

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--IMPLANTATION TYPE TRITIUM TARGETS MADE FROM SCANDIUM, YTTRIUM,
PRASEODYMIUM, NEODYMIUM, AND ERBIUM -U-
AUTHOR-(04)-STRIZHAK, V.I., PRIMENKO, G.I., KATSAUROV, L.N., PRONMAN, I.M.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(3), 249-51
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ION IMPLANTATION, TRITIUM, SCANDIUM, YTTRIUM, PRASEODYMIUM,
NEODYMIUM, ERBIUM, PARTICLE ACCELERATOR TARGET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--2000/1038 STEP NO--UR/0089/70/028/003/0249/0251
CIRC ACCESSION NO--AP0124696
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE IMPLANTATION OF T INTO ER, SC, ND, Y, AND PR TARGETS, BY USING AN ACCELERATION VOLTAGE OF 120 KV AND A T CURRENT OF 100 MUA, SATN. OF THE TARGETS WITH T OCCURS AFTER 35-50 MIN OF BOMBARDMENT; THE YIELD OF N FROM THE T(D,N) REACTION ON THE ABOVE TARGETS IS 2.1 TIMES 10 PRIME7, 1.8 TIMES 10 PRIME7, 1.5 TIMES 10 PRIME7, 1.5 TIMES 10 PRIME7, AND 1.8 TIMES 10 PRIME7 N-MUCK, RESP., AS COMPARED WITH 1.8 TIMES 10 PRIME7 N-MUCI FROM A TI TARGET WITH ABSORBED T. HEATING OF IMPLANTATION TYPE RARE EARTH TARGETS REDUCES THE N YIELD FROM THE T(D,N) REACTION, E.G., BY SIMILIAR TO 30PERCENT AFTER HEATING TO 400DEGREES, BUT THE N YIELDS FROM SUCH HEATED TARGETS ARE MUCH HIGHER THAN THE YIELDS FROM HEATED ZR-T TARGETS (WHERE THE YIELD DECREASES BY A FACTOR OF R).

UNCLASSIFIED

Steels

USSR

UDC:669.187.2:621.746

CHISTYAKOV, V. F., AVERIN, V. V., PRONOV, A. P., DANTLIN, V. I.,
LISOV, I. V., YERMAKOV, B. A., KISELEV, A. A., DUMCHEV, YA. P. and
KHRISTICH, V. D., "Krasnyy Oktyabr'" Plant

"Casting of ShKh15 Steel under Exothermic Slag-Forming Briquets"

Moscow, Metallurg, No 1, Jan 74, pp 19-22

Abstract: Exothermic, slag-forming briquets were tested by casting of steel melted in a 16-ton electric arc furnace with evacuation of the metal, not deoxidized with silicon and aluminum, in the ladle. For comparison, steel was cast in 2.7 t ingots by the siphon method without briquets and with application of a light crust to the surface of the liquid metal when the mold was 1/3 full. The riser was heated with type L28M lunckerite and an exothermic mixture based on 75% FeSi. The experimental briquets produced steel of a quality corresponding to the requirements of the state standard (GOST801-60). The ShKh15 steel produced with the exothermic experimental briquets was higher in quality than metal produced in coated molds.

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Miscellaneous

USSR

UDC 519.283

KUN, L. A., PRONOZIN, Yu. F., Moscow

"On Differential Games. III"

Moscow, *Avtomatika i Telemekhanika*, No 9, Sep 71, pp 16-22

Abstract: The differential games described in the first and second parts of this paper are analyzed. (For the first two parts of the article, see *Avtomatika i Telemekhanika* No's 5 and 7, 1971). In particular, the differential game \mathcal{J} is considered in which the right member f of the equation of motion of the players, and the function g , do not depend on the controlling parameter v of player E . Such a game can be treated as an optimum control problem with generalized Bellman function

$$\mathcal{P}(t, z) = \inf_{u \in E_p} \mathcal{J}(t, z, u).$$

A theorem is proved which eliminates the difficulties due to the differentiability of the Bellman equation by reducing solution of the optimum control problem to finding an everywhere continuous, differentiable ϵ -solution of the Bellman equation rather than its exact solution. In addition, the

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KUN, L. A., PRNOZIN, Yu. F., Avtomatika i Telemekhanika, No 9, Sep 71,
pp 16-22

general case of a differential game with two players is considered. Sufficient conditions of ϵ -optimality are proposed in the form of differential ϵ -inequalities (including those for games which are not pseudosaddle games). A sufficient condition is established for the existence of a generalized value in the game. An example is given. The authors thank A. M. Letov for constructive criticism during discussion of the work. Two figures, bibliography of five titles.

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PRONIZIN, Yu. F.

control

JPAS 54729
17 Dec 71

UDC 519.3:62-50
ON THE REGULARIZATION OF THE BELLMAN METHOD IN PROBLEMS OF OPTIMUM RAPID ACTION

Article by I. A. Ivin and Yu. F. Pronozin, Institute of Control Problems, Moscow, USSR, ~~SAKUNYI MANUSKRIPT, Nauk SSSR, Russian, Vol 200, No 6, 1971, pp 1234-1237.~~

1. We will discuss the problem of the optimum control of an object whose motion is described by the equation $\dot{x} = f(x, u), x \in R^n, u \in U \subset R^m$ (1) where R^n = n-dimensional Euclidean space; U = control area; f = local Lipschitz mapping from $R^n \times U$ into R^n . Let us assume, in addition, that the mapping of f satisfies the Filippov condition $\Delta_{\epsilon}^{\delta}$: $\|f(t, u) - f(t, v)\| \leq C(\|u - v\|)$ for $(t, u) \in R^+ \times U$, where $\langle \alpha, f(t, u) \rangle$ = scalar product of vectors α and $f(t, u)$; $\|\cdot\|$ = Euclidean norm; C = some positive number.

We must find, in the class of piecewise-continuous functions, the control that converts object (1) into the source of space R^n coordinates after a minimum length of time. As is known [1], the original approach to the solution of the problem of optimum control, which was based on the Bellman equation, had as one of its most essential moments an a priori assumption about the existence of a solution of the Bellman equation that was everywhere continuously differentiable. However, this assumption is extremely restrictive and, as a rule, is not fulfilled. In all the examples presented in [1], in particular, the Bellman function proved to be nondifferentiable at some multifurcations (containing entire segments of optimum trajectories). This fact creates fundamental difficulties in using the Bellman equation in optimum control problems.

Polyanskiy, in [2], gave a proof of the Bellman approach as a sufficient condition of optimality for substantially weaker assumptions relative to the smoothness of the

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UDC 519.283

KUN, L. A., and PRONOZIN, Yu. F., Moscow

"On Differential Games. I"

Moscow, Avtomatika i Telemekhanika, No 5, May 71, pp 22-30

Abstract: The basic concept to be considered is that of a global strategy, a concept based on the work of Karlin. With the global strategy is associated a tactic. The derivation of these terms is given in detail. The class of permissible strategies includes the set of global strategies satisfying the following conditions: 1) the switch and tactic are independent of game state, and the tactic takes on values of constant local strategies; 2) if any global strategy is part of the permissible state, then any other global strategy with an arbitrary switch independent of state and a constant tactic equal to any tactic of the first strategy is also permissible; 3) any strategy formed by adopting tactics from other permissible strategies, switching from one to another at arbitrary time points, is permissible. These definitions lead to a series of sub-classes of permissible strategies. The optimal strategy is defined in the usual way.

If one player has an optimal strategy in the initial state of the game,

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KUN, L.A., et al, Avtomatika i Telemekhanika, No 5, May 71, pp 22-30

it is easy to show (1) that if the possibility functions are equal, they are a payoff function which, if differentiable at the starting point, satisfies the Isaacs-Bellman equation; (2) in optimal control theory that the differentiable Bellman function satisfies the Bellman equation. However, there are known cases in optimal control theory in which there are no piecewise continuous optimal controls. Even lacking optimal strategies, however, it is possible to show that the Bellman function satisfies the Bellman equation.

Several properties of the functions which describe the possibilities of each player can also be shown, without assuming the existence of optimal strategies or the equality of these possibility functions.

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USSR

UDC 546.18:543.862.34

KOROL'KO, V. V., SHAROV, V. N., PRONS, V. N., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Molecular Refraction of the Cyclotriphosphazene Grouping P_3N_3 "

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 584-585

Abstract: A series of cyclotriphosphazenes with the general formula $(PN)_3Cl_x(OCH_2R^F)_{6-x}$, where $R^F = C_2F_5, C_3F_7$ and $x = 0$ to 6, has been synthesized and characterized. Molecular refraction of this grouping calculated by the formula $(MR_D)_G = (MR_D)_1 - (MR_D)_2$ is 25.23. $(MR_D)_1 =$ molecular refraction from the formula of Lorentz-Lorenc, and $(MR_D)_2 =$ molecular refraction of the substituents on cyclotriphosphazene.

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USSR

UDC 546.185 + 547.412

~~PRONS, V. N.~~ GRINBLAT, M. P., and KLEBANSKIY, A. L., All Union Scientific
Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Ammonolysis Reaction of Perfluoroalkylchlorophosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, p 692

Abstract: Reaction of ammonia with bis(trifluoromethyl)trichlorophosphorane and bis(heptafluoropropyl)trichlorophosphorane in chloroform or methylene chloride at -40° - 0° , the reagents being taken in a ratio $\leq 3:1$, followed by heating the intermediate products to $200-250^{\circ}$ yields respective perfluoroalkylphosphazenes.

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USSR

UDC 547.26'118

PRONS, V. N., GRINBLAT, M. P., and KLEBANSKIY, A. L.

"Synthesis and Reactivity of Fluoroalkylchloro- and Fluoroalkylphosphites"

Leningrad, Zhurnal Obschey Khimii, Vol 41 (103), No 2, Feb 71, p 483

Abstract: Reaction of PCl_3 with tetrafluoropropanol, pentafluoropropanol and heptafluorobutanol gave low yields of bis-(tetrafluoropropyl) chlorophosphite, bis-(pentafluoropropyl) chlorophosphite, b.p. $67^\circ/35\text{mm}$, d_4^{20} 1.5931, n_D^{20} 1.3370, and bis-(heptafluorobutyl) chlorophosphite, b.p. $35^\circ/2\text{mm}$, d_4^{20} 1.6623, n_D^{20} 1.3312 respectively. In later runs the fluoroalcohol was added gradually to PCl_3 to increase the yield of secondary phosphites. However, even with small portions of the fluoroalcohol added, both the bis- and tris-(fluoroalkyl) phosphites were formed, the later by far in largest amounts.

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USSR

UDC 546.185 + 547.412

PRONS, V. N., GRINBLAT, M. P., and KLEBANSKIY, A. L., All Union
Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Synthesis and Polymerization of Methylchlorocyclophosphazenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71,
pp 482-483

Abstract: Heating methyltetrachlorophosphorane with ammonium chloride in sym-tetrachloroethane yields methylchlorocyclophosphazenes in 55% yield, provided that ammonium chloride is prepared directly in the reaction vessel. The product consists of a 60:40 mixture of 1,3,5-trimethyl-1,3,5-trichlorocyclotriphosphazene and 1,3,5,7-tetramethyl-1,3,5,7-tetrachlorocyclotetraphosphazene. This mixture, heated to 200-220^o for 15-20 hrs in a sealed ampoule, yields a rubber-like methylchloropolyphosphazene.

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USSR

UDC 546.185 + 547.412

PRONS, V. N., GRINBIAT, M. P., KLEBANSKIY, A. L., NIKOLAYEV, G. A.

