

USSR

UDC 576.314.576.8

FIKHMAN, B. A., and CHEMERIS, N. A., Institute of the Biochemistry and Physiology of Microorganisms, Academy of Sciences USSR, Pushchino on the Oka

"The Mechanical Properties of Cell Walls of Microorganisms"

Moscow, Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1060-1063

Abstract: The rheological properties of living cells of microorganisms can be determined on inclusion of these cells into macrofilms with known elastic properties. In the procedure applied, the elasticity modulus E of gelatin-glycerol films containing cells of microorganisms was determined by stretching the films in one direction. If addition of cells did not change E of a film with a definite composition, E of the cells could be assumed to be equal to that of the film. The relation $E = kc^9$ applied to gelatin-glycerol films, where c is the concentration of gelatin. On the basis of experimental results, the 0.1-600 $\text{kg}\cdot\text{mm}^2$ range of E , which could be obtained by varying c , included the values of E corresponding to those of microorganisms. E for *E. coli* (0.26 kg/mm^2) corresponded to a gelatin concentration of 66.5%. At high values of c , stretching of the film was best carried out at a low rate (0.5 mm/sec). The properties of cells were not affected significantly by inclusion into the films and stretching of the latter. Experiments with

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FIKHMAN, B. A., and CHEMERIS, N. A., Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1060-1063

Schizosacch. pombe incorporated into the films indicated that the cells could be readily observed under a microscope in the course of rheological studies. They retained their capacity for normal growth and division.

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USSR

CHEMERIS, N. N.

"Transformational Grammar for a Fragment of the Russian Language"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 22-33 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V822).

Translation: The fragment of the Russian language described does not include single-unit sentences (impersonal, incomplete, etc.), sentences with introductory words and phrases, sentences containing quantitative numbers, etc., as well as sentences with separated components. The grammar describing this fragment consists of three parts. The first part is a context-free control grammar, a generalization of the domination grammar: the right portion of a rule not only notes the controlling element, but also indicates the type of control. The terminal symbols are not word forms, but rather characteristics of entire classes of word forms. This grammar generates nucleus statements. The second portion -- the transformational grammar -- processes the marker of the components marked for control and the characteristics of the nucleus statement, converting them to transform statements. The third portion, only

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Chemersis, N. N., Lingvist. Probl. Avtomatiz. Inform. Poiska, Kiev, 1972,
pp 34-47.

briefly described in the article, includes supplementary transforms of state-
ments in place of certain characteristics in the independent transforms and
constructs the final chains of characteristics which are replaced by Russian-
language word forms. Ye. Burgina

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USSR

UDC[621.362:538.4]-16:533.9.083

BOYKO, YU.V., CHEMERIS, V.T.

"Movement Of Electrical Arc In Transverse Magnetic Field"

V sb. Teplotekhn.probl.pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 95-102 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A186)

Translation: The paper presents a scheme, a description of the arrangement of an experimental installation, the peculiarities of a system of probe measurements, and the results of a study of the movement of an electrical arc in a magnetohydrodynamical channel with argon and argon with an additive of potassium, in a transverse magnetic field. A diagram is presented of the distribution of the speeds of motion of the arc with respect to the length of the channel as well as the scheme of movement of the arc with respect to the electrodes. 4 ill. 4 ref. [In-t el-dinamiki AN USSR, Kiyev--Institute Of Electrodynamics AS UkrSSR, Kiev]

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USSR

UDC 669.243.87

GUDIMA, N. V., ~~CHEMLEV~~ V. A., BYKOVA, T. D., and ZOTKOV, O. M.

"Effect of Current Density on Production Cost in Electrolytic Nickel Refining"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 29-33

Abstract: The production of nickel in electrolytic shops may be raised by increasing the number of electrolyzers, raising the current density, and simultaneously adjusting the principal operational parameters, such as nickel concentration, electrolyte salt composition, and the circulation rate. The optimum current density must be determined for each individual plant taking into consideration the specific process technology and changes in various items of expenditures as a function of current density. With the shop expenditures being a major portion (40--45%) of the total conversion cost, it was the objective of this paper to determine the correlation of current density and shop expenditures on the basis of report data of an electrolytic shop. It was also essential to establish the factors, other than current density, affecting changes in the absolute shop expenditures, eliminate these effects, and arrive at "net" (cleaned) expenditures. Depending on production volume, the items subject to changes are: within-plant transport, maintenance of basic facilities, current repairs, and depreciation.

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GUDIMA, N. V., et al., Tsvetnyye Metally, No 3, Mar 70, pp 29-33

Within the period of analysis, the production volume at this specific shop was affected by the number of electrolyzers, current density, cathode surface, current yield, and extensive utilization of electrolyzers. Formulas are cited for determining shop expenditures as a function of current density. Calculation shows that an increase in current density from 241.3 amp/m^2 to 388.9 amp/m^2 and the resultant higher production volume made it possible to reduce the shop costs of 1 ton of cathodic nickel by 45.4%.

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MARKOVA, Ye. V., CHEMLEVA, T. A.

"The Composition Principle of Investigation of Multicomponent Mixtures"

Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta [Problems of Cybernetics. Certain Problems of Experimental Planning], Moscow, 1972, pp 73-86 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V294, by the authors).

Translation: When composition-property diagrams are studied, it is necessary to develop sequential experimentation plans. The sequence of plans should be constructed so that all or part of the experiments of the initial plans are included in subsequent plans, i.e., planning should include the composition principle. This article presents a classification of typical situations arising in planning in diagrams with qualitative factors which are useful for the development of the composition principle of planning.

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CHEMLEVA, T. A., ADLER, Yu. P.

"Decision Making in Informalized Stages of Planning of Experiments in Studies of Composition-Property Diagrams"

Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta [Problems of Cybernetics. Certain Problems of Experimental Planning], Moscow, 1972, pp 97-103 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V297, by the authors).

Translation: Methods of experimental planning are ever more widely included in the practice of studies of composition-property diagrams. In the past 10 years, large numbers of plans have been suggested for various tasks. In developing each new specific assignment, a decision must be made concerning the selection of some definite, most suitable and efficient plan for realization of the task at hand as an experiment. This work studies problems related to making this selection.

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USSR

UDC 669.295'292'71

YELYUTIN, O. P., KALININ, G. P., SOBOLEV, N. N., and CHEMLEVA, T. A., Moscow

"Optimum Planning of the Experiment in the Investigation of the Properties of Ti-V-Al Alloys"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 4, Jul/Aug 72, pp 234-238

Abstract: Mathematical methods of planning were used to establish diagrams of chemical composition and specific electric resistance for titanium-rich alloys of the Ti-V-Al system in the form of an improper simplex with the vertices x_1 (100% Ti), x_2 (60% Ti, 40% V), and x_3 (90% Ti, 10% Al). The use of D- and G-optimum plans made it possible to construct an adequate mathematical model of the investigated diagram by means of which the value of the specific electric resistance at any point of the system can be calculated. In applying mathematical methods to the investigation of composition and properties of multicomponent systems, computer technology can be effectively applied for processing experimental data, plotting and statistically analyzing the model of the investigated dependence, analytical calculations of the studied property, and for diagrammatic representation of modeling results. Three illustrations, one table, five formulas, seven bibliographic references.

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIOCHEMICAL STUDY OF PLATINUM DISSOLUTION IN ACID ELECTROLYTES AT
VARYING POLARIZATIONS. I. EXPERIMENTAL PROCEDURES AND SOME RESULTS -U-
AUTHOR--(03)-CHEMUDANOV, A.N., KOLOTYRKIN, YA.M., DEMBROVSKIY, M.A.
COUNTRY OF INFO--USSR
SOURCE--ELECTROKHIMIYA 1970, 6(4), 460-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RADIO CHEMISTRY, PLATINUM, ELECTROLYTE, SOLUBILITY, NITRIC
ACID, HYDROCHLORIC ACID, PERCHLORIC ACID, SULFURIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1149 STEP NO--UR/0364/70/006/004/0460/0468
CIRC ACCESSION NU--AP0121708
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOLN. OF PT IN H SUB2 SO SUB4, HCL, HCL0 SUB4, HNO SUB3, AND THEIR MIXTS. WAS INVESTIGATED OVER A BROAD RANGE OF POTENTIALS INCLUDING THE REGION OF H EVOLUTION. ELECTRODES WERE MADE OF PT PRETREATED IN A STREAM OF NEUTRONS AND THE QUANTITY OF PT IN THE ELECTROLYTE WAS FOLLOWED BY RADIOMETRY. THE RATE OF DISSOLN. OF PT WAS GOVERNED BY THE COMPN. AND CHARACTER OF THE SURFACE OXIDE FILMS IN BOTH THE ANODIC AND CATHODIC REGIONS. THE KIND AND CONC. OF THE ELECTROLYTE WERE OF MINOR IMPORTANCE ONLY. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

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UR0533

AUTHOR-- CHEMODANOV, M., DEPUTY CHAIRMAN, SIBERIAN BRANCH OF
THE ACADEMY OF SCIENCES, U.S.S.R.

TITLE-- A BRIDGE LEADING TO THE SHORES OF APPLICATION

NEWSPAPER-- SOTSIALISTICHESKAYA INDUSTRIYA, JANUARY 21, 1970,
P 2, COLS 1-5

ABSTRACT-- THE ARTICLE DISCUSSES THE PROBLEM OF BRIDGING THE THEO-
RETICAL AND APPLIED SCIENCES. THE AUTHOR CLAIMS THAT MORE THAN HALF
OF THE ASSOCIATES OF MANY INSTITUTES OF THE SIBERIAN BRANCH OF THE
ACADEMY ARE WORKING ON PROJECTS DIRECTLY RELATED TO INDUSTRY OR
AGRICULTURE. THE NETWORK OF RESEARCH INSTITUTES, DESIGN BUREAUS AND
PILOT PLANTS WHICH IS BEING DEVELOPED BY THE NOVOSIBIRSK RESEARCH
CENTER OPERATES ON THE PRINCIPLE OF DOUBLE SUBORDINATION, WHICH MEANS
THAT THESE ORGANIZATIONS ARE ADMINISTERED BY MINISTRIES, BUT THEIR
RESEARCH ACTIVITIES ARE GUIDED BY THE ACADEMY. THE CADRE FOR THE

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ACADEMY INSTITUTES ARE TRAINED AT THE UNIVERSITY, WHICH IS PART OF THE NOVOSIBIRSK RESEARCH CENTER SYSTEM. THE SAME PROCEDURE WILL BE APPLIED TO THE TRAINING OF CADRE FOR RESEARCH INSTITUTES AND DESIGN BUREAUS UNDER DOUBLE JURISDICTION. SOME WILL ALSO BE TRAINED IN A NEWLY FOUNDED POLYTECHNICAL INSTITUTE.

