

2/2 023

CIRC ACCESSION NO--A0054578

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CLINICO ROENTGENOLOGICAL CLASSIFICATION OF SILICOTUBERCULOSIS WHICH FOR A NUMBER OF YEARS IS HAS BEEN USED AT THE CLINIC OF THE INSTITUTE OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES OF THE AMS OF THE USSR, IS OFFERED FOR DISCUSSION. THE AUTHORS SUBDIVIDE SILICOTUBERCULOSIS INTO 2 DISTINCT GROUPS. THE FIRST INCLUDES SILICOTUBERCULOSIS WHERE THE FORM OF TUBERCULOSIS CAN BE CONDITIONALLY SPECIFIED AGAINST THE BACKGROUND OF SILICOSIS. TO THE 2D GROUP IS REFERRED THE PROCESS IN WHICH DEFINITION OF THE TUBERCULOSIS FORM AND, AT TIMES, THE STAGE OF SILICOSIS TOO APPEARS TO BE IMPOSSIBLE. THE FOLLOWING FORMS OF THE DISEASE ARE SET APART WITH REFERENCE TO THE 2D GROUP: SILICOTUBERCULOUS BRONCH ADENITIS, MICRO AND MACRONODULAR AND ALSO MASSIVE SILICOTUBERCULOSIS. MOREOVER, IT IS SUGGESTED THAT THE PRESENCE OF TUBERCULOUS INTOXICATION, CASEOUS DEGENERATION AND POSITIVE BECILLOSCOPY BE POINTED UP SEPARATELY, ALONG WITH THE ABOVE MENTIONED CONDITIONS.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.318

RASHEVSKAYA, L. P.

"Effect of Some Technological Factors on the Electromagnetic Parameters of Ni-Al SHF Ferrites"

Elektron. tekhnika. Nauchno-tekhn. sb. Ferrit. tekhn. (Electronic Technology. Scientific and Technical Collection. Ferrite Technology), 1970, vyp. 1 (23), pp 128-137 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V442)

Translation: Experimental data are given from an investigation of the effect which the conditions of grinding aluminum oxide and preliminary heat treatment of aluminum hydroxide have on some physical and technological properties of the  $Al_2O_3$  itself (shrinkage during sintering, content of basic material, average size of particles, phase composition) and on some magnetic properties of Ni-Al SHF ferrites (density, magnetic induction, permeability and width of the ferromagnetic resonance curve). Resumé.

1/1

KASHEVSKAYA, YE P.

SPRS 59208  
6-73

SECTION III  
III-1. OBTAINING AND STUDYING CERTAIN PROPERTIES OF SOLID SOLUTIONS OF THE  
INDIUM ARSENIDE AND GALLIUM ARSENIDE SYSTEM

Article by N. A. Sakhinoy, N. D. Nulystovskaya, K. Ye. Dmitriyeva, R. P. Chuvpova, Ye. V. Kizoleva, Ye. P. Kashevskaya, Moscow; *Russkaya Fizicheskaya Literatura*, 1972, p. 259

The solid solutions of the indium arsenide and gallium arsenide system are interesting and prospective semiconducting materials the basic characteristic parameters of which have an immediate value between the parameters of such important compounds as Gallium arsenide and Indium arsenide.

In the given paper a study was made of the problem of obtaining solid solutions of the indium arsenide and gallium arsenide system by different methods: zone growth, directional crystallization, pulling from a melt by the Czochralski method, crystallization from the gas phase. Comparative characteristics of the materials obtained by these methods are presented.

A study was made of some optical and electrophysical properties of solid solutions of the indium arsenide and gallium arsenide system in the entire range of compositions. The spectra of the optical transmission in the entire range of 0.7-25 microns were measured for temperatures of 77 and 300°K. The curves were obtained for the spectral dependence of the absorption coefficient, mobility and width of the forbidden zone on the composition of the charge carriers. A study was made of the dependence of the concentration of the charge carriers on the composition of the solid solutions.

*RASHNEVOKAYA, Ye. P.*

UNCLASSIFIED

*Biochemistry*

Name: Protein Research Institute, Pushchino  
Description: SECTION IV Sci: Selected Research Papers  
PC-5-29  
June 1971

(U) During this quarterly reporting period, two new articles were located from the Protein Research Institute at Pushchino. On the basis of one of the articles, which dealt with escherichia coli ribosomes, it was possible to associate one new person, N. I. Smirnov, with the institute (32). The other article, also on escherichia coli, was issued jointly from the Institute of Genetics and Selection of Microorganisms, Moscow, and the Protein Research Institute at Pushchino (33). Previous articles by V. I. Purogov have been issued from the former institute. No previous facility association could be located for V. D. Vasil'yev, but it is likely that he represents the latter institute. This article probably represents some joint work between the two institutes.

(U) As a ready source of reference, given below is a complete listing of personalities identified with the Protein Research Institute to the present time:

- |                             |                            |
|-----------------------------|----------------------------|
| <u>Belotelov, N. V.</u>     | <u>Pekhalov, P. I.</u>     |
| <u>Bershteyn, T. M.</u>     | <u>Pel'syn, O. B.</u>      |
| <u>Chirpádzá, Yu. H.</u>    | <u>Rashnevkaya, Ye. P.</u> |
| <u>Fedorov, B. A.</u>       | <u>Serdyuk, I. N.</u>      |
| <u>Finkel'shteyn, A. V.</u> | <u>Smirnov, N. I.</u>      |
| <u>Glinkskaya, O. V.</u>    | <u>Stin, A. S.</u>         |
| <u>Lavrilova, L. P.</u>     | <u>Tikhonova, Ye. I.</u>   |
| <u>Loshakova, I. M.</u>     | <u>Vasil'yev, V. D.</u>    |
| <u>Mitin, Yu. V.</u>        |                            |

10  
I N I N I A C C I E N T

USSR  
Adsorption

USSR

UDC 661.728.82:663.63

GULYAMOV, T., RASHIDOV, B. R., MAKSUDOV, E., and AYKHODZHAYEV, B. I., Institute of Nuclear Physics, Academy of Sciences Uzbek, SSR

"Acetylcellulose Membranes for Reverse Osmosis"

Tashkent, *Uzbekskiy Khimicheskiy Zhurnal*, Vol 17, No 3, 1973, pp 39-41

Abstract: A method was developed for the preparation of semipermeable membranes for reverse osmosis from cellulose acetate dissolved in dimethylformamide. The optimum conditions of preparing the membranes were evaporation of a solution containing 20% cellulose acetate + 80% dimethylformamide at 28-34° within less than 2 hrs, immersion in water for 2 min at 20-21°, and thermal fixation for 5 min at 81-86°. In tests conducted at 50 atm with a solution of 10 g NaCl/l., the efficiency of the membranes was 200-300 l./sq. m. per 24 hrs at a 95% degree of NaCl retention. When a solution with the composition cellulose acetate 20, dimethylformamide 75, H<sub>2</sub>O 5% was used and thermal fixation was carried out at 86°, the efficiency increased to 500 l./sq. m. per 24 hrs while the degree of desalination remained at 94-5%. To increase the efficiency, the same inorganic additives as those used in the forming of membranes from acetone solutions of cellulose acetate could be 1/2

USSR

UDC: 533.601.1

AKHMEDOV, R. B., BALAGULA, T. B., RASHIDOV, F. K.

"Aerodynamics of Vortex Jet Near the Nozzle"

Tashkent, Izvestiya Akademii Nauk UzSSR, No. 2, 1971,  
pp 53-57

Abstract: Results of theoretical and experimental investigation of vortex jets are presented. The vortex is produced by the vanes of a vortex generator.

The vortex jets are of interest because of their use in gas burners.

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USSR

AKHMEDOV, R.B., et al, Izvestiya Akademii Nauk UzSSR, No 2, 1971, pp 53-57

The differential equation of the total pressure versus distance from the axis is obtained by the method of heat transfer analogy. The general solution of this equation is given. The numerical values of the boundary conditions are obtained by making the theoretical and experimental peaks of the total pressure versus distance from axis curves to coincide. Above curves are given for 30° and 40° vortex angles and for several distances from the burner exit.

2/2

USSR

UDC 547.944/945

ABDUSAMATOV, A., RASHIDOV, M. U., and YUNUSOV, S. YU., Red Banner of Labor  
Institute of Plant Chemistry, Uzbek Academy of Sciences

"The Structure of Pediculidine"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 3, 1971, pp 304-306

Abstract: The alkaloids of a 1968 sample of Pedicularis olgae, obtained at Sagyrdasht, Tadzhik SSR, were extracted with chloroform (they made up 0.59% of the dry dample). The picrate of this base was then extracted from the ether portion and studied chromatographically (on aluminum oxide). A base of composition  $C_{10}H_9NO$  with melting point of  $74-75^{\circ}C$  was extracted; this alkaloid was named pediculidine.

Infrared, ultraviolet and nuclear magnetic resonance and mass spectra were used to determine the structure of the new alkaloid.

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USSR

UDC 629.841.621.643.2/3

RASHIDOV, T., KHOZHMETOV, G., and KHAZRATKULOV, M., Institute of Mechanics and of Earthquake Resistance of Buildings imeni M. T. Urazbayeva, Academy of Sciences UzSSR

"Earthquake Resistance of Complex Systems of Underground Buildings for an Elastic-Viscous Model of the Interaction of Buildings With the Ground"

Tashkent, Izvestiya Akademii Nauk UzSSR, Seriya Tekhnicheskikh Nauk, No 3, 1973, pp 56-60

Abstract: A theoretical investigation was made of the vibrations of a complex node of an underground pipe-line laid in an elastic-viscous (relaxing) ground, with accounting for the rotation inertia of the node. As a result of studying the vibrations of pipe-lines with a complex node and consisting of independent pipe sections on both sides of the complex node, at  $I_x$  and  $I_y \neq 0$ , for rigid butt-jointing and the case of an elastic-viscous model of pipe-ground interaction, a system of differential equations was derived with constant coefficients. The system describes the motions of complex systems of underground buildings under the action of seismic forces. A program was developed for solving this system with the help of an electronic digital computer. Sixteen formulas, five bibliographic references.

1/1

USSR

UDC: 699.841.697.33

RASHIDOV, T.

"Seismodynamic Equations of Complex Underground Structure Systems With Noncentral and Nonorthogonal Complex Pipe Joints"

Tashkent, Izvestiya Akademii Nauk UzSSR, No. 2, 1971, pp 18-24

Abstract: This three-dimensional problem is treated by means of vector analysis. The origin of coordinates is at the center of mass of the system, which consists of a well with pipes connected to it. The seismic displacement of the ground occurs in the direction of the x-axis.

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USSR

RASHIDOV, T., Izvestiya Akademii Nauk UzSSR, No 2, 1971, pp 18-24

The following equations are derived:

1. Linear acceleration of the well as function of forces.
2. Angular acceleration of the well as function of moments.
3. Relations between linear and angular motion of the well and the pipe joints.
4. Conditions of rigid connection of the pipes to the well.

2/2

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--EQUATIONS OF MOTION OF COMPLEX SYSTEMS OF SUBTERRANEAN STRUCTURES  
DURING SEISMIC DISTURBANCES -U-  
AUTHOR--RASHIDOV, T. *R*  
COUNTRY OF INFO--USSR  
SOURCE--TASHKENT, IZVESTIYA AKADEMII NAUK UZSSR: SERIYA TEKHNICHESKIKH  
NAUK, NO 1, 1970, PP 26-37  
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--EARTHQUAKE, OSCILLATION, SOIL STRUCTURE, PIPELINE, STRUCTURE  
STABILITY

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CIRC ACCESSION NO--AP0118265

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118265

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER INVESTIGATES THE SEISMIC STABILITY OF INDIVIDUAL RECTILINEAR BRANCHES OF COMPLEX SUBTERRANEAN PIPELINE NETWORKS, AND STUDIES LONGITUDINAL OSCILLATIONS OF PIPELINES FOR THE MOST GENERAL FORMS OF END FASTENING. COMPUTATIONAL FORMULAS ARE FOUND FOR SEISMIC STRESSES AND DISPLACEMENTS AS FUNCTIONS OF EARTHQUAKE INTENSITY, SOIL CONDITIONS, DEPTH OF THE PIPELINE, ETC. IT IS SHOWN THAT THE PROBLEM OF OSCILLATIONS OF COMPLEX SYSTEMS OF SUBTERRANEAN PIPELINE NETWORKS MAY BE SOLVED IF THE EXTERNAL EFFECTS (LAW OF MOTION OF THE SOIL DURING AN EARTHQUAKE), GEOMETRIC PARAMETERS OF THE PIPELINES AND GROUND MODEL ARE KNOWN. THE AUTHOR THANKS CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES OF THE USSR ALEKSEY ANTONOVICH IL'YUSHIN FOR CONSTRUCTIVE CRITICISM AND CONSIDERABLE ASSISTANCE IN COMPLETION OF THIS WORK. FACILITY: INSTITUTE OF MECHANICS AND SEISMIC STABILITY OF STRUCTURES.