"Rearrangement of Fluoroalkoxyhalocyclophosphazenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, p 2128

Abstract: Heating a mixture of hexakis-(pentafluoropropoxy)-cyclotriphosphazene (I) and tris-(pentafluoropropoxy)-trichlorocyclotriphosphazene (II) taken at a 1:1 ratio to 250° for 40 hrs in a sealed tube leads to the formation of 12% tetrakis-(pentafluoropropoxy)-dichlorocyclotriphosphazene (III) and a trace of pentakis-(pentafluoropropoxy) monochlorocyclotriphosphazene (IV). Increasing the reaction time brings up the ratio of (III) and (IV) to about the level of (I) and (II). A similar disproportionation reaction occurs with hexakis-(heptafluorobutoxy)-cyclotriphosphazene and tris-(heptafluorobutoxy)-trichlorocyclotriphosphazene.

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USSR

UDC 546.185 + 547.412

PROKS, V. N., GRINBLAT, M. P., KLEBANSKIY, A. L."Synthesis of Bis-(perfluoroalkyl)-cyclophosphazenes"Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 2127-2128

Abstract: Ammonolysis of bis-(heptafluoropropyl)-trichlorophosphorane (I) with a fivefold excess of highly dispersed ammonium chloride in chlorobenzene, prepared freshly in the reaction vessel from gaseous ammonia and HCl, occurs at 125-130° with slight decomposition of (I), yielding a 70-30 mixture of 2,2,4,4,6,6-hexa-(heptafluoropropyl)-cyclophosphazene and 2,2,4,4,6,6,8-octa-(heptafluoropropyl)-cyclophosphazene (II). Vacuum distillation of the above crystalline mixture gives pure (II), m.p. 122.5-123°; its IR spectrum shows bands at: 683, 740, 752, 880, 1120, 1142, 1300-1240, 1335, 1400-1420 cm⁻¹.

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS AND THERMAL STABILITY OF PHOSPHAZOPHOSPHINES -U-

AUTHOR--(031)-PRCNS, V.N., GRINBLAT, M.P., KLEBANSKIY, A.L.

COUNTRY OF INFO--USSR

SOURCE--Zh. OBSHCH. KHIM. 1970, 40(3), 589-94

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, THERMAL STABILITY, POLYMER, ORGANIC
PHOSPHORUS COMPOUND, AZO COMPOUND, PHOSPHORUS CHLORIDE, FLUORINATED
ORGANIC COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1136

STEP NO--UR/0079/70/040/003/0589/0594

CIRC ACCESSION NO--AP0128562

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128562

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 20 G (CF SUB3) SUB2 PNH
SUB2 AND 22 G ET SUB3 N AT NEGATIVE 40DEGREES TO 30.61 G (CF SUB3) SUB2
PCL SUB3 IN ET SUB2 O UNDER GAVE ON THE FOLLOWING 95PERCENT ET SUB3
N,HCL AND 62.2PERCENT (CF SUB3) SUB2 PCL, B. 21-1.5DEGREES, WHILE THE
DISTN. RESIDUE IS SHOWN ON MICROFICHE. FACILITY: YSES. NAUCH.
ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ULTRASONIC DEFECTOSCOPY OF GRILLED TUBES -U-

AUTHOR--(05)-PRONYAKIN, V.T., ANIKEYEV, YA.F., GORSHKOV, A.V., LOVYAKIN,
YE.M., NEMYROVSKIY, M.G.
COUNTRY OF INFO--USSR

SOURCE--SVERDLOVSK, DEFEKTOSKOPIYA, NO. 1, 1970, PP. 6-19

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT,
MATERIALS
TOPIC TAGS--NONDESTRUCTIVE TEST, QUALITY CONTROL, ULTRASONIC INSPECTION,
CERAMIC MATERIAL, PIEZOELECTRIC MATERIAL/(UITSTSI) CERAMIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0140

STEP NO--UR/8381/70/000/001/0010/0010

CIRC ACCESSION NO--AP0100670

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--10SEP70

CIRC ACCESSION NO--AP0100670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALTHOUGH MANY DEFECTOSCOPIC DEVICES HAVE BEEN SUCCESSFULLY USED FOR QUALITY CONTROL OF THIN WALLED TUBES, THEIR USE FOR THE CONTROL OF GRILLED TUBES IS IMPOSSIBLE BECAUSE OF THE INTERFERING PULSES REFLECTED FROM THE RIBS OF THE TUBE. EXPERIMENTAL STUDY OF HOW THE AMPLITUDES OF THE TRANSMITTED AND REFLECTED ULTRASONIC PULSES ARE AFFECTED BY THE RIBBED SECTION OF THE TUBE HAS SHOWN THAT A DIFFERENCE IN THE INTERFERENCE EFFECTS OF THE TRANSMITTED AND REFLECTED SIGNALS IS OBSERVED DEPENDING ON THE SHAPE OF THE RIBBING. AS A RESULT, THIS FACTOR PREDETERMINES THE CHOICE OF CONTROL METHOD. THIS PAPER DESCRIBES EXPERIMENTS OF DEFECTOSCOPIC CONTROL OF THIS TUBING TYPE USING PIEZOELECTRIC ELEMENTS MADE OF THE TSTS-19 CERAMIC WITH RESONANT FREQUENCIES FROM 2 TO 5.25 MHZ. IT WAS FOUND THAT DEFECTS WITH A DEPTH OF MORE THAN 25 MICRONS ON THE INNER SURFACE OF THE TUBES UNDER THE RIBBING WERE RELIABLY RECORDED; SENSITIVITY TO DEFECTS ON THE OUTER SURFACE WAS MUCH LOWER, WITH A DEPTH THRESHOLD OF 60 MICRONS. THE AUTHORS EXPRESS THEIR GRATITUDE TO P. I. VIT'KO, WHO ASSISTED IN THE EXPERIMENTS.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--04DECTO
 TITLE--ON THE INFLUENCE OF RESONANCES IN ELASTIC ELECTRON SCATTERING BY LI
 PRIME POSITIVE ION ON LI PLASMA PROPERTIES -U-
 AUTHOR--PROPIN, R.KH.
 COUNTRY OF INFO--USSR
 SOURCE--LATV. PSR ZINAT. AKAD. VESTIS FIZ. TEHN. SER. (USSR), NO. 2, P.
 30-4 (1970)
 DATE PUBLISHED-----70

P

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, ELASTIC SCATTERING, LITHIUM, PLASMA
PROPERTY, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1419

STEP NO--UR/0371/70/000/002/0030/0034

CIRC ACCESSION NO--AP0138429

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESONANCE INFLUENCE ON THE EFFECTIVE NUMBER OF THE ELECTRON IMPACTS IN A UNIT OF TIME IS CONSIDERED. THE PLASMA ITSELF, LOCATED IN A WEAK ALTERNATING ELECTRIC FIELD, HAS PARAMETERS AT WHICH THE EFFECT CONSIDERED IS EXPECTED TO REACH THE HIGHEST LEVEL. THE EFFECT IS FOUND TO HAVE A MINOR INFLUENCE ON THE ELECTRIC PROPERTIES OF THE PLASMA.

UNCLASSIFIED

L/3 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPLEXING OF 2,2,THIAZOLYLAZO,1,8,DIHYDROXY,3,6,
NAPHTHALENEDISULFONIC ACID DERIVATIVES WITH METAL IONS -U-
AUTHOR-(64)-SAVVIN, S.B., ROZOVSKIY, YU.G., PRGPISTSOVA, R.F., LIKHONINA,
YE.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 423-9
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE, THIAZOLE, ALUMINUM COMPLEX, THORIUM COMPOUND, GALLIUM
COMPOUND, ZIRCONIUM COMPLEX, NAPHTHALENE, SULFONIC ACID, POTENTIOMETRIC
TITRATION, ANALYTIC CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2092

STEP NO--UR/0075/70/025/003/0423/0429

CIRC ACCESSION NO--AP0125678

UNCLASSIFIED

273 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125678

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW REAGENTS BASED ON VARIOUS DERIVS. OF 2,AMINOTHIAZOLE AND CHROMOTROPIC ACID WERE SYNTHESIZED AND THEIR COMPLEX FORMATION WITH TH, ZR, GA, AND AL WAS STUDIED. THE REAGENTS ARE RED POWDERS, IN THEIR H FORM AND WELL SOL. IN H SUB2 O, HCONME SUB2, AND MEOH. AQ. SOLNS. OF THE REAGENTS ARE NOT STABLE. THE INTENSITY AND COLOR OF THE REAGENTS DEPENDS ON THE ACIDITY OF THE MEDIUM. THEY ARE BLUE GREEN COLORED IN A CONCD. H SUB2 SO SUB4, YELLOW IN 1-10N HCL, VIOLET IN THE PH RANGE 1-5, RED CRIMSON IN THE PH RANGE 7-12, AND BLUE IN 10PERCENT KOH. THE PREPN. AND BEHAVIOR OF 4,5-DIMETHYL,2, THIAZOLYLAZCCHROMOTROPIC ACID (I) IS DESCRIBED IN DETAIL. I CAN BE REPRESENTED AS A 4 BASIC ACID. THE 1ST EQUIL. POINT ON THE POTENTIOMETRIC TITRN. CURVE REPRESENTS THE NEUTRALIZATION OF 2 SULFO GROUPS, THE 2ND POINT THE TITRN. OF THE 1ST OH GROUP OF THE NAPHTHALENE NUCLEUS, THE DISSOCN. OF THE 2ND OH GROUP TAKES IN THE ALK. REGION. IN THE ACID REGION I FORMS 2 PROTONIZED FORMS, AT PH IS SMALLER THAN 1 A YELLOW THIAZOLYL CATION WITH MAX. ABSORBANCE AT 480 NM AND IN CONCD. H SUB2 SO SUB4 A 2ND PROTONIZED FORM WITH MAX. ABSORBANCE AT 640 MU M. I REACTS WITH SEVERAL ELEMENTS, GIVING VERY CONTRASTING COLORS WITH AL, ZR, TH, AND GA. I FORMS WITH AL 2 DIFFERENT COMPLEXES. IN AQ. SOLNS. AT PH 3-4 THERE IS A BLUE COMPLEX WITH MAX. ABSORBANCE AT 590 NM AND THE 2ND COMPLEX IS FORMED AT PH 1-2.5 REGION. THIS COMPLEX IS BLUE GREEN AND HAS A HIGH MOLAR ABSORPTIVITY. IN A AQ. ALC. SOLN. ONLY THE 2ND COMPLEX FORMS WITH MAX. ABSORBANCE 630 NM. TEMP. AND ORDER OF ADDN. DO NOT AFFECT THE YIELD OF THE COLORED COMPLEX. AL AND I REACT IN A 1:1 MOLAR RATIO.

UNCLASSIFIED

3/3 014 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0125678
ABSTRACT/EXTRACT--FACILITY: INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: *APC106267*

P
Ref. Code: *UR0103*

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr *3*, pp *122-133*

OF STOCHASTIC APPROACH TO PROBLEMS
OF NONLINEAR PROGRAMMING

A. I. KAPLINSKIY, A. I. PROPOY

There are considered the statements of the problems of stochastic programming and the relations among them under various degrees of information concerning the parameters in the conditions of the problem. There are stated the problems when the introduction of randomized strategies allows to improve the solution of the problem to a certain extent. It is shown that the solution of the problems of stochastic programming in randomized strategies is reduced to finitedimensional problems of nonlinear programming.