THE FIRST ORGANIZATION THAT WAS PLACED UNDER DOUBLE SUBORDINATION IS THE SCIENTIFIC-RESEARCH INSTITUTE FOR AUTOMATED PLANNING AND CONTROL SYSTEMS /NIISISTEM/ OF THE MINISTRY OF INSTRUMENT CONSTRUCTION, AUTOMATION AND CONTROL SYSTEMS, U.S.S.R. TODAY ITS RESEARCH ACTIVITIES ARE GUIDED BY THE INSTITUTE OF ECONOMICS AND ORGANIZATION OF INDUSTRIAL PRODUCTION OF THE SIBERIAN BRANCH OF THE ACADEMY.

IN 1966, THE REQUEST OF THE SIBERIAN BRANCH AND CERTAIN MINISTRIES FOR PERMISSION TO BUILD FOUR NEW DESIGN BUREAUS OF DOUBLE SUBORDINATION WAS GRANTED BY THE GOVERNMENT. RECENTLY PERMITS HAVE BEEN

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GRANTED FOR THE CONSTRUCTION OF THREE MORE RESEARCH INSTITUTES AND DESIGN BUREAUS OF THIS TYPE. THE INSTITUTE OF CATALYSIS OF THE SIBERIAN BRANCH AND THE MINISTRY OF CHEMICAL INDUSTRY HAVE DEVELOPED PLANS FOR A DESIGN-TECHNOLOGICAL BUREAU WITH A PILOT PLANT. THE MINISTRY OF GEOLOGY, U.S.S.R., AND THE INSTITUTE OF GEOLOGY AND GEOPHYSICS ARE DISCUSSING A PROPOSAL TO ESTABLISH A DESIGN BUREAU FOR DESIGNING GEOPHYSICAL INSTRUMENTS ON THE BASIS OF THEORETICAL AND EXPERIMENTAL RESEARCH CONDUCTED BY THE INSTITUTE.

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USSR

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UDC 547.241

RAZUMOV, A. I., LIORBER, B. G., SOKOLOV, M. P., MOSKVA, V. V., NAZVANOVA, G. F., ZYKOVA, T. V., CHEMODANOVA, L. A., and SALAKHUTDINOV, R. A.,
Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reactivity and Structures of Phosphorylated Carbonyl Compounds. XI. Study of the Aldol-Enol Equilibrium of Phosphorylated Aldehydes as a Function of Temperature"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 568-572

Abstract: The aldol-enol equilibrium of a series of alkyl substituted and non-substituted phosphorylated aldehydes has been investigated as a function of temperature using IR, NMR-¹H and NMR-³¹P spectroscopical analyses. With increasing temperature the nonsubstituted compounds go from the trans-enol form through the aldol form into the cis-enol form. In case of the alkyl substituted phosphorylated aldehyde only the conversion from trans-enol form into the aldol form has been observed. Quantitative determination of the ratios of aldol to trans-enol form has been made.

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USSR

UDC 547.341+547.26'118

MOSKVA, V. V., NAZVANOVA, G. F., ZYKOVA, T. V., PAZUROV, A. I., and ~~CHENK-~~
~~DANOVA, L. A.~~, Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. X. α -Alkyl- β -alkoxy-
vinylphosphonic and -thiophosphonic Acid Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1680-1684

Abstract: For purpose of a more complete study of α -alkyl- β -alkoxy-
vinylphosphonic and -thiophosphonic acid derivatives, dialkyl esters of
these acids were synthesized by the reaction of their dichlorides with alcohols
in the presence of triethylamine or with alkoxides. Hydrolysis of the esters
of α -alkyl- β -alkoxyvinylphosphonic and -thiophosphonic acids (7 percent
HCl, 80°, 3 hours) gives corresponding phosphorylated aldehydes, which were
identified from elemental analysis, by IR and NMR spectra, as well as in
the form of their 2,4-dinitrophenylhydrazones. IR and NMR spectroscopy
data indicate the presence of keto-enol tautomerism in the aldehydes.

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1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HIGH CHROMIUM DIFFUSION COATING ON CHROMIUM NICKEL AUSTENITIC
STEELS -U-
AUTHOR-(03)-SMIRNOV, A.V., CHEMRUKOVA, E.N., NACHINKOV, A.D.
COUNTRY OF INFO--USSR
SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
14-18
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CHROMIUM NICKEL STEEL, ALLOY DESIGNATION, METAL DIFFUSION,
METAL COATING, CHROMIZING, METAL POWDER, STAINLESS STEEL, AUSTENITIC
STEEL, ALUMINA, IRON ALLOY/(U)E1612 STAINLESS STEEL, (U)IKH18N9
STAINLESS STEEL, (U)IKH18N9T STAINLESS STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1574 STEP NO--UR/0369/70/006/002/0014/0018
CIRC ACCESSION NO--AP0125200
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE FORMATION OF A HARD COATING DURING CONTACT CHROMIZING OF AUSTENITIC STEELS 1KH18N9, 1KH18N9T, AND E1-612 IN A MIXTURE OF POWDERS CONSISTING OF 40PERCENT CR, 30PERCENT FE₂O₃, 28PERCENT ALUMINA, AND 2PERCENT NH₄Cl. IT IS SHOWN THAT THE TOTAL DEPTH OF DIFFUSION OF CR INTO THE 1KH18N9 STEEL IS TWICE THAT OF THE E1-612 STEEL. IT IS FOUND THAT THE COATING CONSISTS OF AN OVERGROWN AND A PROPER DIFFUSION LAYER. THE STRUCTURE AND CHEMICAL COMPOSITION OF THE COATING ARE EXAMINED. FACILITY: Leningradskii Institut Aviatsionnogo PriBOROSTROENIIA, Leningrad, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

KOCHNEV, V. A., CHEMYAKINA, G. M.

"Calculation of Potential Functions"

Tr. Zap.-Sib. n.-i. geologorazved. nef. in-t (Works of the West Siberian Scientific Research Institute of Geological Petroleum Prospecting), 1972, vyp. 55, pp 215-219 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V665 [authors' abstract])

Translation: A standard program in Minsk-22 codes. The program is designed for computing the potential function of objects having number parameters of m distinctive features. It can be used to develop a pattern recognition program.

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USSR

UDC 621.371.029.6

AMANOV, S. A., KOLARZH, V. V., CHEN, B. B., KADYROV, I., and
RAIMKULOVA, K.

"Statistical Characteristics of UHF Signal Distribution Over Open
Land and Mountain Waterways"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
Sekts. 2 (Tenth All-Union Conference on the Propagation of Radio
Waves; Report Theses; Section 2--collection of works) "Nauka," 1972
pp 13-17 (from RZh--Radiotekhnika, No 10, 1972, Abstract No
10A352)

Translation: Experimental integral functions are given for the
distribution of average-time values of the signal attenuation fac-
tor, together with results of an investigation into the daily
course of the fading range during the various months for land and
mountain waterways in the rayon of Lake Issyk-Kul'. Two illustra-
tions, bibliography of two. A. L.

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USSR

UDC: 550.834

BALASHKAND, M. I., FILIPPOV, N. G., YEFIMENKO, M. D., CHEN, O. L., MAYOROV, V. V., KRASNOPOL'SKIY, A. D., SOLODILOV, L. N., YEVDOKIMOV, G. S., Ramenskoye Department of the All-Union Scientific Research Institute of Geophysical Methods of Prospecting

"A Device for Emission of a Seismic Signal"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, Mar 72, Author's Certificate No 330407, Division G, filed 20 Jan 70, published 24 Feb 72, p 142

Translation: This Author's Certificate introduces: 1. A device for emission of a seismic signal. The device contains compressed-air and liquid-fuel supply systems and a pneumatic chamber with movable piston which opens and closes the outlet port of the chamber. As a distinguishing feature of the patent, the compressed-air discharge energy is increased and the heat and force load on the chamber is reduced by fitting the movable piston with atomizers which break up the fuel in the compressed air during gas exhaust and by attaching a device for ignition of the fuel mixture to the chamber housing. 2. A modification of this device distinguished by the fact that

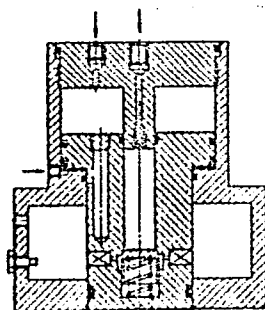
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BALASHKAND, M. I. et al., USSR Author's Certificate No 330407

the movable piston has a channel filled with fuel and communicating with the atomizer through a check valve, and the cover of the chamber has a rod which enters the channel of the piston and feeds fuel into it through the check valve. 3. A modification of this device distinguished by the fact that the attachment for igniting the fuel mixture is made in the form of a wedge.



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USSR

UDC:547.241

CHENBORISOV, R. Sh., and MARKIN, V. V.

"Preparation and Properties of Phenylhydrazides of Alkylthioalkylphosphonous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 43-48

Abstract: Nine title compounds (I) were prepared in 87-93% yield by adding slowly alkylthioalkylphosphonous chloride to a mixture of phenylhydrazine and triethylamine in ethyl ether under nitrogen at 0°, filtering off the triethylammonium chloride precipitate, then distilling the filtrate in a molecular still. All I compounds are liquids which decompose on normal distillation. Characteristic P-S bands were detected in IR spectra of I. The physical constants of I were tabulated. The I compounds reacted exothermally with sulfur to form addition compounds - alkylthioalkylphosphonic phenylhydrazides (II), viscous undistillable oils (yields 90-94%). IR bands indicative of PSSR group were present in the spectra of all II. Predictably I reacted exothermally with Schiff bases, e.g., p-benzylidenetoluidine, in petroleum ether under nitrogen at 45-50° to give 28-54% yields of crystallized addition compounds. The alkylthioalkyl(p-toluidino)benzyl-N-anilinophosphazine (III) structure was

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CHENBORISOV, R. Sh., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70,
pp 43-48

attributed to these compounds, because they did not add S even on heating and gave phenylhydrazine hydrochloride on acid hydrolysis. I easily reacted, typically at 30-35°, with aldehydes and ketones to give 60-90% yields of $C_2H_5P(SR)(O)CR'R''NHC_2H_5$ which do not add S. There are IR bands indicative of P=O and NH groups in the spectra of the above compounds.

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Acc. Nr:

AP0053348

Abstracting Service:
CHEMICAL ABST.