USSR

UIC 621.641:621.643

RASHIDOV T.



"Simplified Equations of the Seismodynamics of Complex Systems of Underground Structures with Account Taken of Pliancy of the Connection Near a Junction"

Tashkent. Investiya Akademii Nauk Uzbekskoy SSR, No 3, 1970, pp 16-23

Abstract: The dynamic problem of a complex network of underground structures is considerably simplified in order to take account of pliancy of the connections near the junctions. It is shown that in order to establish the seismic resistance of underground systems with pliancy of the connection near a complex junction, it is necessary to investigate the equation systems of longitudinal movements of coaxial pipes with the cited conditions in complex assemblies.

1/1

R Nitrogen Compounds

USSR

UDC: 542.91 + 547.759.4

RASHIDYAN, L. G., KARAGEZYAN, K. S., and TATEVOSYAN, G. T., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Isoindoline Derivatives. IV. bis-(5-chloro-cis-3a,4,7,7a-tetrahydroisindolyl-2-methyl)-alkylamines"

Yerevan, Armyanskiy Khimicheskii Zhurnal, Vol 23, No 4, 1970, pp 387-389

Abstract: A mixture of 7.4 g 4-chloro-cis-1,2,3,6-tetrahydrophtalimide, 20 ml of 95% ethanol and 4 ml formaline was refluxed to a complete solution, 0.021 mole of primary amine was added and heated for another 15 min, cooled overnight, the product was extracted with ether, dried, evaporated and recrystallized from ether. Butyl, benzyl, and allyl derivatives of bis-(4-chloro-cis-1,2,3,6-tetrahydrophtalimidomethyl)-alkylamines were obtained in yields exceeding 80%, their melting points being 93-94, 85-86, and 134-135° respectively. These compounds were reduced over lithiumaluminum hydride to bis-(5-chloro-cis-3a,4,7,7a-tetrahydroisindolyl-2-methyl)-alkylamines, boiling respectively at 145-150/5mm, 164-168/5mm, and 125-127/5mm.

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USSR

UDC 616.936-084.4(47+57)(091)

RASHINA, M. G., DUKHANINA, N. N., and SARIKYAN, S. Ya., Institute of Medical Parasitology and Tropical Medicine Imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"Achievements in the Control and Eradication of Malaria in the USSR"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 6, Nov/Dec 72, pp 658-665

Abstract: At present malaria has been practically eliminated in the USSR. Beginning with 1921, a network of institutions for the control of malaria was created. An effective measure for the control of mosquito larvae in Southern regions was breeding of Gambusia fish in bodies of water. After Gambusia had been imported from Italy in 1924 by N. P. Rukhadze, Director of the Abkhaziya Tropical Institute, they were bred on a mass scale in Georgia, Azerbaydzhan, and Armenia and also introduced in the Uzbek, Tadzhik, and Turkmenian SSR. Great attention was paid to problems pertaining to the prevention of malaria in connection with the construction of hydraulic engineering and irrigation installations as well as large shipping canals within the scope of the 5-Year plans following World War II. In 1951 the Ministry of Health USSR issued instructions dealing with the determination of epidemiological factors and  
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USSR

RASHINA, M. G., et al., *Meditinskaya Parazitologiya i Parazitarnyye Bolezni*, Vol 41, No 6, Nov/Dec 72, pp 658-665

measures against malaria to be carried out in connection with the construction of large water reservoirs. As a result of measures applied under the 4th Five-Year Plan (1946-49), which included treatment of buildings with DDT and hexachlorocyclohexane, the incidence of malaria in the USSR was reduced by a factor of four in relation to the pre-war year 1940. Use of effective drugs such as bigumal in addition to the application of insecticides contributed to the reduction of the number of malaria cases in the USSR to 13,034 (0.65 per 10,000 of population) in 1956 and 425 (0.17 per 100,000 of population) in 1960. Studies were carried out on the regional aspects of malaria epidemiology and the results were used in drawing up typical plans for the control of malaria adapted to the regional characteristics in various republics. New chemotherapeutic and chemoprophylactic agents (e.g., quinocide) were tested under different epidemiological conditions. Data on typical conditions with respect to malaria as affected by diverse local landscapes were compiled for many USSR republics and regions. The concept of chronic malaria was rejected. Work was conducted to determine the extent of restoration of the numbers of Anopheles mosquitoes of different species after the use of persistent insecticides had been discontinued. At present considerable attention is being paid to the prevention of the importation of malaria from abroad by sailors, travelers,

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USSR

RASHINA, M. G., et al, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,  
Vol 41, No 6, Nov/Dec 72, pp 658-665

etc. In a number of Southern regions of the USSR a considerable danger of renewed development of foci of malaria infection exists; particular vigilance is required there to prevent the development of such foci.

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UDC 911.3:616.936(47+57)

USSR

RASHINA, M. G., SARIKYAN, S. Ya., DUKHANINA, N. N., PROKOPENKO, L. I.,  
LYSENKO, A. Ya., and ZHUKOVA, T. A.

"Results of the Anti-Malaria Campaign in the USSR"

V sb. Vopr. med. parazitol. (Problems of Medical Parasitology -- collection  
of works), Moscow, 1970, pp 6-30 (from RZh-Meditsinskaya Geografiya, No 2,  
Feb 71, Abstract No 2.36.82, by A. Belyaev)

Translation: In 1967, 91 malaria foci were registered in the USSR (these  
are locations where 1 local or imported case was reported), among these  
were six active residual points, seven inactive residual points, 47 new  
potential points, four new active points, and 16 foci in large cities where  
transmission is impossible. The number of brought-in cases increases with  
each year. In 1959, they amounted to 0.7% of the total number of cases,  
in 1963 they were 45.5%, in 1966 59.5%, in 1967, 60.2%. Malaria was brought  
in from 56 countries, among them 36 African countries, 16 Southeast Asian  
countries and four Latin American countries. Tropical malaria predominated.  
Because of the long duration of 4-day malaria, cases of this form continue  
to appear (154 cases during 1958-1966).

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UDC 547.944:945

USSR

KHASHIMOV, Kh. N., TELEZHENETSKAYA, M. V., BASHKES, Ya. V. and YUNUSOV, S. Yu.,  
"Red Banner of Labor Order" Institute of Plant Chemistry, UzbekSSR Academy of  
Sciences

"Pegamine, a New Alkaloid from Peganum Harmala"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 4, 1970, pp 453-455

Abstract: The total alkaloid content of Peganum harmala was found to be 2.17 percent and consisted of peganine, vasicinone, harmine, desoxypeganine, desoxyvasicinone, and a new alkaloid melting at 160-161°, which the authors named pegamine. The structure of the compound was ascertained from spectral data, including UV, IR, and mass spectra. A scheme for the mass spectral fragmentation of the compound was proposed.

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UDC 547.944/945 + 543.51

USSR

YUNUSOV, M. S., RASHKES, YA. V., and YUNUSOV, S. YU., Order of the Labor  
Red Banner Institute of the Chemistry of Natural Products, Academy of  
Sciences UzSSR

"Fragmentation Features of Ring A Substituents of Lycotoxin Alkaloids On  
Electron Impact"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1972, pp 85-87

Abstract: By studying mass-spectroscopic fragmentation of lycotoxin alkaloids  
it was established that the ease with which a substituent at C-1 is eliminated  
depends on its configuration, increasing with the size of the substituent.  
Changing the orientation of a C-1 substituent from *α* to *β* stabilizes  
the molecular ion and as a result the peak at M-17 is decreased, while the  
one at M-15 is increased. Temperature changes have little or no effect on  
the intensity of various peaks. Mass spectral data of carbinolamine esters  
of three diterpene alkaloids useful in characterizing the substituent at C-4  
are reported.

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USSR

UDC: 547.94:543.51

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RASHKES, YA.V., FAYZULDINOVA, Z. SH., YUNUSOV, S.YU., Order of Labor Red Banner  
Institute of the Chemistry of Natural Compounds, Academy of Sciences Uzbek SSR

"Mass Spectrometry of Haplofoline and Folifine"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1970, pp 107-110

Abstract: Data are given from an investigation of the mass spectra of alkaloids isolated from *Haplophyllum tuberculatum*: haplofoline, N-methylaplofoline, folifine and acetylfolifine. The principal paths of decay of these four compounds may be studied on the basis of localization of a positive charge on the nitrogen atom. Two decay schemes are described on the basis of the mass-spectroscopic data.

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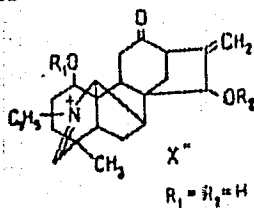
- 10 -

USSR

YUNUSOV, M.S., ~~RASHKES, YA.V.~~, YUNUSOV, S.YU., SAMATOV, A.S., Order of Labor Red Banner Institute of Chemistry, of Plant Substances, Tashkent, Academy of Sciences Uzbek SSR

"Mass Spectra of Alkaloids of the Songorine Type. Structure of Songoramine"  
Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1970, pp 101-107

Abstract: Analysis of alkaloid mixtures extracted from the tubers of Aconitum karakolicum which grow in the upper regions of the Tyup River (Terskey Altai Range) showed aconitine, songorine and an alkaloid with a melting point of 211-212°C. This base is identified as songoramine. A study was made of the mass spectra of songorine, dihydrosongorine, their diacetates, N-desethylsongorine, deuterio analogs of songorine and dihydrosongorine. Analysis of chemical and spectral data shows that songoramine has the following structure:



Diagrams are given showing the fragmentation of songorine and its derivatives.

1/1

USSR

UDC 669.189:669.046.554

KAMARDIN, V. A., RASKEVICH, N. N., and KASPER, N. V., Zaporozh'ye

"Desulfurization of Steel During Outside-Of-Furnace Refining Using Alumosilicate Slags"

Moscow, Akademiya Nauk SSSR. Izvestiya. Metally, No 6, Nov-Dec 72, pp 47-53

Abstract: A study is made of the effect of metallurgical factors (temperature, chemical composition of metal and slag) on the equilibrium and actual distribution of sulfur between metal and slag during outside-the-furnace refining of steel using the basic alumosilicate slags. With the use of basic alumosilicate slags, containing up to 20% SiO<sub>2</sub>, with small additions of magnesium oxide and calcium fluoride (~5%), the same degree of desulfurization can be attained as that by using lime-alumina slags.

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Ion Exchange

2

USSR

UDC 678.742.2:678.029.5:62-278/01

TULUPOV, P. YE., ZHUKOV, M. A., KOSSAYA, A. M., RASHKOV, A. B., GREBEN', V. P.  
and KOSTYUKHINA, L. I.

"Preparation and Properties of Heterogeneous Ion-Exchange Membranes"

Moscow, Plasticheskiye Massy, No 2, Feb 72, pp 60-63

Abstract: Operational features of ion-exchange membranes depend upon a complex of physico-chemical, electrochemical and mechanical properties, and also upon the stability of such properties during use.

