"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 539.374

PROSKURINA, V. M., LUKASH, P. A.

"Calculation of Hollow Shells of Nonlinearly Elastic Materials Under Small Deflections"

Sb. tr. Mosk. inzh.-stroit. in-t (Collection of Works of Moscow Structural Engineering Institute), 1970, No. 84, pp 11-17 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V450)

Translation: Assuming that the material of the shell conforms to the equations of the theory of small elastic-plastic deformations under the polynomial simplification

$$\sigma_i = Ae_i + Be_i^2 + Ce_i^3 + \ldots$$

and using statistical and kinematic hypotheses of the geometrically linear theory of thin hollow shells, the authors compile an expression for the frictional of the total energy of the shell. On this basis and using the Ritz method for two variable parameters, the authors make an approximate examination of the deformation of a hollow spherical shell loaded by pressure that is square in plan and supported along a contour. V. I. Rozenblyum.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

MAKHAMATOV, A. , PROSKUROV, V.

"Composition and Structure of the Software of the Computer of an ACS"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 51, Tashkent, 1972, pp 55-62 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V669, by the authors).

Translation: The basic statements are formulated which should be used as a basis for the creatio of the software of a computer, particularly one of the Minsk family, used as the hardware in an automatic planning and control system. The experience of Soviet scientists in the creation of software for computers and the technical parameters of the parameters which are significant for programming are presented.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 616.981.25:547.722.54:576.858.97-07

PROSKUROV, V. A., Odessa Medical Institute

"Effectiveness of Furazolidone and Bacteriophage in the Treatment of Staphylococcal Diseases"

Kiev, Vrachebnoye Delo, No 3, 1972, pp 144-147

Abstract: Furazolidone along or in combination with antibiotics was effective in 62% of patients (52 were treated) against sepsis, pneumonia, enterocolitis, cholecystis, and other diseases cuased by Staphylococcus. The therapeutic effectiveness of polybacteriophage prepared from many strains of bacteria was studied on 278 patients afflicted with various diseases with staphylococcal complications. The bacteriophage was effective in 87% of cases in doses not exceeding 20-40 ml. There were no side effects from the bacteriophage, with the exception of a slight rise in temperature in some patients, which is attributed to the intoxication caused by lysis of Staphylococci under the effect of bacteriophage. In many instances the bacteriophage was effective where other preparations failed. One of its advantages is its ability to be combined with antibiotics and it always prevents the development of dis-bacteriolysis. Details of methods of applying the bacteriophage are given.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ANTIBIOTIC SENSITIVITY OF STAPHYLOCOCCI ISOLATED FROM BLOOD IN CASES WITH NONSPECIFIC BACTERIEMIA AND SEPSIS -U-

AUTHOR-(02)-PROSKUROV, V.A., STROKATOVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 532-534

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC RESISTANCE, PENICILLIN, STAPHYLOCOCCUS, KANAMYCIN, OLEANDOMYCIN/(U)LEUCOMYCIN ANTIBIOTIC, (U)EPHICILLIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1862 STEP NO--UR/0297/70/015/006/0532/0534

CIRC ACCESSION NO--AP0125473

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 014

CIRC ACCESSION NO--AP0125473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STAPHYLOCOCCAL STRAINS ISOLATED FROM BLOOD OF VARIOUS PATIENTS WERE RESISTANT #81.6PERCENT) TO THE MOST WIDELY USED ANTIBIOTICS. PENICILLIN RESISTANCE WAS REGISTERED MAINLY IN TOXIGENIC STAPHYLOCOCCI. RESISTANCE TO LEUCOMYCIN, EPHICILLIN, KANAMYCIN, OLEANDOMYCIN WAS RARE AMONG THE ISOLATES. FACILITY: N. I. PIROGOV ODESSA MEDICAL INSTITUTE.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 025

TITLE--PROPHYLAXIS OF STAPHYLOCOCCAL COMPLICATIONS IN THE BURNED -U-

AUTHOR-(03)-PROSKUROV, V.A., KALASHNIKOV, A.P., ADAMENKO, N.N.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 26-28

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THERMAL BURN, STAPHYLOCOCCUS, PROPHYLAXIS, ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1048 STEP NO--UR/0177/70/000/003/0026/0028

CIRC ACCESSION NO--AP0134748

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 025

CIRC ACCESSION NO--AP0134748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE PRESENT TIME, ON THE BACKGROUND OF THE GROWTH OF STAPHYLOCOCCAL COMPLICATIONS EVERYWHERE, A ACONSIDERABLE INCREASE OF SUPPRATIONS OF BURNS WOUNDS IS NOTED (E. LOWBURG, I. BABB, AND V. BROWN, 1964). THIS CAN BE EXPLAINED TO A GREAT DEGREE BY LOWERING OF THE THERAPEUTIC EFFECT OF ANTIBIOTICS IN CONNECTION WITH THE EMERGENCE AND RAPID SPREAD OF STRAINS OF STAPHYLOCOCCI RESISTANT TO THEM. IT SUFFICES TO SAY THAT 78-97PERCENT OF THE STRAINS OF STAPHYLOCOCCI ISOLATED AT THE PRESENT TIME ARE RESISTNAT TO ANTIBIOTICS USED IN THE CLINIC (K. VUSKOVICH, 1966; N. G. ROGOL', 1967; V. I. GLADYSH, 1967; T. S. ZABALUYEVA AND V. G. OOROFECHUK, 1968, ETC). THIS DICTATES THE NEED TO FIND NEW AND EFFECTIVE METHODS OF COMBATING WOUND INFECTION, ESPECIALLY UNDER THE CONDITIONS OF BURN DIVISIONS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Acc. Nr: AP0043921 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 104-107

# APPLICATION OF STAPHYLOCOCCUS BACTERIOPHAGE FOR THERAPEUTIC AND PROPHYLACTIC PURPOSE

V. A. Proskurov

Staphylococcus bacteriophage was used in 148 patients with various localization of staphylococcus infection (cholecystitis, enterocolitis, peritonitis, endometritis, sepsis, pleurisy, sinusitis, otitis, conjunctivitis, osteomyelitis, complicated wounds and thermic burns). A favourable therapeutic effect was obtained in 120 of 148 patients (81%).

Patients unsuccessfully treated with antibiotics and hormonal preparations for chronic staphylococcus affections (cholecystitis, sinusitis, peritonitis, etc.) completely recovered or improved considerably after bacteriophage therapy.

Bacteriophage treatment of carriers among the personnel of maternity hospitals proved to be effective in 46±9% (p±m) of the cases. Probability of differences with control group was authentic ($p<0.05$).

The use of bacteriophage for therapeutic and prophylactic purpose was not accompanied by unfavourable side-effects.

1/1 6 DI

REEL/FRAME 19770347

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Acc. Nr.: AP0030922 Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 126-129

# ROLE OF STAPHYLOCOCCI IN THE DEVELOPMENT AND COURSE OF ERYSIPELAS

V. A. Proskurov (Odessa)

Analysing 61 patients suffering of erysipelas with staphylococcal complications the author stresses general increase of diseases caused by antibioticoresistant staphylococcal strains.

The etiological role of the staphylococcus in the development of erysipelas was verified bacteriologically and allergologically.

A favourable result was received with inclusion in the treatment of native staphylococcal anatoxine. The use of anatoxine did not cause any unfavourable side-effects.

The use of anatoxine is recommended in all patients with erysipelas for the prophylaxis of staphylococcal complications.

6 MK

1/1

REEL/FRAME

19690941

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STABILITY OF PERIODIC SOLUTIONS OF QUASILINEAR AUTONOMOUS SYSTEMS WITH SEVERAL DEGREES OF FREEDOM -U-

AUTHOR--PROSKURYAKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MATEMATIKA I MEKHANIKA, VOL. 34, JAN.-FEB, 1970, P. 105-114

DATE PUBLISHED--------70

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

TOPIC TAGS--CONTROL SYSTEM STABILITY, ASYMPTOTIC PROPERTY, DIFFERENTIAL EQUATION SYSTEM, VARIATIONAL METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1452 STEP NO--UR/0040/70/034/000/0105/0114

CIRC ACCESSION NO--AP0106208

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106208

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULATION OF SUFFICIENT CONDITIONS FOR THE ASYMPTOTIC STABILITY OF QUASI LINEAR AUTONOMOUS SYSTEMS COMPOSED OF SECOND ORDER EQUATIONS. THE GENERATING SYSTEMS CAN HAVE SIMPLE, MULTIPLE, MUTUALLY COMMENSURABLE, PARTIALLY NONCOMMENSURABLE, AND NULL FREQUENCIES. THE STUDY IS CONDUCTED WITH THE AID OF VARIATIONAL EQUATIONS AT SUFFICIENTLY LOW VALUES OF THE SMALL PARAMETER.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE TRACTIVE FORCE IN THE SHAPING OF STEEL TUBES IN A FUNNEL DIE -U-

AUTHOR-(04)-SHVEYKIN, V.V., GRABARNIK, L.M., PROSKURYAKOV, B.I., PICHURIN, I.I.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V. U. Z., CHERNAYA MET., 1970, (2), 66-71

DATE PUBLISHED--------70

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

TOPIC TAGS--STEEL MANUFACTURING PROCESS, ROLLING MILL, FRICTION COEFFICIENT, DIE FORGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0117 STEP NO--UR/0148/70/000/002/0066/0071

CIRC ACCESSION NO--AP0123889

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATHEMATICAL ANALYSIS OF THE FORCES INVOLVED IN THE SHAPING OF STEEL TUBES IN A SPECIAL DIE IS PRESENTED, WITH SPECIAL REF. TO THE TRACTIVE FORCES REQUIRED AND THE COMPONENTS OF WHICH THESE ARE MADE UP. THE TOTAL TRACTIVE FORCE INCLUDES THE FORCE REQUIRED TO DEFORM THE MATERIAL PASSING INTO THE DIE, THE FORCE REQUIRED TO OVERCOME FRICTION IN THE LATTER, AND THE FORCES ASSOCIATED WITH THE PASSAGE OF THE TUBE THROUGH THE PULLING ROLLS. THE ADVANTAGES OF THE 'FUNNEL' METHOD OVER CONVENTIONAL TECHNIQUES ARE CONSIDERED.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC: 531.01

PROSKURYAKOV, G.M. and PLOTNIKOV, P.K.