// *DI*
REEL/F
19881511

Acc. Nr: **APO040890**

Ref. Code:

UR0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 65-75

MINIMAX PROBLEMS OF CONTROL AT SUCCESSIVE INFORMATION

A. I. PROPOV

There are considered the minimax problems of control in the case when during the game one of the players may learn the current values of the state variables and the control variables of his opponent.

REEL/FRAME
19750629

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ke

Theoretical Automation

USSR

PROBCH, 1, 5, (Moscow)

"Problems of Discrete Control with Phase Constraints"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki; September-October, 1972; pp 1128-1141

ABSTRACT: The author considers means of solving problems of discrete control with phase constraints. "Straightforward" conditions of optimality are presented in terms of feasible directions. Different variations of the maximum principle for the class of problems considered are obtained. By means of duality methods the relation between "straightforward" and "ambiguous" conditions of optimality is established, in the course of which operation Lagrange multipliers are used as constraints on the variables. A bilateral evaluation of the optimal control is obtained. Based on the conditions of optimality presented, a method of possible directions for the problems considered is given.

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1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANISM OF BRANCHING IN THE REACTION OF FLUORINE WITH DEUTERIUM.
I-U-
AUTHOR--(03)-VEDENEYEV, V.I., ~~PROPOY, V.I.~~ SARKISOV, O.M.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 36-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORINE, DEUTERIUM, CHEMICAL KINETICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1462 STEP NO--UR/0195/70/011/001/0036/0040
CIRC ACCESSION NO--AP0120249
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE EMISSION KINETICS IN THE D SUB2, F SUB2, AR SYSTEM ON AR PRESSURE WAS STUDIED AT A TOTAL D PLUS F PRESSURE OF 0.03 TORR AND A 3:5 F:D CONC. RATIO AT 273DEGREE SK. UP TO SIMILAR TO 50 TORR, DECAY OF AT. F AND D OCCURRED BY A HETEROGENEOUS MECHANISM PARTIALLY ON O IMPURITIES WHICH WERE INTRODUCED WITH F. THE EFFECTIVE DECAY CONST., G SUBEFF EQUALS KAPPA PRIME SUBEFF PLUS KAPPA PRIME PRIME SUBEFF (O SUB2) (AR), WHERE KAPPA PRIME SUBEFF APPROXIMATELY EQUAL TO 0.2 SEC PRIME NEGATIVE AND KAPPA PRIME PRIME SUBEFF EQUALS 3 TIMES 10 PRIME NEGATIVE 32 CM. PRIME 6 MOL. PRIME NEGATIVE 2 SEC PRIME NEGATIVE 1. IT IS ASSUMED THAT THE REACTION D SUB2 PLUS F SUB2 EQUALS F PLUS DF PLUS D IS THE BASIC CHAIN INITIATION REACTION. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

BEMBEL', R. M., PROPP, E. F.

"Computing Theoretical Hodographs of Reflected Waves for Layered Media. The 'Goss-1' Program"

Tr. Zap.-Sib. n.-i. geologorazved. neft. in-t (Works of the West Siberian Scientific Research Institute of Geological Petroleum Prospecting), 1972, vyp. 55, pp 160-169 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V642 [authors' abstract])

Translation: The program is set up in Minsk-22 computer codes and is formulated as a standard program. The operator is based on an equation of a theoretical hodograph of a reflected wave for a layered medium in which the refraction of the transmitted waves is taken into consideration on all intermediate boundaries. The angles of inclination of all higher layers, and the stratum velocities may be different, and are accounted for in the operator.

1/1

USSR

UDC 539.143.43+661.718.1

①

ISHKAYEVA, E. A., KHARRASOVA, F. M., ZAV'YALOV, A. P., and PUDOVIK, A. N.,
Kazan State University imeni V. I. Ul'yanov-Lenin, Kazan

"The Dipole Moments of Para-Substituted Phenylphosphonates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, Mar 71,
pp 619-620

Abstract: The dipole moments of the p-substituted phenylphosphonates $p\text{-XC}_6\text{H}_4\text{P}(\text{O})(\text{OEt})_2$ ($X = \text{Me}, \text{MeO}, \text{Cl}, \text{Br}$) and of $\text{PhP}(\text{O})(\text{OEt})_2$ were determined experimentally. They were also calculated on the assumption that the dipole moment of the $(\text{EtO})_2\text{P}(\text{O})$ - group had the value 2.30 D which followed from an orientation of this group in such a manner that the components along the coordinate axes had the values $m_x = 0.72$, $m_y = 0$, $m_z = 2.19$ D (shmayeva, et al Izv. AN SSSR, Ser. Khim., 1970, 2695). The calculated values for compounds $p\text{-XC}_6\text{H}_4\text{P}(\text{O})(\text{OEt})_2$ did not correspond to the experimental values, apparently because of an interaction of X with the $(\text{EtO})_2\text{P}(\text{O})$ -group by conjugation, through the phenyl ring. The experimentally determined dipole moment of $\text{PhP}(\text{O})\text{Cl}_2$ corresponded to the calculated moment. 1/1

USSR

UDC: 8.74

PROPP, M. V.

"Structure of a Biogeocenosis and its Simulation by Methods of the Theory of Fluxes"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 25, Moscow, "Nauka", 1972, pp 183-190 (from RZh-Kibernetika, No 6, Jun
72, Abstract No 6V604)

Translation: The paper deals with requirements for a practically usable model of a biogeocenosis (an ecological system of fairly high complexity). It is proposed that energy and matter fluxes be modeled by the populations comprising the biogeocenosis -- the division of the theory of graphs which is used in economics. The maximum possible fluxes between separate populations are determined on the basis of the maximum numbers in corresponding species observed in nature. The fluxes throughout the entire system are calculated by means of the Ford-Fulkerson algorithm, which is equivalent to the hypothesis of maximum utilization of all resources by the ecosystem. The model gives limiting factors, admits a process of gradual complication, and defines the minimum initial amount of data for a complete mathematical representation of the system. The Ford-Fulkerson algorithm gives the relation between the maximum and average numbers in species of a community. The theory of dynamic networks should be used for further extending applications. Author's abstract.

1/1

Acc. Nr:

AP0041845

Abstracting Service:
CHEMICAL ABST.

H-70

Ref. Code:

UR0502

P

86836y Mechanism of the depression of the thyroid gland function with thyroid hormones. Baranov, V. G.; Laskutova, E. A.; Propp, M. V. (Inst. Fiziol. im. Pavlova, Leningrad, USSR). *Probl. Endokrinol.* 1970, 16(1), 43-6 (Russ). Triiodothyronine (T₃) administered to hypophysectomized rats at 10 µg/100 g daily for 7 days decreased the height of the follicular epithelium and the level of ¹³¹I uptake by the thyroid gland and restored these parameters to normal after administration of thyrotropic hormone (TSH) i.m. at 0.5 units daily for 10 days. Height of the follicular epithelium and ¹³¹I-uptake were higher in TSH-treated rats than in those subjected only to hypophysectomy. T₃ seems to act directly on the thyroid gland, causing morphol. and functional changes characteristic of decreased function, and 1 of the mechanisms seems to be blocking the action of TSH on the gland.

BJJR

REEL/FRA
19751726

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--DIAGNOSTIC SIGNIFICANCE OF PNEUMOTHROIDOGRAPHY -U-
AUTHOR--RYBAKOVA, N.I., PROPP, R.M. P
COUNTRY OF INFO--USSR
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970 PAGES
47-51
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--X RAY TECHNIQUE, SURGERY, DIAGNOSTIC METHOD, THYROID GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0727

STEP NO--UR/0248/70/025/002/0047/0051

CIRC ACCESSION NO--AP0102697

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0102697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THUS, ANALYSIS OF OUR FINDINGS AND ROENTGENO SURGICAL COMPARISON REVEALS THE HIGH RESOLUTION OF THIS METHOD, WHICH, WITH PROPER SKILL IN INTERPRETING ROENTGENOTOMOGRAMS, FURNISHES A COMPLETE PICTURE AS TO THE STATE OF THE THYROID GLAND AND ADJACENT TISSUES PRIOR TO SURGICAL INTERVENTION.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 038
TITLE--SOME CARDIOVASCULAR CHANGES IN FEMALE TELEGRAPH OPERATORS OF THE
CENTRAL TELEGRAPH OFFICE IN THE COURSE OF THEIR WORK DAY -U-
AUTHOR--(02)-POD08A, YE.V.; PROSEKIN, A.M.

P

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYE ZABOLEVANIYA, 1970, NR 6, PP

4-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HUMAN FACTORS ENGINEERING, INDUSTRIAL HYGIENE, SANITARY
ENGINEERING, PHYSIOLOGIC FATIGUE, TELEGRAPH SYSTEM, HYPERTENSION,
CARDIOVASCULAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0419

STEP NO--UR/0391/70/000/006/0004/0007

CIRC ACCESSION NO--AP0129646

UNCLASSIFIED

272 038

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX SET OF PHYSIOLOGICAL AND HYGIENIC INVESTIGATIONS INTO THE WORKING CONDITIONS OF FEMALE TELEGRAPH OPERATORS AT THE MOSCOW CENTRAL TELEGRAPH OFFICE WAS CARRIED OUT. THE NATURE OF PHYSIOLOGICAL SHIFTS WAS DETERMINED IN THE COURSE OF WORKING DAY IN PRACTICALLY HEALTHY OPERATORS. THE HYPERTENSIVE EFFECT OF THE WORK EFFORTS WAS ASCERTAINED AND CORRELATION BETWEEN AVERAGE DYNAMIC TENSION VALUES AND THE RATE OF THE PULSE WAVE PROPAGATION, AS WELL AS A RELATION OF THE REACTION TIME WITH THE MEAN DYNAMIC PRESSURE VALUE WERE BROUGHT OUT. AN INCREASE IN THE INCIDENCE OF HYPERTENSION AMONG FEMALE TELEGRAPH OPERATORS OF THE CENTRAL TELEGRAPH OFFICE IS CONDITIONED BY THE DERANGEMENT OF COMPENSATORY POSSIBILITIES OF THE ORGANISM OWING TO THE ARRHYTHMIC AND STRAINED NATURE OF THE WORK. RECOMMENDATIONS RESPECTIVE CHANGES OF THE SCHEDULE OF WORK AND ITS DURATION (AN INCREASE OF THE INTERSHIFT INTERVAL, REDUCTION OF THE WORK HOURS DOWN TO 6) WERE PROPOSED AND ACCEPTED. FACILITY: INSTITUT GIGIYENY TRUDA I PRGFZABOLEVANIY AMN SSSR.