Studied here are high-density polyethylene membranes prepared with the cationite KU-2 and the anionites AV-17 and EDE-10-P, with careful control of moisture content and particle size. These ionites, taken in various proportions and particle sizes, and with both capron and dacron binders, were tested regarding their effect on fusion coefficient, tensile strength and electrical parameters; temperature was also evaluated in this connection.

Electric conductivity for these heterogeneous ion-exchange members was found to follow the laws already established for homogeneous and interpolymer membranes. Tentative optimal values for the variables mentioned are suggested. Graphs illustrating variation in conductivity, etc. accompany the paper.

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USSR

RASHKOVAN, V. M.; KHIZHIYAK, N. A. (Khar'kov Aviation Institute)

"Study of the Physical Processes in an Electron-Ion Oscillatory Discharge"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; July, 1972; pp 1106-10

ABSTRACT: The work concerns experimental studies of the physical processes involved in an electron-ion oscillatory discharge occurring in a system of alternating positive and negative electrodes. The axial distribution of the potential in a system in which there are plasmoids in the vicinity of the positive electrodes was studied. The radial and axial structures of the potential inside the plasmoids, as well as the distribution of the temperature  $T_e$  and density  $d_0$  of the plasma in the plasma anode, were studied.

It is shown that in the region of the plasmoids the plasma potential equalizes itself along the axis. A radial decrease of the potential inside the plasmoid was observed. The average temperature of the plasma inside the plasma anode  $T_0$  is 5-7 ev, and the density of the plasma varies within the

limits  $5 \cdot 10^3 - 5 \cdot 10^9 \text{ cm}^{-3}$ .

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USSR

RASHKOVAN, V. M.; KHIZHNYAK, N. A., Ukrainskiy Fizicheskiy Zhurnal; July, 1972; pp 1106-10

On the basis of the results of the studies conclusions are drawn concerning the movement of particles in electron and ion oscillatory configurations.

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Acc. Nr: A0052081

Ref. Code: UR0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2, PP 113-114

ON THE ETIOLOGICAL RELATIONS OF CHICKENPOX AND HERPES ZOSTER

K. Rashkov and T. Shirokorad (Tyrnovo, Bulgaria)

Results are presented of a five-year study of the epidemiological relationship of chickenpox and herpes zoster in Velikotyrnovo Region. Chickenpox affects mainly children whereas herpes zoster is a disease of adult and elderly persons.

It is suggested that children which have been in contact with herpes zoster patients may later be affected by chickenpox.

The course of the disease was typical, is transmitted by the air-drip route. The diseases have a seasonal character: chickenpox is an autumn-winter disease, herpes zoster a summer disease.

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**19820619**

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USSR

UDC 533.98

*R*  
RASHKOVAN, V. M., KHIZHNYAK, N. A.

"Ellipsoidal Plasma Configurations in a Gas Discharge"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 7, 1970,  
pp 1382-1389

Abstract: The possibilities of setting up plasma ellipsoids in external static fields are investigated in this paper. Such configurations can be used in injector accelerators for radiation acceleration of the plasma. Developing the relationships for creating an equilibrium plasma configuration, the authors begin by considering an uncompensated plasma ellipsoid of revolution under the assumption that the uncompensated charge density throughout the plasma's volume is constant. They also describe experiments they conducted for investigating the configurations arising in a system of ring electrodes with alternating potentials. A schematic of the equipment is given. With it, the authors studied the resulting steady-state plasma bunching as a function of the magnitude of the longitudinally focused magnetic field, the pressure in the gas discharge chamber, and the  
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USSR

RASHKOVAN, V. M., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 40,  
No 7, 1970, pp 1382-1389

electrode potentials. The experiments were conducted in air,  
argon, and helium at pressures varying from  $10^{-4}$  to  $10^{-2}$  mm Hg.  
Photos of the ellipsoid configurations are shown. The authors  
are members of the Kharkov Aviation Institute.

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Acc. Nr. **AP0048043** Abstracting Service: 5/70 Ref. Code: **U190185**  
INTERNAT. AEROSPACE ABST.

R

A70-23190 # Investigation of the electron-ion oscillation discharge as a source of neutral particles (Doslidzhennia kolival'nogo elektronno-ionnogo rozriadu yak dzhercia shvidkikh neutral'nikh chastinok). V. M. Rashkovan and M. A. Khizhniak (Kharkivs'kii Aviatsiinii Institut, Kharkov, Ukrainian SSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 40-46. In Ukrainian.

Production of the fast neutral particles along the axis of the electron-ion oscillation discharge was investigated. The discharge exists stationary in the charge potential electrodes system and differs from the Penning's discharge. The optimum conditions for production of the fast neutral particles are shown to be a function of gas pressure and magnetic field. (Author)

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JRS 58593  
6 APR 1973  
K. M. Polakovsky  
L. M. Rashkovich  
Moscow State University  
Faculty of Physics  
Crystallography

RASHKOVICH, L. N.

POSSIBILITY OF GROWING SINGLE CRYSTALS WITHOUT A CRUCIBLE UNDER CONDITIONS OF WEIGHTLESSNESS

Article by K. M. Polakovsky and L. M. Rashkovich, Moscow State University Physics Department, Yerevan, IVAN GABRIELYANOVYANOVSKHETIMANE PO ROSTU Kristalloy, Russian, September 1972, pp 130-133

A formulation of the problem of single-crystal growth in orbital space stations is becoming feasible at the present time. We feel that the future for this process lies primarily in the possibility of growing crystals from melts without crucibles. The paper examines the crystallization process for a weightless liquid, occurring by virtue of heat dissipation through a crystal seed of the same substance. It was assumed for simplification that the weightlessness is total, while the crystallizing substance is isotropic. Evaluating the importance of these assumptions is beyond the scope of this paper, although it is clear that the influence of these factors cannot be ignored. The material is presented here without the mathematical calculations.

1. Growth of a Liquid Surface Contracting a Solid Phase under Isothermal Conditions

The extensive literature on the behavior of a liquid under zero-gravity conditions has largely been summarized in the bibliography of collection [1], as well as in A. Ya. Maryak's dissertation [2]. We are concerned with knowing how a liquid sphere will behave if it comes into contact with a rod or other solid of simple geometric form. No one has up to now specifically examined this matter, even though it is a special case of a problem which has been solved by various procedures.

Under equilibrium conditions, the liquid will have the shape of a solid sphere where the boundary line of the three phases is a circle. Finding the generatrix equation can be reduced to solving an isoperimetric problem in the variational calculus, since a stable liquid form is determined by the condition of minima surface energy in the liquid-solid system provided that the volume is constant. One may show that two solutions exist. If the axis of rotation passes through the surface of a liquid, such as a drop on a plane, the liquid will form a sphere. Otherwise (for example, with a drop on the



lateral face of a cylindrical rod), the generatrix equation is specified by an elliptical integral. When there is a rather sizable amount of liquid, its free surface generatrix has an inflection point near the boundary line of the phases, while at a distance from the solid phase, the generatrix approximates an arc of a circle centered on the axis of rotation. The free surface of the liquid has no inflection point if the volumes are small.

Two factors will determine the shape of the equilibrium liquid surface, which it assumes after contacting the end of the solid rod. They are the contact angle magnitudes and ratio of the radii of the initial liquid sphere (R) and of the rod (r). If R/r is small, the liquid will form a spherical segment at the end of the rod. For small contact angles, the segment's height is much less than its base length. Let us note that the system's surface energy will be greater if a drop of the same volume is suspended not at the end, but on the lateral face of the rod. If R/r is such that not all the liquid can be situated on the rod end, part of it will be located on the lateral face, where a corner point separating the spherical drop situated at the end from the remaining amount of liquid covering the lateral face will appear on the generatrix. Increasing R/r further merely alters the surface form of this last portion of liquid. We will note that, generally speaking, the case is possible in which the spherical drop hangs on the lateral face and the end is located within the drop, and this is less suitable from the energy viewpoint than when the free surface has a corner point. In summarizing, we reach the conclusion that at the liquid contact the rod, it flows onto the lateral face, where a relatively small volume of liquid can be supported at the rod end. This amount corresponds to R/r = 0.52 for a 180° contact angle.

2. Behavior of the liquid in a Temperature Field

As is well known, under zero gravity at a constant temperature, the liquid should have a spherical shape. Since the surface tension temperature coefficient for most liquids is of an order greater than the volume expansion coefficient, if a temperature gradient is present, the liquid will spontaneously begin moving to the region of higher temperatures, where its surface will have a lower surface energy. The spherical liquid shape will be distorted. As can be shown, the generatrix curvature radii ratio at points of minimum and maximum temperature (in the plane isotherm case) will equal the ratio of the surface tension values at these points.

If the temperature field is such that the temperature is lower on both sides of some maximum, assuming two-dimensional isotherms, the liquid will be located in the maximum temperature region and will have the shape of a sphere flattened on both sides. We believe that the temperature will begin to fall and the crystallization isotherms will intersect the liquid volume. The solid phase areas appearing on the melt surface will unavoidably be in contact. Since the crystallization occurs gradually, a small solid-phase volume will appear at first, and its immersion in the melt will be most favorable from the viewpoint of energy in terms of the overall surface energy. The new melt areas appearing at this spot will again crystallize and can later be plunged into the melt. The process can be concluded with the entire melt

USSR

UDC 613.865:612.1/.2

RASHMAN, Chair of Labor Hygiene and Occupational Diseases, Kiev  
Medical Institute, Kiev Pedagogical Institute

"Changes in the Functional Condition of Students' Bodies Under  
the Influence of Examinations"

Kiev, Fiziologicheskii Zhurnal, Vol 17, No 1, Jan/Feb 71, pp 97-  
100

Abstract: Arterial blood oxygenation, changes in the circula-  
tion rate, arterial blood pressure, and cardiogram were studied  
in students taking examinations in literature, anatomy, and  
mathematical analysis. Sixty students in all were observed.  
The dynamics of blood oxygenation and the circulation rate were  
determined with the use of the appropriate oxyhemographs; arter-  
ial pressure with the use of a mercury manometer prior to and  
immediately after the examination, and then 20 minutes after the  
examination was over. The cardiogram was obtained with the  
students reclining before the examination and 20 minutes after  
its termination. The investigations established that under the  
influence of examinations, arterial blood oxygenation in the  
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USSR

RASHMAN, Fiziologicheskii Zhurnal, Vol 17, No 1, Jan/Feb 71,  
pp 97-100

students decreased; arterial pressure was elevated; and the  
cardiogram was sharply modified. An analysis of the data  
obtained indicates the disturbing effect of examinations on the  
functions of the cardiovascular and respiratory systems.

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USSR

UDC 612.821

RASHMAN, S. M., Kiev Pedagogic Institute imeni A. M. Gor'kiy, Kiev

"Changes of Some Physiological Indexes in Students Under the Effect of Mental Work"

Moscow, Gigiyena i Sanitariya, No 2, Feb 73, pp 105-106

Abstract: Measurements carried out on students indicated that as a result of mental work carried out for 1.5 or 3 hrs the velocity of blood circulation, the blood pressure, and the degree of oxygenation of the arterial blood increased. These effects were greater after 3 hrs than 1.5 hrs of mental work. The blood oxygenation showed an initial drop during the first 45 min and then increased. There was a correlation between the increase in the degree of oxygenation of the blood (in the concentration of oxyhemoglobin) at the end of the work period and the relative intensity of the mental work in the respective special fields of the students; after 3 hrs of work, the increase was greater for students of the physico-mathematical faculty (department) than those of the philological or pedagogic faculty. After 1.5 hrs of mental work, the oxyhemoglobin content increased in the blood of 13 out of 20, 18 out of 20, and 19 out of 20 students of the philological, pedagogic, and physico-mathematical faculty, respectively.