5/7/79

Ref. Code:

UR0079

111568x Preparation and properties of phenylhydrazides of
 alkylthioalkylphosphonous acids. Chenborisov, R. Sh.; Markin,
V. Y. (USSR). Zh. Obshch. Khim. 1970, 40(1), 43-8 (Russ).
 To 10.8 g PhNHNH, and 10.1 g Et₃N in Et₂O was added under N
 at 0°, 15.6 g RP(SR)Cl, and after removal of Et₃N.HCl after
 30-40 min the mixt. gave, on distn. in a mol. still (130-40° bath
 temp.), RP(SR¹)NHNHPh (I) (R and R¹ shown): Et, Et,
 87%, d²⁰ 1.0904, n_D²⁰ 1.5915; Et, iso-Pr, 89%, 1.0634, 1.5780;
 Et, Bu, 88%, 1.0582, 1.5745; Et, iso-Amyl, 93%, 1.0488,
 1.5685; Me, Et, 87%, 1.1099, 1.6030; Me, iso-Pr, 90%, 1.0902,
 1.5900; Me, Bu, 90%, 1.0767, 1.5810; Me, iso-Amyl, 92%,
 1.0594, 1.5740; Et, Ph, 88% —, —(viscous oil). The products
 underwent much decompn. on attempted normal distn. The ir
 spectra showed the PS band at 510 cm⁻¹. I and PhCH:NC₆H₄R²
 in petroleum ether under N at 50° 2-3 hr gave RP(SR¹)(:NNH-
 Ph)CHPhNHC₆H₄R² (R, R¹, and R² shown, resp.): Me, Bu,
 p-Me, m. 151-2°; Et, iso-Pr, m-Me, m. 152-4°; Et, iso-Pr, H,
 m. 145-7°; Me, iso-Amyl, p-NO₂, m. 147-8°; Me, Bu, p-NO₂,
 m. 149-50°. Addn. of S to I was exothermic and gave viscous

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undistillable RP(SR¹)(S)NHNHPh: Me, iso-Pr; Me, Bu; Et, Et; Et, Bu. All gave ir bands at 667 cm⁻¹ indicative of PS₂R grouping. R¹R²CO and PhNHNHP(SR)Et in 30 min at 30-5° gave EtP(SR)(O)CR¹R²NHNHPh (R, R¹, and R² shown, resp.): Et, H, Me, 70%, b_{0.4} 140°, n_D²⁰ 1.5732; Et, Me, Et, b_{0.4} 140°, 1.5642; Bu, Me, Et, b_{0.4} 145°, 1.5498; Et, Et, Bu, b₁ 150°, 1.5283; Bu, Et, Bu, b₁ 150°, 1.5303; Bu, H, Me, b_{0.4} 140°, 1.5558; Et, H, Pr, b_{0.4} 140°, 1.5552; Bu, H, Pr, b_{0.4} 140°, 1.5432; Et, H, C₆H₁₃, b_{0.4} 160°, 1.5435; Bu, H, C₆H₁₃, b_{0.4} 160°, 1.5290; Et, H, 2-furyl, b_{0.4} 140°, 1.6126; Bu, H, 2-furyl, b_{0.4} 140°, 1.5950. These did not add S. G. M. Kosolapoff

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19830370

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MOLECULAR MOTION IN CELLULOSE NITRATES STUDIED BY NUCLEAR MAGNETIC
RESONANCE -U-
AUTHOR--(05)-KOSTOCHKO, A.V., CHENBORISOVA, L.YA., MAKRAKOV, A.I.,
MAKOVCYEVA, G.N., FRUKTISTOVA, O.B.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(11), 72-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CELLULOSE, NITRATE, NUCLEAR MAGNETIC RESONANCE, PLASTICIZER,
PHTHALATE, ORGANIC PHOSPHATE, GLUCOSIDE, SPIN RELAXATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0314 STEP NO--UR/0460/70/012/001/0072/0074
CIRC ACCESSION NO--AP0111508
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111508

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. MOTION IN CELLULOSE NITRATE (1) PLASTICIZED WITH 35-55PERCENT OF DI-BU PHTHALATE, TRICRESYL PHOSPHATE, OR GLYCEROL TRINITRATE WAS INVESTIGATED BY NMR SPECTRA AT MINUS 140 50 MINUS 20DEGREES. A PLOT OF 2ND MOMENT (DELTA H SUB2 PRIME2) VS. TEMP. FOR THE PLASTICIZED I SAMPLES INDICATED THAT DELTA H SUB2 PRIME2 WAS INVERSELY PROPORTIONAL TO TEMP. IN THE RANGE OF MINUS 10 TO PLUS 20DEGREES, PRESUMABLY DUE TO THE FLEXIBILITY OF THE PYRANOSE RING AND HINDERED MOTIONS ABOUT THE GLUCOSIDE BOND C,O,C. THE HIGH MAGNITUDE OF DELTA H SUB2 PRIME2 WAS ACCOUNTED FOR BY A HYPOTHESIS THAT THE CH SUB2 AND SUB2 GROUP REVOLVES ABOUT THE RING AT MINUS 140DEGREES AT A FREQUENCY OF 10 PRIME4, WHICH WAS CONSISTENT WITH THE EXPTL. DATA. INCREASED PLASTICIZER CONTENT CAUSED A CONTRACTION IN THE NMR BAND AND AN INCREASE IN THE SPIN SPIN RELAXATION TIME (CHARACTERISTIC OF MOL. PLASTICIZATION). THE SPIN SPIN RELAXATION TIME FOR I PLASTICIZED WITH EQUAL AMTS. OF EACH OF THE 3 PLASTICIZERS WERE SIMILAR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SINGLE DOMAIN POLARIZATION OF FERROELECTRICS WITH A FIRST ORDER
PHASE TRANSITION -U-
AUTHOR--CHENSKIY, YE.V. C
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2), 586-92
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--BARIUM TITANATE, FERROMAGNETIC DOMAIN, MAGNETIC POLARIZATION,
CRYSTAL, FERROELECTRIC MATERIAL, PHASE TRANSITION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0140 STEP NO--UR/0181/70/012/002/0586/0592
CIRC ACCESSION NO--AP0054936
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FERROELECTS. (E.G., BATIO SUB3) POSSESSING SEMI CONDUCTING PROPERTIES WERE STUDIED. FOR THE CASE OF A LARGE CONC. OF FREE ELECTRONS IN THE CRYSTAL THE SYSTEM OF EQUATION WAS COMPLETELY INTEGRATED, THUS MAKING IT POSSIBLE TO EXPLAIN THE TEMP. DEPENDENCE OF THE DISTRIBUTION OF SPONTANEOUS POLARIZATION OVER THE CRYSTAL. EVALUATIONS WERE MADE OF THE CONC. OF FREE CARRIERS AT WHICH SINGLE DOMAIN POLARIZATION BECOMES STABLE. SINGLE DOMAIN POLARIZATION WAS CONSIDERED OF A PLATE IN AN EXTERNAL FIELD.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SPACE CHARGE LIMITED CURRENTS IN A METAL FERROELECTRIC AND METAL
SYSTEM -U-
AUTHOR--(02)-CHENSKIY, YE.V., KRAPIVIN, V.F.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2), 597-604
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ELECTRIC FIELD, SPACE CHARGE, FERROELECTRIC MATERIAL, CRYSTAL,
FERROMAGNETIC DOMAIN, MAGNETIC POLARIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0139 STEP NO--UR/0181/70/012/002/0597/0604
CIRC ACCESSION NO--AP0054935
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS CONSIDERED OF THE CONTACT FIELD ON THE DISTRIBUTION OF SPONTANEOUS POLARIZATION, ELEC. FIELD, AND THE D. OF FREE CHARGE IN A SHORTED CONDENSER OF THE METAL FERROELEC. METAL TYPE. FOR SOME PROPERTIES OF THE CONTACTS, QUAL. NEW DISTRIBUTION OF SPONTANEOUS POLARIZATION TAKES PLACE ("RANDOM DOMAIN"); TOTAL CHARGE OF THE FERROELEC. INCREASES AS WELL AS COND. OF THE SYSTEM.). CURRENT VOLTAGE CHARACTERISTICS OF SUCH SYSTEM HAVE PECULIARITIES RELATED TO POLARIZATION OF THE FERROELEC. CRYSTAL WITH THE APPEARANCE AND DISAPPEARANCE OF THE ABOVE DOMAIN UNDER THE ACTION OF AN EXTERNAL ELEC. FIELD.

UNCLASSIFIED

USSR

UDC: 8.74

SEDOV, B. I., CHENTSOV, V. M.

"A Method of Adaptive Placement of Elements"

Moscow, Kibernetich. sistemy avtomatiz. proyektir.--sbornik (Cybernetic Automated Design Systems--collection of works), 1973, pp 101-103 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V593 by O. Belkin)

Translation: A central problem in the stage of technical design of electronic items is that of arrangement of design elements (modules) and laying out connections in multilayered printed circuits. The task of optimum placement of elements is that of finding the global extremum of a quality function. Most known algorithms of placement are regular. As a rule they handle the problem in two stages: 1) finding the initial version of placement, 2) improving this version. A heuristic method of handling this job is proposed which is based on the ideology of automation games. The use of automaton models increases the efficiency of handling the job as compared with traditional methods.

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CYBERNETICS, COMPUTERS AND AUTOMATION TECHNOLOGY

Automata

USSR

PARSHENKOV, N.Ya., and CHENTSOV, V.M.

"Obtaining the Reduced Form of a Stochastic Automaton"

Moscow, Diskretnyye Avtomaty i Seti Svyazi, 1970, pp 136-141

Abstract: The article proves that the method of finding the reduced form of a stochastic automaton can be reduced to the problem of the minimization of a certain deterministic automaton. The model of Moore's stochastic automaton with a determinate output function is used. Whereas the reduced form is unique for a deterministic automaton, two cases are possible for a stochastic automaton; viz., the machine has a unique reduced form or has a continuum of different reduced forms. Two assertions are formulated and proved, the validity of which means that the problem of finding the reduced form of a stochastic automaton can be reduced to the problem of the minimization of deterministic automata defined by the set of expansions of the initial stochastic automaton.

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USSR

UDC: 577.4

PARSHENKOV, N. Ya. and CHENTSOV, V. M.

"Problems in the Theory of Probability Automata"

Moscow, v sb. Avtomaty i upr. setyami svyazi (Automata and the Control of Communications Networks--collection of works) "Nauka," 1971, pp 180-202 (from RZh--Matematika, No 6, 1972, Abstract No 6V306)

Translation: The structural characteristics of probability automata are studied. The probability automaton $M = (X, Y, S, \langle H(x) \rangle, F)$ where X is a set of input constants, Y is a set of output constants, S is a set of inner constants, F is a given output function transforming S into Y , $\langle H(x) \rangle$ is a family of $n \times n$ stochastic matrices, $n = |S|$ is converted into a structural model $N = (X, Y, S, R, \langle P_m(\rho_i) \rangle, f, F)$, where $s_j = f(s_i, \rho_i)$, while $\rho_i \in R$ shows up with a probability of $p_m(\rho_i)$ depending on the input $x_m \in X$. The reducibility of probability automata in terms of transition matrix expansions to simple matrices is considered. From this point of view, a study is made of the stable states of probability automata (a component part of the probability automaton, the determinate

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USSR

PARSHENKOV, N. YA., and CHENTSOV, V. M., V sb. Avtomaty i upr. setyami svyazi, "Nauka," 1971, pp 180-202

automaton, has a stable state s_j for the input p_i if, under the action of the input p_i , the automaton can fall into the state s_j ; but that input p_i does not change the state s_j). Stable realizations of the probability automaton are considered. Through the use of a structural model for autonomous probability automata, the problem of their decomposition into quasi-sequential and parallel combinations is solved.

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USSR

UDC: 577.4

PARSHENKOV, N. Ya., CHENTSOV, V. M.

