: JPRS # 59580
23 Oct '73

Hydrometeorology

EFFECT OF THE FLUCTUATIONS OF THE CARBON DIOXIDE CONCENTRATION ON THE THERMAL REGIME OF THE ATMOSPHERE

UDC 551.511

[Article by Doctor of Physical and Mathematical Sciences L. R. Raktinova, Main Geophysics Observatory; Moscow, Meteorologiya i Gidrologiya, No 5, 1973, submitted 15 September 1972, pp 21-31]

The problem of the effect of the CO_2 concentration variations on the temperature of a clear sky was investigated for the stationary zonal schematic of the atmosphere in which the following are considered: the radiation heat fluxes, the macroturbulent heat exchange (horizontal and vertical), the heat of condensation and vaporization, the heat exchange between the surface of the ocean and the lower lying layers. The CO_2 concentration varied from zero to a value five times exceeding the modern volumetric concentration ($u_0 = 0.032$).

The warming effect of the CO_2 under modern conditions is 6.7 K for the warm hemisphere and 6.9 K for the cold hemisphere. The increase in CO_2 concentration by 30% with respect to u_0 corresponds to $\Delta T = 0.3$ K, and an increase by 100% to $\Delta T = 1.3$ K.

For large CO_2 concentrations, the saturation effect arises.

The theoretical problem of estimating the effect arises. Carbon dioxide content in the atmosphere on the temperature comprises two independent parts: calculation of the carbon dioxide concentrations of the variations in fluxes caused by variations of the temperature and calculation of the temperature variations caused by variation of the radiation fluxes.

Investigated only the first part of it. The second part was replaced by approximate estimates of the temperature variations ΔT corresponding to the calculated variations of the radiation heat fluxes. These were the fluxes of

The majority of authors dealing with the solution of this problem have

USSR

UDC 677.494.72

SLATINA, S. D., KIRILENKO, Yu. K., VOL'F, L. A., MEOS, A. I., KLIMENKO, I. B., GRACHEV, V. I., VISHNYAKOVA, T. P., and VLASOVA, I. D., Leningrad Institute of the Textile and Light Industries imeni S. M. Kirov, and Moscow Institute of the Petrochemical and Gas Industries imeni I. M. Gubkin

"Polyvinyl Fabrics Modified With Ferrocene-Containing Compounds"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 446-447

Abstract: Heteroorganic compounds are already widely used as modifiers of chemical fibers, and specific methods are known for imparting desired properties to fibers by the use of silicon- and boron-containing compounds. However, the use of ferrocene-containing compounds in this way has not been described, although these compounds impart a number of valuable properties to polymers, notably resistance to heat and radiation. Ferrocene-containing compounds are of further interest in having possible biological effects, including an effect on blood-formation. Polyvinyl alcohol (PVA) fiber was treated with 1,1-diacetylferrocene-formaldehyde (DAFF) resin, obtained by condensation polymerization with formaldehyde in the presence of Na_2CO_3 in ethanol. The freshly formed fiber was submerged for 1-5 minutes in 5-20% solutions of the resin, then heated at 140-180° for 10-20 minutes.

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SR

SLATINA, S. D., Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 446-447

The fiber became resistant to the effect of hot water. Apparently, in the fiber-resin reaction there was condensation of the PVA hydroxyl groups with the resin methyl groups, so that simple ester bonds were formed between the two polymers; this was confirmed by comparison of the number of hydroxyl groups in the initial fiber, the resin-processed fiber, and the heated resin, and also by infrared data. Graphic data accompany the paper.

2/2

USSR

3

UDC 678.675:542.949

STARKOVA, A. N., SHAPIRO, Ye. I., KIRILENKO, Yu. K., MEOS, A. I., VOL'F, L. A., VISHNYAKOVA, T. P., and ZUMMEROV, S. R., Leningrad Institute of the Textile and Light Industries imeni S. M. Kirov, and Moscow Institute of the Petrochemical and Gas Industries imeni I. M. Gubkin

"Modification of Capron Fiber With Ferrocenaldehyde"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 447-449

Abstract: One of the basic weaknesses of polyamide fibers is low heat-resistance. Chemical methods for remedying this weakness (based mostly on processing with bifunctional compounds and formaldehyde to form intermolecular cross-links in the polymer), but almost nothing has been published on the use of other monoaldehydes which might act as modifying agents to strengthen the resistance of polyamides to thermo-oxidative destruction. The authors studied ferrocenaldehyde (FCA) as a modifier, in the case of the fiber Capron. Phosphoric acid was used to increase reactivity of the aldehyde groups; this acid reacts only slightly with Capron, and not at all with ferrocenaldehyde. Ethanol was the solvent used. It was found that treatment of Capron with FCA substantially increases the heat-resistance of this fiber. This is explained

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USSR

STARKOVA, A. N., et al., Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 447-449

On the basis of decreased concentration of free terminal amino groups during their blocking by an aromatic compound of FCA type, as is suggested by other published data. Graphic data are given on the strength, elongation and thermal properties of Capron, as these are affected by concentrations of FCA and H_3PO_4, and by heating.