UNCLASSIFIED

1/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--STRUCTURE AND CHEMICAL REACTIONS OF CARBAZOLE AND ITS DERIVATIVES.
34. CHLOROSULFONATION OF CARBAZOLE -U-

AUTHOR--(03)-SHISHKINA, V.I., PROSHECHKINA, T.I., ZUBAREVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2),
269-70

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, ORGANIC AZOLE COMPOUND, SULFONATION,
CHLORINATION, SULFONIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1129

STEP NO--UR/0153/70/013/002/0269/0270

CIRC ACCESSION NO--AT0134815

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0134815
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN CCL SUB4, A GREAT EXCESS OF
CLSO SUB3 H (II) IS REQUIRED FOR THE CHLOROSULFONATION OF CARBAZOLE (II).
THUS, BY BOILING 4 HR IN CCL SUB4 THE YIELD OF CARBAZOLESULFONYL
CHLORIDE IS NEGLIGIBLE WITH 8:1 I-II, 36PERCENT WITH 15:1 I-II, AND
85PERCENT WITH 30:1 I-II. THE K SALTS OF CARBAZOLE, 3,6,DISULFONIC AND
1,3,6,TRISULFONIC, AND THE NA SALT OF CARBAZOLE, 1,3,6,8,TETRASULFONIC
ACID WERE CHLOROSULFONATED IN 86-94PERCENT YIELD WITH 30 FOLD EXCESS OF
I. IN MENO SUB2 OR DIOXANE, I IS NOT CHLOROSULFONATED. IN THE ABSENCE
OF CCL SUB4, A GOOD YIELD OF CARBAZOLESULFONYL CHLORIDE IS OBTAINED BY
HEATING 0.024 MOLE I 4 HR WITH 0.432 MOLE II AT 100-100DEGREES.
FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 025
TITLE--REACTION OF TETRAFLUOROHYDRAZINE WITH UNSATURATED NITRO COMPOUNDS
-U-

AUTHOR--(04)-FOKIN, A.V., NIKOLAYEVA, A.D., STUONEV, YU.N., PROSHIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 717-18

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORONITRO COMPOUND, FLUORINATED ORGANIC COMPOUND, HYDRAZINE
COMPOUND, ORGANIC NITRO COMPOUND, CHEMICAL SYNTHESIS, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--1999/1881

STEP NO--UR/0062/70/000/003/0717/0718

CIRC ACCESSION NO--AP0123669

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123669

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

ABSTRACT. PASSING N SUB2 F SUB4 35 HR INTO
 7.5 G 2,2-DINITRO,4,PENTENE IN MECN AT 70DEGREES UNDER N GAVE
 36.4PERCENT F SUB2 NCH SUB2 CRR PRIME1 NF SUB2 (I) (R EQUALS H, R PRIME1
 EQUALS CH SUB2 CME(NO SUB2) 2), B SUBO.008 46-80DEGREES, N PRIME20 SUBO
 1.4512, D PRIME20 1.52. SIMILARLY WERE PREPD. THE FOLLOWING I (R AND R
 PRIME1 SHOWN): H, CH SUB2 NO SUB2, B SUBO.04 47DEGREES, N PRIME20 SUBD
 1.4403; ME, CH SUB2 NO SUB2, B SUBO.01 50DEGREES, 1.4780; H, CH SUB2
 CF(NO SUB2) SUB2, B SUBO.1 65DEGREES 1.4416; H, CH SUB2 CH SUB2 CF(NO
 SUB2) SUB2, B SUBO.003 56DEGREES, 1.4513; H, CME(NO SUB2) SUB2, B
 SUBO.001 36DEGREES, 1.4380; AND ME, CH SUB2 CME(NO SUB2) SUB2, B
 SUBO.001 64DEGREES, 1.4811. THE PRODUCTS WERE RATHER REACTIVE AND
 UNSTABLE LIQS. ONLY MINOR DECOMPN. TOOK PLACE UNDER THE ABOVE
 CONDITIONS.

UNCLASSIFIED

USSR

UDC 911.3.616.981.455(574)

KONDRASHKIN, G. A., PUGACHEV, Yu. A., KONDRASHKINA, K. I., KALYAZINA, I. M.,
PROSHIN, V. G., LUK'YANOVA, A. D., KORCHEVSKAYA, V. A., KORCHEVSKIY, P. G.,
and POLYAKOV, V. K.

"Landscape-Epidemiological Regional Division Into Tularemia Districts in the
Trans-Ural Area of Western Kazakhstan"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous In-
fections -- collection of works) Byp. 5(15), Saratov, 1970, pp 91-105 (from
RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.96)

Translation: The Trans-Ural area of Western Kazakhstan consists of four land-
scape-epidemiological areas: the Barbastau-Ileko-Utvinskiy area (steppe),
the Chelkaro-Ankatinskiy area (dry steppe), the Chiderty-Ulenty-Buldurtinskiy
area (semi-desert), and the Kaldygayty-Uil'skiy area (semi-desert-desert).
Each area is described. Characteristic for the steppe and dry steppe areas
is the steppe type of tularemia focus; while the estuary semi-desert type
of tularemia focus is typical for the semi-desert. The prolonged epizootic
"calm" of tularemia foci in the Trans-Ural area is due to the progressive
drying out of once extensive local river delta floods. Because of cattle
slaughter, xerophyt plants take over with river land turning to desert.

1/2

SSR

KONDRASHKIN, G. A., et al., *Probl. osobo opasn. infektsiy* (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5 (15), Saratov, 1970, pp 91-105 (from *RZh-Meditsinskaya Geografiya*, No 4, Apr 71, Abstract No 4.36.96)

The projected irrigation of the Trans-Ural area by construction of the Volga-Ural canal may activate local native tularemia foci. Numerical tables are provided for small mammals and their ectoparasites in the areas defined.

2/2

- 38 -

UDC: 681.333:519.2

USSR

PETUKHOV, V. I., KOLOMIYETS, O. M., BERKUTOV, A. M., PROSHIN, Ye. M., SADOVSKIY, G. A., Ryazan Radio Engineering Institute

"A Static Analyzer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271911, Filed 30 Dec 68, p 115

Abstract: This Author's Certificate introduces a static analyzer which contains an analysis level discriminator, a controlled step voltage generator, a generator which produces pulses to fill the intervals corresponding to the dwell period of a realization higher (lower) than the given level of analysis, an analysis time key circuit, a pulse frequency divider, a filler pulse counter, and a unit which introduces the number for the initial counter setting. As a distinguishing feature of the patent, the analyzer is designed for simplification in determining numerical characteristics. It contains an inhibiting logic circuit with the output of the frequency divider connected to one of its inputs while the second input is connected to the output of the pulse counter, whose set input is connected to the unit for introducing a number into the

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USSR

PETUKHOV, V. I., et al, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271911 Filed 30 Dec 68, p 115

counter. The output of the inhibiting logic circuit is connected to the input of the controlled step voltage generator, whose output is connected to the analysis level discriminator.

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Aerospace Medicine

USSR

PROSHINA, L.

"We are Motivated by the Spirit of the Search for the Unknown"

Moscow, Sovetskiy Krasnyy Krest, Vol 21, No 4, Apr 71, pp 30-32

Abstract: The following information was given by Prof. Yu. G. Nefedov, a specialist in the field of space medicine and biology, at a meeting in the Moscow House of Workers of Literature.

The 18-day long flight of Soyuz 9 showed that humans become adapted rapidly to the conditions of weightlessness and are capable of performing the most demanding research work under these conditions. It was unexpected that the cosmonauts had greater difficulties in becoming readapted to conditions on earth. When a person has been kept for a long time in bed, he must again learn how to walk. The muscles of the legs no longer feel the weight of the body and the activity of nerve centers that coordinate the movements in walking is disturbed. Furthermore, the heart is no longer accustomed to performing the work which is required of it when the body is in a vertical position. Something similar happens after prolonged exposure to weightlessness. The cosmonauts, on returning to earth, had a feeling of heaviness in

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USSR

PROSHINA, L., Sovetskiy Krasnyy Krest, Vol 21, No 4, Apr 71, pp 30-32

the legs and arms. On lying down, they had the impression that the springs of a mattress press strongly against their body. These sensations passed rapidly. During the flight, the cosmonauts exercised twice per day. They put on special clothing which ensured a uniform load on the muscles and attached spring compensators to this clothing. These compensators attracted the cosmonauts to the floor of the cabin with a force of several dozen kilograms. In this manner, earth gravity was simulated. The exercises, which were continued for one hour every time, comprised walking, standing jumps, and running. The exercises had the purpose of preserving the capacity to withstand heavy overloads during landing and that for normal locomotion on earth after returning from space. They also maintained the working capacity of the cosmonauts during the flight. Cosmonauts A. G. Nikolayev and V. I. Sevast'yanov returned from the flight in good health and are requesting renewed assignments for space trips. This shows that the methods applied were correct. Soon cosmonauts will from an orbit around earth locate schools of fish, determine the direction of ocean currents, carry out ice reconnaissance, and survey more precisely the boundaries of deserts, forests, and steppes. This will require prolonged flights and a greater number of

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USSR

PROSHINA, L., Sovetskiy Krasnyy Krest, Vol 21, No 4, Apr 71, pp 30-32

personnel on space vehicles. In connection with this, creation of favorable sanitary conditions on the vehicles and space stations will acquire increasing importance. Already cosmonauts wash with napkins that are soaked in a special composition and shave on space vehicles. A special device that purifies the air operates on board. The cosmonauts drink water that has been decontaminated with silver compounds. All this has the sole purpose of safeguarding health. Subsequent trips into the space around the earth will require more extensive knowledge of sanitary medicine.

3/3

1/2 011
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--THEORETICAL BASES FOR CALCULATING MULTICHAMBER HYDROSTATIC SUPPORTS
-U-
AUTHOR--PROSHINA, N.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, MASHINOSTROYENIYE,
NO. 1, 1970, PP 33-37
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HYDROSTATICS, SUPPORT ROLLER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0493
STEP NO--UR/0145/70/000/001/0033/0037
CIRC ACCESSION NO--AT0100966
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0100966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE REVIEWS PROBLEMS RELATING TO THE THEORETICAL INVESTIGATION OF MULTICHAMBER HYDROSTATIC SUPPORTS WIDELY USED, FOR EXAMPLE, IN THE SUPPORT SYSTEMS OF HEAVY RADIO AND OPTICAL TELESCOPES, RADAR ANTENNAS, METALLURGICAL EQUIPMENT, ETC. THEORETICAL BASES ARE PRESENTED FOR CALCULATING THESE SUPPORTS, AS ARE THE RESULTS OF COMPUTING THE COEFFICIENTS CHARACTERIZING THE BEARING CAPABILITIES OF THE SUPPORTS, LUBRICANT FLOW, POWER LOSSES IN OVERCOMING THE RESISTANCE FORCES OF VISCOUS SHEAR DURING ROTATION, AND THE ENERGY REQUIRED FOR LUBRICANT PUMPING. USING THE EQUATIONS GIVEN AND A CORRESPONDING COMPUTER PROGRAM, IT IS POSSIBLE TO DETERMINE THE VALUES OF VARIOUS COEFFICIENTS FOR SUPPORTS HAVING CHAMBERS OF ANY SIZE AND DIVERSE PLACEMENT WITHIN THE SUPPORT. GRAPHS PLOTTED FROM COMPUTATION RESULTS FROM A URAL-4 COMPUTER EXPRESS THE CHARACTERISTIC COEFFICIENTS FOR THE DIMENSIONLESS COEFFICIENT OF LUBRICANT FLOW, THE DIMENSIONLESS COEFFICIENT OF BEARING CAPABILITY, AND THE DIMENSIONLESS COEFFICIENT OF POWER LOST IN FRICTION. DEPENDING UPON THE DESIGN PROBLEM, THESE GRAPHS CAN BE USED TO OBTAIN THE OPTIMUM CORRELATION OF PARAMETERS FOR A PLANNED SUPPORT.

UNCLASSIFIED

USSR

UDC 533.69.01+533.662.013

PROSHINA, T. D.