"Dynamics of Two-Degree Gyroscope Accounting for Elastic-Damping Properties of the Structure"

Saratov, Nauch. Tr. Saratov. Politekhn. In-t (Transactions of Saratov Polytechnic Institute), 1972, vyp 55, pp 69-74 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2A130 by N.P. Stepanenko)

Translation: The linearized approach of the problem on motion of two-degree gyroscope is investigated, taking into account the elasticity of its elements. Assuming a constant speed of the gyromotor, it is shown that the gyroscope dynamics are characterized with sufficient accuracy by the dynamics of the integrating aperiodic coupling with proper selection of its parameters. Approximate formula for the determination of these parameters are obtained.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE INTERACTION OF PEPSIN AND CHEMOTRYPSINOGEN -U-

AUTHOR--PROSKURYAKOV, M.T.

COUNTRY OF INFO--USSR

SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3 PP 19-20

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPSIN, ENZYME ACTIVITY, DIGESTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0860 STEP NO--UR/0219/70/069/003/0019/0020

CIRC ACCESSION NO--AP0052294

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS STAGED IN VITRO THE AUTHOR ESTABLISHED THAT IN THE INTERACTION OF PEPSIN AND CHEMOTRYPSINOGEN THE ACTIVATION OF THE LATTER IN PH 2, 5, 8 DOES NOT OCCUR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

EQUIPMENT
Measuring, Testing, Calibrating

USSR

UDC 551.510.62:539.293

TAGANOV, O. K., PROSKURYAKOV, M. V., KHAR'YUZOV, V. A. and FILIPPOV, O. K.

"The Determination of Optical Constants of Semiconductor Glasses in the Spectral Region 1.1 to 1.6 mm"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 2, Feb 73, pp 62-63

Abstract: A method for experimentally determining the optical constants of semiconductor glasses in the submilimeter region of the spectrum, using a prism at minimum deflection for determining the refraction coefficient, a plane-parallel plate for the absorption coefficient, a goniospectrophotometer, an optical acoustic detector and a reverse wave lamp is presented. The results obtained make it possible to calculate the absorption coefficient and the refraction. As an example of the use of this method the results of the measurement of a sample of chalcogenite glass are presented.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 547.217.4:542.943:542.976

NOVOSELOVA, L. V., ZUBTSOVA, L. I., BABEL', V. G., and PROSKURYAKOV, V. A.

"Study of the Conversions of Dialkylphosphites in Synergistic Mixtures with MB-1 in the Process of Inhibited Oxidation of Decane"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 6, Jun 73, pp 1329-1333

Abstract: An attempt has been made to investigate the chemical conversions of diisopropylphosphite [DIP] and diisoctylphosphite [DOP] in the process of inhibited oxidation of decane at 175° by means of IR and PMR spectroscopy. On the basis of spectral data it has been shown that the hydrocarbon portion of DIP and DOP are eliminated in pure state and in the hydrocarbon medium (175°) with the formation of phosphorus acid. An effect of synergism has been established for the composition of phosphorus acid with 4,4'-methylbis-2,6-di-tert-butylphenol [MB-1] during the process of inhibited oxidation of white oil, the reaction being carried out at 175°, with total concentration of 0.005 g-mole/1.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 665.4:542.943

NOVOSELOVA, L. V., BABEL', V. G., ZAYCHENKO, L. P., PROSKURYAKOV, V. A.

"Synergism of Mixtures of Alkylphenol and Phosphonate Antioxidants in the Process of Oxidation of White Paraffin Oil"

Leningrad, Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71, pp 2349-2352

Abstract: This paper deals with new antioxidants, their mixtures and synergistic properties. Alkylphenols are the basic antioxidants; thiocarbonates, sulfides, phosphites and phosphonates are the synergists which enhance the inhibiting action of alkylphenols. An attempt to explain the mechanism and factors responsible for the synergistic effect is described here. The experiment involved dialkylphosphonate (as the synergist) and alkylphenol (antioxidant). Mixtures of both were tested on white paraffin oil as a readily oxidizable medium. The total concentration of the inhibitors in the oil was constant and equal to 0.005 mol/l. Only the "phosphite-phenol" ratio was varied. Binary diagrams were plotted on the basis of the test data for

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

NOVOSELOVA, L. V., et al, Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71, pp 2349-2352

each individual component and of the phosphite-phenol mixtures as functions of concentration. The results show ionol:MB-1 in ratios of 0.001:0.004 and 0.002:0.003 to have the highest synergistic effect. The maximum induction period exceeded that of the most effective inhibitor, at a concentration of the latter equal to the total, by a factor of 2.0-2.5. When used independently, the antioxidants were not very effective. In mixtures with thiophosphonate they inhibit oxygen absorption, with the effect directly proportional to the content of thiophosphonate. Curves are shown to demonstrate the kinetics of oxygen absorption during oxidation of paraffin oil in the presence of different mixtures of inhibitors at 175°C; the induction period of paraffin oil oxidation as a function of phosphonate: ionol molar ratio.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UNCLASSIFIED

1/2 017 PROCESSING DATE--11SEP70

TITLE--LIQUID PHASE OXIDATION OF ALIPHATIC KETONES -U-

AUTHOR--RIF, I.I., POTEKHIN, V.M., PROSKURYAKOV, V.A., MIKHEYENKO, T.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 372-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION, ALIPHATIC KETONE, THERMAL DECOMPOSITION, ORGANOLEAD COMPOUND, ACETONE, CARBOXYLIC ACID, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1217 STEP NO--UR/0080/70/043/002/0372/0377

CIRC ACCESSION NO--AP0104583

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION WAS INVESTIGATED ON δ,UNDECANONE (I) OBTAINED BY THERMAL DECOMPN. OF PB CAPROATE. I (50 ML) WAS OXIDIZED WITH AIR (CONTINUOUS FLOW, 0.5 L.-MIN.) 3 HR AT 140DEGREES-18 KG-CM PRIME2 TO GIVE A MIXT. OF MONOCARBOXYLIC ACIDS (FROM ACETIC TO CAPROIC), GAMMA,METHYLBUTYROLACTONE, GAMMA,ETHYLBUTYROLACTONE, 3,6 AND 2,6,UNDECANEDIONES, GAMMA,OXOVALERIC, AND GAMMA AND DELTA,OXOCAPROIC ACIDS. THE PRESENCE OF THESE COMPDS. PROVES THAT THE REMOTE (FROM C:O) CH SUB2 GROUPS ARE ATTACHED BY O, CONTRARY TO THE OPINION OF EARLIER AUTHORS STATING THAT IN THE OXIDN. OF THE ALIPHATIC KETONES, ONLY THE CH SUB2 NEXT TO C:O IS OXIDIZED (ALPHA,MECHANISM). NO BETA,DIKETONES WERE FOUND IN THE PRODUCT; THEY ARE FORMED BUT UNDERGO OXIDATIVE DECOMPN.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC: 621.762.8(088.8)

PROSKURYAKOV, Yu. G., SAYKO, I. B., FEDOTOV, V. I.

"Method of Saturation of Metal Ceramic Products"

USSR Author's Certificate Number 358088, Filed 19/10/70, Published 26/12/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G407P).

Translation: A method is suggested for saturation of metal ceramic products with liquid, differing in that in order to increase the degree of saturation, the products are saturated during the process of standardization.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 621.787

PROSKURYAKOV, YU. G., Doctor of Technical Sciences, Professor

Moscow, Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov (Technology of Calibration-Hardening and Form-Shaping Treatment of Metals), Izd-vo "Mashinostroyeniye," 1971, 208 pp

Translation of Foreword: It has been established from numerous investigations that the surface condition of machine parts determines to a considerable extent the wearing qualities, strength, corrosion resistance, and other operational properties of machines. Of the technological methods for improving the surface condition, the methods of final cold treatment of parts with calibration-hardening instruments are the most progressive. Nowadays, the following methods of mechanical surface hardening of metals are widely used: rolling and unrolling with rolls or balls, rolling between rolls, expanding by mandrel of cylindrical and section-shaped openings, centrifugal ball working, processing with mechanical brushes, and the like. Also widely used are form-shaping processes of cold treatment of complex surfaces with simultaneous surface layer hardening of the metal, in particular: thread

1/7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp

rolling, final drawing of shaped profiles, rolling low-module teeth of gear wheels, slots, rifflings and signs, rotation cogging, and the like. These processes, which also are based on the principle of interaction and surface rolling with a precision form-shaping instrument, guarantee a high precision of calibration and final treatment of parts. A classification is given of the principal methods of calibration-hardening and form-shaping treatments of metals on the basis of an analysis of stress-strain conditions of the metal in the contact zone with the working instrument. Principal technological systems of calibration-hardening and form-shaping treatment of metal are discussed. Constructions and calculations of typical instruments, appliances, and technological equipment are presented and the effect of the quality of hardened surfaces on operational characteristics of machine parts is demonstrated. On the basis of generalized scientific and operational results and information in the literature, all necessary data are given for the calculation and

2/7



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp

selection of processing conditions of parts by the described methods. The high temperature which is generated in calibration-hardening treatment in surface layers of instruments and billets can result in thermal decomposition of the lubricant, breakdown of lubrication properties, and changes in the microstructure of the metal surface layer. Therefore, the temperature gradients on the contact surface and in the depth of the processed metal are analyzed for different processes of hardening, the effect of temperature on metal gripping, and spew development on the instrument. The wear of the instrument, affected by temperature and friction, is demonstrated and recommendations are made for the prevention of these occurrence.