12

USSR

UDC 677.4:54-171:539.16.04

STARKOVA, A. N., KIRILENKO, YU. K., SHAPIRO, YE. I., YEOS, A. I., VOL'F, L. A., VISHNYAKOVA, T. P., VLASOVA, I. D., PANCHENKOV, G. M., and KAUCHANSKIY, D. A.

"Radiation Resistant Polyamide Fiber"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 785-786

Abstract: An attempt was made to increase the resistance of polyamide fiber towards γ-radiation by treating it with ferrocene containing compounds. Caprone cord fiber was treated with ferrocenealdehyde (FCA) under following conditions: FCA - 3%; catalyst - 6.5% H_3PO_4; temperature - 75°C; duration - 2 hrs; solvent - ethanol. The fiber obtained was more resistant to thermooxidative destruction than the starting material; after heating for 2 hrs at 200°, the modified fiber retained 60-70% of the initial strength, while the starting material dropped down to 25%. The modified fiber was found to possess high adhesiveness towards the resin; it can be used in production of hoses, conveyor belts, driving belts, etc, performing under radiation.

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USSR

UDC 677.4:54-171:539.16.04

SLATINA, S. D., KIRILENKO, YU. K., VOL'F, L. A., MEOS, A. I., SHAPIRO, YE. I., VISHNYAKOVA, T. P., PANCHENKOV, G. M., VLASOVA, I. D., KAUCHANSKIY, D. A., and MARNAUSOV, V. A.

"Radiation Resistant Polyvinylalcohol Fibers Containing Ferrocene"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 786-787

Abstract: Polyvinylalcohol fibers containing ferrocene were obtained by impregnating a freshly formed or thermostabillized PVA-fibers with 5-18% solution of 1,1'-diacetylferrocenylformaldehyde resin [1,1'-DAFF] in acetone. After the impregnation the material was heated to 140-160°C for 10-20 min, resulting in formation of chemical bonds between the hydroxyl groups of the PVA-fiber and the methylal group of 1,1'-DAFF resin (14-18% of chemically bound 1,1'-DAFF resin). The 1,1'-DAFF resin was obtained by polycondensation of diacetylferrocene with formaldehyde in ethanol at 50°C and in presence of sodium carbonate. The modified fiber was subjected to γ-radiation in presence of air oxygen. The strength and the elastic indicators of the ferrocene containing material were superior in comparison to the starting material.

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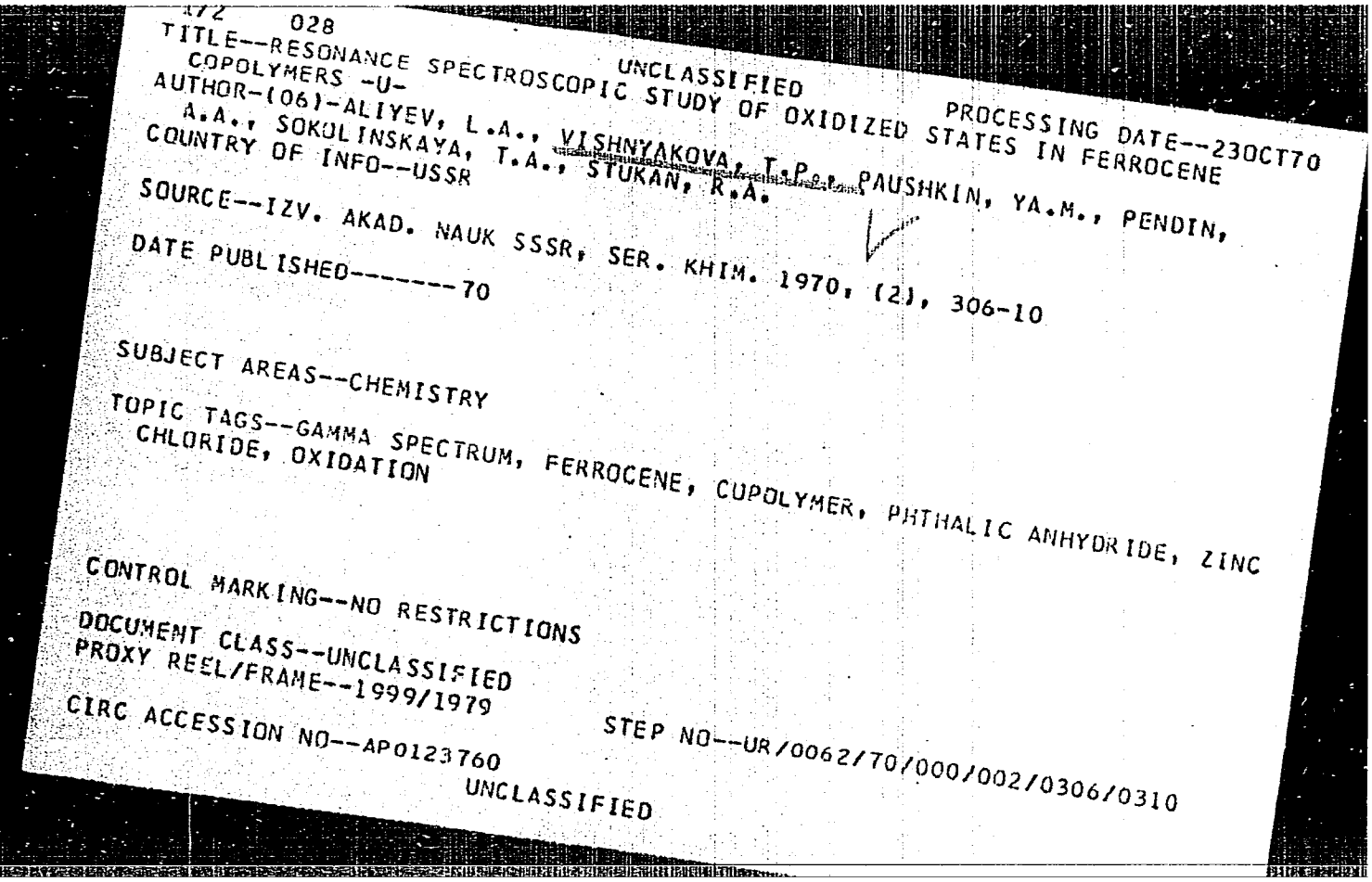