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Navigation Aids

USSR

UDC: 621.396.983

SOLOMONIK, M. Ye., ROTENBERG, M. I., IL'IN, G. B., RASIN, A. M., SHESTAKOV, A. V., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"A High-Precision Radio Direction Finder With Steerable Antenna"

Moscow, Radiotekhnika, Vol 27, No 8, Aug 72, pp 1-6

Abstract: The errors in radio direction finding due to distortions of the phase front of the received signal increase with a reduction in wavelength. One way to reduce these errors is to take a "sample" of the electromagnetic field from as large a region of space as possible. A new way to realize this method on meter wavelengths is considered which combines simplicity of the direction finder circuit with short-base antennas and reduced sensitivity to local distortions of the phase front. The antenna is steerable about the vertical axis. The motion of the antenna results in a change in the errors of the instrument in accordance with a periodic law, with the result that time averaging considerably reduces error. The authors discuss the theory of operation of such a direction finder with an antenna which moves in a closed curve.

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USSR

UDC 66.048.5

PAVLOV, B. M., RASIN, O. G., and ABRAMENKO, A. N.

"Experimental Gasodynamic Vacuum Installation for the Investigation of Evaporation Processes"

Minsk, Teplo i Massoobmen pri Nizkikh Temperaturakh, 1970,  
pp 25—30

Abstract : Problems of investigation of the evaporation process from capillary porous bodies are discussed by reference to experiments carried out with a model capillary porous body on an illustrated gasodynamic vacuum installation. The described investigation method is based on experimental solution of equations of the balance of heat and mass flows by means of determination of the evaporation intensity and by plotting distribution curves of temperature, pressure, and vapor concentration in the moving steam-gas medium, the dry interlayer, and the liquid phase. The important role of the decreasing evaporation zone inside of the body and the specific effect of rarefaction conditions of the flowing over gaseous medium on the mechanism of heat and mass transfer are noted. Two illustr.

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RASKATOV, N.N.

rare metals  
+ crystals

SINGLE CRYSTALS OF REFRACTORY AND RARE METALS

Article by Candidate of Technical Sciences N. N. Raskatov, Moscow, U.S.S.R.  
Abstract from SSSR, Russian, Vol 42, No 4, April 1972, pp 177-184

SPR 5607  
25 Mar 72

Conference in Moscow

The number of works devoted to questions about the obtaining and investigation of the structure and properties of single crystals of refractory and rare metals increases with each year. For regular exchange of information and coordination of work in that direction, problem conferences are convened each year. On 29 November - 1 December 1971, in Moscow, in the Institute of Metallurgy, L. A. A. Baykov, was held the regular Sixth All-Union Conference on the Obtaining, Structure, Physical Properties and Application of Single Crystals of Refractory and Rare Metals. It was organized by the Scientific Council for the Problem "Application of Rare Metals in the Nation" of the State Committee for Science and Technology of the Council of Ministers USSR; the Scientific Council for the Problem "Physicochemical Principles of Obtaining New Heat-Resistant Inorganic Materials", and the Institute of Metallurgy, L. A. A. Baykov of the AS USSR. Participating in the work of the conference were over 300 persons, representing 52 organizations from various cities of the Soviet Union. Sixty-four reports were heard.

As the work of the conference showed, at the present time there is an intensive development of new methods of growing single crystals. In the Moscow Institute of Engineering Physics, single crystals of chromium have been obtained from the various phases. Co-workers of the Institute of Metallurgy, L. A. A. Baykov have used the method of plasma-arc fusion to grow single crystals of niobium. Into the circle of investigations on the synthesis of alloys with the participation of rare-earth metals which have forced magnetic characteristics, the combination of the growth and formation of the eutectic ligand. Of great practical interest is work on the obtaining of polydisperse and amorphous films with a lamellar structure, being done in the Institute of Metallurgy, L. A. A. Baykov.

Reports directed to the investigation of the influence of impurities in the fine structure and physical properties of single crystals were presented

USSR

UDC 669.172:620.17

SAVITSKIY, Ye. M., BURKHANOV, G. S., RASKATOV, N. N., and SHNYREV, G. D.

"Mechanical Properties of Large Tungsten Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 139-143

Translation: The mechanical properties of large single crystals of tungsten up to 40 mm in diameter produced using a low-temperature plasma at room temperature and 1,000-2,000°C are studied. It is established that the anisotropy of the mechanical properties of single crystals, which appears strongly at room temperature, becomes insignificant at 1,000-2,000°. 2 Tables; 3 Figures; 5 Bibliographic References.

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USSR

UDC 669.172

SAVITSKIY, Ye. M., BURKHANOV, G. S., RASKATOV, N. N., and SHNYREV, G. D.

"Formation of Growth Structure During Growing of Tungsten Single Crystals From a Melt"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 19-25

Translation: The formation of the growth structure of oriented tungsten single crystals is studied with various temperature gradients as a function of the content of carbon in the tungsten and the growth rate. A possible mechanism of formation of the growth structure of tungsten single crystals is described. It is established that the formation of a coarse growth submacrostructure occurs due to macroscopic fluctuation of impurities in the crystallizing tungsten. 6 Figures; 13 Bibliographic References.

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RASKATOV, V. M.

JPRS 53723  
30 July 71

AUTOMATION OF MACHINE-BUILDING PROCESSES  
(Conference in Moscow)

[Article by V. M. Raskatov, Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 48, No 5, May 1971, pp 122-124]

The Scientific Council for the Theory of Machines and Working Processes of the AS USSR and the Institute of Machine Sciences held on 9-11 December 1970, in Moscow, the fifth conference on the automation of machine-building processes. Participating in it were workers of the academic and branch scientific research institutes and special design bureaus, VUZ, and the leading plants of the country.

The wide development of automation advances new requirements for the further improvement of its means and methods. This determined the main content and direction of the conference, at which over 270 reports, mainly of a theoretical character, were heard.

The following presented reports at the plenary sessions: V. N. Starovskiy, on "Questions of mechanization and automation in the national economy of the USSR," V. I. Bikhshin, on "Problems of the complete automation of machine-building processes," A. Ye. Prokopenchik, on "Prospects of the automation of metal-working equipment," N. G. Ruyevich, on "Forecasting the role of automation of intellectual labor in the development of machine building," M. F. Strelkin, on "The automation of production in the motor-vehicle industry of the USSR," V. V. Karibskiy, on "Principles of construction of computerized systems for the control of production," and V. A. Fedorenchik, on "Automation in the electronics industry." At the conference, eight sessions worked, corresponding to the main areas of the theory of working processes of machine building.

AS was made clear from the reports and the discussion of

Automation

USSR

UDC 621.315.592:546.19'681

KOVTONYUK, N. F., KURBATOV, L. N., NOZDRIN, V. V., ORLOV, V. S., RYABENKO, Ye. A., RASKIN, A. A., ROSTUNOVA, R. P., SOLOV'YEV, A. A., SEVAST'YANOV, V. G., UMYAGIN, A. M., SHALUMOV, B. Z., and SHAULOV, Yu. Kh.

"Some Problems of a Technological Formulation of the Process of Obtaining Epitaxial Films of Gallium Arsenide by the Gas Phase Method"

V sb. Protsessy rosta kristallov i plenok poluprovodn. (Procedures for the Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B130)

Translation: The epitaxial films of GaAs obtained were produced by the gas phase method with the use of AsH<sub>3</sub>, Ga, and HCl. GaAs wafers served as substrates. The surface of a wafer was subjected to chemical--mechanical processing and etching with H<sub>2</sub>SO<sub>4</sub>: H<sub>2</sub>O<sub>2</sub>: H<sub>2</sub>O in the ratio 3: 1: 1. Synthesis of the GaAs was conducted in a reaction apparatus which was thoroughly scavenged by H<sub>2</sub> and etched by HCl at 550° C for 30 minutes. After cooling, the Ga was loaded into the chamber. The chamber was heated to a temperature of 550° C for activation of the Ga surface. After reduction of the temperature to 100--150° C, the GaAs substrate was introduced into the reaction zone. After heating the Ga area and the GaAs area, etching of the GaS was performed by HCl gas in a stream of AsH<sub>3</sub> and H<sub>2</sub>. The films were doped by Se.

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JSSR

KOVTONYUK, N. F., et al., Protsessy rosta kristallov i plenok poluprovodn.  
(Procedures for the Growth of Semiconductor Crystals and Films -- Collection  
of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye  
primeneniye, No 7, July 1971, Abstract No 7B130)

The best specimens of film had n-type conductivity and a mobility of 4000--5000  
 $\text{cm}^2/\text{v. sec.}$  Films doped by Se had a concentration of  $5 \cdot 10^{17}$ --  $5 \cdot 10^{18}$  at/ $\text{cm}^2$  and  
a mobility of 2000  $\text{cm}^2/\text{v. sec.}$  8 ref. V.B.

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1/3 . 013 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--V. I. LENIN AND SOME PROBLEMS OF THE METHODOLOGY OF SCIENTIFIC  
RESEARCH -U-  
AUTHOR-(02)-PREOBRAZHENSKIY, B.S., RASKIN, B.V. *R*  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OTORINOLARINGOLOGII, 1970, NR 2, PP 14-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES  
TOPIC TAGS--POLITICAL THOUGHT, SCIENTIFIC PERSONNEL, MEDICAL PERSONNEL,  
SCIENTIFIC RESEARCH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1986/1723 STEP NO--UR/0607/70/000/002/0014/0022  
CIRC ACCESSION NO--AP0103489  
UNCLASSIFIED

2/3 013

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103489

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS NOTE, THAT THE MATERIALIST DIALECTICS CREATED BY MARX, ENGELS AND LENIN IS A UNIVERSAL METHOD OF KNOWLEDGE AND REVOLUTIONARY REORGANIZATION OF SOCIETY, THE ONLY SCIENTIFIC METHODOLOGY OF NATURAL SCIENCE, AND, IN PARTICULAR, OF MEDICINE. THE GREAT CORYPHAENS OF SCIENCE, V. I. LENIN POSSESSED EXCEPTIONALLY ALL ROUND KNOWLEDGE ALSO IN THE FIELD OF NATURAL SCIENCE. LENIN'S SCIENTIFIC ACTIVITY IS A BRILLIANT EXAMPLE OF THE APPLICATION OF THE METHOD OF THE MATERIALIST DIALECTICS TO THE STUDY OF THE MOST COMPLICATED LAWS OF NATURE AND SOCIETY. V. I. LENIN CONSIDERED THE ESTABLISHMENT OF EXACT AND INDISPUTABLE FACTS AS A NECESSARY CONDITION OF SCIENTIFIC RESEARCH. HE INSISTED UPON THE ANALYSIS AND COMPARISON OF ALL THE FACTS, CONCERNING THE PROBLEM, HE WAS AGAINST ARBITRARY SELECTION OF THEM AND SUBJECTIVE INTERPRETATION. V. I. LENIN CRITICIZED THE EMPIRICISM AND THE ECLECTICISM AND INSISTED UPON THE DEEP THEORETICAL GENERALIZATION OF THE FACTS, OBTAINED AS A RESULT OF RESEARCH. HE CONSIDERED NECESSARY TO COMPARE AND TO ANALYSE COMPARABLE, SIMILAR DATA AND CRITICIZED THE METHOD OF THE GROUNDLESS CALCULATION OF "THE MEANS". V. I. LENIN EXPLAINED, THAT SCIENTISTS PROCLAIMING THEMSELVES TO BE "OUT OF POLITICS", IN FACT PURSUE A BOURGEOIS POLICY. V. I. LENIN MERCILESSLY CRITICIZED REACTIONARY IDEALIST INTERPRETATION OF THE ACHIEVEMENTS OF SCIENCE, BUT AT THE SAME TIME HE INSISTED UPON THE UTILIZATION OF THE ACHIEVEMENTS OF FOREIGN SCIENCE AND TECHNIQUES IN EVERY POSSIBLE WAY FOR THE WELFARE OF PEOPLE, FOR BUILDING OF SOCIALISM.