"Problems in the Theory of Probabilistic Automata"

V sb. Avtomaty i upr. setyami svyazi (Automata, and Control of Communications Networks--collection of works), Moscow, "Nauka", 1971, pp 180-202 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V306)

Translation: The structural properties of probabilistic automata are investigated. The probabilistic automaton $M = (X, Y, S, \langle M(x) \rangle, F)$, where X is the set of states of the input, Y is the set of states of the output, S is the set of internal states, F is the deterministic function of the output which maps S on Y , and $\langle M(x) \rangle$ is a family of stochastic matrices of dimensionality $n \times n$, $n = |S|$, is transformed to the structural model $N = (X, Y, S, R, \langle p_m, \rho_i \rangle, f, F)$, where $s_j = f(s_i, \rho_i)$, and $\rho_i \in R$ appears with probability $p_m(\rho_i)$ depending on input $x_m \in X$. A study is made of the reducibility of probabilistic automata in terms of expansions of matrices of transitions into simple matrices. From this standpoint, a study is made of the stable states of probabilistic automata (a component part of the probabilistic automaton -- the deterministic automaton -- has a state s_j which is stable with respect to input ρ_i if the automaton can be put into state s_j under

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USSR

PARSHENKOV, N. Ya., CHENTSOV, V. M., Avtomaty i upr. setyami svyazi, Moscow, "Nauka", 1971

the effect of input ρ_i , but the same input ρ_i does not change state s_j). Stable realizations of a probabilistic automaton are considered. Utilizing the structural model introduced, a problem is solved on decomposing self-contained probabilistic automata into quasi-series and parallel connection. G. Agasandyan.

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USSR

UDC 577.4

LAZAREV, V. G., CHENTSOV, V. M.

"Use of Stochastic Automata for Information Distribution"

V sb. Avtomaty, gibridn. i upravlyavushch. mashiny (Automata, Hybrid and Control Machines — collection of works), Moscow, Nauka Press, 1972, pp 66-72
(from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V373)

No abstract

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USSR

UDC 591.1.15

SAKHAROV, V. N., VORONKOVA, L. N., and ~~CHEMISOV, Yu. S.~~

"Ultrastructure of Intranuclear Inclusions Formed During the Division of Cells Irradiated with an Ultraviolet Microbeam"

Nauch. dokl. vyssh. shkoly. Biol. n. (Scientific Reports of Higher Schools. Biological Sciences), 1972, No 5, pp 56-59 (from RZh-Biologicheskaya Khimiya, No 17, 10 Sep 70, Abstract No 17 F1481)

Translation: The division of cells with a prophase nucleolus locally injured by an UV microbeam results in the formation of daughter cells whose nuclei contain numerous inclusions, prenucleoli, in addition to normal nucleoli. The former contain RNA but, unlike normal nucleoli, they are lacking in granules and consist mainly of delicate fibrils (40 to 80 Å). The appearance of prenucleoli is thought to be due either to specific disruption of the ribosomal RNA synthesis in the daughter cells or to radiation-induced injury to the nucleolar substance.

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USSR

UDC 537.533.331

LYUBCHIK, Ya. G., MOKHNATKIN, A. V., Candidate of Sciences, CHENTSOV, Yu. V.,
Doctor of Sciences and YAVOR, S. Ya.

"Electron-Optical System of Nonaxisymmetrical Elements for Building a
Microprobe"

Leningrad, Optiko-mekhanicheskaya promyshlennost' No 11, Nov 71, pp 7-9

Abstract: The use of nonaxisymmetrical elements such as quadrupoles and octupoles for correction of spherical aberration in microprobe systems is suggested. A model of a triplet consisting of four similar five-electrode electrostatic quadrupole-octupole lenses is described. The small excitation regimes and a part of strong excitation regimes of quadrupoles (up to $V = 3-3.5$ kv) were experimentally investigated at magnification ratio not higher than $1/3$. Coefficients of linear magnification were determined using a fine mesh screen as an electron-optical object. The excitation values and coefficients of linear magnification obtained experimentally and by computation on a BESM-4 computer, presented in graphs, show good agreement.

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Microbiology

USSR

UDC 615.372.576.851.553

DRACHENNIKOV, V. I., GOLSHMID, V. K., REZEPOV, F. F., and CHENTSOVA, O. I.,
State Control Institute imeni Tarasevich and Moscow Institute of Vaccines
and Sera imeni Mechnikov

"Immunochemical and Biological Characteristics of Botulinus Type A Toxoids.
II"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971,
pp 12-18

Abstract: DEAE-cellulose chromatography revealed that the specific antigen of botulinus type A toxoids is heterogeneous in physicochemical properties. Separation of the toxoids on DEAE-cellulose yielded a fraction containing over 50 percent of the total antigenic activity and free from nucleic acids and pigments. Its specific activity was almost double that of the original preparation. No relationship was found between the charge of the specific molecules of the toxoids and their molecular weight. Purification of the toxoids on DEAE-cellulose resulted in removal of the ballast substances with no impairment of the immunogenic properties of the active fraction.

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CHENYKAYEVA, Ye. Yu.

MEDICINE

JPRS 50105
26 May 1972

CHANGES IN SERVE ENDINGS OF RABBIT BRAIN IN HEALTH AND AFTER
POISONING WITH AN ORGANOPHOSPHORUS CHEMISTEASE INHIBITOR

Article by N.P. Ivanova, Ye. Yu. Chenykayeva, E.F. Gulyaeva, G.G. Gulyaeva, G.G. Gulyaeva,
G.G. Gulyaeva, G.G. Gulyaeva, G.G. Gulyaeva, G.G. Gulyaeva, G.G. Gulyaeva, G.G. Gulyaeva,
pp 25-31

The content of gangliosides in the synaptosomal fraction from rabbit brain isolated by fractionation in a sucrose density gradient averages 28.7% of N-acetylneuraminic acid (H-AHA) or 115 μ g of gangliosides per mg of protein. Poisoning with an organophosphorus inhibitor (OP) of cholinesterase results in enrichment of the synaptosomes with gangliosides, the amount of which increases by 38% on the average, despite a decrease of 16.4% in total gangliosides in brain homogenate. Synaptosomal preparations are separated in a thin layer of silica gel into the same 10 fractions as brain homogenate gangliosides. As a result, 3 fractions of trihexylgangliosides, 3 fractions of dihexylgangliosides, and 2 fractions of monohexylgangliosides are clearly separated. In addition, 2 faint polar spots produce the smallest polar fractions with a low N-AHA content. The quantitative relationships of the ganglioside fractions are similar to those in brain homogenate except that they have a higher content of the G3 fraction (the so-called main dihexylganglioside) i.e. of a slight decrease in the G6 and G7 fractions. The fractional composition of the gangliosides remains constant after poisoning with a cholinesterase (OP) both in the brain as a whole and in the synaptosomes, despite their marked enrichment with gangliosides.

Gangliosides are unlabeled specific to nervous tissue. They are a multicomponent mixture of similarly constructed acyl-oligosaccharides which differ in the structure of the carbohydrate part of the molecules and in the amount of N-acetylneuraminic acid (H-AHA)

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[1 - USSR - C]

1/2 025

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--A GENERAL PURPOSE MULTIBALL BURNISHER -U-

AUTHOR--(03)--ANDRIYASIN, V.A., CHIEPA, P.A., SHEYKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 30-31

DATE PUBLISHED-----70

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

TOPIC TAGS--HYDRAULIC EQUIPMENT, SURFACE PROPERTY, METAL POLISHING,
PLASTIC DEFORMATION, METAL WORKING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1776

STEP NO--UR/0121/70/000/002/0030/0031

CIRC ACCESSION NO--AP0114275

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--0900T70

CIRC ACCESSION NO--AP0114275

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. FOR FINISHING WORKS ON PARTS OF LOW RIGIDITY (SUCH AS COUPLING RODS FOR HYDRAULIC CYLINDERS) BY THE METHOD OF SURFACE PLASTIC DEFORMATION, THE SCIENTIFIC RESEARCH INSTITUTE OF MACHINERY MANUFACTURE AND METAL WORKING (MINSK) HAS DEVELOPED A GENERAL PURPOSE MULTIBALL BURNISHER, A DISTINCTIVE FEATURE OF WHICH IS THE POSSIBILITY OF READJUSTMENT FOR PROCESSING PARTS WITH A DIAMETER FROM 10--32 MM VIA THE PLACING OF BALLS OF APPROPRIATE DIMENSIONS. A DESCRIPTION OF THE MACHINE IS GIVEN, AND ITS OPERATION IS DESCRIBED. SUCH BURNISHERS ARE RECOMMENDED FOR FINISHING WORK ON PARTS OF VARIOUS SIZES WITH A REQUIRED SURFACE CLEANNESS OF CLASS 9-10.

UNCLASSIFIED

USSR

UDC: 621.318.1(088.8)

MEDVEDEV, S. A., KOLCHIN, V. V., BALBASHOV, A. M., CHEPARIN, V. P., Moscow
Power Engineering Institute

"A Hexaferrite"

USSR Author's Certificate No 281710, filed 3 Jun 68, published 10 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V465 P)

Translation: This Author's Certificate introduces a hexaferrite which contains iron oxide, strontium oxide and chromium oxide. As a distinguishing feature of the patent, the field of anisotropy is increased to values of 33-40.3 thousand oersteds with a ferromagnetic resonance width of 1.8-2.2 thousand oersteds or less by taking the initial components in the following proportions (in percent by weight): strontium oxide 9.85-9.95, chromium oxide 23.2-32, and the remainder iron oxide.

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USSR

UDC: 621.396.69:621.318.4(088.8)

CHEPARUKHIN, A. M., CHERNYAYEV, V. D.

"A Coil With Controllable Inductance"

USSR Author's Certificate No 270837, filed 10 Oct 68, published 20 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V325 P)

Translation: This Author's Certificate introduces a coil with controllable inductance which contains a magnetic circuit, a working winding, and a control winding. To increase control precision, the magnetic circuit is made in the form of two shell type cores which fit one inside the other with a clearance in which the tuning core is located. The working winding is located in the inner shell core, and the control winding is on the outer lateral surface of this same core.

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USSR

UDC 621.384.664

GALYAYEV, N. A., GOLOVINA, N. I., GRACHEV, M. I., GRIDASOV, V. I., GUERIYENKO, K. I., YEREMENKO, Ye. V., ZAPOL'SKIY, V. N., ZELENOV, B. A., KOTOV, V. I., KUZNETSOV, V. S., MERKER, E. A., MYZNIKOV, K. P., PUCHUGIN, V. A., PRILEPIN, A. A., SELEZNEV, V. S., SEREBRYAKOV, B. A., KHODYREV, Yu. S., and CHEPEGIN, V. N.

"Proton Beam With an Impulse of Up to 70 Gev/s Elastically Dispersed Inside a Target"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

Abstract: This paper discusses the operation of a channel built into the French liquid-hydrogen Mirabelle chamber for the accelerator of the Institute of High-Energy Physics (IHEP). The function of the channel is to form pure beams of pi and k mesons, and antiprotons, in a broad range of impulse magnitudes under the action of a high-frequency separator. The secondary particles are generated on the inside of a target placed in the path of a proton beam diverted from the accelerator with an energy of 70 Gev. By using a fast system for aiming the proton beam at the target, together with a kicker magnet in the channel, the required number of particles passing through the chamber can be provided. The optical system of the channel is described with the
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USSR

GALYAYEV, N. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972,
pp 1437-1445

aid of diagrams of two possible variants; the beam aiming system and the particle dosage for the bubble chamber are also explained. The authors thank R. M. Sulyayev, P. F. Yermolov, A. M. Moiseyev, M. I. Solov'yev, I. A. Danil'chenko, Ya. A. Parshin, V. M. Kolesnik, A. N. Alayev, V. D. Rudko, and V. M. Gorshkov for their assistance.