Translation of Table of Contents:

Foreword ..... 3
Calibration-hardening treatment of metals and the quality of the surface layer ..... 5

3/7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp


Classification of calibration hardening and form-shaping treatments of metals ..... 5
Quality of the surface layer and operational properties of parts ..... 8
Static deformation of the metal surface layer by the punch face ..... 13
Deformation features of the metal surface layer by static methods of treatment ..... 13
Deformation regularities of micrononuniformities ..... 19
Deformation by tangential dislocation of the instrument (smoothing) ..... 24
Deformation regularities of the metal surface layer .. 25
Thermal phenomena in metal surface layers ..... 30
Regularities of excrescence development on instruments 38
Recommendations for the selection of deformation conditions ..... 47


4/7



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp


Expanding by mandrel of cylindrical openings ..... 49
Principle of the process and treatment schema ..... 49
Deformation by expanding by mandrel and residual stresses in processed parts ..... 54
Temperature fields in the deformation zone ..... 59
Force of pull by mandrel expanding ..... 62
Shape of the working profile of mandrels ..... 70
Optimum allowance, lubrication, and speed by mandrel expanding ..... 74
Application examples of mandrel expanding ..... 83
Mandrel expanding with high allowances ..... 87
Vibration expanding by mandrel ..... 99
Mandrel expanding of section-shaped openings ..... 102
Calibration features of slit openings ..... 104
Form-shaping treatment of profiled openings ..... 109
Geometric parameters of section-shaped mandrels and treatment conditions ..... 113


5/7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp

Deformation of the surface layer under rolling friction conditions ..... 115
Contact pressures and forces by roll and ball rolling. 115
Rolling process temperature ..... 116
Deformation features and surface layer quality ..... 119
Centrifugal ball treatment ..... 126
Features of the process and heat treatment schema .... 126
Deformation regularities of the metal surface layer .. 130
Temperature in the deformation zone ..... 132
Instrument ..... 136
Eccentric vibration hardening devices ..... 139
Conditions and systems of the treatment with ball hardening devices ..... 143
Treatment with mechanical brushes ..... 145
Principle and features of the process ..... 145

6/7



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSKURYAKOV, YU. G., Tekhnologiya Uprochnyayushche-Kalibruyushchey i Formoobrazuyushchey Obrabotki Metallov, Izd-vo "Mashinostroyeniye," 1971, 208 pp

Heat phenomena in the deformation zone and quality of the surface layer ..... 146
Instrument ..... 149
Treatment conditions ..... 152
Knurling low-module teeth of gear wheels and slots and extrusion of internal thread with chipless threading taps . 154
Knurling teeth of gear wheels with rolls ..... 156
Tooth-knurling instrument ..... 162
Selection of the diameter of the ingot and knurling conditions of low-module gear wheels ..... 172
Calculation methods of rolls for knurling slots by the rounding method ..... 174
Production and shaping teeth on conical surfaces of slot-knurling rolls ..... 185
Extrusion of internal thread with chipless threading taps ..... 198
Bibliography ..... 205

7/7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Nitrogen Compounds

USSR

UDC 547.821.824.07:542.953

PROSTAKOV, N. S., KHOLDAROVA, T., PLESHAKOV, V. G., GOVOR, S. Ys., and SHALIMOV, V. P., University of People's Friendship Imeni Patrice Lumumba, Moscow

"Condensation of 1,2,5-trimethylpiperidone-4 With Ethyl- and Naphtyl-acetylenes and Synthesis of Substituted Pyridines"

Riga, Khimiya Geterotsiklicheskikh Soyedinenii, No 3, Mar 73, pp 349-352

Abstract: 1,2,5-Trimethylpiperidone-4 condensed under conditions of Favorskii reaction with 1-butyne, α- and β-naphtylacetylene yields 4-(1-butynyl)- and 4-naphtylethynyl-1,2,5-trimethylpiperidols-4, which after hydrogenation over Raney nickel gave 4-n-butyl-, 4-(2α-naphtylethyl)- and 4-(2β-naphtylethyl)-piperidols-4. These piperidols can be converted to pyridine bases by dehydration, catalytic dehydrogenation and N-demethylation. In this fashion 2,5-dimethyl-4-phenylpyridine was obtained from 1,2,5-trimethyl-4-phenylpiperidience. Condensation of 2,5-dimethyl-4-phenylpyridine with formaldehyde yields 5-methyl-2-(β-hydroxyethyl)-4-phenylpyridine and 2-(5-methyl-4-phenylpyridyl-2)-propanediol-1,3. The first product was converted to the urethane N-phenyl-β-(5-methyl-4-phenylpyridyl-2)ethylcarbamate and dehydrated to 5-methyl-2-vinyl-4-phenylpyridine. 2,5-Dimethyl-4-n-butylpyridine

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSTAKOV, N. S., et al., Khimiya Geterotsiklicheskikh Soyedinenii, No 3, Mar 73, pp 349-352

condensed with formaldehyde gave 5-methyl-2-(β-hydroxyethyl)-4-n-butylpyridine which was dehydrated to 5-methyl-2-vinyl-4-n-butylpyridine. Two derivatives of this β-hydroxyethyl compound were prepared: N-phenyl-β-(5-methyl-4-n-butylpyridyl-2)ethylcarbamate and 5-methyl-2-(β-benzoyloxyethyl)-4-n-butylpyridine.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 547.821.07:542.944.1

PROSTAKOV, N. S., BAKTIBAYEV, O. B., Friendship of Peoples University imeni Patrice Lumumba, Moscow

"Substituted Pyridines. 5-Methyl-4-phenyl-2(aminoalkoxy, aroxymethyl)pyridines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, Sep 71, pp 1211-1212

Abstract: 2,5-Dimethyl-4-phenylpyridine was used in the synthesis of α-aminomethyl and α-alkoxy(aroxy)methyl derivatives of this pyridine system. The transition from the pyridine base to its derivatives was accomplished through 5-methyl-4-phenyl-2-(bromomethyl)pyridine. Bromination of 2,5-dimethyl-4-phenylpyridine was accomplished with N-bromosuccinimide by the Wohl-Ziegler reaction in the presence of benzoyl peroxide.

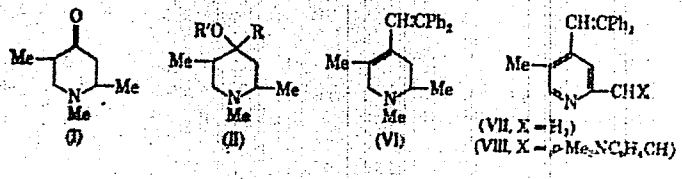
1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Acc. Nr: AP0100327 — Abstracting Service: CHEMICAL ABST. — Ref. Code: UR 0409

111243n Esters of (1,2,5-trimethyl-4-hydroxy-4-piperidyl)- and phenyl(1,2,5-trimethyl-4-hydroxy-4-piperidyl)acetic acids. Prostakov, N. S.; Pleshakov, V. G.; Dorogov, V. V.; Zvolinskii, V. P. (Univ. Druzhby Nar. im. Lumumby, Moscow, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 60–4 (Russ). To $Me_2CHMgCl$ (from 33 g Mg and 146 g $Me_2CHCl$ in 550 ml $Et_2O$) was added 91.2 g $PhCH_2CO_2H$ in 300 ml $C_6H_6$, and to this 63 g 1,2,5-trimethyl-4-piperidone (I) in 200 ml $C_6H_6$ to give 145.9 g hygroscopic product, which was heated with 500 ml MeOH and 45 ml concd. $H_2SO_4$ to give 52 g II [R = $CHPhCO_2Me$, R′ = H], m. 117–17.5° (petroleum ether); methiodide m. 194° (EtOH). II (R = $CH_2CO_2Et$, R′ = H) (III) (6.87 g) 15 ml $C_6H_6$, and 5 ml pyridine with 8.5 g BzCl gave 1.5 g II.HCl (R = $CH_2CO_2Et$, R′ = Bz) (IV), m. 195–7° (2:1 MeOH-$Et_2O$). Also prepd. were II (R = $CH_2CPh_2OH$, R′ = H) (V), m. 148–9.5° [V.MeI, m. 188–91° (EtOH); V picrate, m. 165–8° (EtOH)], and VI, b. 169–87°, also obtained in 70% yield by dehydration of V.




REEL/FRAME
19841736

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

AP0100327

VI (30.3 g) in 200 ml $C_6H_6$ was passed during 8 hr through a tube filled with 100 ml catalyst K-16 at 420–30° to give 4200 ml gas (23°, 754 mm), and 16.3 g of a fraction, $b_{0.5}$ 160–91°, from which 10 g rose VII, m. 97–100° was obtained; VII.MeI m. 198–200.5° (EtOH); VII picrate m. 164–6° (EtOH); VII perchlorate m. 161° (EtOH). VII.MeI (1 g), 0.4 g $p$-$Me_2NC_6H_4CHO$, 0.3 ml piperidine, and 25 ml EtOH gave 0.4 g VIII.MeI, m. 255–8° (EtOH), bright-red. II and V have 6-membered chelate rings through intramol. H-bonding.

S. K. Banerjee

1/3

19841737

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 547.836:542.942.4

PROSTAKOV, N. S., GAYVORONSKAYA, L. A., URBINA, G. A., EMEKUVA, P. D., and NARANISI, T., Friendship Between Peoples University imeni Patris Lumumba, Moscow

"2-$\omega$-Hydroxyalkyl-3-Methylindano[2,1-c]Piperidine"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 666-668

Abstract: In order to obtain physiologically active preparations of partially hydrogenated azafluorenes for systematic stereochemical studies, investigations were commenced on sodium reduction of 3-methyl-2-azafluorene (I) in an alcoholic solution. Of the four possible isomers of 3-methylindano[2,1-c] piperidine (II) that could have been expected, only two were actually formed: one isomer was a liquid (IIa) with a b.p. of 115°C, and the other a crystalline substance (IIb) with a m.p. of 81.5-83°C. IR spectra confirmed the structure of II and indicated hydrogen bonding between the molecules involving the -NH group. This mixture of the II isomers was employed for the synthesis of 2-$\omega$-hydroxyalkyl-3-methylindano[2,1-c]piperidines which are of pharmacological interest. Ethylene and butylene chlorohydrins were used for the alkylation of II in the presence of KI and $K_2CO_3$, and chromatographic analysis of the products revealed the formation of 2-$\beta$-hydroxyethyl-3-methyl-indano[2,1-c] piperidine (III) and 2-$\delta$-hydroxybutyl-3-methylindano[2,1-c]piperidine, respectively.

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSTAKOV, N. S., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 666-668

Each of the latter two compounds existed in the form of two isomers which apparently corresponded to the two isomers of II. The IR spectra of III showed a wide absorption band at 3420 $cm^{-1}$ which represents the involvement of the -OH group in intermolecular hydrogen bonds, and an intense absorption at 1600 $cm^{-1}$ corresponding to the C-O bond of the primary alcohol. Subsequent communication shall deal with the sterochemistry of the geometric isomers of II.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

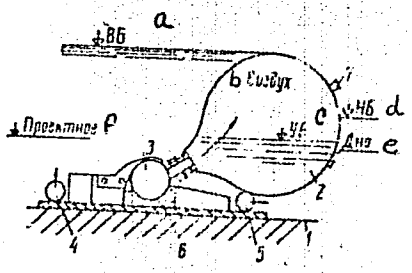
UDC 627.82(088.8)

PROSTOV, A.I.