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103489

ABSTRACT/EXTRACT--V. I. LENIN KNEW MANY FOREIGN LANGUAGES AND IN HIS RESEARCH HE USED NOT ONLY HOME SOURCES, BUT A GREAT NUMBER OF FOREIGN ONES. V. I. LENIN WAS A GENIUS, BUT BESIDES THAT HE POSSESSED THE GREATEST DILIGENCE AND THE EXCEPTIONAL SCIENTIFIC HONESTY. LENIN'S IDEAS IN THE METHODOLOGY OF SCIENTIFIC RESEARCH ARE GUIDING PRINCIPLES FOR ALL SOVIET SCIENTISTS. THE AUTHORS DEMONSTRATE, THAT TO BE TRUE TO LENIN'S PRINCIPLES THE SOVIET SCIENTISTS WORKING IN THE FIELD OF MEDICINE SHOULD GIVE A DEEP DIALECTICAL MATERIALIST SUBSTANTIATION OF THE ACHIEVEMENTS OF MEDICINE, CRITICIZE REACTIONARY VIEWS AND TRENDS IN MEDICINE, FOLLOW A NUMBER OF OBLIGATORY DEMANDS IN MEDICAL EXPERIMENTS AND IN CLINICAL OBSERVATIONS, OVERCOME THE ELEMENTS OF EMPIRICISM, WHICH ONE COMES ACROSS IN SOME WORKS, RAISE THEIR GENERAL THEORETICAL LEVEL IN EVERY POSSIBLE WAY AND AS QUICKLY AS POSSIBLE PUT INTO PRACTICE OF SOVIET HEALTH SERVICES THE ACHIEVEMENTS OF MEDICINE, STUDY AND APPLY TO SCIENTIFIC ACTIVITIES THE REMARKABLE PATTERN OF LENIN'S STYLE OF WORK.

UNCLASSIFIED

USSR

UDC 621.357.13

IVANOVSKIY, L. Ye., KOTELEVSKAYA, V. A., RASKIN, B. Ya.

"Production of Continuous Coatings of Vanadium by Electrolysis of Halide Melts"

Tr. In-ta Elektrokhimii. Ural'sk. Nauch. Tsentr AN SSSR [Works of Institute of Electrochemistry, Ural's Scientific Center, Acad. Sci. USSR], No 17, 1971, pp 124-126 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L355 by A. V. Dribinskiy).

Translation: The precipitation of V during electrolysis of chloride and bromide-chloride melts is studied. It is shown that continuous cathode sediments several millimeters thick can be produced with  $D_c = 10-20 \text{ ma/cm}^2$  at 400-450°. Increasing the temperature in  $D_c$  causes formation of a dendritic sediment.

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USSR

UDC 519.24

MALITSKIY, A. A., MATS, A. D., and RASKIN, L. G. (Khar'kov)

"On Selection of Measurements Times in a Problem of Parameters Evaluation"

Novosibirsk, Avtometriya No 3, May-Jun 72, pp 36-41

Abstract: The problem of evaluating the  $a_0$  and  $a_1$  parameters of a signal  $s(t) = a_0 + a_1 t + \xi(t)$  measured at times  $t_1, \dots, t_n$  is considered assuming that  $\xi(t)$  is the measurement error and that measurements taken at different times are independent, while the error is distributed according to normal law  $N(0, \sigma(t))$  where  $\sigma(t)$  is the known time function. A system of equations is derived the solutions of which determine the optimal distribution of measurement times, under condition that a nonstationary Gauss interference is superposed additionally on the results of measurements. An exhaustive solution of the problem is obtained for the case of equally accurate measurements. The cases of small and large  $\alpha$  are considered at the exponential variation of interference distribution ( $\sigma(t) = \sigma_0 e^{\alpha t}$ ,  $\alpha > 0$ ).

1/1

USSR

UDC 621.79

SEVERDENKO, V. P., RASKIN, L. S.

"Theoretical Study of the Stress-Deformation State in the Bending of an Elliptical Plate"

Minsk, Izvestiya Akademii nauk BSSR, Seriya fiziko-tekhnicheskikh nauk, No. 2, 1971, pp 9-15

Abstract: A theoretical solution is presented for the problem of determining stresses and deformations in bending an elliptical plate under sheet stamping. It is noted that previous studies to determine stress-deformation state under bending considered elastic bending of a freely suspended or rigidly embedded plate with small bends under the action of a given load, and that such solutions cannot be applied to establish stress-deformation state in sheet stamping since the bends in the stamping cannot be considered small, the deformation process goes beyond the elastic and elastic-plastic stage, and in stamping the shape of the deformed surface is known but not the loads acting on it. The problem is treated in the following order: first elastic bending of a freely suspended rigid plate is considered and then corrections are introduced into the solution obtained that take into account chain or membrane stresses in the middle surface, and finally elastic-

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USSR

SEVERDENKO, V. P., RASKIN, L. S., Izvestiya Akademii nauk BSSR, Seriya fiziko-  
tekhnicheskikh nauk, No. 2, 1971, pp 9-15

-plastic bending of plates under large bends is considered. An expression is derived giving stresses and deformations as a function of the bend and the dimensions of a blank of a given shape, i.e., that is characterized by a constant curvature in the directions of the axes of the ellipse. The formulas obtained for determining components of stresses and deformations are applicable for cases of bending with fairly large bends not exceeding, however, half the minor semi-axis of the ellipse. The problem was solved considering geometric and physical nonlinearities in using the common simplifying assumptions such as incompressibility of the material under plastic deformation. The reliability of the relationships obtained was checked by comparing their particular solutions with formulas known in the literature for the bending of circular plates and spherical shells and also by comparing computed and experimental data on determining spring in the bending of circular plates.

USSR

UDC 632.95.4/.5

RASKIN, M. S., USKOVA, L. A., and GRUZDEN, L. G.

"Investigation of the Activity of Herbicidal Mixtures"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 11 (121), 1973, pp 47-51

Abstract: Highest degree of conditional synergism was observed in the combination of diamate with 2M-4Kh or 2,4-D taken in ratios of 1:6 to 1:20. Diamet and diamet-D were effective against annual dicotyledonous weeds including those resistant to 2,4-D and 2M-4Kh. The optimal dose of herbicides for grain culture fields is 21.2 kg/hectare. Herbicidal activity of these preparations is almost identical, although diamet-D is somewhat more advantageous due to a simpler production technology and a much higher content of the active substance. Used at the optimal dose, diamet-D did not depress the growth of oats nor did it lower the yield of grain, its quality also remaining unaffected.

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USSR

UDC 632.954.4

RASKIN, M. S., and KALININA, Ye. A.

"Herbicide Entry From the Soil Into Plants With Presprouting Application"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 53-56

Abstract: Investigation was conducted to determine zones of herbicide absorption in beans, oats, and corn, using the following predetermined optimal dosages of the indicated herbicides: .2 mg. of trysben 200 or dianat and .01 mg. of tordon, for beans; 5 mg. of trysben, 10 mg. of dianat, .5 mg. of tordon and 3 mg. of simazine, for oats; 20 mg. of trysben or dianat and 1 mg. of tordon, for corn. All were added to 1 kg. of absolutely dry soil, then placed in wax paper cups so that the root system was in a larger cup and the upper plant was isolated in a cup above it. Tests were conducted in a greenhouse at 20-23° with alternating light and darkness for 12 hours each. Soil moisture was maintained at 60% of absolute saturation. It was determined that dianat, trysben 200, and simazine, when applied through the soil before sprouting, entered the monocotyledons oats and corn only through the roots; no herbicide penetrated the sprouts going through toxic soil layers. The herbicides entered the dicotyledon beans mainly through the roots, but partially also through the hypocotyl and cotyledons.

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USSR

UDC 632.95

RASKIN, M. S., USKOVA, L. A., SVIRIDENKO, A. S., RYZHKOV, A. A., BABIN, YE. P.

"Analysis of 2-Methoxy-3,6-dichlorobenzoic Acid in Plant Mass by a Combined Method"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 363-365 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N503)

Translation: The herbicide is extracted from the plant mass, the dry extract is dissolved in a mixture of 75% alcohol with dioxane (4:1); it is applied to the first entire bean leaves at the time of development of the first trefoil (50 microliters/plant); the plants are gathered 5-6 days after treatment considering the weight of the dry mass of the trefoil.

1/1

USSR

UDC 616-099

RASKIN, M. S. Chair of Hospital Therapy, Kazan' Medical Institute imeni S. V. Kurashov and 6th Municipal Clinical Hospital

"Experience in the Diagnosis and Treatment of Acute Poisonings"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 6, 1971, pp 24-26

Abstract: The 6th Municipal Clinical Hospital in Kazan' (Tatar Republic) treated 228 victims of acute poisonings from 1969 to 1971 aged 17 to 60 (mostly persons 20 to 30): intoxication was caused by the organochlorine pesticide chlorophos in 33 cases, barbiturates -- 15 cases, acetic acid -- 13, alcohol -- 102, and other poisons -- 65. The poisonings caused by chlorophos, barbiturates, and alcohol are discussed in some detail -- symptoms, differential diagnosis, treatment, and results. Hemodialysis was used in 20 cases, the indications being symptoms of acute renal insufficiency. Hemodialysis is considered particularly useful for poisonings caused by substances of low molecular weight that circulate freely in the vascular bed and are not bound to proteins and blood lipids, e.g., barbiturates, salicylates, bromides, methyl and ethyl alcohol.

1/1

1/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--ERADICATION OF MOUNTAIN BLUET USING BENZOIC ACID DERIVATIVES -U-

AUTHOR--BEREZOVSKIY, M.YA., ~~ASKIN, M.S.~~

R

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(1), 36-41

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, BENZOIC ACID/(U)TRISBEN 200 HERBICIDE, (U)BANVEL O HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1738

STEP NO--UR/0394/70/008/001/0035/0041

CIRC ACCESSION NO--AP0109699

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UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0109699

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIELD EXPTS. ON ERADICATION OF THE MOUNTAIN BLUET WERE CARRIED OUT IN A ZONE OF INSUFFICIENT RAINFALL USING TRISBEN 200 (2,3,6,CL SUB3 C SUB6 H SUB2 CO SUB2 NH SUB2 ME SUB2), 2-KF (DIMETHYLAMINE SALTS OF POLYCHLOROBENZOIC ACIDS), AND BANVEL-D 3,6,CL SUB2 2(MED)C SUB6 H SUB2 CO SUB2 ME SUB2). THE WEEDS WERE SPRAYED IN THE SPRING OR AUTUMN WITH 1000 L.-HA OF A SOLN. CONTG. 5-15 (BANVEL-D), 20, OR 50 KG OF A HERBICIDE. AT THE DOSES INDICATED THE WEED WAS COMPLETELY ERADICATED WITH ALL HERBICIDES. THE MOST EFFECTIVE WAS BANVEL-D, AND THE LEAST, 2-KF. BOTH TRISBEN-200 AND 2-KF REMAINED EFFECTIVE IN THE SOIL FOR GREATER THAN 4 YEARS. A SUBSTANTIAL DISADVANTAGE OF THE PREPNS. WAS THEIR DELETERIOUS EFFECT ON MAIZE AND WINTER WHEAT. THESE CROPS COULD NOT BE PLANTED UNTIL 2 AND 4 YEARS, RESP., AFTER USING THE PREPNS. BANVEL-D PERSISTED FOR 1-2 YEARS.

ZZZZZZZZZZZZ

UNCLASSIFIED

USSR

UDC: 517.948:517.88:519.4

RASKIN, V. G., YSAKOV, A. I.

"On the Problem of Exponential Stability of Solutions of Differential Equations in Banach Space"

Tr. NII mat. Voronezh. un-ta (Works of the Scientific Research Institute of Mathematics, Voronezh University), 1970, vyp. 1, pp 120-127 (from RZh-Matematika, No 5, May 71, Abstract No 5B942)

Translation: Let  $E$  be a Banach space, and let  $L_M^*$  be the Banach space of Bochner-measurable functions on  $[0, +\infty]$  with values in  $E$  in the norm

$$\|x\|_{L_M^*} = \inf \left\{ k: \int_0^{+\infty} M \left[ \frac{\|x(t)\|_E}{k} \right] dt < 1 \right\},$$

where  $M(u) = \int_0^{|u|} \rho(s) ds$  for some function  $\rho(s)$  which is positive when  $s > 0$ ,

nondecreasing, and such that  $\rho(0) = 0$ ,  $\lim_{s \rightarrow +\infty} \rho(s) = \infty$ . In this case, sufficient con-

ditions are found for exponential stability of the zero solution of the problem  $y' = A(t)y$ ,  $y(t_0) = y_0$  (i. e., satisfaction of the inequality

1/2

RASKIN, V. G., YASAKOV, A. I., Tr. NII mat. Voronezh. un-ta, 1970, vyp. 1, pp. 120-127

$$\|y(t)\| < B_1 e^{-\alpha(t-t_0)} \|y(t_0)\|$$

for some  $\alpha$  and  $B_1$  and for all  $t_0 \geq 0$ , assuming that for any  $f(t) \in L_M^*$  the problem  $x' = A(t)x + f(t), x(t_0) = x_0$  has a bounded solution. T. Yenzikeyeva.