"A Calculation of the Wing Surface of Minimum Drag with a Shock-Free Leading Edge"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), Vol 3, No 6, 1972, pp 112-118 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4B313)

Translation: The problem of calculating the surface form of an infinitely thin lifting wing with a shock-free leading edge in a supersonic flow in a given potential distribution is examined. The potential is taken as a certain polynomial guaranteeing shock-free flow past the leading edge, while the coefficients of the polynomial are determined from the conditions of minimum wing drag with a given lifting force. The calculations may be carried out for wings with a swept leading edge, having a break, and a supersonic trailing edge. As an example the calculations for a triangular wing with a subsonic leading edge are presented using a different number of polynomial terms.
(Resume)

1/1

Corrosion

USSR

UDC 669.018.6:620.194.2

KADIROV, T., and PROSHITSKIY, B. Ye.

"Corrosion Resistance of VAD 23 Alloy Sheet"

[Tr.] Tashkent. politekhn. in-ta ([Works] of Tashkent Polytechnic Institute), 1970, vyp. 77, pp 90-92 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No II766 by I. Nabatova)

Translation of Abstract: The authors investigated the resistance of VAD23 alloy to general corrosion (GC) and stress corrosion (SC). Specimens of 2-mm-thick clad sheet, prehardened in various agents (water at 20 and 96°, oil at 20°, and liquid nitrogen at -196°) and aged under the following procedures: 140°, 18 hours; 160°, 10 hours; and 200°, 10 hours, underwent GC testing. Losses of mechanical properties were determined after specimens had been held in an NaCl solution for 150 days. SC susceptibility was determined by the "arc" method, with specimens periodically submerged in a 3% NaCl solution. Changing the hardening agents had practically no effect on the loss of mechanical properties. Specimens aged under the procedure of 140° for 18 hours proved least resistant to GC (loss of σ_B was 4-4.9%, and of δ 31-38.5). In the case of specimens aged at 160° for 10 hours, GC resistance was satisfactory, while the mechanical properties of those

1/2

USSR

KADIROV, T., and PROSHITSKIY, B. Ye., [Tr.] Tashkent. politekhn. in-ta
([Works] of Tashkent Polytechnic Institute), 1970, vyp. 77, pp 90-92
(from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11766 by I. Nabatova)

aged at 200° for 18 hours were practically unchanged. The SC resistance
of sheets after two-stage aging was satisfactory. Two tables.

2/2

USSR

UDC 621.385.832.82.001

PROSHKIN, YE.G., SVITENKO, V.N.

"Interior Recharge Readout In Potentialsopes With Visible Image"

Radiotekhnika. Resn. mezhved. temat. nauch.-tekhn.sb. (Radio Engineering, Republic Interdepartmental Thematic Scientific-Technical Collection), 1971, No 19, pp 123-129 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A296)

Translation: An analytical expression is obtained for the recharge current of the target, on the basis of which the optimum reading rate is determined, which makes it possible to obtain the optimum parameters of the counted signal. The marking pulse undergoes distortion during fulfillment of reading with a rate less than optimum. The results presented are useful during development of a device with a bistable cathode-ray memory tube. Summary.

1/1

USSR

UDC 666.1.001.5

TSARITSYN, M. A., Candidate of Technical Sciences, PROSHKINA,
A. I., Engineer, State Scientific Research Institute of Glass,
KARADZHIYEV, A. G., Engineer, Baku Glass Plant

"Glass Types Which Absorb Heat Rays"

Moscow, Steklo i Keramika, No 11, Nov 70, pp 15-17

Abstract: In connection with the increased use of glass for the facing of building exteriors, the Soviet Union has embarked upon the production of heat-absorbing window glass. The Baku Glass Plant was picked to master the production of this type of glass. In the article are presented results of laboratory research on the development of compositions of heat-absorbing glass, and the technological parameters of the industrial production of heat-absorbing glass at the Baku plant. A comparison is made with glass of this type produced by foreign firms. 2 tables. 3 figures.

1/1

- 54 -

1/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--USE OF PHOSPHORUS COMPOUNDS FOR PRODUCING LIGHTING ENGINEERING
OPAQUE GLASSES-U-

AUTHOR--(04)-TSARITSYN, M.A., PROSHKINA, A.I., SOKOLOV, M.S., SHAPIRO, M.D.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(3), 13-16

P

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GLASS COMPOSITION, OXIDE GLASS, PHOSPHORUS COMPOUND, GLASS
OPACITY, GLASS PROCESSING, LIGHT SCATTERING GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1255

STEP NO--UR/0072/70/027/003/0013/0016

CIRC ACCESSION NO--APO116717

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0116717

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

ABSTRACT. CONCD. SUPERPHOSPHATE CONTG. P
SUB2 O SUB5 49.05 MINUS 50.92PERCENT AND CAO 21.7-2.46PERCENT WAS USED
FOR OPACIFYING LIGHTING ENGINEERING GLASSES. IT WAS DRIED AT 400DEGREES
AND SIFTED THROUGH A SIEVE 81 MESHES-CM PRIME2. GLASS BATCHES WERE
PREPD. OF THE CHEM. COMPN. SIO SUB2 60.8-3.2, B SUB2 O SUB3 4-4.8, AL
SUB2 O SUB3 7.9-8, P SUB2 O SUB5 5-6, CAO 2.2-2.6, NA SUB2 O 10.7-10.8,
K SUB2 O 7, AND ADDNL. F 1.5PERCENT. THE MATERIAL WAS MELTED AT
1470-90DEGREES.

UNCLASSIFIED

UDC 621.315.592

USSR

MIL'VIDSKIY, M. G., OSVENSKIY, V. B., PROSHKO, G. P., KHOLODNIYY, L. P.

"Nature of Defects in Gallium Arsenide Strongly Alloyed with Tellurium"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 224-228

Abstract: A complex study was made of defects in single crystals of GaAs strongly alloyed with Te by joint measurement of the internal friction and the photoluminescence spectra in certain samples. The crystals were investigated both in the initial state after growth and after various types of heat treatment. In the grown GaAs crystals with carrier concentration $n < 5 \cdot 10^{18} \text{ cm}^{-3}$, one of the basic electrically inactive forms of occurrence of the Te atoms is the pairs TeV_{Ga} . With an increase in the Te concentration to $n \approx 8 \cdot 10^{18} \text{ cm}^{-3}$, more complex complexes of Te atoms with lattice defects are formed. Preliminary high-temperature quenching has a significant effect on the nature of the transformations taking place during subsequent annealing. The nature of the centers formed during heat treatment depends on the concentration of the alloying admixture in the crystal. The radiation band with a peak at ≈ 1.2 electron volts in the photoluminescence spectrum of GaAs alloyed with Te is not connected with TeV_{Ga} pairs. The role of the centers of radiationless recombination can be

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USSR

MIL'VIDSKIY, M. G., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 224-228

played by gallium vacancies and complex complexes of Te atoms with lattice defects. Graphs are included showing the temperature dependence of the internal friction in single crystals of GaAs alloyed with Te and their photoluminescence spectra.

2/2

141

Acc. Nr: AP0051945

Ref. Code: UR 0297

2

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 4, pp 297-300

CHEMICAL STUDIES ON SIBIROMYCIN, AN ANTITUMOR ANTIBIOTIC

M. G. Brázhnikova, I. N. Kousharova, N. V. Konstantinova, A. S. Mezentsev,
V. V. Proshlyakova, I. B. Talstykh,

Institute for New Antibiotics of USSR Academy of Medical Sciences, Moscow
A new antibiotic named sibiromycin was isolated. It has the following empirical formula: $C_{21-25}H_{33-35}N_3O_{6-7}$, $\lambda_{max}^{CH_2OH}$ 230 and 310 m μ . Sibiromycin possesses amphoteric properties, pKa 7.5 (in 75 per cent ethanol). It contains 1 amine, 3 C-methyl and 2 acetylating groups. A crystalline sulfur containing derivative with a composition of $C_{21-25}H_{33-35}N_3SO_{6-9}$ and a melting point of 203° was prepared. The ultraviolet spectrum is identical to that of an antibiotic, $[\alpha]_D^{20}$ 100 \pm 2° (c. 0.15, DMPHA).

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REEL/FRAME
19820428

2pc

1/2 025 UNCLASSIFIED PROCESSING DATE--11-1970
TITLE--MICROBIAL DETOXICATION OF DENDROOCHINE -U-
AUTHOR--BILAY, V.I., PROSHURYAKOVA, N.S. P
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 293-299
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FUNGICIDE, TOXICITY, CHROMATOGRAPHY, SOLVENT EXTRACTION,
ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/0417 STEP NO--UR/0220/70/039/002/0293/0299
CIRC ACCESSION NO--AP0100899
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROORGANISMS (FUNGI AND BACTERIA), RESISTANT TO THE ACTION OF DENDRODOCHINE, ONE OF THE MOST TOXIC FUNGAL POISONS, METABOLITE OF DENDRODOCHIIUM TOXICUM PIDOPL. ET BILAI, INACTIVATED DURING THEIR GROWTH THIS SUBSTANCE IN THE NUTRIENT MEDIUM. DENDRODOCHINE INACTIVATION COINCIDED WITH THE PHASES OF MICROBIAL ACTIVE GROWTH. CHROMATOGRAPHY AND BIOLOGICAL TESTS ON LABORATORY ANIMALS REVEALED COMPLETE DENDRODOCHINE INACTIVATION IN THE GROWTH MEDIUM WITHOUT FORMATION OF ANY SIDE TOXIC PRODUCTS. CHLOROFORM EXTRACT FROM THE MYCELIUM OF THE TOXIN INACTIVATING FUNGAL STRAINS AFTER GROWTH ON THE MEDIUM WITH DENDRODOCHINE ALSO DID NOT CONTAIN TOXIN, SUGGESTING IN THIS CASE THE ABSENCE OF POSSIBLE ADSORPTION OF TOXIC SUBSTANCES BY THE CELLS. AN INCREASE OF OXYGEN CONSUMPTION BY THE MYCELIUM OF THE TOXIN INACTIVATING STRAINS WAS RECORDED DURING THE INTRODUCTION OF DENDRODOCHINE SOLUTION AS A SUBSTRATE AS WELL AS A SIMULTANEOUS DECREASE OF DENDRODOCHINE CONTENT IN THE REACTING MIXTURE. HENCE, OXYGEN CONSUMPTION IN THIS CASE WAS AN INDEX OF DENDRODOCHINE DECOMPOSITION AND DENDRODOCHINE INACTIVATION WAS DUE TO ENZYME PROCESSES.

UNCLASSIFIED

UDC 621.391.812.624

USSR

PROSIN, A.V., PAVEL'YEV, A.G. [Members, Scientific-Technical Society Of Radio Engineering, Electronics, And Communication imeni A.S. Popov]

"To A Calculation Of The Power Of A Radio Signal Scattered By A Statistically Uneven Surface"

Radiotekhnika, Vol 27, No 4, Apr 1972, pp 30-40

Abstract: Scattering of radiowaves at a statistically uneven surface is considered within the limits of the Kirchoff approximation. In contrast to other works, a solution is found for the short-distance zone (Fresnel zone), where throughout the effective region of scattering, the angle substantially changes between the normal to the mean surface and the direction of observation. The proposed method of determining the energy characteristics of the field makes it possible to show the principal physical regularities of a given problem --- the condition of a regular mirror image and the connection of the coordinates of the dispersing section of it with the inclination to the median plane, without introduction of simplifying assumptions concerning the independence of the reflections from the separate sections and the uncorrelated random heights and inclinations at the neighboring points of the surface. Consideration of the correlations between the random heights and inclinations made it possible to find the error of another work connected with the incorrect interpretation of the role of self-shadowing during scattering of radio waves. 5 fig. 12 ref. Received, 24 July 1970.