"Low-Head Dam"

USSR Author's Certificate No 269796, filed 30 Dec 68, published 10 Aug 70 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D128 P)

Translation: A dam is proposed (see the figure). It contains an apron 1 and a flexible shell 2 which for acceleration of disassembly is hinged to the support 6 on which the tubes 3-5 made with slots for supplying compressed air are installed.




Key: a. headrace
b. air
c. water level
d. tailrace
e. bottom
f. planned

The shell 2 is filled with water and air; then via the tube 3 enough compressed air is passed through it at such a pressure that the upper part of it is

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROSTOV, A. I., USSR Author's Certificate No 269796, filed 30 Dec 68, published 10 Aug 70

raised to a given height, that is, higher or lower than the given level of the headrace so that the dam can operate as a spillway passing the given amount of water. In order to lower the level of the headrace by a given amount, the excess air is released from the shell by the attachment 7. To prevent freezing the dam is equipped with the tubes 4 and 5 laid along the bottom on both sides of the dam. Compressed air bubbles are released through the holes in the tubes. As these bubbles rise, they expand and carry along large masses of bottom water with a positive temperature to the surface. This causes intense vertical circulation of the water in the river and prevents the formation of ice along the pressure front of the dam. There is 1 illustration.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC: 550.380:621.317.444

TEREKHIN, Yu. V., PROSTUN, O. A., POLYAKOV, V. V., KROVOTYNTSEV, V. A.

"Automated Marine Proton Magnetometer APM-1"

Mor. Gidrofiz. Issled. [Marine Hydrophysics Studies -- Collection of Works], No 1(57), Sevastopol', 1972, pp 106-114 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 4, 1973, Abstract No 4.32.1336).

Translation: A description is presented of a marine automated proton magnetometer, the APM-1, developed at the Marine Hydrophysics Institute, Academy of Sciences, UkSSR, and tested in the 24th cruise of the research vessel *Mikhail Lomonosov*, as well as the second cruise of the research vessel *Akademic Vernadskiy*. Results are presented from studies of various types of sensors and selection of the optimal version of a sensor of several possible versions. The basic units in the devices are described, and results of determination of deviation, convergence of indications and metrological tests are presented.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 619:616.988.43:576.809.8

KOZHAYEVA, G. I., PROSTYAKOV, A. P., TOKARIK, E. F., and SYUSYUKIN, A. A., All Union Scientific Research Foot-and-Mouth Institute

"Purification of Cultural Foot-and-Mouth Disease Virus"

Moscow, Veterinariya, No 1, Jan 71, pp 41-42

Abstract: The starting material was $A_{22}$ virus replicated in a monolayer of primary trypsinized pig epithelial and calf kidney cells. The virus-containing material was subjected to a series of procedures beginning with freezing, thawing, and centrifugation and ending with filtration through Sephadex G-100 or G-200, both in order to obtain different fractions and to remove proteins and nucleic acids. Some 99.3% of the ballast proteins and 99.2% of the tissue nucleic acids were thus removed. Despite the many manipulations of the virus, its infectious titer at the end was higher than in the original suspension. The purified preparation can be lyophilized for the accumulation of virus material or for deproteinization in order to obtain infectious RNA with a molecular weight no lower than 100,000.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

3

BAPTIZMANSKIY, V. I., BAKHMAN, N., DMITRIYEV, Yu. V., PROSVIRIN, K. S., SHEVELEV, V. V., YANKELEVICH, Ya. P., PODGORODETSKIY, A. A.

"The Problem of the Use of Coagulators During Deoxidation of Steel by Aluminum"

Moscow, Izv. Vuzov, Chernaya Metallurgiya, No 2, 1971, p 51-55.

Abstract: Analysis of the hydrodynamic and thermodynamic factors shows the possibility of using secondary large particles as coagulators for the products of deoxidization of steel with aluminum. The introduction of crushed lime, feldspar, and aluminum to the center mass during deoxidization in the process of siphon pouring of seven-ton ingots of type 3 kp steel was tested. Studies of rolled products produced from these ingots confirmed experimentally the possibility of reducing the level of contamination of the steel with stable nonmetallic inclusions by combined introduction of deoxidizers and coagulators.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EFFECT OF CYCLICALLY CHANGING TEMPERATURES ON POLY,METHYL METHACRYLATE, DURING SUBSEQUENT LOADING -U-

AUTHOR--PROSVIRIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM. 1970, 6(2), 339-44

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--POLYMETHYLMETHACRYLATE, STRESS ANALYSIS, TEMPERATURE DEPENDENCE, INTERNAL STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0901 STEP NO--UR/0374/70/006/002/0339/0344

CIRC ACCESSION NO--AP0134630

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 024 UNCLASSIFIED

CIRC ACCESSION NO--AP0134630 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLING OF TEMP. IN MINUS 75 TO PLUS 100DEGREES INTERVAL CAUSES A BUILD UP OF THE INTERMOL. STRAINS IN POLY(ME METHACRYLATES) (I). THE SUBSEQUENT APPLICATION OF A STRESS CAUSES THE APPEARANCE OF A FINE NETWORK OF FISSURES. THE NO. OF THE FISSURES INCREASES WITH THE SIZE AND DURATION OF THE APPLIED STRESS. THE TEMP. CYCLING ALSO CHANGES THE D. AND THE DIMENSIONS OF I SAMPLES. THE STORAGE OF I SAMPLES SUBJECTED TO THE CYCLIC HEATING RELEASES SOME OF THE INTERNAL STRAINS AND CAUSES ADDNL. CHANGES IN D. AND SIZE. FACILITY: RIZH. INST. INZH. GRAZHDANSKOI AVIATS., RIGA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC: 621.396.2:621.371.1

KLYZHENKO, B. A. and PROSVETOV, A. M.

"Experimental Investigation of the Probability Characteristics of the Signal Envelope and Phase on a Shortwave Path"

V sb. Radioelektron. v nar. kh-ve SSSR, Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works) Kuybyshev, 1970, pp 259-264 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A262)

Translation: A description is given of experiments to verify the applicability of the Gaussian model for a shortwave communication channel. Five illustrations, bibliography of two. N. S.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC: 621.791.947.55:546.212(260)

BEYDER, B. D., Candidate of Technical Sciences, PROSVIRIN, A. P., Engineer, EZROKHIN, A. B., Engineer, and UZILEVSKIY, YU. A., Engineer

"Plasma-Arc Cutting in Sea Water"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 52-53

Abstract: The authors determine the requirements for a plasma cutting torch which can work in sea water. A cutting torch is tested which can ensure the reliable parting of hull grades of steel up to 40mm thick in sea water with a salinity of 20 percent at a depth of 10m. The cutting is done at a current of 500-520amp and an arc voltage of 120-140v. The cutting rate of the plasma-arc is 2-5 times greater and the productivity is 3-8.5 times greater than is the case with electro-oxygen cutting.



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 518.1

SHESTOPALOV, V. P., Corresponding Member of the Academy of Sciences Ukrainian SSR, LYTVYNENKO, L. M., and PROSVIRNIN, S. L., Khar'kov State University

"Method of Successive Approximations for Numerical Solution of Fredholm's Integral Equations of Second Kind"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR -- Seriya A. Fizyko-Tekhnichni ta Matematychni Nauky, No 4, Apr 73, pp 353-357

Abstract: A previous article by L. M. LYTVYNENKO described a method for the solution of an infinite system of algebraic equations of the second kind, in which preliminary inversion of part of the operator is used to construct a convergent iterative process. In the present article a similar method of successive approximations proves effective for the numerical solution of Fredholm's integral equations of the second kind, especially with an infinite interval of integration. The method is substantiated and tested for the integral equation in the problem of electromagnetic wave diffraction by a slit in a metal screen. The method makes it possible to obtain a numerical evaluation of the error of solution and a substantial decrease in the interval of integration by replacing the original integral equation at each approximation stage with an equation with some new free term, whose value at each point of the domain of definition of the sought function can be found by numerical



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

SHESTOPALOV, V. P., et al., Dopovidi Akademii Nauk Ukrains'koi RSR -- Seriya A. Fizyko-Tekhnichni ta Matematychni Nauky, No 4, Apr 73, pp 353-357

integration. The possibility of narrowing the interval of integration is especially important in the case of infinite intervals, making it possible to use the degenerate kernel method to construct the resolvent of the integral equation and evaluate the error of solution of the integral equation at each approximation stage. If the integral equation is replaced by a finite system of linear algebraic equations for computer-aided realization of the method, the order of this system can be considerably lowered by reducing the interval of integration and performing only one inversion of the matrix, since the same inverted matrix is used in all subsequent iterations.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC: 535.411.01

KAZANSKIY, V. B., LITVINENKO, L. N., and PROSVIRNIN, S. L.

"Theory of the Fabry-Pérot Interferometer With Mirrors in the Form of Flat Grids for an Inclined Incident Wave"

Leningrad, Optika i Spektroskopiya, vol 32, No 3, 1972, pp 592-600

Abstract: This article considers the characteristics of the Fabry-Pérot interferometer with mirrors made up of plane ribbon grids, where the incident wave is inclined and is a planar electromagnetic wave of two polarizations, with the E and H vectors parallel to the grid ribbons. The considerations of the authors are based on a rigorous solution of the diffraction problem, which makes possible the determination of the utilization area and the estimation of the error of the approximation formulas. Analysis of the problem -- made for the single-wave case, when the higher diffraction harmonics of the fields at the ribbons drop off exponentially with the distance from the mirror plane -- permitted discovery of very narrow-wave passage interference maxima with changes in the incidence angle. This important characteristic can be successfully used in metrological practice. An explicit dependence of the resolving power on structural parameters is found which permits construction of the interferometer with two grids having the characteristics necessary for this application.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INDIRECT POLAROGRAPHIC DETERMINATION OF SOME METALS -U-

AUTHOR-(02)-PROSYANIK, N.S., SUKHAN, V.V.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1), 95-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CADMIUM SULFIDE, POLAROGRAPHIC ANALYSIS, TRACE ANALYSIS, COPPER, MERCURY, SILVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1998 STEP NO--UR/0073/70/036/001/0095/0097

CIRC ACCESSION NO--AP0118957

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118957

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SMALL AMTS. OF CU PRIME POSITIVE POSITIVE, AND AG PRIME POSITIVE IN SOLN. CAN BE SATISFACTORILY DETD. BY SHAKING THE SOLN. WITH CDS FOLLOWED BY POLAROGRAPHIC DETN. OF THE CD PRIME POSITIVE POSITIVE RELEASED INTO SOLN. BY METATHESIS.

FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 669.71.018.9.4(088.8)

KIMSTACH, G. M., KORYAKIN, G. I., UTKIN, S. Ye., SOTNIKOVA, A. T., YEFIMOVA, A. Ya., and PROTALEV, V. M.

"Method of Refining Aluminum Alloys"

USSR Author's Certificate No. 265451, Filed 8/07/68, Published 23/06/70, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G159 P).

Translation: In order to achieve simultaneous removal of gas inclusions and nonmetallic impurities and to increase the effectiveness of refining, the alloy is treated with hexachloroethane with a layer of liquid refining flux on the surface of the bath.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 616.988.25-022.395.42-036.1(476 + 571.62)

PROTAS, I. I., and VOTYAKOV, V. I., Clinical Department of Neuroviral Infections, Belorussian Institute of Epidemiology and Microbiology, Minsk

"Clinical Differences between Tickborne Encephalitis in Belorussia and Khabarovskiy Kray"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,001-1,006

Abstract: A comparative study was conducted of 61 cases of tickborne encephalitis in Belorussia in 1966-1968 and of 149 cases of tickborne encephalitis in Khabarovskiy Kray during the same period. While the disease in Khabarovskiy Kray was accompanied by bulbar and residual paralyses in a large number of cases (24.2%) and had a relatively high mortality (16.8%), in Belorussia it was predominantly of the meningeal or general infection type and had a favorable outcome (95.2% of the patients recovered completely and there was not a single death). Residual paralyses and pareses were observed in 14.8% of cases in Khabarovsk Kray, whereas full motor capacity of paretic extremities was usually restored in Belorussia. Fever was the principal component of the clinical syndrome in Belorussia in the acute period; the symptoms of a meningeal



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROTAS, I. I., et al, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,001-1,006

lesion disappeared immediately after the temperature became normal. The clinical symptoms observed in Khabarovskiy Kray indicated a predominant lesion of the cerebral parenchyma, which continued to increase in severity during the post-fever period. A two-wave fever was typical for the cases observed in Belorussia, while the second wave seldom developed in Khabarovskiy Kray encephalitis, and the length of the fever period was less extended in this type of the disease. The disease was of the focal type in 38.3 and 11.5% of cases in Khabarovsk Kray and Belorussia, respectively.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 616.988.25-022.395-06:616.832.522

PROTAS, I. I., and VOTYAKOV, V. I., Clinical Department of Neuroviral Infections, Belorussian Institute of Epidemiology and Microbiology, Minsk

"The Relationship Between Amyotropic Sclerosis and Tickborne Encephalitis"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 70, No 8, 1970, pp 1,124-1,129

Abstract: A study was made of 16 male and 8 female (20 to 42 years old) afflicted with amyotrophic lateral sclerosis. No etiological link was found between this disease and tickborne encephalitis. Although the syndrome of amyotrophic lateral sclerosis was found to be extremely rare in tickborne encephalitis, it is recommended that primary chronic neuroinfections for which the pathogenic agent is also tickborne be registered in Byelorussia.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

JPRS 49208
6-73

3

XVI-8. FORMATION OF THE FILM STRUCTURE OF CERTAIN SEMICONDUCTORS IN THE CASE OF LASER DEPOSITION OF SPECIMENS

[Article by Yu. G. Poltavtsev, V. P. Zakharov, I. M. Protas, Kiev; Novosibirsk. III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 227]

Thermal deposition of chemical compounds containing components with high vapor pressures frequently cannot be used to contain condensed films of stoichiometric composition. Definite progress has been made in this direction in the presence of laser deposition of the samples. An estimate was made of the role of the molecular composition of the vapor and the interatomic interrelations with this type of deposition for the process of formation of amorphous film structures on a glass substrate. The research subjects were semiconductors of the $A^{III}B^{V}$ and $A_2^{V}B_3^{VI}$ type. The molecular composition of the vapor was investigated mass-spectrometrically; the structure of the amorphous films was investigated by the method of integral analysis of the electron scattering intensity curves.

It is established that the GaAs vapor contains ionized and neutral complexes comprising atoms of the same and different types, and the structure of the amorphous films is well described by the model of the set of dispersed crystals. In contrast to this, in GaP vapor complexes of atoms of different types are completely absent, and in the amorphous film structure in addition to the "crystal-like" regions there are regions containing atoms of one type with the structure of amorphous phosphorous and gallium.

For $As_2S_3$, $As_2Se_3$ and AsSe, the molecular composition of the vapor turned out to be similar whereas the structure of the amorphous films was different. Thus, for example, in the $As_2S_3$ films the value of the radius of the first coordination sphere and the coordination numbers are the same as in the crystal, and in the $As_2Se_3$ films they are appreciably less.

The results obtained have permitted evaluation of the effect of the molecular vapor composition on the processes of the formation of the film structures of the investigated substances. A description is given for the probable kinetics for the formation of the film structure.



PROTAS, I.M.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 621.378.385

ZAKHAROV, V. P., PROTAS, I. M.

"Mass-Spectrometric Study of the Evaporation of Type $A^{III}B^{V}$ Semiconductor Compounds by Laser Emission"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 670-672

Abstract: Mass-spectrometric studies of vapor composition were performed during evaporation of single GaAs and GaP crystals by ruby laser emission. The qualitative composition of the vapor in both cases was similar (the $Ga^+$, $As^+$ and $As_2^+$ ions for GaAs predominate, and the $Ga^+$, $P^+$, $P_2^+$ for GaP); however, the relative intensity distribution between them is not retained. The predominant composition of the part of the vapor not ionized by the laser emission was established by using additional ionization of the vapor by a high frequency spark. The causes of the quantitative differences in the vapor during evaporation of single GaAs and GaP crystals by ruby laser emission were discussed. The results were compared with analogous results for thermal evaporation. In the case of additional ionization of the plasma, the A: As and Ga: P ratios found from the mass spectra approach stoichiometric. Thus, the degree of ionization of Ga during evaporation by laser emission is appreciably higher than for thermal evaporation, and the part of the vapor ionized by the light

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

ZAKHAROV, V. P., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 670-672

pulse comprises primarily single or multiatom particles of the B-element (for compounds of the $A^{III}B^{V}$ type).

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 77

PROTAS, I. R.

"Certain Problems in the Synthesis of Photoemulsions"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol 15, pp 40-51 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1299)

Translation: A survey of certain problems in the theory of the synthesis of AgHal photoemulsions developed by Soviet researchers. Particular attention is given to the structural properties of the emulsions and light-sensitive layers. The effect of various factors (emulsification, physical maturity, chemical maturity, optical sensitization, and the glaze of the emulsion) on the resolution capacity of the layer are discussed. 43 references. Authors abstract.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Pharmacology and Toxicology

USSR

PROTAS, L. L., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Block of Neuromuscular Conduction by Choline Esters in the Presence of Cholinesterase Inhibitors and Restoration of Conduction Through Reactivation of Cholinesterases"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 5, 1973, pp 1243-1246

Abstract: The amount of suberyldicholine (a dicholine ester of dicarbonic acid) necessary to produce the desired degree of neuromuscular block is considerably reduced after inhibition of cholinesterase. Quaternary ammonia compounds such as GT-165 and AA-31 are safe cholinesterase inhibitors because they penetrate the blood-brain barrier to a very small extent. In cats, inhibitor GT-165 (0.1 micromol/kg) reduces the blocking dose of suberyldicholine by a factor of 100, while inhibitor AA-31 (10 micromol/kg) reduces this dose by a factor of 25-30. In both cases, administration of cholinesterase reactivator TMB-4 (dipiroxime) in a dose of 4 mg/kg rapidly eliminates the conduction block. In rat nerve-muscle preparations, a $x10^{-5}$M conc. of suberyldicholine in the bathing liquid reduces transmission by 50%. In the presence of $10^{-6}$M GT-165, the suberyldicholine concentration necessary to produce the same effect

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

PROTAS, L. L., Doklady Akademii Nauk SSSR, Vol 209, No 5, 1973, pp 1243-1246

is reduced by a factor of 100-200, while $10^{-6}$M AA-31 reduces this dose by a factor of 25-30. Addition of dipiroxime ($10^{-5}$M) almost immediately restores full conduction. In these concentrations, GT-165 and AA-31 inhibit not only cholinesterase but also acetylcholinesterase. The method offers good control over the depth and duration of neuromuscular block.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--DISLOCATION STRUCTURE AND MECHANICAL TWINNING IN AGED COPPER,TITANIUM AND COPPER,TITANIUM, ALUMINUM ALLOYS -U-

AUTHOR--PROTASOV, A.T., BUSHNEV, L.S., KOROTAYEV, A.D.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 192-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--TWINNING, CRYSTAL DISLOCATION, COPPER ALLOY, ALUMINUM ALLOY, TITANIUM ALLOY, ELECTRON MICROSCOPY, X RAY DIFFRACTION, METAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0659 STEP NO--UR/0126/70/029/001/0192/0196