2/2

USSR

UDC 621.4/.6:533.6

LAZEREV, Ye. A., BAUL'KIN, A. V., LAVRIK, A. N., RASKIN, V. G.

"Determination of the Permissible Range of Variation in the Control Parameter of a Two-Stage Turbine in a Turbocompressor"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collected Scientific Works of the Chelyabinsk Polytechnical Institute), 1971, No 87, pp 96-102 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B334)

Translation: The paper presents the results of a theoretical study of nozzle control implemented on both stages of a turbine. The ratio of the areas at the outlets from the guide vane assemblies is used as the control parameter. Calculations show that as the degree of expansion of the gas in a stage increases, the optimum values of the control parameter decrease. For instance when the degree of expansion is  $\pi_r^* = 0.6$ , the optimum value of the control parameter is 1.1, while at  $\pi_r^* = 1.0$ , the optimum control parameter decreases to 0.8. The permissible ranges of variation in the control parameter  $\Delta I$  are determined from the condition of a reduction in efficiency by no more than 0.5%: at a degree of expansion of  $\pi_r^* = 1.0$ , this range is 0.7-0.9, and at  $\pi_r^* = 0.6$ , it is 0.98-1.28. A. G. Plotkina.

1/1

S/019/62/000/017/024/054  
A154/A126

AUTHORS: Shmayn, L.D., Raskin, Ya.L., Belyayeva, K.P., Orlov, I.N., Soshchin, N.P., Zhil'tsova, I.V.

TITLE: A method of producing a copolymer

PERIODICAL: Byulleten' izobreteniy, no. 17, 1962, 35

TEXT: Class 39c, 25<sub>01</sub>. No. 149881 (752222/23-4 of November 18, 1961).  
1) This method is for producing a copolymer of styrene with an epoxide resin esterified with unsaturated fatty acids. The method is distinguished by the fact that, to obtain polymers containing free epoxy groups with improved light, electrical and mechanical characteristics, acrylic or methacrylic acid is used as an unsaturated fatty acid and the esterification is carried out partially.  
2) The copolymers obtained by the method described in 1. can be used as binders for producing varnishes, enamels and electroluminescent layers.

[Abstracter's note: Complete translation]

Card 1/1

S/0286/64/000/008/0038/0038

ACCESSION NR: APO32909

AUTHOR: Raskin, Ya. L.; Shmayn, L. D.; Pipris, M. D.; Kulshova, I. D.; Malakhova, N. P.; Zhil'tsova, I. V.; Gurevich, A. D.; Gryunberg, A. Yu.

TITLE: Method of producing electroinsulating lacquers. Class C 09f, 22h, 4, No. 161837 (819257/23-4, 9 Feb 1963)

SOURCE: Byulleten' izobretaniy i tovarnykh znakov, no. 8, 1964, 38

TOPIC TAGS: lacquer, electroinsulating lacquer, isocyanate, polycaprolactam, monophenyldiisocyanate, phenylethylenediisocyanate

ABSTRACT: 1. A method of producing electroinsulating lacquers, based on a binder modified by isocyanates, with the addition of a solvent. The distinguishing feature is the production of electroinsulating lacquers which have increased elasticity, heat resistance, and also resistance to the effect of moisture and solvent. Polycaprolactam modified by monophenyldiisocyanate or phenylethylenediisocyanate is used as the binder.

1/2

ACCESSION NR: APL032909

2. The method of para. 1, with the distinguishing feature that the hinder-polyca-  
prolactam is used in the amount of 100 parts by weight, monophenyldiisocyanate -  
20 parts by weight, phenylethylenediisocyanate - 50 parts by weight.

ASSOCIATION: None

SUBMITTED: 09Feb63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: CH, MA

NO REF SOV: 000

OTHER: 000

2/2

Card

15.7140

63857

S/O 1/51/000/002/042/111  
A158/4827

AUTHORS: Belyayeva, K.P., Berlin, A.A., Kefeli, T.Ya., Bogorskaya, T.A., and  
Raskin, Ya.L.

TITLE: A Method of Obtaining a Polyetheracrylic Varnish

PERIODICAL: Byulleten' izobreteniy, 1961, No. 2, p. 39

TEXT: Class 39b, 402. No. 135216 (663279/23 of April 15, 1960). This method  
is used in the presence of solvents and initiators. In order to make a coat  
from this varnish capable of drying outdoors without being heated, polyether-  
acrylate is blended with a mixture of nitrocellulose, styrene and acetone.

Card 1/1



S/019/60/000/020/079/211  
A154/OA26

AUTHORS: Raskin, Ya.L., Belyayeva, K.P., Berlin, A.A., Bogatyrev, P.M.,  
Popova, G.L., Shmayn, I.P., Erman, V.Ya.

TITLE: A Method of Obtaining Color-Varnishing Materials

PERIODICAL: Byulleten' izobrateniy, 1960, No. 20, p. 35

TEXT: Class 22h, 1<sub>02</sub>. No. 132745 (649549/23 of Jan 6, 1960). This method of obtaining color-varnish materials polymerizing in a film and with a base of unsaturated poly ester compounds, alkyd resins, nitrocellulose, siccatives, peroxide catalysts, pigments and solvents is distinguished by the fact that, in order to increase the stability of the varnish system and widen the raw-material base, poly ester acrylates, for example tetramethacrylatediglycerinphthalate, tetramethacrylatediglycerinadipate (adipinat) or tetramethacrylatediglycerinsebacinate (sebatsinat), are unsaturated compounds.

Card 1/1

15(7)

S/019/59/000/23/183/432  
D046/D005

AUTHORS: Mamedov, Sh.A., Sverdlin, M.S., Nizker, I.L., Raskin, Ya.L.  
and Rzayev, A.S.

TITLE: A Method of Obtaining Perchlorovinyl Coatings

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 23, p 39 (USSR)

ABSTRACT: Class 22h, 1<sub>02</sub>. Nr 124572 (616668/23 of 16 Jan. 1959). The coating on the basis of perchlorovinyl with the use of a plasticizer. To extend selection of the plasticizers, glycol ethers of the naphtenic acids of petroleum fractions are used.

Card 1/1

Marine and Shipbuilding

USSR

UDC 629.122/.123:539.4

GREBENYUK, YA. P., RASKIN, YU. N., SEM'YANOV, I. V.

"Concerning the Standard of General Strength of River-Sea Ships"

Leningrad, Sudostroyeniye, No 11, Nov 70, pp 9-11

**Abstract:** River-sea ships are of shallower draft than ships operating exclusively in the maritime service, and differ from them with respect to other design features as well. Experience in the designing, construction, and operation of river-sea ships cannot as yet fully serve as basis for a set of rules for building them. Therefore when developing a standard of general strength for river-sea ships we must adopt the strength standard of maritime ships as a basis, and introduce into it necessary corrections which take into account the basic features of river-sea ships. The article presents a standard of general strength for river-sea ships that has been correlated with the experience of operating these ships and the results of full-scale strength tests of them, 4 tables, 3 bibliographic entries.

1/1

USSR

UDC 534

RASKIN, Yu. N., Leningrad

"Application of the Lantsosh Quadrature Formula to a Study of Vibrations of Nonlinear Mechanical Systems"

Moscow, Mekhanika tverdogo tela, No. 2, Mar/Apr 72, pp 27-33

Abstract: A method for studying vibrations of nonlinear mechanical systems with distributed parameters is proposed. The Lantsosh quadrature formula is used to integrate the partial differential equations describing the motion of these mechanical systems. The Lantsosh formula is given in the form

$$\int_a^b \psi(x) dx = \frac{1}{N_j^*} \sum_{j=0}^{v-1} N_{j+1}^* (b-a)^{j+1} \left[ \left( \frac{\partial^j \psi}{\partial x^j} \right)_{x=a} + (-1)^j \left( \frac{\partial^j \psi}{\partial x^j} \right)_{x=b} \right]$$

$$N_j^* = \frac{(2v-j-1)!}{(v-j-1)!(j+1)!} \quad (1)$$

The motion of a nonlinear mechanical system such as a rod is considered as described by the differential equation

1/2

USSR

RASKIN, Yu. N., Mekhanika tverdogo tela, No. 2, Mar/Apr 72, pp 27-33

$$F[y(x, t), x, t] = D(y) - P \frac{\partial^2 y}{\partial x^2} + m(x) \frac{\partial^2 y}{\partial t^2} - q(x, t) = 0 \quad (2)$$

where  $D(y)$  is a differential operator of the  $r$ -th order in terms of the variable  $x$  and generally nonlinear,  $y = y(x, t)$  is the displacement of the rod,  $q(x, t)$  is the intensity of the transverse load,  $m(x)$  is the linear mass,  $x$  is the coordinate and  $t$  is time. Two cases are considered: (a) a physically nonlinear system under a given longitudinal force  $P = P(t)$ , and (b) a geometrically nonlinear system for a linear operator  $D(y) = EI \partial^4 y / \partial x^4$ . In the latter case the force  $P$  is determined from the condition that the longitudinal displacement of the bearing sections of the rod are equal to zero. The nonlinear boundary value problem is reduced to a Cauchy problem for systems of nonlinear ordinary differential equations with initial conditions. It is noted that this method in the first approximation gives fairly accurate solutions of problems on bending, stability of equilibrium shapes, and vibrations of mechanical systems with distributed parameters.

2/2

USSR

UDC: 801:51

RASKINA, A. A., CHEPIGO, T. S.

"A Factographic Information Retrieval System and a System of Microuniversalia. (Based on Material of Russian Word Forms)"

Nauch.-tekhn. inform. Sb. Vses. in-t nauch. i tekhn. inform. (Scientific and Technical Information. Collection of the All-Union Institute of Scientific and Technical Information), 1970, Ser. 2, No 12, pp 21-28, 42 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV807)

Translation: The paper describes the system of characteristics of a factographic data retrieval system based on Russian word forms, and presents a list of microuniversalia -- universal connections between the meanings of these characteristics. Authors' abstract.

6610

CSO: 1843-W

- END -

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- 91 -

USSR

UDC 801:51

RASKINA, A. A., CHEPIGO, T. S.

"Information Retrieval System for Investigation of a Language"

Nauch.-tekhn. Inform. Sb. Vses. In-t Nauchn. i Tekhn. Inform. [Scientific and Technical Information, Collection of All-Union Institute of Scientific and Technical Information], Series 2, No 11, 1970, pp 20-24, 34, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V695 by the authors).

Translation: The structure of the characteristics for a factographic IRS, based on the material of Russian word forms, is described. A classification of noun paradigms is also presented considering homonymy arising during declension.