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USSR

UDC 63 .95

KHELEMSKIY, M. Z., CHEPEGINA, F. D., and BOLDYREV, B. G.

"Application of Thiosulfonate Esters in the Control of Decay of Root Crops During Storage"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 110-113 (from Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N649 by T. A. Belyayeva)

Translation: Eighteen compounds were studied under laboratory conditions to determine the physiological effects of RSO_2SR' on stored root crop decay. The highest fungicidal activity against *Botrytis cinerea* and *Fusarium betae* was exhibited by $EtSO_2SCCl_3$ and $PrSO_2SCCl_3$, and against *Phoma beta*, by $MeSO_2SMe$, $EtSO_2SEt$, $EtSO_2SBu$, and $PrSO_2SPr$. These compounds diluted 1:5000 still had fungicidal activity but did not have a toxic effect on the sugar beets.

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- 24 -

CHEPELENKO, G. V.

THE EFFECT OF TRANSVERSE G FORCES ON NERVE ELEMENTS OF THE RAT'S PHARYNGEAL AND ESOPHAGEAL NERVE ELEMENTS FOLLOWING PHELYMINANT EXPOSURE TO A CONSTANT MAGNETIC FIELD

UDC: 611.32+611.329]:611.832.014.428-019

СДМ С 65 5-77
6 11 1971

Article by V.P. Golov, G.V. Chepeleiko, Chair of Normal Anatomy, Leningrad Medical Institute (Chair headed by Professor V.N. Golov); Leningrad, ANATOMICAL ANATOMY, GISTOLOGICAL EMBRYOLOGY, Russian, No 11, 1971, submitted 30 December 1971, pp 47-501

We failed to encounter any works dealing with structural changes in intraneural nerve elements of internal organs as related to exposure of the organism to the combined effect of G forces and other physical factors. S.I. Yevloyev (1967) discovered changes in the dog's cardiac receptors following exposure to accelerations of J, 6, and 9 g.

L.B. Kukhal'ekiy (1967) conducted similar experiments. He investigated the influence of multiple transverse accelerations on the structure of the neuroreceptor system of the dog's sinoarotoid reflexogenic region.

S.I. Yevloyev, V.M. Klobanov, and S.S. Mikhaylov (1970) discovered reactive and destructive changes in the nerve elements of the atrial wall, in the nerves of the vascular wall of the ostium of the vena cava and pulmonary veins and first segment of the aorta arising as the result of multiple exposure to transverse G forces. These changes consist of the "psychromia phenomenon," neuroplasmic edema, atypophilia, hypertrophy and deformity of the receptor system, and varicosities.

In the present work, the nature of morphological changes in the intraneural nerves of the pharynx and esophagus was investigated on 30 rats with single and fractional exposure to transverse accelerations lasting 5-10 minutes.

The animals were rotated in a special centrifuge container with accelerations up to 12 g. Experimental animals were first exposed for one hour to a constant magnetic field with a force of up to 1,000 H [Oersted]. Some rats were exposed once to the combined effect of the physical factors. Another group of animals was submitted to such sessions for up to ten consecutive

Radiation Chemistry

USSR

UDC 541.15

BOROVKOVA, V. A., BAGDASAR'YAN, Kh. S., CHEPEL', D. V., SHEMAROV, F. V.,
Institute of Physical Chemistry imeni L. Ya. Karpov

"Pulse Radiolysis of Polymethylmethacrylate Containing Aromatic Compounds"

Moscow, Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71, pp 337-339

Abstract: The formation of ions during pulse radiolysis of solutions of triphenylamine, biphenyl, naphthalene in polymethylmethacrylate (M) at 300°K was investigated. The spectrum of the pure polymer is at least partially due to captured electrons; in the presence of CCl_4 its optical density decreases. Triphenylamine solutions exhibit the spectrum of its cation-free radical (A^+). The spectra obtained in the presence of biphenyl and naphthalene are also due to the cation-free radicals of the admixtures. During radiolysis of polymethylmethacrylate for periods shorter than 10^{-6} sec, cation-free radicals of the admixture are formed: $\text{M}^+ + \text{A} \rightarrow \text{M} + \text{A}^+$. This process competes effectively with the primary recombination of matrix charges $\text{M}^+ + \text{e}^- \rightarrow \text{M}$ as a consequence of the electron-acceptor properties of the matrix. Reaction $\text{A}^+ + \text{e}^- \rightarrow \text{A}^*$ is slow for the same reason. The radiation source was a linear accelerator providing 4 MeV electrons at 4 microsec. pulse duration. The results confirm previously proposed mechanisms of polymer radioprotection.

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RESIDUAL STRESSES IN BUILT UP CRANKSHAFTS -U-
AUTHOR--(03)-NALIVKIN, V.A., CHEPELENKO, V.I., NUYKINA, T.P.
COUNTRY OF INFO--USSR
SOURCE--AVTOMAT. SVARKA, FEB. 1970, (2), 55-49
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PROPULSION
AND FUELS
TOPIC TAGS--RESIDUAL STRESS, BIBLIOGRAPHY, CHROMIUM STEEL, MANGANESE
STEEL, ENGINE CRANKSHAFT, WELD FACING, METAL SURFACING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0317 STEP NO--UR/0125/70/000/002/0055/0059
CIRC ACCESSION NO--AP0124076
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--A0124076

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE RESIDUAL STRESSES IN CRANKSHAFTS BUILT UP BY WELDING IS DISCUSSED. THE RESIDUAL STRESSES IN THE SURFACING METAL ARE DIRECTLY RELATED TO THE NATURE OF THE WELDING MATERIAL SELECTED AND THE HEAT TREATMENT APPLIED. IN ORDER TO CREATE A FAVORABLE STRESS DISTRIBUTION, SPECIAL WELDING MATERIALS ARE REQUIRED (E.G., CR-MN STEELS), AND THE PROCESS MUST BE COMPLETED BY NORMALIZATION AND H.F. HARDENING. MECHANIZED BUILDING UP UNDER FLUX IS NOT SUITABLE FOR CRANKSHAFTS AS IT LEADS TO A SEVERE LOSS IN STRENGTH.

UNCLASSIFIED

USSR

UDC: 539.182.8

~~CHEPELEVA, I. V., LAZUKIN, V. N., OZHEREL'YEV, B. V., and~~
DEMBOVSKIY, S. A.

"Electron Paramagnetic Resonance of Fe^{3+} Ions in Chalcogenide Glasses As_2Se_3 and $TlAsSe_2$ "

Moscow, Doklady Akademii nauk SSSR, vol 204, No 2, 1972, pp 324-327

Abstract: This paper describes experiments performed to investigate the electron paramagnetic resonance of Fe^{3+} ions in As_2Se_3 chalcogenide glasses in the wavelength range of 3.2 cm using an RE-1301 spectrometer at 293 and 77° K. Observations were also made with a superheterodyne spectrometer at 4.2° K. Four groups of electron paramagnetic resonance spectra are arranged according to similarities in shape, effective g -factor, and temperature dependence. Samples of the spectra are shown, and a curve of the magnetic susceptibility of the chalcogenide glasses as a function of the temperature is plotted. It is found that the spectra of the four groups can be explained by the spin Hamiltonian. The authors thank N. Ye. Kask for observing the spectra at 4.2° K, and V. N. Prudnikov for investigating the magnetic susceptibility.

1/1

- 118 -

CHEPELEV, S. A.

PERSISTENCE OF THE RADIATION EFFECT IN YEASTS IRRADIATED BY GAMMA QUANTA ON EARTH AND IN SPACE

So: JPRS 55100
4 FEB 71

UDC 582.382.237.051

Article by V. N. Semvolynskiy, Yu. G. Kadul'skiy, V. I. Korotkin and S. A. Shepel'ev, Moscow, Kosmicheskaya Biologiya i Meditsina, Krasnodar, Vol. 5, No. 9, 1971, submitted for publication 25 June 1971, pp 14-18/

Abstract: During the flight experiment a study was made of the effect of specific flight factors on preirradiated yeast cells *Saccharomyces ellipsoidea*, strain Mageri 139-B. The 6-day space flight produced insignificant effects on the occurrence and development of previously existing damage. Prolonged storage of cells in a state of inhibited metabolism influenced the radiation effects to a greater extent.

In studying the modifying effect of weightlessness and other nonradiation flight factors on the radiosensitivity of cells one must consider with the influence of these factors on the aftereffect of primary radiation damage. This problem can be successfully solved with the in-flight exposure of cells which prior to the flight were irradiated on the earth.

Depending on the conditions for maintaining the irradiation of cells on a satellite under given experimental conditions, it is possible to study the influence of specific flight factors on the processes of occurrence and recovery from potential radiation damage (with exposure of nondividing cells which have just been irradiated), on the kinetics of appearance of already formed damage (assuming that the cells divide during flight), and finally, on the outcome of the forming damage in an undeveloped state (in the case of the in-flight exposure of recovered cells).

The diploid yeast cells extensively used in similar investigations in general radiobiology are a convenient object for studying these problems (V. I. Korotkin, N. V. Timofeyev-Resovskiy, et al.; O. V. Malinovsky). For these reasons they were used in the experiment described below, carried out on the Kosmos-368 artificial earth satellite.

1/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--MONOCYTOSIS DURING TREATMENT OF LEUCOSIS -U-

AUTHOR--CHEPELEVA, M.A.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELU, 1970, NR 6, PP 35-40

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMOTHERAPY, LEUKOCYTOSIS, HEMATOPOESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1853

STEP NO--UR/0475/70/000/006/0035/0040

CIRC ACCESSION NO--AP0129213

UNCLASSIFIED

2/2 G17

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129213

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE PRESENTED ON MONOCYTOSIS IN PATIENTS WITH LEUCOSIS DURING TREATMENT WITH CHEMOTHERAPEUTIC DRUGS. THE INCREASING NUMBER OF BLOOD MONOCYTES WITH APPEARANCE OF TRANSITIONAL FORMS IS CONSIDERED AS A PROCESS OF AGING OF HYPERPLASIC CELLULAR ELEMENTS OF THE HEMOPOIETIC ORGANS. IT IS SUGGESTED THAT THIS PROCESS IS ASSOCIATED CLINICALLY WITH A DECREASE OF MORPHOLOGICAL ACUTENESS OF THE LEUCEMIC PROCESS AND TRANSITION TO A MORE CHRONIC COURSE.

FACILITY: CTDEL KLINICHESKOY GEMATOLOGII KIEVSKOGO NAUCHNO-ISSLEDOVATEL'SKOGO INSTITUTA KLINICHESKOY MEDITSINY IMENI AKAD. N. D. STRAZHESKO.