472 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--RESONANCE SPECTROSCOPIC STUDY OF OXIDIZED STATES IN FERROCENE COPOLYMERS -U-

AUTHOR-(06)-ALIYEV, L.A., VISHNYAKOVA, T.P., PAUSHKIN, YA.M., PENDIN, A.A., SOKOLINSKAYA, T.A., STUKAN, R.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 306-10

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAMMA SPECTRUM, FERROCENE, COPOLYMER, PHTHALIC ANHYDRIDE, ZINC CHLORIDE, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1979

CIRC ACCESSION NO--AP0123760 STEP NO--UR/0062/70/000/002/0306/0310

UNCLASSIFIED

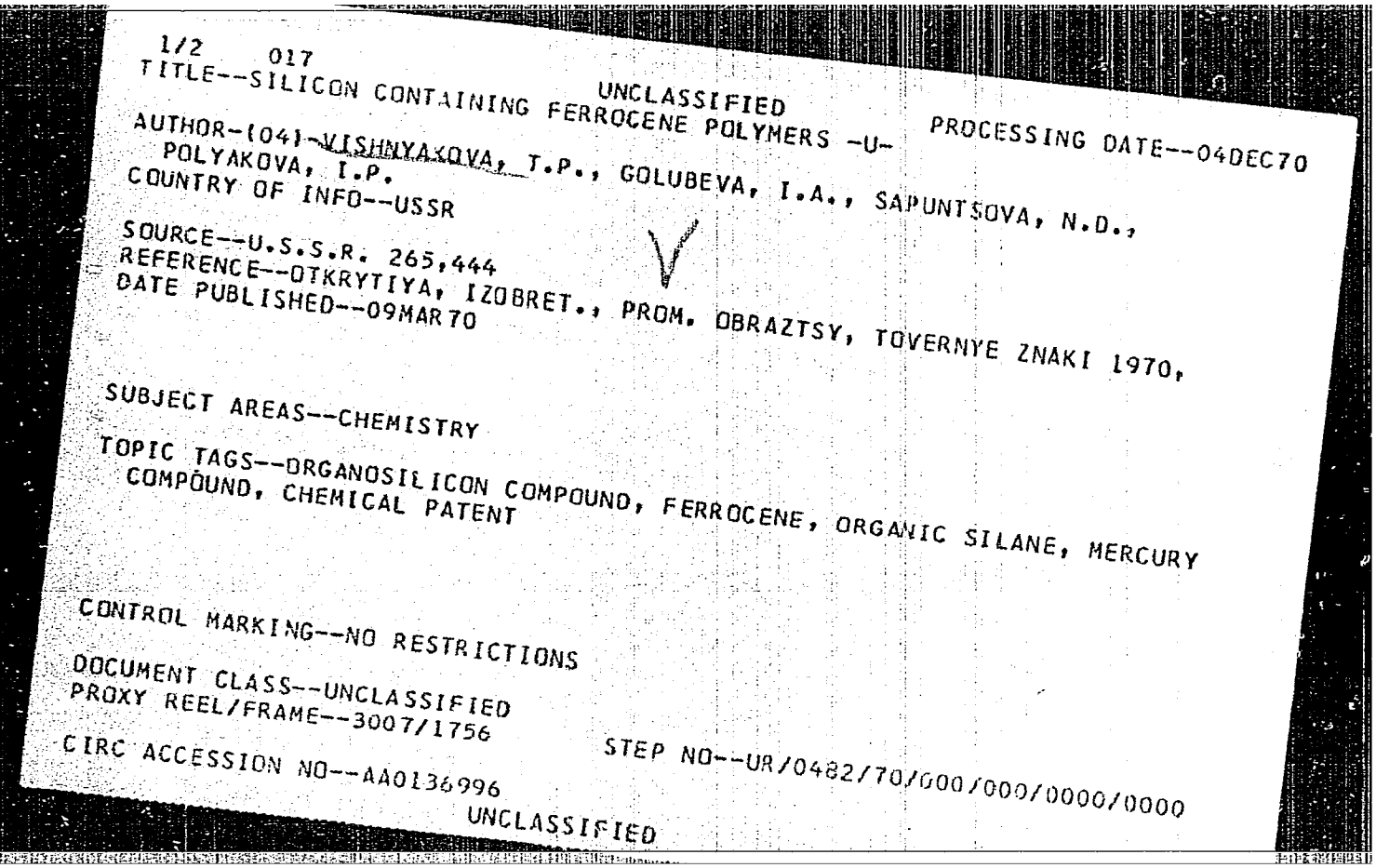
2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0123760 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA RESONANCE SPECTRA OF COPOLYMERS MADE OF FERROCENE AND ETCOME AND PHTHALIC ANHYDRIDE WERE REPORTED IN CONJUNCTION WITH DETN. OF THE AMT. OF THE OXIDIZED FORM OF FE IN SUCH POLYMERS FROM THE AMT. OF OXIDIZING AGENT CONSUMED. THE COPOLYMER WITH MECOET WAS OXIDIZED TO SMALLER THAN OR EQUAL TO 60PERCENT OF ITS FE CONTENT, WHILE THE COPOLYMER WITH PHTHALIC ANHYDRIDE WAS OXIDIZABLE TO 45PERCENT. THE COPOLYMER WITH PHTHALIC ANHYDRIDE HAVING THE MAX. LEVEL OF OXIDN., RELATIVE TO FERROCENE AND WITH MIN. PROGRESS OF SECONDARY REACTIONS CONTAINED SOME 35PERCENT OXIDIZED FE ACCORDING TO SPECTRAL DATA AND 50PERCENT ACCORDING TO CHEM. DETN. THIS COPOLYMER WAS PREPD. WITH A ZNCL SUB2 CATALYST IN 5 HR AT 150DEGREES IN AN AUTOCLAVE; THE SUBSTANCE WAS GENERALLY INSOL. THE OXIDNS. WERE DONE WITH K SUB2 CR SUB2 O SUB7 IN ACOH OR WITH A FECL SUB3 SOLN. IN AQ. KCL.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED



1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SILICON CONTAINING FERROCENE POLYMERS -U-

AUTHOR-(04)-VISHNYAKOVA, T.P., GOLUBEVA, I.A., SAPUNTSOVA, N.D., POLYAKOVA, I.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,444

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

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, FERROCENE, ORGANIC SILANE, MERCURY COMPOUND, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

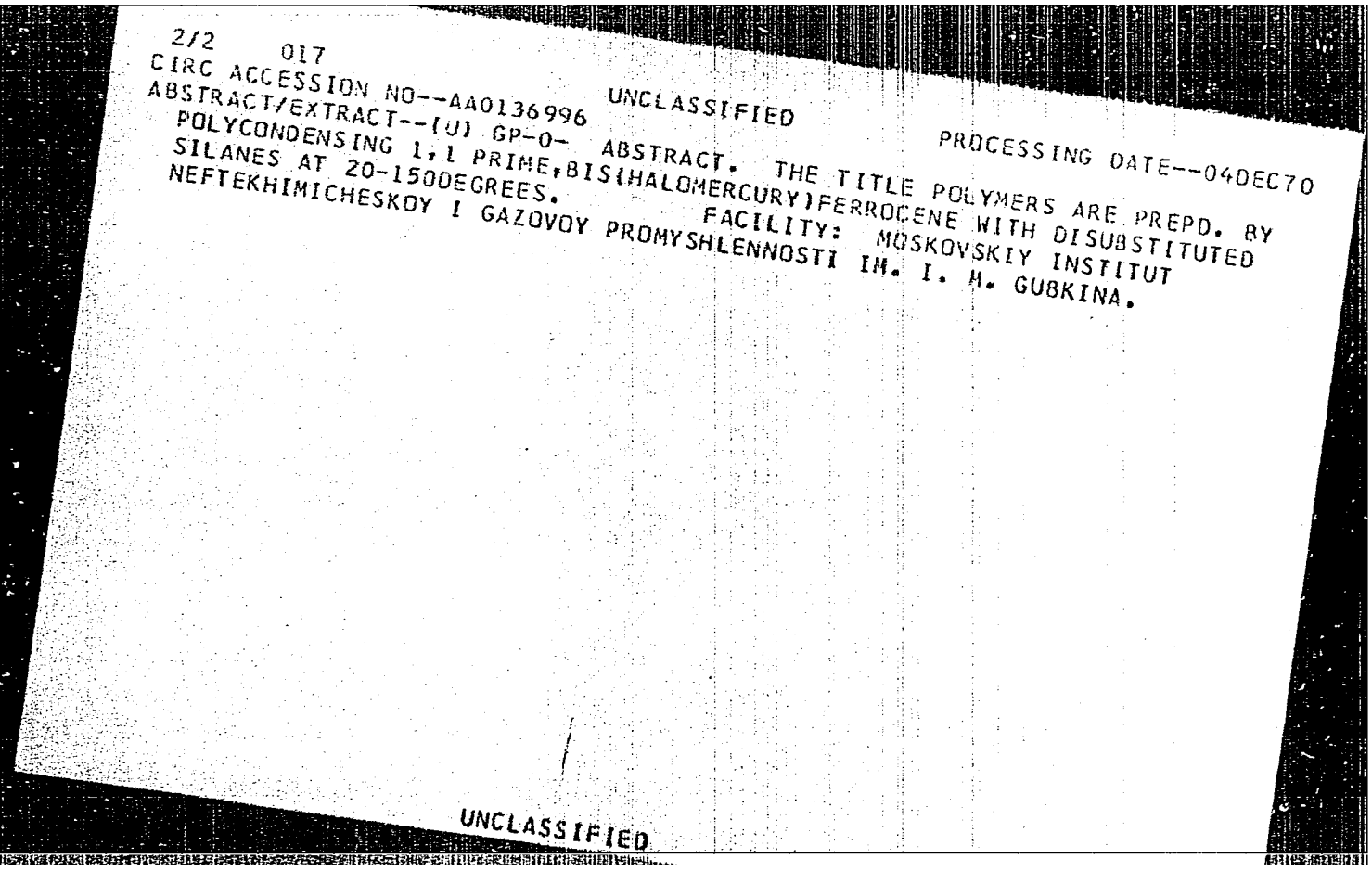
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1756