CIRC ACCESSION NO--AP0105638

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105638

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISLOCATION STRUCTURE AND MECH. TWINNING IN QUENCHED AND AGED CU PLUS 4.3PERCENT TI AND CU PLUS 2.3PERCENT TI PLUS 2PERCENT AL ALLOYS WERE STUDIED BY THIN FILM ELECTRON MICROSCOPY. THE CHARACTERISTIC FEATURE OF THE DISLOCATION STRUCTURE OF QUENCHED ALLOYS IS THE PRESENCE OF FLAT DISLOCATION CLUSTERS. THESE SHOWED UP TO A LESSER DEGREE IN THE TERNARY ALLOYS THAN IN THE CU-TI ALLOYS. THE BROAD TWIN INTERLAYERS AS OBSD. THROUGH METALLOGRAPHY ARE INDEED MICROTWIN BUNDLES WHICH HAVE A RATHER PERFECT STRUCTURE. MECH. TWINNING WAS OBSD. BOTH AT THE STAGE CORRESPONDING TO THE APPEARANCE OF THE SATELLITES ON X RAY DIFFRACTION PATTERNS AND ON THE STAGE OF THE DEVELOPMENT OF THE METASTABLE BETA PRIME PHASE. THE RESULTS OBTAINED DO NOT ALLOW THE CONCLUSION TO BE MADE THAT THE PPTS. ARE NOT BEING SLIT THROUGH BY THE DISLOCATIONS; THIS FACT IS CONFIRMED ALSO BY THE FACT THAT MECH. TWINS ALSO PASS THROUGH THE PPTS. THE PPTN. OF THE METASTABLE PHASE FIRST LEADS TO SLIP HOMOGENIZATION, AND SECONDLY, DETS. THE APPEARANCE OF A NEW DEFORMATION MECHANISM, NAMELY MECH. TWINNING. IN THE CU PLUS 2.3PERCENT TI PLUS 5PERCENT AL ALLOY, NUCLEATION OF THE STABLE PHASE ON THE DISLOCATIONS WAS OBSD. THE PRESENCE OF THE LATTER LEADS TO THE FORMATION OF A DISLOCATION STRUCTURE CHARACTERIZED BY UNIFORM DISTRIBUTION OF THE DISLOCATIONS THROUGH THE BULK OF THE MATERIAL. THE OBSD. CHANGES DUE TO THE AGING PROCESS ARE ASSOCD. NOT ONLY WITH THE CHANGE IN THE LOCALIZATION AND MULTIPLICITY OF SLIP BUT ALSO WITH A CHANGE IN THE FREE PATH OF THE DISLOCATIONS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--INTERMITTENT DECOMPOSITION IN HARDENED AND DEFORMED ALLOYS -U-

AUTHOR-(05)-KOROTAYEV, A.D., BUSHNEV, L.S., PROTASOV, A.T., TYUMENTSEV, A.N., PSHENINA, L.S.

COUNTRY OF INFO--USSR

P

SOURCE--IZV. VYSSH. UCHEB. ZAVED. FIZ. 1970, 13(1), 108-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CRYSTALLIZATION, COPPER ALLOY, TITANIUM ALLOY, ELECTRON MICROSCOPY, METAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0960 STEP NO--UR/0139/70/013/001/0108/0112

CIRC ACCESSION NO--AT0105829

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

2/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0105829

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF CU-TI 4.3PERCENT ALLOY WERE HARDENED, DEFORMED, AND THEN STUDIED BY METALLOGRAPHY AND ELECTRON MICROSCOPY. WITH SMALL DEFORMATION DEGREES (LESS THAN OR EQUAL TO 20PERCENT) THE FORMATION OF AN INTERNAL STABLE PHASE WAS NOT OBSD. SINCE THIS FORMATION USUALLY IS PRECEDED BY RECRYSTN., IT WAS ASSUMED THAT THE RECRYSTN. CAUSED DISCONTINUOUS DECOMPN. INSIDE OF GRAINS. AT THE DEFORMATION DEGREE OF 20PERCENT THE DISCONTINUOUS DECOMPN. SHOULD BE EXPECTED AT GREATER THAN OR EQUAL TO 450DEGREES; IN ACTUAL EXPTS. THIS DECOMPN. WAS OBSD. AT 550DEGREES.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 629.78.017

PROTASOV, B. V. (Reviewer)

"Reliability of Precision-Mechanical Instruments. Scientific Works of Saratov Polytechnic Institute"

Nadezhnost' priborov tochnoy mekhaniki. Nauch. tr. Saratov politekhn. in-t (cf. English above), vyp. 55, Saratov, 1972, 114 pp, ill., 47 k. (from RZh-Raketostroyeniya, otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.181 K)

Translation: The results of studies performed at the branch and scientific research laboratory on the reliability of precision mechanical instruments under the department of gyroscopic instruments and devices of Saratov Polytechnic Institute are published in this collection. The articles in the collection are devoted to two aspects of the reliability problem: the technological guarantee of reliability of the structural elements and the development of highly reliable structural elements as applied to electromechanical devices and instruments. The results of studies of the processes of formation of the operational characteristics of the working surfaces operating with friction and sliding weakly-precision contacts are included. The results are published from analyzing the errors of gyroscopic devices during their operation under dynamic conditions and the analytical design of the gyroscopic devices.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Semiconductors and Transistors

USSR

UDC: 621.382.2

LUK'YANCHIKOVA, N. B., SOLGANIK, B. D., SHEYNKMAN, M. K., PROTASOV, I. I., and TROFIM, V. G.

"Excess Noise in Heterogeneous p-$Al_xGa_{1-x}As$--n-GaAs Photodiodes"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1851-1855

Abstract: Stating that research on the noise characteristics of heterojunctions has been neglected, the authors present the results of experimental investigations into the low-frequency noise characteristics, at 20-2·10³ Hz, of p-$Al_xGa_{1-x}As$--n-GaAs specimens. The specimens were obtained by the growth of solid solution AlAs-GaAs p-type epitaxial layers on n-GaAs substrates. The current noise spectral density was measured in darkness with the heterojunctions biased in the forward as well as inverse directions, and with the heterojunctions illuminated in the gate and photodiode modes. The measurements were conducted at temperatures of 77-300° K and the wavelength of the illuminating light was 0.68 microns. It was found that the current noise was in all cases much higher than the shot noise level, and that illumination of the specimens did not vary the current noise spectral density with the specimens biased

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC: 621.382.2

USSR

LUK'YANCHIKOVA, N. B., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1851-1855

in the inverse direction. Current noise spectral densities and families of volt-ampere characteristics of the specimens are plotted.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC: 51:155.001.57:681.3.06

PROTASOV, K. T., SERYKH, A. P.

"Determination of Informational Characteristics from the Condition of Minimum Risk in the Problem of Pattern Recognition"

V sb. Obnaruzh. i raspoznavaniye. Planir. eksperimentov (Detection and Recognition. Planning of Experiments--collection of works), Moscow, "Nauka", 1970, pp 3-10 (from RZh-Kibernetika, No 1, Jan 71, Abstract No 1V650)

Translation: The authors formulate the extremum problem of finding the vector function which recognizes membership to one of two patterns effectively and with minimum risk. In the final form, consideration is given to search for the informational characteristic $u$ in the class of linear functions $u=\sum_{s=1}^{n} h_s x_s$ in the case of an ideal observer and a normal law of distribution of probabilities for patterns $A_1$ and $A_2$. Then

$$h_1=1,\ h_s=\frac{\Delta_s\sigma_1^2}{\Delta_1\sigma_s^2},\ s=2,3,\ \ldots,\ n,\ \Delta_s=a_{1s}-a_{2s},$$

$a_{is}$, $\sigma_s^2$ are the averages and standard deviations of the normal laws of distribution. An example is given of calculations for comparison of methods

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

PROTASOV, K. T., SERYKH, A. P., Obnarush. i raspoznavaniye. Planir. eksperimentov, Moscow, "Nauka", 1970, pp 3-10

based on maximum information and on minimum risk as a function of the relative weight of errors of the first and second kind.

Note: The article does not give the explicit dependence of $\sigma_i^2$ on $\sigma_{1i}^2$ and $\sigma_{2i}^2$.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC: 518.5.681.3.06

USSR

BARANOV, G. I., PROTASOV, N. M.

"Program for Calculation of the Vibrations of Molecules on the M-220 Digital Computer"

Sb. nauch. tr. Kuzbas. politekhn. in-t (Collected Scientific Works of the Kuznetsk Basin Polytechnical Institute), 1970, No 28, pp 119-134 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V767)

[No abstract]

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC 535.435.43

USSR

SECHKAREV, A. V., ARTAMONOV, A. A., NEVZOROV, B. P., NIKOLAYENKO, P. T., PROTASOV, N. M.

"Study of the Intermolecular Dynamics of Condensed States of Matter by the Vibrational Spectroscopy Method. III. Experimental Investigation of the Temperature-Phase Relationship of the Intermolecular Dispersion Spectra of Some Organic Compounds"

Tomsk, Izvestiya: Fizika, No 5, 1970, pp 7-12

Abstract: Results of research on intensity distribution in the intermolecular dispersion spectrum are presented for a broad temperature range. The authors established the fact of continuous transition of the discrete spectrum (solid phase) into the continuous spectrum (liquid phase) as well as the presence of maxima in the intermolecular spectrum of some classes of fluids, the redistribution of intensities with temperature, and other rules governing the behavior which may, with sufficient basis, be considered general for substances with different types of intermolecular bond. Theoretical consideration with account taken of the degree of molecule-vibration noncoherence made it

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

SECHKAREV, A. V., et al, Izvestiya: Fizika, No 5, 1970, pp 7-12

possible to provide a qualitative, and, in a number of cases, quantitative interpretation of these rules and to define a series of molecular parameters for a whole group of substances.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

UDC 612.822.3.05

USOV, V. V., PROTASOV, V. A., BELAYEV, V. V., ANNARAUD, D. K., and CHEREPANOV, I. M., Laboratory for Computer Methods, Department of Applied Neurophysiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"A Helical Electrode for Electrophysiological Studies of the Deep Structures of the Brain"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 59, No 11, Nov 73, pp 1764-1765

Abstract: Since helical electrodes have been successfully employed for long-term stimulation of smooth musculature, a similar electrode has been constructed for recording the biopotentials of the deep structures in the brain. The coiled electrode contains within it a guiding rod and the entire assembly is located within a hypodermic needle-like device for introducing the electrode. Once it is located in the desired region and the inner rod removed, the helical nature of the polyfluoroethylene-insulated electrode possesses sufficient elasticity to permit the outer tissues to heal around it and thus fix it. No additional outer fixation of the electrode is necessary.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC: 621.375.82

VENKIN, G. V., DERYUGIN, L. N., PROTASOV, V. P., SOTIN, V. Ye., and CHEKHLOVA, T. K.