UNCLASSIFIED

USSR

UDC 582.288:616.9-098:581.12:633.51

SALIKHOVA, B. S., BORODIN, G. I., RUNOV, V. I., and CHEPENKO, L. I.,
Microbiology Division, Academy of Sciences Uzbek SSR

"The Effect of the Toxic Compounds of *Verticillium dahliae* Mycelium on
Gas Exchange in Cotton Leaves"

Tashkent, Uzbekskiy Biologicheskii Zhurnal, No 5, 1970, pp 28-31

Abstract: The mycelium and culture fluid of *V. dahliae* contain a group of toxic substances that appear to play a major role in the wilting of cotton plants. When these substances are applied to the plants, the leaves show signs of *Verticillium* wilt (loss of turgor; appearance and luminescence of yellow spots), suggesting that the mechanism of action of the toxic substances produces changes in the chloroplasts and, consequently, in the gas exchange of the leaves. Changes in the intensity of respiration and photosynthesis in cotton leaves following application of the toxic substance of *V. dahliae* (yellow pigment) were studied using a gas analyzer. The yellow pigment markedly increased respiration, which reached a peak after 20 hours. Exposure of the leaves to light or addition of ADP or NAD resulted in secondary activation of respiration. After 72 hours the rate of respiration decreased; after 96 hours it was below that of the controls.

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USSR

SALIKHOVA, B. S., et al, Uzbekskiy Biologicheskii Zhurnal, No 5, 1970,
pp 28-31

Photosynthesis was simultaneously suppressed. The yellow pigment impaired the regulatory mechanism of the cells by disrupting phosphorylation in the mitochondria and chloroplasts. Thus, cotton plants affected with Verticillium wilt are apparently killed as a result of impairment of gas exchange in the leaves.

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1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ISOLATING TOXIC SUBSTANCES FROM VERTICILLIUM DAHLIAE -U-

AUTHOR--(04)-CHEPENKO, L.I., SALIKHOVA, B.S., BORODIN, G.I., RUNOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 71-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, PLANT TOXIN, FILTRATION,
CENTRIFUGATION, ELECTROPHORESIS, PAPER CHROMATOGRAPHY, THIN LAYER
CHROMATOGRAPHY, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0018

STEP NO--UR/9079/70/014/002/0071/0072

CIRC ACCESSION NO--AP0137217

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS WERE USED TO EXT. TOXIC SUBSTANCES FROM V. DAHLIAE IN AMTS. SUFFICIENT FOR ANAL. (1) V. DAHLIAE MYCELIA WERE HOMOGENIZED REPEATEDLY IN DISTD. WATER AND FILTERED. AFTER SATN. WITH (NH SUB4) SUB2 SO SUB4, THE FILTRATE AND CULTURE FLUID WERE EXT. WITH BENZYL ALC. (2) AQ. EXTS. OF MYCELIA AND CULTURE FLUID WERE MIXED WITH NA CL AND EXT. SEVERAL TIMES WITH PHOH-CHCL SUB3 (1:1). IN EACH CASE, AFTER ADDN. OF 3 VOLS. OF ET SUB2 O, THE ORG. PHASE WAS EXT. WITH WATER. THE AQ. EXTS. WERE CONCD. AT ROOM TEMP., AND ANY EMULSION WAS REMOVED BY FILTRATION OR CENTRIFUGATION. THE ISOLATED SUBSTANCES WERE SEPD. BY HORIZONTAL PAPER ELECTROPHORESIS INTO YELLOW AND RED PIGMENTS AND SUBSTANCES WHICH FLUORESCED IN UV LIGHT. PAPER, THIN LAYER, AND DEAE-CELLULOSE CHROMATOG. REVEALED 2 YELLOW, 3 RED, AND 3 FLUORESCENT COMPONENTS. SPECTRAL ANAL. WAS ALSO PERFORMED IN THE UV AND VISIBLE REGIONS. BOTH EXTN. PROCEDURES YIELDED THE SAME GROUPS OF TOXIC SUBSTANCES, IN PURER FORM AND IN SHORTER TIME THAN WAS PREVIOUSLY POSSIBLE. THE PHOH-CHCL SUB3 METHOD IS PREFERRED SINCE LESS EMULSION FORMS.

UNCLASSIFIED

USSR

UDC 546.76+546.74+546.27

CHEPICA, M. V., KRIVUTSKIY, V. P., and KUZ'MA, YU. B., L'vov State University
Imeni Ivan Franko

"The Cr-Ni-B System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8,
No 6, Jun 72, pp 1059-1064

Abstract: An investigation was made by x-ray and microstructural methods of the Cr-Ni-B system in the whole interval of concentrations. The investigated specimens, made from metal powders (purities: electrolytic chromium 99.5%, nickel 99.9%, and boron 99.3%), were placed in Al_2O_3 crucibles, heated in a vacuum furnace up to $1400^\circ C$, slowly cooled to $800^\circ C$, sealed in quartz ampoules, and annealed for at least 300 hrs at $800^\circ C$. The isothermal profile of the Cr-Ni-B system at $800^\circ C$ is shown. A very low intersolubility of borides and the existence of two ternary compounds were established: Cr_3NiB_6 (rhombic structure of the V_2B_3 type, $a=3.034\pm 0.003 \text{ \AA}$; $b=18.11\pm 0.02 \text{ \AA}$; $c=2.956\pm 0.003 \text{ \AA}$) and $Cr_2Ni_3B_6$ (rhombic structure of the V_5B_6 type, $a=2.971\pm 0.003 \text{ \AA}$; $b=20.34\pm 0.02 \text{ \AA}$;
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USSR

CHEPIGA, M. V., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1059-1064

$c=3.011+0.003 \text{ \AA}$). Both compounds have a crystalline structure, and are the first representatives of these types among the ternary compounds. One illustration, three tables, sixteen bibliographic references.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PHASE EQUILIBRIUMS IN A CHROMIUM, IRON, BORON SYSTEM -U-
AUTHOR--(02)-CHEPIGA, M.V., KUZMA, YU.B.
COUNTRY OF INFO--USSR C
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(3), 127-30
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--PHASE EQUILIBRIUM, CHROMIUM ALLOY, IRON ALLOY, BORON ALLOY,
SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1492 STEP NO--UR/0148/70/013/003/0127/0130
CIRC ACCESSION NO--AT0130421
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0130421

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

ABSTRACT. AN ALLOY CONTG. 27 CR, 40 FE, AND 33 AT. PERCENT B CONSISTED OF 2 PHASES, I.E. SOLID SOLNS. BASED ON CR SUB2 B AND FE SUB2 B. WITH INCREASING FE CONTENT IT CHANGED TO A 1-PHASE SYSTEM CONTG. ONLY THE FE SUB2 B SOLN. AT THE COMPN. OF 7 CR, 60 FE, AND 33 AT. PERCENT B. IN AN ALLOY WITH 10 CR, 70 FE, AND 20 AT. PERCENT B, 3 PHASES WERE OBSD. SOLID SOLNS. BASED ON CR SUB2 B AND FE SUB2 B WERE AT 900DEGREES IN EQUIL. WITH A SOLID SOLN. OF FE AND CR (ALPHA PHASE) AND WITH SOLID SOLNS. BASED ON CR SUB5 B SUB3, CRB, AND FEB COMPS. THE TERNARY FE SUB1.1 CR SUB0.9 B SUB0.9 COMPD. OF BROWN AND BECRUTSEN (1964) WAS SOLID SOLN. OF FE IN CR SUB2 B. FACILITY: L'VOV. GOS. UNIV., LVOV, USSR.

UNCLASSIFIED

Petroleum Processing and Technology

USSR

UDC 663.13+665.592

CHEFIGO, S. V.

"Protein From Petroleum"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev,
Vol 17, No 5, 1972, pp 504-511

Abstract: The article deals with the use of petroleum for the industrial production of protein substances, particularly feed yeasts. Areas covered include the selection of the petroleum raw material (petroleum distillates, liquid paraffins) and the choice of the protein biomass producers (bacteria, fungi, actinomycetes, yeasts -- only the latter are now used for protein biosynthesis). A flow sheet is presented for the production of feed yeasts from petroleum hydrocarbons using petroleum distillates. In the processing of light-fraction refined liquid paraffins, a biomass "ripening" process, developed by the Paraffin-Protein Laboratory of VNIIsintezbelok [All-Union Scientific Research Institute of Protein Synthesis], is added to the flow sheet. Ordinary Soviet series-made equipment of the chemical and food industry is used, except for specially designed fermenting units. The USSR has developed a technique which obtains from petroleum paraffins a product which meets the requirements of agriculture and public health and which matches --
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CHEPIGO, S. V., Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 17, No 5, 1972, pp 504-511

and in some respects surpasses -- feeds of animal and plant origin in biological value and protein and vitamin content. The Soviet Union has set up the first industrial production in the world of feed yeasts from petroleum hydrocarbons with an annual output of thousands of tons. Extensive and thorough tests of these yeasts on many generations of animals and poultry have shown that they have no toxic, carcinogenic, cocarcinogenic, leukosogenic or teratogenic effect, and they have been cleared for use. Technical and economic estimates show that all schemes for the production of feed yeasts from various hydrocarbons are highly profitable and the capital-investment recoupment period does not exceed three years. However, the production of feed yeasts from petroleum distillates will cost the least.

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- 56 -

Acc. Nr:
AF2018921

Abstracting Service:
CHEMICAL ABST.

12-71

Ref. Code:

U R 0328

119584k Quality and standardization of nutrient protein yeasts. Korotchenko, N. I.; Chernin, S. A.; Denisov, N. I.; Balakhruseva, V. N.; Dubinskaya, A. G.; Kozochkina, E. I.; Novikova, T. G.; Aserva, G. V. (USSR). *Genetika* 1971, 14(6), 2-3 (Russ.). On the basis of comparison with the I.P.A.C. standard and several national standards, values for yeast quality evaluation are suggested which comprise the content of moisture, crude protein, ash, and magnetic contaminants, as well as sensory tests. 3 refs. V. P. Ruzsky

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 7V807)

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.

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CSO: 1843-W

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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.