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

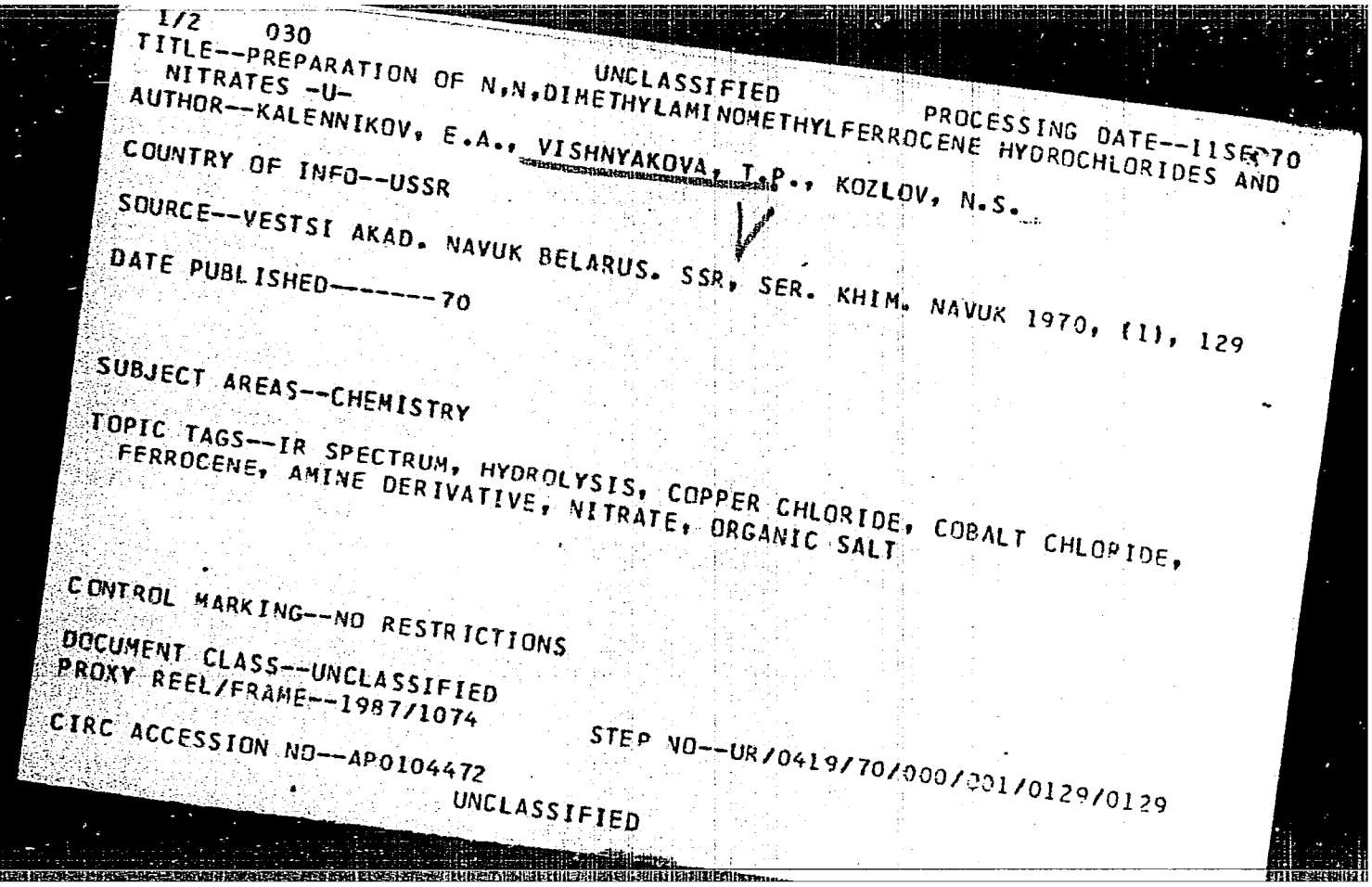
CIRC ACCESSION NO--AA0136996

UNCLASSIFIED



2/2 017 UNCLASSIFIED
CIRC ACCESSION NO--AA0136996 PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE POLYMERS ARE PREPD. BY POLYCONDENSING 1,1 PRIME,BIS(HALOMERCURY)FERROCENE WITH DISUBSTITUTED SILANES AT 20-150DEGREES.
FACILITY: MOSKOVSKIY INSTITUT NEFTEKHIMICHESKOY I GAZOVOY PROMYSHLENNOSTI IM. I. M. GUBKINA.

UNCLASSIFIED



1/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PREPARATION OF N,N,DIMETHYLAMINOMETHYLFERROCENE HYDROCHLORIDES AND NITRATES -U-

AUTHOR--KALENNIKOV, E.A., VISHNYAKOVA, T.P., KOZLOV, N.S.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 129

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, HYDROLYSIS, COPPER CHLORIDE, COBALT CHLORIDE, FERROCENE, AMINE DERIVATIVE, NITRATE, ORGANIC SALT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1074

CIRC ACCESSION NO--AP0104472 STEP NO--UR/0419/70/000/001/0129/0129