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- 110 -

UDC 621.385.623.4

USSR

ALFEROV, V.N., VLADIMIRTSEV, M.B., VISHNEVSKAYA, A.M., KOTOV, V.I., PROSIN, B.V.,
SHCHELKUNOV, G.P., YAMPOL'SKIY, I.R.

"Concerning Phase Stability Of Power Klyatron"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology.
Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 136-139
(from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A171)

Translation: Data are presented characteristic of the dependence of the phase of
the output signal on the magnitude of the anode voltage, the exciting power, the
focusing regime, the filament voltage, and the temperature of the cooling water.
The apparatus for phase measurements is described. The experiments were conducted
on Type KIU-12AM klystrons. 2 ref. Summary.

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USSR

UDC: 577.4

~~PROSINA, Ye. S.~~

"A Rational Number of Types of Commanded Media"

V sb. Issled. operatsiy (modeli, sistemy, resheniya) (Research on Operations (of Models, Systems, and Solutions)--collection of works) No 1, USSR Academy of Sciences, Computer Center, 1970, pp 38-57 (from RZh--Matematika, No 7, 1972, Abstract no 7V470)

Translation: A game model of the "Attack-Defense" type is considered in which the essential moment is the choice of non-standard weapon characteristics complicating the correctness of their identification by the enemy, on the one hand, and the economic disability of the absence of standardization, on the other. The possibility of solving these problems with different information on the part of both sides is investigated. (From the introduction)

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UDC 577.4

USSR

PROSINA, YE. S.

"An Efficient Number of Types of Special-Order Weapons"

V sb. Issled. operatsiy (modeli, sistemy, resheniya) (Operations Research (Models, Systems, Solutions) — collection of works), vyp. 1, Moscow, Computation Center of the USSR Academy of Sciences, 1970, pp 38-57 (From RZh-Kibernetika, No 7, Jul 72, Abstract No 7V470)

Translation: A study was made of a game model of the offense-defense type in which a significant event is on the one hand the choice of nonstandard characteristics of weapons complicating their proper recognition by the enemy and, on the other hand, the economic disadvantage of the absence of standardization. A study was made of the possibility of solving the indicated problems for sides informed to a different degree.

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USSR

GOLDMAN, A. G.; PROSKURA, A. I.; KRICHEVETS, A. M.

"Electroluminescence and Stimulated Conductivity of ZnCdS Tablets"

Minsk, Zhurnal Prikladnoy Spektroskopii; August, 1972; pp 269-74

ABSTRACT: Baked polycrystalline tablets were used as convenient samples in the complex study of electroluminescence and stimulation of conductivity in ZnCdS. As an example, the authors studied the electroluminescence near the cathode and the stimulation of conductivity in photoconducting tablets with $Zn_{30}Cd_{70}S$ as a base at a temperature of 77°K. To obtain the tablets activated powder was first subjected to a pressure of 200 atmospheres and then sintered while being heated to 700°C. The electroluminescence spectra of ZnCdS, ZnCdS-Si, and ZnCdS-Cu tablets consisted of bands with a maximum near 530 mμ. Bands with maxima at 450, 490, and 580 mμ respectively were observed in the photoconductivity spectra.

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USSR

GOLDMAN, A. G., et al., Zhurnal Prikladnoy Spektroskopii; August, 1972; pp 269-74

In the presence of an average field strength of $1 \cdot 10^4$ v/cm electroluminescence with a brightness up to 1 nit appeared simultaneously with an increase in conductivity. The luminescence disappeared at a temperature of about 190°K. The electroluminescent characteristics were typical for the so-called shock mechanism of luminescence excitation. It was assumed that with a reabsorption of the electroluminescent radiation the conductivity of the tablets in the stimulated state can increase still more by the application of photocurrent.

The article includes 4 figures. There are 8 references.

USSR

UDC 535.376 + 535.377 + 537.226.8

GOL'DMAN, A. G., PYSHNYI, M. M., and PROSKURA, A. I., Institute of Physics, Academy of Sciences Ukrainian SSR, Kiev

"Excitation Spectrum of Cadmium Selenide Photoconductivity and Stimulated Conductivity at 77° K"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 3, Mar 71, pp 503-505

Abstract: Soviet photoresistors of the FS-D1 type were used to study the excitation spectra of cadmium selenide photoconductivity and stimulated conductivity at 77° K in the 500-1250 nm region. It was found that stimulated conductivity builds up to saturation under light excitation of any wavelength between 700 and 1100 nm. The current stimulated to saturation in cadmium selenide cells does not depend on the excitation wavelength between 700 and 1100 nm. The red stimulation boundary is situated near 1200 nm. In the photoconductivity spectrum the photoconductivity peak is situated around 800 nm and the red boundary near 1050 nm.

1/1

USSR

UDC: 535.376

GOL'DMAN, A. G., deceased, PROSKURA, A. I., KRICHEVETS, A. M., Institute of Physics, Academy of Sciences of the UkrSSR, Kiev

"Interaction of Electroluminescence and Photoconductivity During Switching in ZnCdS-Cu,Mn Phosphor Crystals"

Kiev, Ukrainskiy Fizicheskii Zhurnal, Vol 17, No 7, Jul 72, pp 1148-1151

Abstract: Conductivity switching is studied in polycrystal electrophosphors. It is shown that conductivity can be amplified by absorption of self-radiation by a photoconductive electrophosphor and induction of photocurrent. The photoconductivity accompanying induced electroluminescence was sustained by the effect of the electroluminescent emission. The triggering of electroluminescence was studied as well as the spectral characteristics of switching, temperature quenching of high conductivity, and the kinetics of conductivity. ZnCdS-Cu,Mn solid solutions were studied at 77°K. Switching was based on amplification of dark conduction by a factor of 10^5 - 10^{10} in the presence of a light source. Either the action of the light was combined with a constant electric field (40 kv/cm) or else the electric field was applied after illumination. Electroluminescence occurred simultaneously with amplification of conductivity. It is shown that the switching effect involves positive feedback between electroluminescence brightness and the self-induced photocurrent.

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USSR

UDC 632.954:631.445.124

PROSKURA, M. S., Ukrainian Scientific Research Institute of Soil Cultivation

"The Effect of Prometrin on Weeds and Carrots on Peat Soils"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 11 (121), 1973, pp 56-60

Abstract: Prometrin used on peat soils shows no undesirable effect on carrots and was found to be effective against monocotyledonous and dicotyledonous weeds. The best time to treat the fields was after the appearance of carrots sprouts, when one-two pairs of real leaves have formed by the dicotyledonous weeds. In case of a heavy weed growth two applications of prometrin are needed: prior to and after the appearance of the sprouts. The optimal dose of the herbicide is 2 kg per hectare. The effectiveness of prometrin depends on the climatic conditions. During a hot, dry weather the activity of this preparation is intensified, decreasing in case of heavy rainfalls.

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USSR

UDC 552.321.6(234.851)

BAKHTEYEV, M. K., ABRAMKIN, A. S., VOLODINA, I. V., LARIONOV, A. M., and PROSKURIN, G. F., Moscow Geological Exploration Institute imeni S. Ordzhonikidze, Vorkuta Complex Geological Exploration Expedition

"The Geological Nature of Local Aeromagnetic Anomalies of the Western Slope of the Northern Urals (the Verkhnyaya /Upper/ Pechora River Basin)"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy--Geologiya i Razvedka, No 10, Oct 73, pp 41-48

Abstract: A report is given on a detailed investigation of the aeromagnetic anomalies on the left bank of the Verkhnyaya Pechora river, on the water divides of its left tributaries -- the Vyder'ya, the Temp'ya, and the Man'skaya Volosnitsa. The area of development of stratified metamorphic rock possesses on the whole a negative magnetic field, which is of a strongly varied nature. Numerous local positive anomalies are to be observed against the generally negative background. Two types of anomalies are to be distinguished among the most intensive ones: isometric and linearly elongated. The isometric and linear magnetic anomalies are described. Worthy of note among the geological objects which bring about the local positive magnetic anomalies are the Temp'inskiye hyperbasites. 4 figures. 3 tables. 12 references.
1/1

AA0051760

PROSKURIN M.I. UR 0482

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

237933 MEMORY ELEMENT. One magnetic core (2) is inside the other (1). Through the centre are passing lines (3) and (4). In figure 2, I₁ is the current applied to line (3), while I₂ is the current applied to line (4). Reading current (I_{sch}) is applied to line (3) and the output signal (U sign) is outgoing from line (4).

During writing the sum of the two currents is applied, one is half amplitude I_{siu} and second is magnetizing current equal to $\frac{1}{2}$ of the writing current (I_{zp/2}). At the same time is applied magnetizing current to line (4) which is equal to (I_{zp/2}). $I_1 = I \sin + I_{zp/2}$. $I_2 = \pm I_{zp/2}$. After writing one toroid will leave an inductance equal to 0, the other $\pm Br$. When reading, the polarity of the output for "1" and "0" is of opposite sign.

23.1.68 as 1212368/18-24. A.N. MIAMLIN et alia.
(18.7.69) Bul 9/20.2.69. Class 21a. Int.Cl.H 03k.

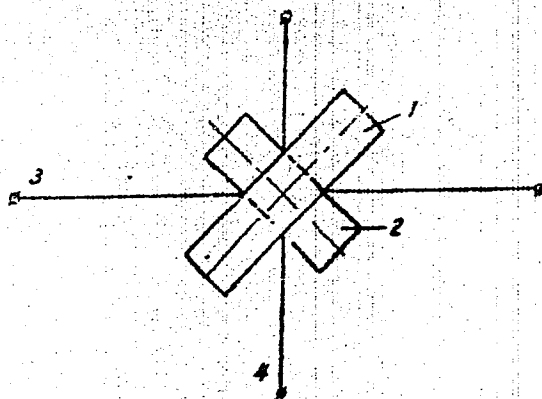
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AA0051760

AUTHORS: Myamlin, A. N.; Sul Khanov, V. I.;
Proskurin, M. I.



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Acc. Nr:

AP0042077

Abstracting Service:
CHEMICAL ABST.

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4-70

Ref. Code:

UR0365

85558x Effect of the zinc plating method on the corrosion resistance of zinc coatings. Proskurkin, E. V.; Zholudev, M. D.; Gorbunov, N. S. (Vses. Nauch.-Issled. Inst. Trub. Prom. USSR). *Zashch. Metal.* 1970, 6(1), 54-6 (Russ). The 10 x 40 mm rods of steel 10 were Zn plated by electrolytic and diffusion methods with and without heat treatment afterwards, and then subjected to the corrosion tests in tap Dniepr River water contg. salts 212, O₂ 11, free H₂CO₃ 27.4, Ca 39.3, Fe 0.1, and Cl⁻ 18.25 mg/l. and having hardness 3.14, basicity 1-2 mg equiv/l., and pH 7.17. The best corrosion resistance was shown by diffusion coatings obtained in a Zn bath contg. 0.12% Al and heat-treated at 500° for 10 min (corrosion rate 0.0092 g/in² hr, corrosion depth 4.1 μ). The poorest resistance (0.036 g/m² hr, 15.2 μ) were those obtained by the electrolytic method without heat treatment, but their treatment at 500° for 20 min increased the resistance by 2.5-fold. Generally, coatings consisting of a homogeneous layer of a Fe-Zn alloy showed good corrosion resistance.