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6508

CSO: 1843-W

- R1 -

UNCLASSIFIED PROCESSING DATE 500110
TITLE—CLINICAL FEATURES SPECIFIC TO HONG KONG A SUB2 INFLUENZA IN 1969

—U—
AUTHOR—(05)—ZLYONIKOV, D.M., BEIYAYEVA, N.M., ROMANOV, YU.A., YEVDOKIMOV,
N.M., CHEPIK, YE.B.
COUNTRY OF INFO—USSR

SOURCE—KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 97-102

DATE PUBLISHED—70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—INFLUENZA VIRUS, SEROLOGIC TEST, GAMMA GLOBULIN

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0528

STEP NO—UR/0497/70/048/005/0097/0102

CIRC ACCESSION NO—AP0124224

UNCLASSIFIED

272 020

UNCLASSIFIED

PROCESSING DATE—30OCT70

CZKC ACCESSION NO—AP0124224

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. A CLINICAL STUDY OF 684 PATIENTS WITH SEROLOGICALLY CONFIRMED DIAGNOSIS DURING THE EPIDEMICS OF HONG KONG S SUB2 INFLUENZA IN LENINGRAD REVEALED NO ESSENTIAL DIFFERENCES IN THE COURSE OF A SUB2 INFLUENZA OUTBREAKS OF THE PRECEEDING YEARS. THE 1969 HONG KONG A SUB2 INFLUENZA OUTBREAK WAS CHARACTERIZED BY MODERATE INTOXICATION AND CATARRHAL SYMPTOMS. THE CLINICAL PICTURE OF INFLUENZA WAS CHARACTERIZED BY A PECULIARITY OF A NUMBER OF CLINICAL SYMPTOMS. SPECIFIC ANTI INFLUENZAL AGENST (ANTI INFLUENZAL GAMMA GLOBULIN, POLYGLOBULIN, ANTI INFLUENZAL SERUM) IN THEIR EARLY EMPLOYMENT PRODUCED A DISTINCT THERAPEUTIC EFFECT. FACILITY: VSESOYUZHNY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT GRIPPA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, KLINICHESKAYA INFEKSIONNAYA BOL'NITSA IM. S. P. BOTKINA I 32 YA POLIKLINIKA ZHDANOVSKOGO RAYONA.

UNCLASSIFIED

Acc. Nr: **AP0047324**

Ref. Code: UR 0300

PRIMARY SOURCE: *Ukrayns'kiy Biokhimichniy Zhurnal*, 1970,
Vol 42, Nr 1, pp 60-65

**ALDOLASE ACTIVITY, PYRUVATE AND LACTATE CONTENT
IN THE RAT BRAIN DIFFERENT DIVISIONS WITH OVERSTRAIN
OF THE CENTRAL NERVOUS SYSTEM**

K. I. Pogodayev, L. A. Kozlova, I. V. Chepinog

The N. I. Pirogov II Medical Institute, Moscow

Summary

It the rat brain tissues the activity of aldolase of fructose-1-monophosphate and aldolase of fructose-1,6-diphosphate increases under the effect of repeating one-four times electroconvulsive attacks. The fatigue, which comes after the animal run with the rotating drum, is characterized by the increase in the lactate and pyruvate content and the rise of the coefficient value of lactate: pyruvate. It is established that with fatigue the intensity decrease in the aerobic processes of oxidation is compensated to some extent by the intensification of anaerobic glycolytic processes.

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UDC 8.74

MINTSER, O. P., CHEPKIY, I. P., TSYGANIY, A. A., ZASLAVSKIY, S. YA.

"Problems of Medical Cybernetics"

Problemy meditsinskoy kibernetiki (Problems of Medical Cybernetics), Moscow, Nauka Press, 1972, 309 pp, ill., 1 r. 44 k. (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V643K)

Translation: A study was made of the problems of applying cybernetics media in medical practice. The use of computers for diagnosing and developing the prognosis of diseases and also when selecting the optimal treatment procedure and constructing the model of the disease is discussed. Comparative characteristics of various medical data processing algorithms are presented in clinical examples.

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AP0005636

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BIOLOGICAL ABSTRACTS

12/69

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131751. ~~G. S. P. P.~~ M. K. SHUBIN, Yu. V. PANICHKIN, N. F. NIKISHIN, and L. A. BRUSAN. (Kiev Inst. Tuberc. Chest Surg., Kiev, USSR.) Vliyaniye eufilina na gemodinamiku bol'nykh vrozhdennykh

porokami serdtsa s legochnoi gipertenziei i bez nee. [Effect of Euphylline (aminophylline) on the hemodynamics of patients suffering from congenital heart defects with and without pulmonary hypertension.] KARDIOLOGIYA 9(6): 60-64. 1969. [Engl. sum.]--Hemodynamic changes were studied in 36 patients during catheterization of the right cardiac cavities and major vessels. It was found that euphylline, directly acting upon the vascular wall, dilates the blood vessels, decreasing the resistance and intensifying the cardiac output. An important pharmacological property of the preparation is the fact that it markedly rises the pulmonary circulation simultaneously with decrease of the cardiopulmonary resistance. Besides, euphylline increases the venous blood shunt via the defect of the cardiac septum, not deteriorating pulmonary circulation or hypertension. The use of euphylline is indicated in patients with pulmonary hypertension.

--J. G. S.--

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE USE OF A SIMPLE MATHEMATICAL MODEL FOR THE ANALYSIS AND
FORECASTING OF EPIDEMIC FLARES OF INFLUENZA -U-
AUTHOR-(02)-GAPOCHKO, K.G., CHEPKOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 59-64

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFLUENZA, EPIDEMIOLOGY, MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1046

STEP NO--UR/0177/70/000/003/0059/0064

CIRC ACCESSION NO--AP0134747

UNCLASSIFIED

2/2 015
CIRC ACCESSION NO--AP0134747

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY NOW FAIRLY EXTENSIVE MATERIAL HAS BEEN ACCUMULATED ON THE INFLUENCE OF VARIOUS FACTORS ON THE DEVELOPMENT OF EPIDEMIC PROCESSES. HOWEVER, THE PROBLEM OF FORECASTING FLARES AND EPIDEMICS STILL IS FAR FROM SOLVED. QUANTITATIVE CRITERIA CHARACTERIZING THE ABILITY OF INFECTIONS FOR EPIDEMIC SPREAD ARE ESPECIALLY WEAKLY REPRESENTED IN THE LITERATURE. IN ADDITION, THE CONTAGIOUSNESS INDEXES ACCEPTED AT THE PRESENT TIME IN EPIDEMIOLOGY FOR VARIOUS INFECTIONS ARE STATED AS STABLE VALUES WITHOUT CONSIDERATION OF CONCRETE CONDITIONS OF INFECTION AND ADEQUATE STATISTICAL SUBSTANTIATION. NEVERTHELESS THOSE INDEXES ARE USED FOR APPROXIMATE FORECASTING CALCULATIONS OF INFECTIOUS MORBIDITY AND, NATURALLY, GIVE UNSATISFACTORY RESULTS. IT WAS PRECISELY THAT FACT WHICH SERVED AS ONE OF THE MAIN REASONS FOR A SKEPTICAL ATTITUDE TOWARD ATTEMPTS TO EXPRESS AN EPIDEMIC PROCESS BY MATHEMATICAL MEANS.

UNCLASSIFIED

Epidemiology

USSR

UDC 614.14-523.8:616.921.5

CAPOCHKO, K. G., Doctor of Medical Sciences, Col Med Serv, and CHEPKOV, V. N.,
Candidate of Medical Sciences, Maj Med Serv

"The Use of a Simple Mathematical Model for Analysis and Prediction of Influenza
Epidemics"

Moscow, Voenno-Meditsinskiy Zhurnal, No 3, 1970, pp 59-64

Abstract: A method is described for mathematical analysis and prediction of
influenza epidemics. The autocatalysis and determinacy character of the chain
process of transmission of influenza permits the use of some autocatalysis
equations used in chemistry. The process of influenza spread on a city-wide
scale may be expressed by the N. N. Semenov equation for chain processes oc-
curring in autocatalytic systems:

$$E = \frac{100}{1 + e^{-k(t-\theta)}}$$

where E -- is the percent of material reacted in time (t); k -- is the constant
of the given process, θ -- is the half conversion period, i.e., the time during
1/4

USSR

GAPOCHKO, K. G., and CHEPKOV, V. N., *Voyenno-Meditsinskiy Zhurnal*, No 3, 1970, pp 59-64

which 50 percent of the whole substance reacts; and e -- is the base of natural logarithms. This equation was successfully used for quantitative prediction of the course of the combined epidemic of influenza A₂ and B.

This equation was also used to analyze the development of the actual incidence of influenza in organized collectives of limited size, whose members were in constant personal contact. For mathematical analysis of each outbreak, cumulative statistical data of the daily incidence were used. Since the collective possessed different susceptibilities, an additional parameter was introduced into the equation -- the coefficient of infectiousness of the outbreak -- (i), which was determined from the ratio of the incidence during the entire outbreak (I) to the total number of people in the collective (N), and characterized the mean probability of sickness of each member of the collective under the given conditions. This resulted in the following equation:

$$I_t = \frac{N \cdot i}{1 + e^{-k(t-\theta)}}$$

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GAPOCHKO, K. G., and CHEPKOV, V. N., Voenno-Meditsinskiy Zhurnal, No 3, 1970, pp 59-64

where I_t -- is the number of sick by a definite time (t); N -- is the total number in the collective threatened by infection; i -- is the coefficient of infectiousness of the outbreak; k -- is the rate constant of development of the outbreak; t -- is the time of development of the outbreak in days; θ -- is the period (in days) in the course of which 50 percent of the susceptible people become sick; and e -- is the base of natural logarithms. If the number of persons in the collective (N) is to be expressed in percentages, then the equation can be written:

$$I_t = \left(\frac{100 \cdot i}{1 + e^{-k(t-\theta)}} \right) \%$$

which permits the direct use of extensive statistical indices in calculations.

These equations can completely express the dynamics of influenza spread in organized, isolated, and semi-isolated collectives of 30-2000 people in close personal contact with the source of infection, and can serve as an approximate mathematical model of an influenza outbreak. With the help of the mathematical

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USSR

GAPOCHKO, K. G., and CHEPKOV, V. N., Voenno-Meditsinskiy Zhurnal, No 3, 1970,
pp 59-64

model, the average dynamics of secondary occurrence of influenza for certain types of epidemic situations can be determined and quantitatively characterized. The nomogram formed on the basis of the obtained mean quantitative parameters of the epidemic process can be used for a rough prediction of the start of influenza outbreaks in collectives of limited size where close personal contact exists.

4/4

USSR

UDC 542.91:547.1'118

ALIMOV, P. I., LEVKOVA, L. N., ANTOKHINA, L. A., and CHEPLANOVA, I. V.,
Institute of Organic and Physical Chemistry ineni A. Ye. Arbuzov, USSR,
Academy of Sciences

"Reaction of Acid Chlorides with Dialkylphoric and Carboxylic Acid Amides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72,
pp 147-150

Abstract: In connection with data obtained earlier on the reactions between dialkylphosphoryl chlorides and various substituted and unsubstituted formations (P. I. ALIMOV et al), it was of interest to apply a similar approach in the case of reactions of acetyl, butyryl and benzoyl chlorides with diethylphoric acid amide, and also to the reaction of diethylphoryl chloride with acetic, butyric and benzoic acid amides, and also with formanilide.

In the case of diethylphoric acid amide, the reaction proceeds with the formation of acetylamide phosphates; in the case of the other amides, and formanilide, with the formation of the ethyl ether of pyrophosphoric acid and the corresponding nitryls or phenylisonitryl.

Reaction schemes, analytical data, etc., are given.