"Laser Using a Traveling Wave, Ring Waveguide Resonator"

Moscow, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Sov. radio," No 1(13), 1973, pp 108-109 (from RZh--Fizika, No 7, 1973, Abstract No 7D1OC7)

Translation: Oscillations are obtained from rhodamine 6Zh in a traveling wave, ring resonator in the excitation of the second harmonic in a neodymium laser. The ring resonator is a fine gelatin film on a glass rod. The concentration of the rhodamine in the film is $10^{-3}$-$10^{-2}$ moles/liter. Authors' abstract

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 597.0/5-15

PROTASOV, V. P., NEPROSHIN, A. YU., GUSAR, A. G., and KUPRIYANOV, V. S., Institute of Animal Evolutionary Morphology and Ecology, imeni A. N. Severtsov, Moscow, and Azov-Black Sea Scientific Research Institute of Marine Fisheries and Oceanography, Kerch"

"Sounds Emitted by the Anchovy (Engraulis encrasicholus L.) in a Light Field"

Moscow, Voprosy Ikhtiologii, Vol 12, Vyp 2(73), 1972, pp 394-396

Abstract: Apparently fish within a light field emit sounds that attract other fish outside the light field. This reaction was tested in 17 experiments with anchovies on the Black Sea in March 1970 using television, underwater photography, sound recording, and oscillographic analysis. Before light was introduced the fish emitted rare high-frequency crackling sounds and a low-frequency persistent drumming that was attributed to other fish species. When a submerged lamp was switched on the fish congregated about it, emitting sounds of higher frequency at a significantly greater rate. These results were confirmed with those of laboratory tank experiments with Leucaspoius delineatus Heck. When lights were turned on after 3 minutes of darkness the acoustic activity of the fish increased noticeably. These significant differences in acoustic activity in the absence and presence of light should be studied in their application to fish attraction methods.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

NASA TT F-684

# PHYSICAL PROPERTIES OF ROCKS AT HIGH TEMPERATURES

By A. P. Dmitriyev, L. S. Kuzyayev, Yu. I. Protasov, and V. S. Yamshchikov

PROTASOV, Yu. I.

Translation of "Fizicheskiye svoystva gornykh porod pri vysokikh temperaturakh." "Nedra" Press, Moscow, 1969

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION June 1972

For sale by the National Technical Information Service, Springfield, Virginia 22151
$3.00

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8



UDC 621.375.826

USSR

ALEKSEYEV, V. A., KOZLOV, N. P., and PROTASOV, Yu. S.

"Organic-Dye Laser"

Moscow, Pribory i Tekhnika Eksperimenta, November-December 1973, pp 137-138

Abstract: The description is given of a laser containing an alcohol solution of 6Zh rhodamine excited by the radiation of the plasma focus of a pulse accelerator operating in a plasma of metals and dielectrics. Light sources with pulse energies of up to 7500 j were used for pumping. Other details and technical characteristics of the laser are given together with a sketch showing some details of the instrument's structure. The reflector was made of polished duralumin in the form of an elliptical cylinder with a major semiaxis of 240 mm and a minor semiaxis of 210 mm. The energy generated was in the spectral range of 593-599 nm and the generation time was about 16 μs.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC: 620.10

USSR

GUBAREV, V. Ya., Engineer, KOZLOV, N. P., Candidate of Technical Sciences, Docent, LESKOV, L. V., Doctor of Physical and Mathematical Sciences, Professor, PROTASOV, Yu. S., Graduate Student, Moscow Higher Technical Academy imeni N. E. Bauman

"On Measurement of Small Deflections"

Moscow, Izv. VUZov: Mashinostroyeniye, No 9, 1972, pp 190-191

Abstract: The paper describes a procedure and experimental equipment for measuring displacements of the order of $10^{-3}$ mm at frequencies of the order of hundreds of kHz. The measurement installation is based on the Töpler schlieren method as illustrated in the diagram. Sharp-edged plate 1 is securely fastened to the article at the point to be measured in the plane of deflection. Lens 2 focuses a beam from gas laser 3 onto the sharp edge of this plate. The light beam is then allowed to fall on the cathode of photomultiplier 4 whose output signal is registered by oscilloscope or digital recorder 5.

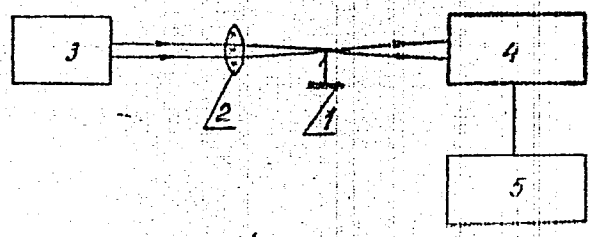
1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

GUBAREV, V. Ya. et al., Izv. VUZov: Mashinostroyeniye, No 9, 1972, pp 190-191




2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

PROTASOV, Yu. V., RUMYANTSEV, A. P.

"Multiple-Layer Thin-Film Structures With Negative Resistance"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 4 (21), pp 59-66 (from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6B234)

Translation: The paper presents the results of a study of thin-film multi-layered MSDM strucutres (M is metal, S is semiconductor and D is dielectric), as well as simpler structures produced by the method of thermal evaporation in a vacuum using metallic Ni, Al, Cu, and copper-aluminum alloy as metals, Te as the semiconductor, and SiO and $CaF_2$ as the dielectrics. Regions of differential negative resistance were observed on current-voltage curves of S- and N-types. Resumé.

1/1



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

Mechanical Properties

USSR

UDC 669.5'71:620.1

GULYAYEV, A. S., PROTASOVA, I. V. and SHAPOCHKIN, A. I.

"Study on the Superplasticity of TsAM 10-5 Alloy"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 58-60

Abstract: The study on the superplasticity of TsAM 10-5 alloy (5% Cu, 10% Al, up to 0.06% Mg, the balance--zinc) included the effect of the initial structure and the state of the treated alloy on its mechanical properties under static tensile tests within 200-350°C as well as changes in the alloy's microstructure during deformation under conditions of superplasticity. The alloy was tested as hot-extruded, hot-rolled, quenched and aged. In the process of superplastic flow the structure of the alloy appears to be almost identical in all cases and comprises a finely disperse mixture of phases with crystals measuring several microns. The TsAM 10-5 alloy exhibits its maximum tendency to superplasticity when its structure consists of finely disperse phases measuring several microns. An addition of magnesium increases the tensile strength of the alloy following its superplastic flow without affecting the superplasticity temperature interval. (2 illustrations, 1 table, 6 bibliographic references).

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

7

UDC 632.95

USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., BARANOV, Yu. I., LIBMAN, B. Ya., STREL'TSOV, R. V., PROTASOVA, L. D., MARKOVA, L. I., KHOKHLOV, P. S., MADZHARA, G. A., KIRILINA, L. E., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Thiophosphonyl Dihalides"

USSR Author's Certificate No 337384, filed 31 Oct 69, published 2 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N500 by T. G. Chekareva).

Translation: Compounds of the general formula $RP(S)X_2$ (I) (R = $C_1$-$C_{12}$-alkyl, cycloalkyl, aryl, unsubstituted alkyl or alkyl containing substituents, Cl or Br; X = Cl, Br) are synthesized by reacting $(RS)_3P$ (II) with a 2-10-fold excess of $PX_3$ with heating to 250-330°C in an autoclave. Example. A mixture of 0.07 mole of II (R = Me) and 0.7 mole of $PCl_3$ is heated in an autoclave test tube of stainless steel at 290-320°C for 5 hours. The excess $PCl_3$ is driven off at atmospheric pressure and distillation of the residue in a vacuum gives I (R=Me, X=Cl), boiling point 70-3°/80, $n^{20}D$ 1.5510, $d_4^{20}$ 1.4421, yield 52%. Similar methods are used to produce other compounds of type I (given are R, X, boiling point in °C/mm, $n^{20}D$, $d_4^{20}$, yield in %): Et, Cl, 64-8/15, 1.5418, 1.3527, 58; Pr, Cl, 85-8/15, 1.5285, 1.2942, 40; iso-Pr, Cl, 72-5/15, 1.5290, 1.3017, 47.5; Bu, Cl, 111-13/25, 1.5269, —, 65;

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

(7)

USSR

SUKHOMLINOV, B. P., Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya, Kharkov, 1972, pp 50-56

sulfur with a sufficient amount of powdered SL. A SN screw mixer is recommended for bringing the components into contact under pressure and pulverizing them at the same time.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

(8)

USSR UDC 632.95

BLIZNYUK, N. K., KHOKHLOV, P. S., KVASHA, Z. N., MARKOVA, L. I., LEVSKAYA, G. S., PROTASOVA, L. D., SOLNTSEVA, L. M., MATYUKHINA, Ye. N., VARSHAVSKIY, S. A., BARANOV, Yu. I., LIBMAN, B. Ya., ZHEMCHUZHIN, S. G.

"Method of Production of Dichlorides or Dibromides of Thiophosphonic Acids or Their Bis Analog"

USSR Author's Certificate No 332095, filed 19/08/69, published 17/04/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N591, by T. A. Belyayeva)

Translation: Compounds of the formula $RP(X)X_2$ (I) (R=alkyl, aryl, aralkyl; X=Cl or Br) and $X_2P(S)A(S)PX_2$ (II) (A-bivalent hydrocarbon radical) were produced by the reaction of mono- or dihalo hydrocarbons with S, P and $PX_3$ with heating to 250-400° in an autoclave of stainless steel or nickel in the presence of catalytic quantities of $I_2$ or its compounds. Example. A mixture of 0.24 mole PhCl, 0.24 g-atom S, 0.16 g-atom white P, 35 ml $PCl_3$ and 0.05 g $I_2$ is heated at 290-330° for seven hours in an autoclave of stainless steel, the $PCl_3$ is distilled, then vacuum distillation is used to separate I (R=Ph, X=Cl), yield 60%, B. T. 109-112°/3, $n^{20}D$ 1.6241. Similarly, I were produced (given R, X, yield in %, B. P. in °C/mm, $n^{20}D$): 4-$ClC_6H_4$,

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

(8)

USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 332095, filed 10/08/69, published 17/04/72

Cl, 53.5; 124-3/1.5-2, 1.6229; p-$MeC_6H_4$, Cl, 54.5, 125-7/1, 1.6120; $4FC_6H_4$, Cl, 72.2, 95-7/0.5, 1.6028; Ph, Br, 61, 127-130/2, 1.6850; 4-$FC_6H_4$, Br, 55, 135-8/1, 1.6758; $PhCH_2$, Cl, 76.4, 120-3/2, 1.6150; 3-$FC_6H_4$, Cl, 108-110/1.5, 1.5908; 4-$MeC_6H_4CH_2$, Cl, 53.3, 126-9/2, 1.6035; 4-$ClC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 74-6°, --; 2-$FC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 48-9°, --; 2.4-$Me_2C_6H_3CH_2$, Cl, 47.5, 140-1.6045; 2.4-$Cl_2C_6H_3CH_2$, Cl, 43.4, 147-9/2, m. p. 100-1", --. Also produced were II (X=Cl, A=$CH_2CH_2$), yield 61.5%, m. p. 92-3°. I and II are intermediate products for the production of insecticides, acarocides, fungicides and herbicides.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., KLIMOVA, T. A., and KLOPKOVA, R. S., All-Union Institute of Phytopathology