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 5 G N,N,DIMETHYLAMINOMETHYLFERROCENE (I) IN CH SUB2 CL SUB2 WITH 14.1 ML 15PERCENT HCL GAVE FROM THE ORG. LAYER 90-5PERCENT HCL SALT. WHILE CONCD. HNO SUB3 DESTROYS I, 15PERCENT HNO SUB3 FORMED ITS NITRATE IN 90-5PERCENT YIELD. THESE SALTS WERE ALSO FORMED FROM REACTION OF I WITH AQ. SALTS OF CO AND CU, PROBABLY OWING TO INTERMEDIATE HYDROLYSIS OF CU OR CO CHLORIDES AND NITRATES, RESP. THE YIELDS WERE 90-5PERCENT. IR SPECTRAL DATA WERE GIVEN.

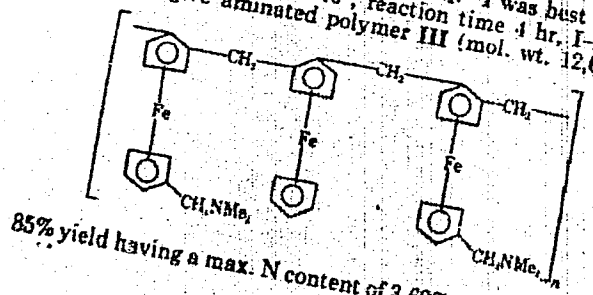
UNCLASSIFIED

Acc. Nr: AP0052505

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: 4R0460

101142q Amination of poly(methylene-1,2-ferrocenylene). Kalennikov, E. A.; Vishnyakova, T. P. (Inst. Neftekhim. Gazov. Prom. im. Gubkina, Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 44–6 (Russ). The title polymer (I) was aminated with $Me_2NCH_2NMe_2$ in AcOH, $Me_2NH.HCl$ in C_6H_6, and $Me_2NCH_2NMe_2.2AlCl_3$ (II) in CH_2Cl_2. I was best aminated with II (optimum conditions 40°, reaction time 4 hr, I–II molar ratio = 1:1) to give aminated polymer III (mol. wt. 12,000–16,000) in