- END -

6508

CSO: 1843-W

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--CONCENTRATION HETEROGENEITY OF STEEL 110G13L CONTAINING NIOBIUM -U-  
AUTHOR--(03)-ANIKIN, P.S., NOVGMEISKIY, YU.D., RASKOLENKO, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--LITEINOE PROI.VOD. 1970, (3), 36-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ALUMINUM, STEEL DEOXIDATION, NIOBIUM STEEL/(U)110G13L NIOBIUM  
STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/1926 STEP NO--UR/0128/70/000/003/0036/0037  
CIRC ACCESSION NO--AP0132188  
UNCLASSIFIED



2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132188

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF NB ADDNS. (0.15, 0.35, AND 0.65PERCENT) ON THE NONUNIFORMITY OF THE TITLE STEEL WAS STUDIED. THE STEEL WAS MELTED IN 120-KG INDUCTION FURNACE WITH BASIC LINING AND ALLOYED IN THE LAULE AFTER CAREFUL DEOXIDN. WITH AL. THE NONUNIFORMITY WAS EVALUATED BY DETG. MICROHARDNESS ON POLISHED SECTIONS PREPD. WITH MIN. COLD HARDENING. ABOUT 90-100 DETNS. WERE MADE ON ONE SECTION; GRAIN BOUNDARIES WERE EXCLUDED. THE DEGREE OF CONC. UNIFORMITY WAS DETD. BY THE RATIO OF THE MAX. OF FREQUENCY CURVE TO THE WIDTH OF THE HISTOGRAM (FREQUENCY POLYGON). THE MAX. OF THIS RATIO (1.75) OCCURRED AT 0.35PERCENT NB, WHICH WAS THE RECOMMENDED NB ADDN.

UNCLASSIFIED

USSR

RASKOSHA, V. L., SHARSHENALIYEV, Zh.

"Simplified Algorithms for Restoration of a Quantized Gaussian Process"

Izv. AN KirgSSR [News of Academy of Sciences, KirgSSR], 1973, No 1, pp 13-17  
(Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No  
6V188, by the authors).

Translation: Simplified algorithms for restoration of a time and level-  
quantized Gaussian random process are studied. Expressions are produced for  
the dispersions of errors and dependence of quantization step with respect  
to time and level is analyzed.

1/1

USSR

UDC 62.504.1

RASKOSHA, V. L., and SHARSHENALIYEV, Zh.

"Optimal Quantization of the Trajectory of a Moving Body in a Control Problem:

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 5, September-October 1971, pp 26-30

Abstract: In measurement of the angular coordinates of a moving body, in the tracking mode, by means of angle-measuring receivers used as angle quantizers, the question arises of determining the angular step of the quantizer. This article gives an example in a two-dimensional space for which the problem is formulated; the space is the  $x,y$  plane in which a point with a coordinate probability density of  $p(x,y)$  moves erratically. The location of the point is to be found by the use of  $(2m + 1) (2n + 1)$  sensors, in which each sensor controls a small square with one side of  $\Delta h$ . Locating the point in a square, the sensor for that square emits a signal. It is required to determine the optimal quantization step  $\Delta h$  for which information regarding the trajectory of the point is a maximum. The criterion of optimality of the choice of quantization step is the maximum of discrete information at the quantizer output. The authors are with the Moscow Power Institute.

1/1

USSR

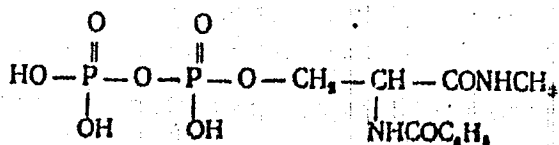
UDC: 547.466

AVAYEVA, S.M., RAS'KOVA, N.V., MEVKH, A.T., Laboratory of Bio-Organic Chemistry, Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis of N-Benzoyl-O-Pyrophosserine Methylamide"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/ Feb 70, pp 100-105

Abstract: Three methods of synthesizing N-benzoyl-O-pyrophosserine methylamide



were investigated. A method is also described for synthesizing this serylpyrophosphate with radioactive tracer atom  $^{32}\text{P}$  for studying the mechanism of interaction of the compound with enzymes.

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USSR

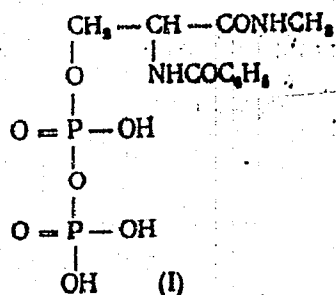
UDC: 547.466

AVAYEVA, S.M., RAS'KOVA, N.V., BOTVINIK, M.M., Laboratory of Bio-Organic Chemistry  
Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and  
Secondary Specialized Education RSFSR

"Hydrolysis of N-Benzoyl-O-Pyrophosphoserine Methylamide"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/  
Feb 70, pp 96-99

Abstract: The authors investigated the limits of stability of N-benzoyl-O-  
pyrophosphoserine methylamide

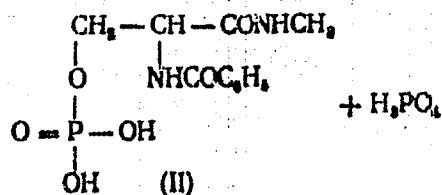


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USSR

AVAYEVA, S.M., et al, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 96-99

at various pH values and studied hydrolysis of the compound in the presence of a number of metal ions. It was found that the pyrophosphoric bond in compound (I) is stable for 4 hrs at 50°C for pH of 2-11, but is readily hydrolyzed in an acid solution. Analysis of the reaction products showed only N-benzoyl-O-phosphoserine (II) and phosphoric acid:



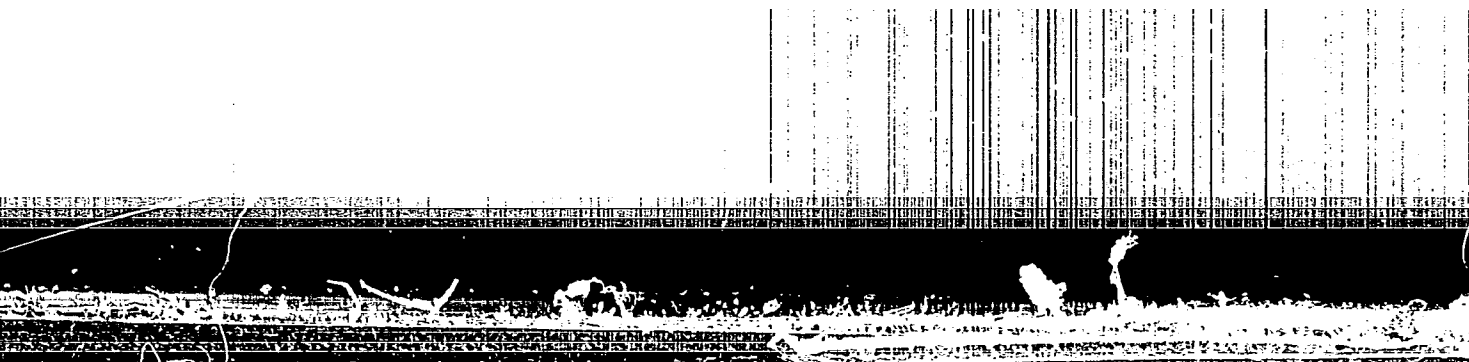
It was found that a change in the structure of the serine part of the pyrophosphoric acid ester has practically no effect on the stability of the pyrophosphoric bond. The rate of hydrolysis of the bond increases appreciably in a neutral medium (pH = 7) in the presence of a number of metal ions - thorium, cerium, lanthanum and iron which act as catalysts. Catalytic hydrolysis at pH values other than

7 was not as great. Hydrolysis of the compound is not catalyzed at pH 4, 7 and 9 by magnesium, manganese, cobalt, calcium, beryllium or nickel ions. It was also found that only the pyrophosphoric bond is decomposed by hydrolysis at pH 7 in the presence of thorium or iron ions.

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**"APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R002202620007-0**



**APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R002202620007-0"**



USSR

RASKOSHA, V. L., SHARSHENALIYEV, Zh.

"Simplified Algorithms for Restoration of a Quantized Gaussian Process"

Izv. AN KirgSSR [News of Academy of Sciences, KirgSSR], 1973, No 1, pp 13-17  
(Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No  
6V188, by the authors).

Translation: Simplified algorithms for restoration of a time and level-  
quantized Gaussian random process are studied. Expressions are produced for  
the dispersions of errors and dependence of quantization step with respect  
to time; and level is analyzed.

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UDC 62.504.1

USSR

RASKOSHA, V. I., and SHARSHENALIYEV, Zh.

"Optimal Quantization of the Trajectory of a Moving Body in a Control Problem:

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 5, September-October 1971, pp 26-30

Abstract: In measurement of the angular coordinates of a moving body, in the tracking mode, by means of angle-measuring receivers used as angle quantizers, the question arises of determining the angular step of the quantizer. This article gives an example in a two-dimensional space for which the problem is formulated; the space is the  $x,y$  plane in which a point with a coordinate probability density of  $p(x,y)$  moves erratically. The location of the point is to be found by the use of  $(2m + 1)(2n + 1)$  sensors, in which each sensor controls a small square with one side of  $\Delta h$ . Locating the point in a square, the sensor for that square emits a signal. It is required to determine the optimal quantization step  $\Delta h$  for which information regarding the trajectory of the point is a maximum. The criterion of optimality of the choice of quantization step is the maximum of discrete information at the quantizer output. The authors are with the Moscow Power Institute.

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USSR

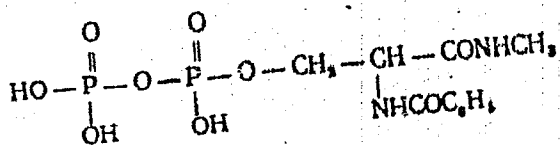
UDC: 547.466

AVAYEVA, S.M., RAS'KOVA, N.V., MEVKEH, A.T., Laboratory of Bio-Organic Chemistry,  
Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and  
Secondary Specialized Education RSFSR

"Synthesis of N-Benzoyl-O-Pyrophosphoserine Methylamide"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/  
Feb 70, pp 100-105

Abstract: Three methods of synthesizing N-benzoyl-O-pyrophosphoserine methyl-  
amide



were investigated. A method is also described for synthesizing this serylpyrophosphate  
with radioactive tracer atom <sup>32</sup>P for studying the mechanism of interaction of the  
compound with enzymes.

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UDC: 547.466

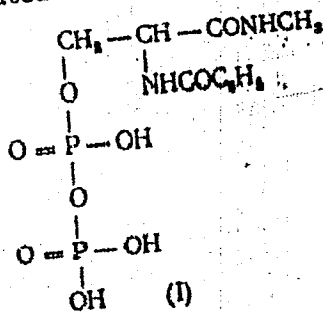
USSR

AVAYEVA, S.M., RAS'KOVA, N.V., BOTVINIK, M.M., Laboratory of Bio-Organic Chemistry  
Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and  
Secondary Specialized Education RSFSR

"Hydrolysis of N-Benzoyl-O-Pyrophosphoserine Methylamide"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/  
Feb 70, pp 96-99

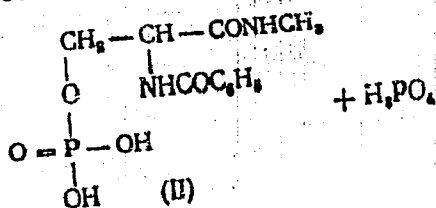
Abstract: The authors investigated the limits of stability of N-benzoyl-O-  
pyrophosphoserine methylamide



USSR

AVAYEVA, S.M., et al, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 96-99

at various pH values and studied hydrolysis of the compound in the presence of a number of metal ions. It was found that the pyrophosphoric bond in compound (I) is stable for 4 hrs at 50°C for pH of 2-11, but is readily hydrolyzed in an acid solution. Analysis of the reaction products showed only N-benzoyl-O-phosphoserine (II) and phosphoric acid:



It was found that a change in the structure of the serine part of the pyrophosphoric acid ester has practically no effect on the stability of the pyrophosphoric bond. The rate of hydrolysis of the bond increases appreciably in a neutral medium (pH - 7) in the presence of a number of metal ions - thorium, cerium, lanthanum and iron which act as catalysts. Catalytic hydrolysis at pH values other than

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AVAYEVA, S.M., ET AL., Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11,  
No 1, Jan/Feb 70, pp 96-99

7 was not as great. Hydrolysis of the compound is not catalyzed at pH 4, 7 and 9 by magnesium, manganese, cobalt, calcium, beryllium or nickel ions. It was also found that only the pyrophosphoric bond is decomposed by hydrolysis at pH 7 in the presence of thorium or iron ions.