"Synthesis of Thiophosphocyclopentenyl Chlorides"

USSR Author's Certificate No 327208, filed 16 Jun 70, published 28 Mar 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, (I, L-S), No 1(II), 1973, Abstract No 1N457P by T. A. Belyayeva)

Translation: The intermediate products for the synthesis of pesticides, the alkylthiophosphocyclopentenyl chlorides, were prepared during the reaction of diene hydrocarbon with alkyldichlorophosphite and $PSCl_3$ at 100-150°C. Example. One mole BuOH is added to 3 moles $PCl_3$ at 15-20°C with constant stirring, the mixture is heated at 60-65°C for 2-3 hr; the reaction mixture is cooled to 0-5°C, then 1 mole of colled $CH_2{=}CHCH{=}CH_2$ and 3 moles $PSCl_3$ are added, the mixture is heated in a stainless autoclave at 110-120°C for 3 hr. The mixture is distilled and the mixture of acid chloride isomers of thiophosphocyclopentenic (2 and 3) acid is separated from the reaction mixture. The yield was 81%, b.p. 120-140°C/14, $n^{20}D$ 1,5840, $d_4^{20}$ 1,3225. The acid chloride of 3-methylthiophosphocyclopentenic-3 acid was also obtained, b.p. 137-140°C/12, $n^{20}D$ 1,5895, m.p. 43-45°C, as well as mixture

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 327208, filed 16 Jun 70, published 28 Mar 72

of isomers of acid chloride of 3-methylthiophosphocyclopentenic (2 and 3) acid, b.p. 125-135°C/12, $n^{20}D$ 1,5845. Example of the reaction with piperylene.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculature USSR

"Method of Preparing Quaternary Phosphonium Chlorides"

USSR Authors' Certificate No 250134, filed 23 Mar 68, published 4 Jan 70 (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N553P by I. M. MIL'SHTEYN)

Translation: Compounds of the general formula [(R) (R')P($CH_2$X) ($CH_2$-Y)]$^+$Cl$^-$ (I) (R and R' = alkyl, Ph, $PhCH_2$, substituted Ph or $PhCH_2$; and X and Y are substituted or unsubstituted aryl)], which may possess physiological activity, are obtained by conjugated alkylation of chloro or dichlorophosphines with benzyl chlorides at 170-320°. $I_2$ or Lewsi acids can be used as catalyst. The process can be initiated by UV irradiation. A mixture of 0.03 mole benzyldichlorophosphine, 0.04 gram atom white Ph and 0.135 mole $PhCH_2Cl$ is heated in a stream of $N_2$ until distillation of $PCl_3$ ceases (3-3.5 hours); excess $PhCH_2Cl$ is distilled off the residue is dissolved in alcohol, and kept in a crystallizer 19-20 hours, and I (R = R' = $PhCH_2$, X = Y = Ph) is separated out,

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

BLIZNYUK, N. K., et al., USSR Authors; Certificate No 250134

yield 89.2%, melting point 225-6 (alcohol-acetone). Analogously obtained are the following I (enumerated are R = R', X = Y% yield melting point in °C): 4-$ClC_6H_4CH_2$, 4-$ClC_6H_4$, 96.5, 235-6; 2,4-$Cl_2C_6H_3CH_2$, 2,4-$Cl_2C_6H_3$, 58, 140-142; 2-$ClC_6H_4CH_2$, 2-$ClC_6H_4$, ~100, --. Analogously obtained are the following I (enumerated are R, R', X = Y% yield, melting point in °C): Ph, 4-$ClC_6H_4CH_2$, 4-$ClC_6H_4$, ~100, --; Ph, $PhCH_2$, Ph, ~100, 128-30 (acetone); Ph, 2,4-$Cl_2C_6H_3CH_2$, 2,4-$Cl_2C_6H_3$, ~100, 160-2 (alcohol-acetone); 4-$MeC_6H_4$, $PhCH_2$, Ph, ~100, 85-7; $C_9H_{19}$, $PhCH_2$, Ph, ~100; Ph, 4-$ClC_6H_4CH_2$, Ph, ~100, 115-6.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

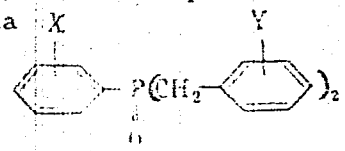
USSR UDC: 547.341.07

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Producing Aryldibenzylphosphine Oxides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztey, Tovarnyye Znaki, No 3, 1970, p 32, patent No 259880, filed 14 Oct 68

Abstract: This Author's Certificate introduces: 1. A method of producing aryldi-benzylphosphine oxides of general formula



based on arylchlorophosphines, where X and Y are hydrogen, an alkyl, or a halide. The distinguishing feature of the method is that the process is simplified and readily available initial compounds are utilized by interacting aryldichlorophosphine with benzyl chloride and elemental phosphorus

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

BLIZNYUK, N. K., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 32, patent No 259880, filed 14 Oct 68

accompanied by heating. The reaction mixture is then boiled with an alkali and the product is isolated by conventional methods. 2. A modification of this method whose distinguishing feature is that the process is carried out at a temperature of 170-200°C.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC 547.241.07

USSR

BLIZNYUK, N. K., KVASHA, Z. N., ~~PROTASOVA, I.~~ D., MADZHARA, G. A., VARSHAVSKIY, S. L., LIBMAN, B. Ya., and BARANOV, Yu. I., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Dihalophosphines"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292988, Division C, filed 10 Nov 69, published 15 Jan 71, p 102

Translation: This Author's Certificate introduces: 1. A method of making dihalophosphines by interacting a hydrocarbon halide or polyhalide with white phosphorus or a phosphorus trihalide with the application of heat and in the presence of a catalyst, with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the yield of the goal product is increased by using selenium, selenium anhydride or phosphorus selenide as the catalyst. 2. A modification of this method distinguished by the fact that the process is done at a temperature of 250-380°C.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC 547.241.07

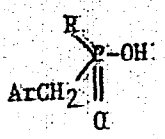
USSR

BLIZNYUK, N. K., ~~PROTASOVA, L. D.,~~ KVASHA, Z. N., KLIMOVA, T. A., and KLOPKOVA, R. S., All-Union Scientific Research Institute of Phytopathology

"A Preparative Method for Benzylphosphinic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298590, division C, filed 23 Jan 70, published 16 Mar 71, p 87

Translation: This Author's Certificate introduces: 1. A method of making benzylphosphinic acids of the general formula:



where R is an alkyl, aryl, or aralkyl, and Ar is an unsubstituted or substituted phenyl. As a distinguishing feature of the patent, the process is simplified by treating diarylphosphonite with benzyl chloride in alcohol with subsequent isolation of the product by conventional methods. 2. A

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

BLIZNYUK, N. K., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298590, division C, filed 23 Jan 70, published 16 Mar 71, p 87

modification of this method distinguished by the fact that the process is carried out with heating to 150-250°C.

2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR UDC 547.241.07

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., and VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Synthesizing 1,4-Phenylenehexabenzyldiphosphonium Chlorides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268418, filed 7 Jun 68, p 23

Abstract: This Author's Certificate introduces: 1. A method of synthesizing 1,4-phenylenehexabenzyldiphosphonium chlorides. The distinguishing feature of this procedure is that 1,4-phenylene-bis-dichlorophosphine is interacted with substituted bensylchloride and white phosphorus in the presence of heat with subsequent isolation of the goal product by conventional methods. 2. The method described in (1) is distinguished by the fact that the temperature reaches 170-220°C.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UDC 632.95

USSR

BLIZNYUK, N. K., PROTASOVA, L. D., and KVASHA, A. N., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Method of Preparing Tin-Containing Dithiophosphonates"

USSR Authors' Certificate No 248673, filed 7 May 68, published 22 Jan 70, (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N554P by S. LYUBARSKAYA)

Translation: Compounds of the formula /zop9s09r0ssn($R_2$')/$_2$0 (I; R = alkyl, aryl, aralkyl; R' = alkyl; Z = substituted or unsubstituted aryl) are obtained by the interaction of the anhydride of dithiophosphonic acid with bis-(arylhydroxydialkyltin)-oxide at 50-100°. To a solution of 0.014 mole $(MePS)_2S_2$ in 10 ml ClPh is added 0.007 mole /2,4,5-$Cl_3$-$C_6H_2$OSn($Bu_2$)/$_2$0, and on conclusion of the exothermic reaction it is heated for 2 hours in a boiling water bath; the solvent is distilled off and bis-(2,4,5-trichlorophenoxymethyldithiophosphinyldibutyltin)- oxide, $n^{20}D$ 1.6005, melting point 87-90°, is obtained. Analogously obtained are the following I (R' = Bu; given are R, A, melting or softening point, $n^{20}D$): Me, alpha-naphthyl, 47-50, --; Ph, 2,4-$Cl_2C_6H_3$, 58-60, --; Ph, p-$NO_2C_6H_4$, 50-2, 1.635; $PhCH_2$, Ph, 52-4, 1.6083; $PhCH_2$, 2,4-

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

USSR

BLIZNYUK, N. K., et al., USSR Authors' Certificate No 248673

$Cl_2C_6H_3$, 87-9, 1.6145. I's can be used as physiologically active substances and catalysts.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8

UNCLASSIFIED

1/2 014 PROCESSING DATE--04DEC70

TITLE--METHOD FOR OBTAINING ARYLDIBENZYLPHOSPHINE OXIDES -U-

AUTHOR-(03)-BLIZNYUK, N.K., PROTASOVA, L.D., KVASHA, Z.N.

COUNTRY OF INFO--USSR

SOURCE--AUTHOR CERTIFICATE NR 259880

REFERENCE--OTKRYTIYA, IZOBRET. PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, NO 3,

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, PHOSPHORUS OXIDE, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1770 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137010

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530009-8"