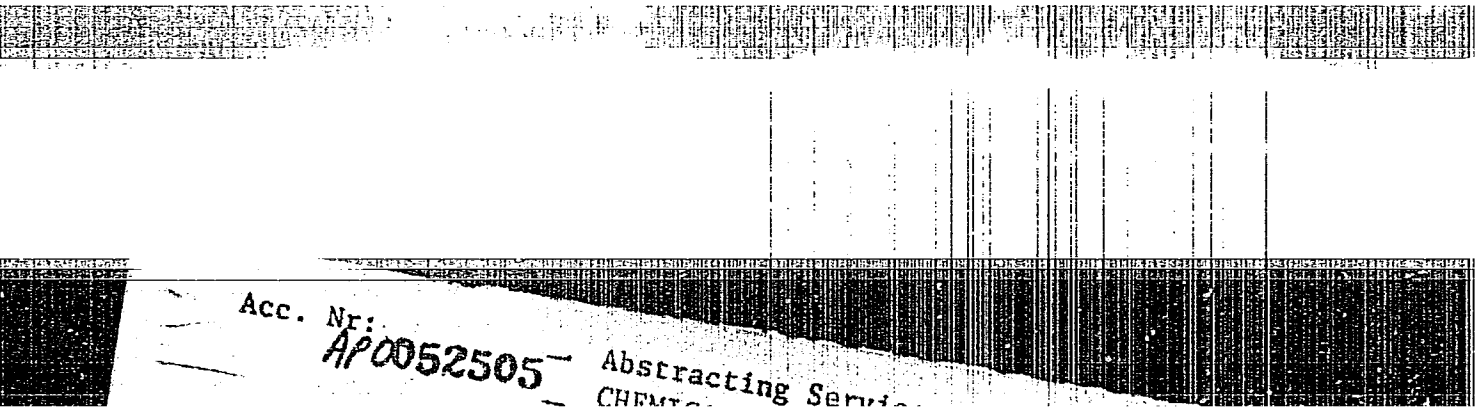


(III)

85% yield having a max. N content of 3.69%.

CKJR

REEL/FRAME 19821146



UNCLASSIFIED

1/2 025 PROCESSING DATE--11SEP70

TITLE--MAGNETIC AND ELECTRIC HYPERFINE INTERACTIONS OF FE PRIME57 NUCLEI IN VANADIUM AND SILICON GARNETS -U-

AUTHOR--LYUBUTIN, I.S., BELYAYEV, L.M., VISHNYAKOV, YU.S., DMITRIYEVA, T.V., DODOKIN, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZAKI, 1970, VOL 58, NR 4, PP 1204-1210

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--VANADIUM, SILICON, GARNET, MOSSBAUER EFFECT, IRON COMPOUND, ELECTRIC FIELD, MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0056/70/058/004/1204/1210

PROXY REEL/FRAME--1988/0989

[illegible] ACCESSION NO--AP0105853

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOSSBOUER EFFECTS FOR FE PRIME 57 NUCLEI IN THE SUBSTITUTED GARNET SYSTEMS Y SUB3 MINUS X CA SUBX FE SUB5 MINUS X SI SUBX O SUB12 WITH O LESS THAN OR EQUAL TO X LESS THAN OR EQUAL TO 2.0 AND Y SUB3 MINUS 2X CA SUB2X FE SUB5 MINUS X V SUBX O SUB12 WITH O LESS THAN OR EQUAL TO X LESS THAN OR EQUAL TO 1.5 IS INVESTIGATED AT TEMPERATURES BETWEEN 78 AND 600DEGREESK. IT IS FOUND THAT THE EFFECTIVE MAGNETIC FIELDS H SUBEFF IN THE ALPHA-SUBLATTICE OF THE VANADIUM GARNETS IS LOWER THAN THE CORRESPONDING FIELDS IN SILICON GARNETS FOR EQUAL REDUCED TEMPERATURES T-THETA. SUBSTITUTION LEADS TO A STRONG GROWTH OF THE ELECTRIC FIELD GRADIENT IN THE ALPHA-SUBLATTICES OF VANADIUM AS WELL AS SILICON GARNETS, THE GROWTH BEING MORE PRONOUNCED IN THE VANADIUM GARNETS. IT IS ALSO FOUND THAT WITH GROWTH OF X THE MAGNITUDE OF THE ISOMER SHIFT IN THE ALPHA-SUBLATTICE DECREASES. THE EFFECTS CAN BE EXPLAINED BY A COVALENCE ADMIXTURE TO THE IONIC CHEMICAL BOND BETWEEN IRON AND OXYGEN IN THE ALPHA-SITES OF THE VANADIUM GARNETS.

UNCLASSIFIED

USSR

UDC 621.382.002:539.234:539.216.22

PAVLOVA, Z. V., VISHNYAKOVA, Z. P., VINOGRADOV, G. B., and VISHNYAKOV, B. A.

"Production of Dielectric Films of Titanium Dioxide"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2207-2208

Abstract: TiO_2 films were produced by the method of pyrolysis of organotitanium compounds. The structure and composition of the films produced were tested by an electronographic method. Films were produced by pyrolysis of tetrabutoxytitanium (TBOT) in an atmosphere of nitrogen at 350-450°C. Substrates used were Ge, Si, and NaCl. The quality of the film is greatly influenced by the cleanliness of the initial surface. Dust and dirt on the substrate produce pores and defects in the film. The best properties were those of TiO_2 films grown at a substrate temperature of 350-400° C, t_{ev} = 120°C with a nitrogen flow rate of 80 l/hr.

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UDC 621.357.7:669.38

USSR

STYAPONAVICHYUS, A. and VISHOMIRSKIS, R.