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USSR

UDC 616.155.392-036.11-07:[616.157+616.419]-078

KAGAN, G. Ya., COLOSOVA, T. V., MARTYNOVA, V. A., CHUMANOVA, L. P., KOPELOVA, Ye. I., and ~~KASNOVA~~ T. M., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Sciences USSR, and Central Institute of Hematology and Blood Transfusion

"Isolation and Identification of Microbial Agents From Bone Marrow and Blood of Acute Leukemia Patients"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 72-76

Abstract: Four types of microorganisms can be isolated directly from blood and bone marrow of acute leukemia patients. Two of them are streptomicrococci and diphtheria-like microbes unlike the classical streptococci and diphtheroids. They are probably altered variants of the patient's microflora. Microbial agents of the third type are either a phase of induction of the L-form in the patient's body or a phase of bacterial reversion from the L-form. Polymorphic agents of the fourth type resemble the Mycoplasmataceae in several respects and they can be tentatively regarded as "mycoplasma-like" organisms.

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Masers

UDC: 621.372.826.029.67

USSR

~~FASKUTII~~, S.A.

"Amplification of Surface Waves in Dielectric Light Pipes"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2527-2532

Abstract: The author analyzes solutions of Maxwell equations for some special cases of configuration of flat light pipes. Symmetric flat dielectric light pipes without absorption and with weak absorption, and the asymmetric case are considered. It is shown that surface waves passing over the light pipe can be amplified in the case where there is negative absorption in one of the external regions of the light pipe. Thus the amplifying properties of an active gas medium can be used to amplify optical signals passing through a light pipe.

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USSR

UDC: 621.386.5.002(088.8)

VASINA, N. T., RASNETSOVA, B. Ye., KOLMAKOVA, G. Ya.

"A Method of Frosting the Surface of Quartz"

USSR Author's Certificate No 263045, filed 22 Mar 68, published 9 Jun 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V317)

Translation: The invention deals with treating the surface of quartz used in the electronics industry for making thin-film photoelectric beam receivers. The treatment consists in frosting the surface of the quartz in a mixture of saturated solutions of potassium fluoride in nitric acid and ammonium fluoride in nitric acid taken in the ratio of 1:1.2. Ye. M.

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UDC: 537.312.62

USSR

VASINA, N. T., ~~RASNETSOVA, B. Ye.~~, KOLMAKOVA, G. Ya.

"A Method of Photoengraving Lead Films"

USSR Author's Certificate No 261498, filed 15 Jul 68, published 27 May 70  
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D643 P)

Translation: This Author's Certificate introduces a method of photoengraving lead films deposited on a dielectric substrate. The procedure is based on coating the lead film with acid resist, forming the copy layer and subsequent etching. As a distinguishing feature of the patent, packing density is increased and circuit quality is improved by placing the substrate in an etchant comprised of a formic acid solution at a distance of 3-4 mm from the etchant reflector and blowing compressed air on the surface of the substrate through a layer of etchant, alternating the action of the compressed air with the action of the etchant.

UDC 911.3:616.9:576.895.771(47+57)

USSR

SHIPTISINA, N. K., ANUFRIYEVA, V. N., BANDIN, A. I., VINOGRADSKAYA, O. N.,  
GORNOSTAYEVA, R. M., KUPRIYANOVA, Y. S., MAKROVICH, N. Ya., ~~RASNITSYN, S. P.~~  
and TIMOFEYEVA, L. V.

"Study of the Biology of Blood-Sucking Diptera as Basis for Combating  
Vectors of Infection and Blood-Sucking Insects in the Soviet Union"

V sb. Materialy Nauchn. konferentsii posvashch. 50-letiyu In-ta Med.  
parazitol. i tropich. Med. 1970 (Proceedings of the Scientific Conference  
Devoted to the 50th Anniversary of the Institute of Medical Parasitology  
and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 48-49  
(from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.48)

[No abstract]

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USSR

UDC 911.3.616.9.576.895.771(571.56)

TIMOFEYEVA, L. V., MITROFANOV, A. M., VINOGRADSKAYA, O. N., RASNITSYN, S. P.,  
PETRUCHUK, O. Ye., RYAZANTSEV, V. A., and YERMISHEV, Yu. V.

"Organizational Principles in the Struggle Against Blood-Sucking Midges and  
Aedes Mosquitoes on the Basis of Their Biological Characteristics"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med.  
parazitol. i tropich. med., 1970 (Proceedings on the Conference Commemorating  
the 50th Anniversary of the Institute of Medical Parasitology and  
Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 50-51  
(from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.75)

[No abstract]

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PROCESSING DATE--20NOV70

UNCLASSIFIED

1/2 059  
TITLE--THE HEART MADE OF TITANIUM -U-

AUTHOR--RASPEVIN, K.

COUNTRY OF INFO--USSR

SOURCE--PRAVDA, AUGUST 7, 1970, P 3, COLS 2-7

DATE PUBLISHED--07AUG70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS, MECH., IND.,  
CIVIL AND MARINE ENGR  
TOPIC TAGS--TITANIUM ALLOY, STATE PRIZE, METALLURGIC PERSONNEL, AERONAUTIC  
PERSONNEL, TURBOFAN ENGINE, AVIATION INSTITUTE, METAL UTILIZATION,  
AIRCRAFT ENGINE, AIRCRAFT MATERIAL/(U)IL62 AIRCRAFT ENGINE, (U)NK8  
TURBOFAN ENGINE, (U)NK84 TURBOFAN ENGINE

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AN0125482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, Y. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SKHODO, AND G. P. DOLGOLENKO, A TEAM OF DESIGNERS, ENGINEERS AND TECHNOLOGISTS, HAVE BEEN NOMINATED BY THE MINISTRY OF AVIATION INDUSTRY FOR THE STATE PRIZE OF 1970. THEY HAVE DEVELOPED TURBOFAN ENGINES NK,8 AND NK,8,4, AND PRODUCTION TECHNIQUES WHICH HAVE MADE POSSIBLE THE USE OF TITANIUM ALLOYS. NIKOLAY DMITRIYEVICH KUZNETSOV AND LYUDYEG AUDE, FOVICH SKHODO ARE IDENTIFIED AS GENERAL DESIGNER AND LEADING DESIGNER OF THE CENTRAL INSTITUTE OF AVIATION CONSTRUCTION, RESPECTIVELY. GEURGIY PAVLOYICH DOLGOLENKO IS REFERRED TO AS AN ENGINEER. CLAIM IS MADE FOR THE USE OF TITANIUM COMPONENTS IN THE "IL,62" ENGINE FOR THE FIRST TIME IN THE WORLD'S PRACTICE.

UNCLASSIFIED

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UR 9012

AUTHOR-- RASPEVIN, K.

TITLE-- THE FLAGSHIP OF THE AEROFLOT

NEWSPAPER-- PRAVDA, MARCH 3, 1970, P 6, COLS 2-8

ABSTRACT-- G. V. NOVOZHILOV, YA. A. KUTEPOV, V. I. SMIRNOV, D. V. LESHCHINER, V. M. SHEYNIN, AND A. A. OVCHAROV, A TEAM OF DESIGNERS WITH THE IL YUSHIN DESIGN BUREAU, HAVE BEEN NOMINATED FOR THE LENIN PRIZE BY THE MINISTRY OF THE AVIATION INDUSTRY FOR DEVELOPING THE "IL-62". THE NOMINATION HAS BEEN SUPPORTED BY YE. F. LOGINOV, MINISTER OF CIVIL AVIATION, AND G. P. SVISHCHEV, CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES, U.S.S.R., HEAD OF TSAGI.

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19681143

USSR

Beryllium



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UDC 669.725'794-541.134

BUTOROV, V. P., NICHKOV, I. F., NOVIKOV, YE. A., RASPOPIN, S. P., and  
SHTOL'TS, A. K., Ural Polytechnic Institute, Department of the Metallurgy of  
Rare Metals

"Thermodynamics of Beryllium-Yttrium Alloys"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya,  
No 4, 1973, pp 86-89

Abstract: Tests on determining the thermodynamic magnitudes of Y-Be alloys was  
reduced to a study of the electromotive force of the galvanic element which was  
determined as the difference

$$\mathcal{E} = \varphi_{\text{alloy}} - \varphi_{\text{Y}}$$

where  $\varphi_{\text{alloy}}$  and  $\varphi_{\text{Y}}$  are the equilibrium potentials of the alloy and metallic  
equilibrium, respectively, relative to the chlorine electrode of comparison.  
From measurements of the emf of Y-Be alloys containing from 4.1 to 40.8 wt% Y,  
it was found that there is a direct relationship of alloy emf to Kelvin tempera-  
ture. Tables were compiled from experimental data which showed the activity  
and coefficients of activity of yttrium and Be-Y alloys and thermodynamic  
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BUTOROV, V. P., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy---Chernaya Metallurgiya, No 4, 1973, pp 86-89

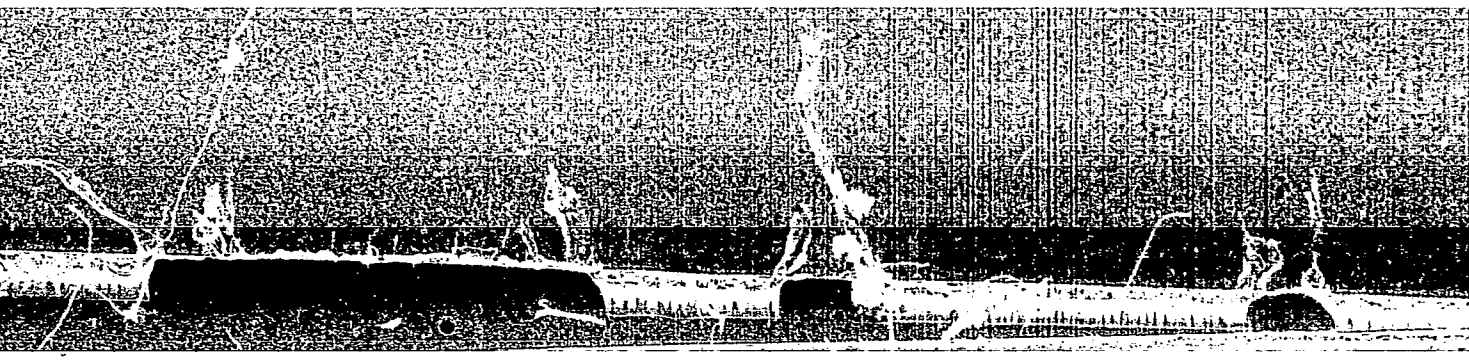
properties of alloy YBe<sub>13</sub>. From x-ray phase analysis of the studied alloys it was established that they consist of two phases: the intermetallic compound YBe<sub>12</sub> and pure beryllium. 1 figure, 3 tables, 4 bibliographic references.

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**"APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R002202620007-0**



**APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R002202620007-0"**

USSR

UDC: 621.386.6.002(088.8)

VASINA, N. T., RASNETSOVA, B. Ye., KOLMAKOVA, G. Ya.

"A Method of Frosting the Surface of Quartz"

USSR Author's Certificate No 263045, filed 22 Mar 68, published 9 Jun 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V317)

Translation: The invention deals with treating the surface of quartz used in the electronics industry for making thin-film photoelectric beam receivers. The treatment consists in frosting the surface of the quartz in a mixture of saturated solutions of potassium fluoride in nitric acid and ammonium fluoride in nitric acid taken in the ratio of 1:1.2. Ye. M.

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APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202620007-0"

RASNUTIN, S.A.

"Amplification of Surface Waves in Dielectric Light Pipes"

Moscow, Radiotekhnika i Elektronika, Vol 19, No 12, Dec 70, pp 2527-2532

Abstract: The author analyzes solutions of Maxwell equations for some special cases of configuration of flat light pipes. Symmetric flat dielectric light pipes without absorption and with weak absorption, and the asymmetric case are considered. It is shown that surface waves passing over the light pipe can be amplified in the case where there is negative absorption in one of the external regions of the light pipe. Thus the amplifying properties of an active gas medium can be used to amplify optical signals passing through a light pipe.