J. Pietkiewicz

LD

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REEL/FRA
19751978

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USSR

UDC 547.241

KARLCTEDT, M. B., PROSKURNINY, M. V., and LUFENKO, I. S., Moscow State University

"Dialkoxyposphines. II. The Addition of Dialkoxyposphines to Aldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2418- 2421

Abstract: Dialkoxyposphines react with aldehydes in inert solvents with a strong evolution of heat in the absence of a base catalyst as follows:



Monitoring the reaction, using the IR spectra at 2220 cm^{-1} (the P—H band) and at 3300 cm^{-1} (the O—H band), shows that the reaction is practically complete in an hour. For example, the reaction of dibutoxyphosphine with isobutoxyaldehyde followed by treatment with trimethyliodide forms the α -oxyphosphinate and in addition the α -oxyphosphinate dimer. The dimer was not observed when acetylaldehyde was used as a starting material. Structures were confirmed by IR, NMR and mass spectra. Preparative procedures and various physical and chemical data are given.

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USSR

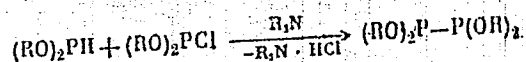
UDC 547.26*118

PROSKURNINA, M. V., CHEKHUN, A. L., LUTSENKO, I. F.

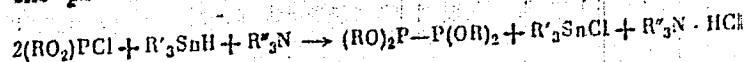
"Bis-hypophosphites (Tetraalkoxydiphosphines)"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 66-69

Abstract: A report was made recently on the synthesis of tetraalkoxy diphosphines [A. L. Chekhun, et al., ZhOKh, No 40, 2516, 1970]. More detailed data are now presented on the methods of synthesizing this class of compounds and some of their properties. Two methods of synthesizing the tetraalkoxy diphosphines based on dialkoxyphosphines. The first method involves the interaction of dialkoxy phosphines with dialkylchloro phosphites:



This method does not permit tetraalkoxy diphosphines with the lowest radicals to be obtained. Thus, the reaction of dialkylchloro phosphites with tin hydrides in the presence of an organic base is proposed.:



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USSR

PROSKURNINA, M. V., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 66-69

Some reactions of the tetraalkoxy diphosphines are also investigated (the reaction with sulfur, sulfuryl chloride, mercury bisacetaldehyde).

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USSR

UDC 547.23

LUTSENKO, I. F., PROSKURNINA, M. V., BORISENKO, A. A., Moscow State University imeni M. V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Dialkoxyposphines -- Complete Esters of the Active Form of Hypophosphoric Acid"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 4, Aug 70, pp 828-830

Abstract: The reaction of dialkyl chlorophosphites with tri-alkylstannanes yields dialkoxyposphines. The reaction rate depends to a large degree on the alkyl group contained in the chlorophosphite molecule. Synthesized were di-isobutoxyphosphine, di-n-amylxyphosphine, and di-n-butoxyphosphine, and their IR and NMR spectra were studied.

1/1

USSR

UDC: 547.26'118

CHEKHUN, A. L., PROSKURNINA, M. V., LUTSENKO, I. F., Moscow State University
imeni M. V. Lomonosov

"Tetraalkoxydiphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2516-2517

Abstract: Two methods are developed for synthesizing a new class of organo-phosphorus compounds -- tetraalkoxydiphosphines: a) by condensing dialkylchlorophosphites with dialkoxyphosphines in the presence of triethylamine; b) by organotin hydride reduction of dialkylchlorophosphites with subsequent condensation of the resultant dialkoxyphosphine with dialkylchlorophosphite in the presence of an organic base. The first method produced both symmetric and asymmetric tetraalkoxydiphosphines. The second method can be used to produce tetraalkoxydiphosphines with lower radicals as well.

1/1

USSR

UDC 547.26'118.07

LUTSENKO, I. F., and PROSKURNINA, M. V., Moscow State University imeni M. V. Lomonosov

"A Method of Making Dialkoxyposphines"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289097, division C, filed 20 Nov 69, published 8 Dec 70, p 78

Translation: This Author's Certificate introduces a method of making dialkoxyposphines. As a distinguishing feature of the patent, dialkylchlorophosphite is interacted with trialkyltin hydride with subsequent isolation of the goal product by conventional methods. The patent also covers a modification of this method distinguished by the fact that the process is carried out in an inert gas atmosphere such as argon.

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USSR

UDC: 8.74

BORODYANSKIY, Yu. M., PROSKURINA, N. A., TSIKUNOV, I. K.

"A Dialog Language for Giving Expert Estimates"

Kiev, Mat. obespech. EVM dlya ekon. zadach--sbornik (Computer Software for Economics Problems--collection of works), 1972, pp 67-81 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V622 by V. Mikheyev)

Translation: The paper describes a version of an expert generalization language with an automated system for analysis of situations (ASAS). A specific feature of the language is its dialog nature: Data for the ASAS cannot be obtained in the form of one or more separate data batches, but are obtained rather as a result of a man-machine dialog. In this connection, each succeeding inquiry made by the ASAS to the expert depends not only on the information already present in the system before the dialog with the given expert, but also on the replies of the expert to preceding questions by the system formed by special programs. The proposed language enables the development and insertion of corrections during use. The language is formulated in the formalism of context-free languages with realization of the problem of data retranslation. From the

1/3

USSR

BORODYANSKIY, Yu. M. et al., Mat. obespech. EVM dlya ekon zadach, 1972, pp 67-81

design standpoint the dialog language consists of two organically related parts: 1) language constructions which describe the object or situation to be analyzed, and which influence realization of the main situation, i. e. constructions for formal description of a very broad class of objects and concepts; 2) language constructions which set the scheme for carrying on the dialog. It is noted that development of formal constructions of the first type for actual objects and situations involves the following difficulties: a) such a formalization is possible only for a fairly foreseeable class of objects, and must be developed through protracted work of the system with experts; b) it is assumed that the problem of semantic identification of syntactically different phrases of the language has been solved to some extent. In this connection it is suggested that the ASAS system be operated at first with an incomplete data language -- the dialog part in which only the most general syntactic limitations necessary for operation of the translator are imposed on the constructions describing the object of analysis. Questions relating to identification of different definitions of the same concept, unique in-

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USSR

BORODYANSKIY, Yu. M. et al., Mat. obespech. EVM dlya ekon. zadach, 1972, pp 67-81

terpretation of some concept, and the formation and extension of language constructions of the first type are solved during the initial operation of the system by the expert personnel responsible for operation of the ASAS. As experience in using the system is accumulated, it will become possible to concretize the syntax of phrase-descriptions and to change over to setting up a specialized expanding reference information system which will chiefly take over the functions listed above.

3/3

USSR

UDC: 574.94

MONAKHOVA, T. Ye., PROSKURNINA, N. F., TOLKACHEV, O. N., KOBANOV, V. S.,
PEREL'SON, M. Ye., All Union Scientific Research Institute of Medicinal
Plants

"Alkaloids of *Sophora Alopecuroides*. 3- α -Hydroxysophoridine"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1973, pp 59-64

Abstract: In a continuation of research on the alkaloids of *Sophora alopecuroides*, preparations were made from the aerial part of the plant in the fruit-bearing stage. The sum of the alkaloids obtained by the conventional dichloroethane method (2.5%) was divided into fractions of strong and weak bases. The following alkaloids were distinguished in the fraction of weak bases by extraction with various solvents combined with aluminum oxide chromatography: sophoridine, cytisine and three bases -- $C_{13}H_{18}N_2O_2$ (III), $C_{15}H_{24}N_2O_2$ (IV), and $C_{15}H_{24}N_2O_2$ (VI). The fraction of strong bases yielded sophoridine, cytisine and baptifoline (V). This is the first time that the alkaloids cytisine and baptifoline have been isolated from this plant. Infrared and mass spectroscopy suggest the structure of 3 α -hydroxysophoridine for base IV.

1/1

- 2 -

UDC: 53.08+389.1: 613

USSR

TRESKUNOV, A.A. POZHAROV, A.V., DRUYAN, V.I. and
PROSKURNINA, N.N.

"Problems of Metrological Provision of Instruments for Biological
Aerosol Analysis"

Sb. Fiz. metody i vopr. metrol. biomed. izmereniy (Symposium on
Physics Methods and Biomedical Metrology Problems) Moscow, 1972,
pp 275-276 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya
Tekhnika, No 8, 1972, Abstract No 8.32.1010 by V.S.K.)

Translation: Problems are considered of metrological provision of a
class of analytical instruments for detection and concentration measure-
ment of biological matters in air. Possibility of creating a dustmeter
for estimating the protein concentration in air is analysed. The study of
these problems showed the absence of methods and means for calibration,
inspection and certification of this class dustmeter. In order to graduate

USSR

UDC 699.841:697.33

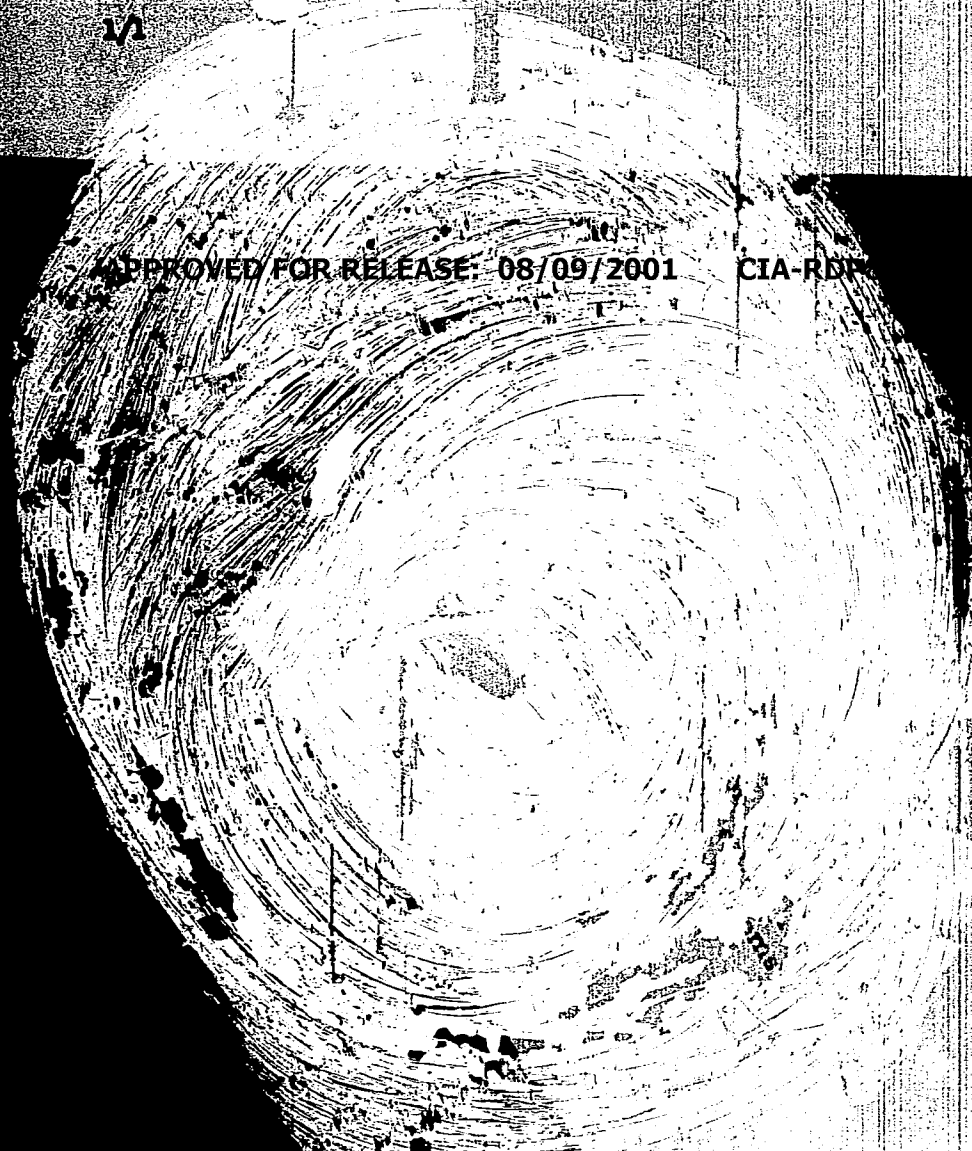
PROSKURINA, S. F., Institute of Mechanics and of Earthquake
Resistance of Buildings imeni M. T. Urazbayeva, Academy of
Sciences UzSSR