"Bright Copper-Plating, Chapter 12"

Blestyashchiye elektrolitich. pokrytiya (Bright Electrolytic Coatings), Vil'nyus, "Mintis," 1969, pp 358-430 (from RZh-Khimiya, No 1(II), 10 Jan 70, Abstract No 1 L314)

Translation: The following problems are examined: brief characteristics of the metal; advances in electrolytic copper-plating (Cpp); comparative characteristics of Cpp electrolytes; Cu as a sublayer prior to bright nickel-plating; sulfate electrolytes of bright Cpp (principal brighteners); mechanism of electrodeposition of matte and bright deposits from sulfate solutions; and properties of deposits. The mechanism of action of organic alcohols and benzotriazol in the formation of bright Cu deposits is examined. A discussion is presented of structural features of bright Cu deposits obtained from electrolytes containing a variety of organic additives. Protracted tests under production conditions permit recommendation of an electrolyte for bright Cpp with the following composition (in grams/liter): $CuSO_4 \cdot 5H_2O$ 180-250, H_2SO_4 30-50, HCl 0.01-0.02, di-(paramethoxyphenylmethinol)-thiourea or di-(meta-methoxy-orthooxyphenylmethinol)-thiourea 0.1-0.3, phenylcarboxyethylthiourea 0.002-0.01, and a mixture of diethylamine and oxalic acid 0.04-

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USSR

STYAPONAVICHYUS, A and VISHOMIRSKIS, R., Blestyashchiye elektrolitich. pokrytiya, 1969, pp 358-430 (from RZh-Khimiya, No 1(II), 10 Jan 70, Abstract No 1 L314)

0.1. Also considered are cyanide electrolytes of bright Cpp (principal brighteners); an analysis of the electrolytes; mechanism of electrodeposition of matte and bright Cu deposits from cyanide solutions; and mechanical properties of Cu coatings. It is shown that considerable cathodic polarization of copper in a cyanide solution is caused by concentration and chemical restrictions. It is assumed that the main cause of chemical polarization is formation on the cathode of a passive film with composition as follows: $Me_x(CN)_y(OH)_x$. Some experimental data are presented dealing with the effect of brighteners on the structure of Cu deposits and cathodic polarization. Prospects for improving the process of bright Cpp are discussed. Bibliography: 407 entries.

E. Z. Napukh

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Materials

UDC 534.232.46.8

USSR

VISKOV, A.S., VENEVTSEV, YU. N.

"Piezoceramic Material"

USSR Author's Certificate No 251631, filed 21 Mar 68, published 3 Feb 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A303P)

Translation: A piezoceramic material is proposed, based on a solid solution of lead titinate. In order to expand the operating range of the temperature and to increase the mechanical quality, it contains $(100-x)PbTiO_3--xBaNb_4/5O_3$, and also the admixture 0.1--0.2 $xMnO_2$, 0.1 xNiO with x = 3--8 mol.%.

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USSR

UDC 621.385.632(088.8)

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 519.2

USSR

VISKOV, O. V., ISMAILOV, A. I.

"Queueing System with a Limited Queue"

Nauch. tr. Tashkent. un-t (Scientific Works of Tashkent University), 1972, vyp. 402, pp 17-29 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V77)

Translation: A study was made of the nonstationary probability distribution of the states of a linear Markov process describing the functioning of the system M|G|1|n (with a limited queue). The recurrent relations are found which relate the probability of the states of the systems to various values of the maximum length of the queue. The characterization of the system M|M|1|n in the class of systems of the type M|M|1|n is indicated.

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PHOTOMETRIC MICRODETERMINATION OF NONPROTE IN NITROGEN -U-

AUTHOR-(03)-SERBINA, G.N., LITVINENKO, G.V., VISHNEYSKAYA, I.G.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1), 31-2

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--MICROCHEMICAL ANALYSIS, BLOOD SERUM, NITROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0214 STEP NO--UR/9099/70/000/001/0031/0032

CIRC ACCESSION NO--AP0119210

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODIFICATION OF THE HYPOBROMITE METHOD FOR THE MICRODETN. OF NONPROTEIN N IS DESCRIBED. BLOOD SERUM (0.02 ML) IS DEPROTEINIZED WITH 1 ML OF THE PPTG. MIXT. CONTG. TUNGSTIC ACID. AFTER CENTRIFUGATION 1 ML OF THE SUPERNATANT IS MIXED WITH 0.5 ML OF THE HYPOBROMITE SOLN. AFTER 3 MIN 0.5 ML OF 5PERCENT KI AND 0.5 ML OF 1N HCL ARE ADDED. AFTER 10 MIN THE ABSORBANCE IS DETD. AT 400 NM AGAINST H SUB2 O. THIS METHOD WAS USED FOR 20,000 ANALYSES DURING 2 YEARS AND ITS RESULTS AGREE FAVORABLY WITH THE OTHER HYPOBROMITE METHODS. FACILITY: GL. KLIN. VOEN. GOSP. IM. BURDENKO, MOSCOW, USSR.

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