"Equations of Seismodynamics of Complex Systems of Underground
Buildings With Arbitrary Non-Central and Non-Orthogonal Butt-
Joining of Pipes in Complex Nodes"

Tashkent, Izvestiya Akademii Nauk UzSSR, Seriya Tekhnicheskikh
Nauk, No 3, 1973, pp 61-64

Abstract: Investigation results are presented of seismodynamics
of complex systems of underground buildings. Euler angles are
used for the orientation of the arbitrary spatial system of coor-
dinates on which along one of the coordinate axes is laid the
pipe-line butted with the complex node. Cases of non-central and
non-orthogonal butt-joints of pipe-lines, arbitrarily directed
in vertical and horizontal planes, are analyzed. The problem of
the dislocation of the pipe-line located in vertical and hori-
zontal planes, was found to be entirely closed under the action
of a horizontally directed seismic force. One figure, thirteen
bibliographic references.

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Construction

USSR

UDC 539.214;539.374

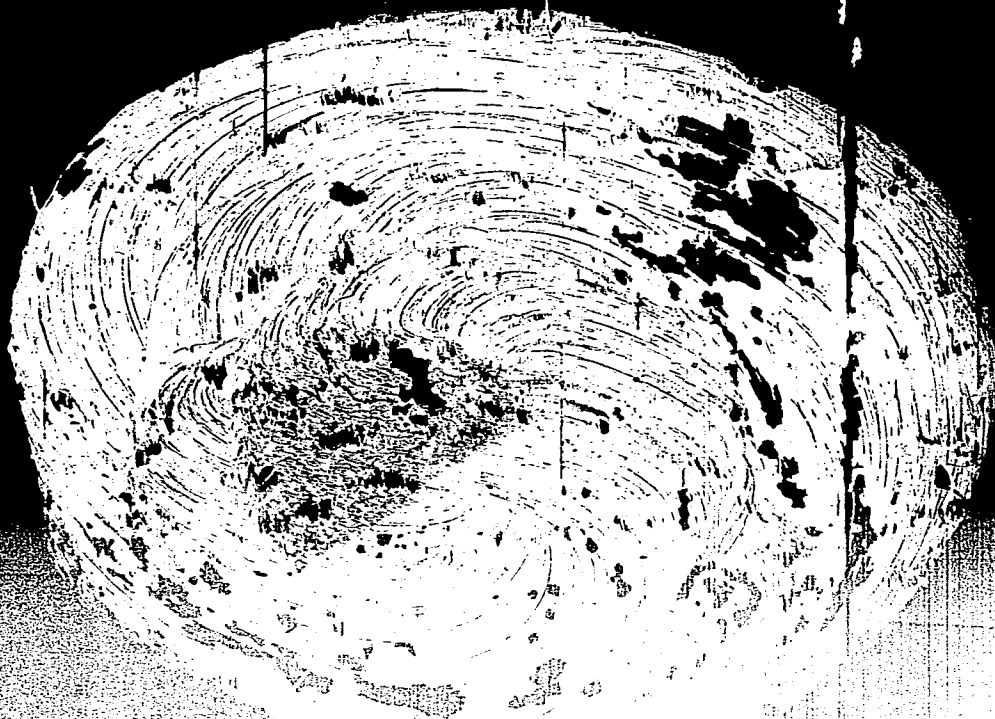
PROSKURINA, V. M.

"Equilibrium of Flexible Nonlinearly Elastic Hollow Shells Considering Temperature Effects"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 182-187 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V454)

Translation: A nonuniformly heated thin hollow shell without initial imperfections is discussed. Nonlinearities are taken into account: geometric (quadratic effect of bends on the elongation and shifts in the median surface) and physical (the dependence between the intensities of stresses and deformations according to the linearly cubic binomial law. The material is assumed to be incompressible and the physical constants are assumed to be independent of the temperature and the temperature gradient over the thickness is assumed to be constant. The functions approximating displacements are assigned with an accuracy up to the parameters as determined by minimization of the deformation energy over the entire volume. A spherical shell of square shape is

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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

$$\sigma_{ij} = A\epsilon_{ij} + B\epsilon_{ij}^2 + C\epsilon_{ij}^3 + \dots$$

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.

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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.

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USSR

UDC 616.981.25:547.722.5+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 caused 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.

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1/2 014 UNCLASSIFIED PROCESSING DATE--300CY70
TITLE--ANTIBIOTIC SENSITIVITY OF STAPHYLOCOCCI ISOLATED FROM BLOOD IN
CASES WITH NONSPECIFIC BACTERIEMIA AND SEPSIS -U-
AUTHOR-(02)-PROSKUROV, V.A., STOKATOVA, 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
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CIRC ACCESSIGN 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, EPICILLIN, KANAMYCIN, OLEANDOMYCIN WAS RARE AMONG THE ISOLATES. FACILITY: N. I. PIROGOV ODESSA MEDICAL INSTITUTE.

UNCLASSIFIED

USSR

BORODYANSKIY, Yu. M. et al., Mat. obespech. EVM dlya ekon. zadach, 1972, pp 67-81

terpretation of some concept, and the formation and extension of language constructions of the first type are solved during the initial operation of the system by the expert personnel responsible for operation of the ASAS. As experience in using the system is accumulated, it will become possible to concretize the syntax of phrase-descriptions and to change over to setting up a specialized expanding reference information system which will chiefly take over the functions listed above.

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BORODYANSKIY, Yu. M. et al., Mat. obespech. EVM dlya ekon. zadach, 1972, pp 67-81

design standpoint the dialog language consists of two organically related parts: 1) language constructions which describe the object or situation to be analyzed, and which influence realization of the main situation, i. e. constructions for formal description of a very broad class of objects and concepts; 2) language constructions which set the scheme for carrying on the dialog. It is noted that development of formal constructions of the first type for actual objects and situations involves the following difficulties: a) such a formalization is possible only for a fairly foreseeable class of objects, and must be developed through protracted work of the system with experts; b) it is assumed that the problem of semantic identification of syntactically different phrases of the language has been solved to some extent. In this connection it is suggested that the ASAS system be operated at first with an incomplete data language -- the dialog part in which only the most general syntactic limitations necessary for operation of the translator are imposed on the constructions describing the object of analysis. Questions relating to identification of different definitions of the same concept, unique in-

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USSR

UDC: 574.94

MONAKHOVA, T. Ye., PROSKURNINA, N. F., TOLKACHEV, O. N., KOBANOV, V. S., PEREL'SON, M. Ye., All Union Scientific Research Institute of Medicinal Plants

"Alkaloids of *Sophora Alopecuroides*. 3- α -Hydroxysophoridine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1973, pp 59-64

Abstract: In a continuation of research on the alkaloids of *Sophora alopecuroides*, preparations were made from the aerial part of the plant in the fruit-bearing stage. The sum of the alkaloids obtained by the conventional dichloroethane method (2.5%) was divided into fractions of strong and weak bases. The following alkaloids were distinguished in the fraction of weak bases by extraction with various solvents combined with aluminum oxide chromatography: sophoridine, cytisine and three bases -- $C_{13}H_{18}N_2O_2$ (III), $C_{15}H_{24}N_2O_2$ (IV), and $C_{15}H_{22}N_2O_2$ (VI). The fraction of strong bases yielded sophoridine, cytisine and baptifoline (V). This is the first time that the alkaloids cytisine and baptifoline have been isolated from this plant. Infrared and mass spectroscopy suggest the structure of 3 α -hydroxysophoridine for base IV.

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USSR

UDC: 53.08 + 389.1: 613

TRESKUNOV, A.A. POZHAROV, A.V., DRUYAN, V.I. and
PROSKURNINA, N.N.

"Problems of Metrological Provision of Instruments for Biological
Aerosol Analysis"

Sb. Fiz. metody i vopr. metrol. biomed. izmereniy (Symposium on
Physics Methods and Biomedical Metrology Problems) Moscow, 1972,
pp 275-276 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya
Tekhnika, No 8, 1972, Abstract No 8.32.1010 by V.S.K.)

Translation: Problems are considered of metrological provision of a
class of analytical instruments for detection and concentration measure-
ment of biological matters in air. Possibility of creating a dustmeter
for estimating the protein concentration in air is analysed. The study of
these problems showed the absence of methods and means for calibration,
inspection and certification of this class dustmeter. In order to graduate

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TRESKUNOV, A. A., et al., Sb. Fiz. metody i vopr. metrol. biomed. izmereniy, 1972, pp 275-276

the dustmeter dial it is necessary to develop methods of concentration measurement for pure protein aerosol mixtures and also of obtaining certification mixtures. At LF VNIMP an aerosol biological indicator has been developed, whose operation is based on photometering specimens with precipitated solid phase of aerosol in two adjoining intervals of IK-spectrum region, one of which is selected by the wave length common to most proteins. The investigations having been conducted showed that to facilitate solution of metrological problems it is expedient to conduct itemized error estimation of IK-spectrophotometer (air sampler, optical and electronic systems).

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USSR

UDC 699.841:697.33

PROSKURINA, S. F., Institute of Mechanics and of Earthquake
Resistance of Buildings imeni M. T. Urazbayeva, Academy of
Sciences UzSSR

"Equations of Seismodynamics of Complex Systems of Underground
Buildings With Arbitrary Non-Central and Non-Orthogonal Butt-
Joining of Pipes in Complex Nodes"

Tashkent, Izvestiya Akademii Nauk UzSSR, Seriya Tekhnicheskikh
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Abstract: Investigation results are presented of seismodynamics
of complex systems of underground buildings. Euler angles are
used for the orientation of the arbitrary spatial system of coor-
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pipe-line butted with the complex node. Cases of non-central and
non-orthogonal butt-joints of pipe-lines, arbitrarily directed
in vertical and horizontal planes, are analyzed. The problem of
the dislocation of the pipe-line located in vertical and hori-
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Construction

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PROSKURINA, V. M.

"Equilibrium of Flexible Nonlinearly Elastic Hollow Shells Considering Temperature Effects"

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PROSKURINA, V. M., Raschet prostranstv. sistem v stroit. melch., Saratov, Saratov University, 1972, pp 182-187

discussed in detail. The unknown displacements and the given temperature fields on both surfaces are approximated by two terms of a binary trigonometric series. The resulting system of two nonlinear algebraic equations after introducing a relationship between the displacement parameters as previously established in solving the problem for a linearly elastic material from geometrical considerations reduces to one equation and is solved in explicit form. 10 ref. Ya. B. L'vin.

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