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USSR

UDC 542.91-547.1'118

CHEPLANOVA, I. V., and YARUKHMETOVA, D. KH., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbutov, Acad. Sc. USSR

"Phenophosphazine Derivatives. 2 Communication. Synthesis of the Esters of Thiophenophosphazinic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, pp 2283-2285

Abstract: Reaction of thiophenophosphazinic acid chloride with sodium alkoxide yields corresponding alkyl esters: methyl -- m.p. 186-187°, ethyl -- m.p. 211-212°, propyl -- m. p. 178-179°, and isopropyl -- m.p. 233-234°. When the potassium salt of thiophenophosphazinic acid reacts with alkyl halides, the products are S-alkyl esters: methyl -- m.p. 265-267°, ethyl -- m.p. 221-222°, propyl -- 174-176°, and butyl -- m.p. 149-151°.

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UCSR

UDC 669.15:539.89

GELUNOVA, Z. M., PASHKOV, P. O., and CHEPRASOV, D. P., Volgograd Polytechnic Institute

"Change in the Properties and Structure of Steel 2Kh15N5AM3 After Severe Impact"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 370-374

Abstract: Previously hardened sheet samples of 2Kh15N5AM3 steel measuring 100 x 150 mm were subjected to impact loading from a plane wave, created by detonating a charge over the sample secured in a sealed tub of liquid nitrogen, in an interval of pressures of 200-500 kbar and to a sliding load with a pressure of almost 140 kbar from the frontal wave. Prior to testing, the samples had an austenite structure with 25-27% martensite. The process of testing samples subjected to sliding impact load consisted of aging the hardened samples at 400°C for four hours, cooling in liquid nitrogen, aging again, impacting at room temperature from the 140 kbar load, aging, cooling in liquid nitrogen, and again impacting at room temperature (140 kbar), aging, cooling as before and impacting (140 kbar) at liquid nitrogen temperature, and aging. Mechanical properties were measured after each step in the process, 1/2

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USSR

GELUNOVA, Z. M., et al, Fizika Metallov i Metallovedeniye, Vol 35, No 2,
Feb 73, pp 370-374

from which it was found that strength increases for each step while elasticity and reduction in area jump up and down with the higher values existing after each aging step. Microhardness also increased after each step. The same type of pattern in mechanical properties was found in samples subjected to plane wave impacts although the treatment varied a little. 3 figures, 2 tables, 10 bibliographic references.

2/2

USSR

UDC 539.23:539.25

STARYY, I. B., and ~~CHEPOK, O. I.~~, Odessa Pedagogical Institute imeni
K. D. Ushinskiy

"Investigation of the Structure of Chromium Silicide Thin Films Condensed on
Preheated Substrate"

Kiev, Metallofizika, No 40, 1972, pp 56-59

Abstract: It was established that in the investigated temperature interval of
condensation (300-1020° C) there exists a region of temperatures where the con-
densation mechanism of the vaporamorphous phase system changes by a mechanism
of heterogeneous condensation. The activation energies of the processes of Si-
Cr film structure formation were determined. It was established that the
temperature of film contact with the air after condensation determines the
degree of system dispersity. 2 figures, 7 bibliographic references.

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USSR

UDC 669.295.054.79

5

GALITSKIY, N. V., BAYBEKOV, M. K., DROZHZHEV, V. I., CHEPRASOV, I. M.,
MEDVEDCHIKOV, E. P., BARKOVA, N. P., ZAVADOVSKAYA, V. N., SELEDTSOV, D. K.,
and KORENDYASEV, M. I.

"Reprocessing Waste Titanium and Its Alloys in a Chloride Melt"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol 6, 1970, pp 135-140

Translation: Results are given of experimental-industrial research on the reprocessing of ungraded waste mixtures of chips from different titanium alloys by chlorinating in a chloride melt. An experimental batch of marketable titanium sponge was obtained. The characteristics of the raw material used, the chlorine gas, the coke, and the working fusion are given, along with a description of the technological conditions, the chart for preparing chips for chlorination, and the technological equipment charts for the chlorination and cleaning conversions. An analysis is made of the distribution of alloying elements in the products of chlorination. Basic expenditure coefficients, calculated per ton of industrial titanium tetrachloride, are deduced, and data are given on the quality of the $TiCl_4$ and the sponge titanium obtained. Three illustrations and one table.

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UDC 669.295.48

USSR

GALITSKIY, N. V., BAYBEKOV, M. K., DROZHZEY, V. I., ~~CHEPRASOV, I. M.~~,
MEDVEDCHIKOV, E. P., BARKOVA, N. N., ZAVADOVSKAYA, V. N., SELETSOV, D. K., and
KORENDYASEV, M. I.

"Processing of Wastes of Titanium and Its Alloys in Chloride Salt Melt"

Sb. tr. Vses. n.-i. i proyekt. in-t titana [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, 135-140,
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract
No. 1'G199 by the Authors).

Translation: Results are presented from pilot-scale studies of the pro-
cessing of unconditioned wastes with a mixture of chips of various Ti
alloys by chlorination in a chloride salt melt. An experimental batch of
commercial Ti sponge is produced. Characteristics are presented for the
raw material, chlorine gas, coke, and working melt used; the technological
modes and plans of preparation of the chips and chlorination are presented,
along with a technological diagram illustrating the limits of chlorination
and purification. Distribution of alloying metals in the chlorination of
products is analyzed, the basic consumption factors per ton of technical
TiCl₄ are presented, and data are presented on the quality of the TiCl and
sponge Ti produced. 3 figures; 1 table.

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USSR

UDC 669.721.472(088.8)

~~CHEPRASOV, I. M.~~, SELEDTSOV, D. K., CHIKODANOV, A. I., BESTAUBAYEV, M. B., PEYSAKHOV, I. L., and BYKHOVER, L. N.

"Method of Purifying Waste Gases"

USSR Author's Certificate No. 267586, Filed 12/05/68, Published 14/07/70, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G171 P).

Translation: A method is suggested for purifying waste gases to remove Cl_2 and Cl_2 -containing products by transmitting the gases through inorganic reagents. In order to increase the degree of purification and simplify the process, the inorganic reagents used are wastes of Ti and its alloys in the form of fine sponge or chips. Example. The gases pumped from the cathode space of a magnesium electrolyzer, at 360° , containing 5-6 mg/l Cl_2 , are passed without preliminary drying to a layer of crushed, unheated titanium sponge. The sponge is heated by the gases themselves to $250-280^\circ$. All of the Cl_2 contained in the gases is trapped by the sponge, forming lower chlorides of Ti, which are then dechlorinated to produce $TiCl_4$.

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USSR

UDC 669.295

GEGER, V. E., CHEPRASOV, I. M., DMITRIYEV, V. N., FEDOTOV, Ye. I.,
GAFUROVA, N. Sh.

"The Mechanism of the Interaction of Titanium Tetrachloride with Magnesium"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Svedeniy, Tsvetnaya
Metallurgiya, No 4, 1972, pp 59-63.

Abstract: The mechanism of magnesium-thermal reduction of titanium is studied by quick cooling of the reaction products. The discovery of sponge titanium on the cover of a commercial reactor in specially cooled recesses and analysis of the structure of the sponge indicate that the sponge structure of titanium is a result of secondary processes occurring following the chemical reactions. The appearance of the primary peculiarities of thermal combustion during magnesium thermal reduction of titanium allows us to look upon the occurrence of this process from the standpoint of the theory of combustion.

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USSR

UDC 8.74

CHEPRASOV, V. A., Editor

"Annotated List of Algorithms and Programs. I"

Annotirovanny perechen' algoritmov i programm. Vyp. 1 Fond algoritmov i programm M-va vyssh. i sredn. spets. obrazovaniya SSSR (Annotated List of Algorithms and Programs. Vyp. 1. Library of Algorithms and Programs of the Ministry of Higher and Middle Specialized Education of the USSR), Moscow University, Moscow, 1970, 75 pp, 15 k. Knizh. letopis' Press, 1971, No 31, 41 pp (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V604K)

No abstract

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USSR

GHEPROSOV, V. A. (Moscow)

"Concerning the Reduction of a Two-Rotor Gyrocompass to Meridian"

Moscow, Mekhanika Tverdogo Tela, No 4, Jul-Aug 70, pp 33-41

Abstract: A two-rotor gyrocompass is an instrument with a large period of natural oscillation, about $1\frac{1}{2}$ hours. Due to the fact that when a gyrocompass is started, its sensitive element (the gyrosphere) occupies a random position with respect to its equilibrium position, natural oscillation originates, for the quenching of which a prolonged time interval is necessary, equal to 3-4 periods. The author deals with the problem of accelerated return of the gyrocompass to the equilibrium position. 4 figures, 1 table, 5 bibliographic entries.

1/1

USSR

CHEPRASOV, V. P.

"Identification of Random Fields"

Tr. Kazan. Aviats. In-ta [Works of Kazan' Aviation Institute], No 135, 1971, pp 43-49, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V160 by the author).

Translation: Based on the stochastic approximation, adaptive algorithms are suggested for construction of estimates of the mathematical expectation of a stable field. The problem of convergence of algorithms is discussed.

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1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHASE DIAGRAM OF A REFRIGERANT AQUEOUS SALT SOLUTION SYSTEM -U-
AUTHOR--(03)--KOSTYUK, V.I., KOPOSOV, V.N., CHEPTSOV, A.S.
COUNTRY OF INFO--USSR
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UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0126275
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS ARE PRESENTED FOR DETG.
THE HYDRATE EUTECTIC TEMP. WHICH WITH EXISTING RELATIONS CAN BE USED TO
FIND THE POINTS OF THE COMPLETE PHASE DIAGRAM OF REFRIGERANT AQ. SALT
SOLN. SYSTEMS. THE PROPANE NACL SOLN. SYSTEM IS USED AS EXAMPLE.
FACILITY: VSES. NAUCH.-ISSLED, PROTEK.-KONSTR. NEFTEKHIM. INST. USSR.

UNCLASSIFIED

USSR

UDC 547.666

ROTBERG, Yu. T., CHEPUKA, L. Ya., and OSHKAYA, V. P., Latvian State University
imeni P. Stuchka

"Condensation of Dicarboxylic Acid Anhydrides With Compounds Containing Active
Methylene Groups. XII. Direct Synthesis of Halogen-Substituted 2-Phenyl-1,3-
-indandiones"

Riga, Izvestiya Akademii Nauk Latviiskii SSR, Seriya Khimicheskaya, No 4, 1970,
pp 471-474

Abstract: Condensation of 3-bromo-, 4-bromo-, 3-iodo-, or 4-iodophthalic an-
hydrides with p-bromo- or (p-iodophenyl)acetic acids in acetic anhydride and
triethylamine yielded the corresponding dihalo derivatives of 2-phenyl-1, 3-
-indandione in good yields. Analogously, 3-bromo- or 4-bromophthalic anhydrides
condensed with (m-bromophenyl)acetic acid yielded 4-bromo-2-(m-bromophenyl)-1,3-
-indandione and 5-bromo-2-(m-bromophenyl)-1,3-indandione, respectively. A mix-
ture of 5-bromo-2-(o-bromophenyl)-1,3-indandione and 5-(or 6-)-bromo-3-(o-bromo-
benzylidenephthalide) was obtained from the condensation of 4-bromophthalic
anhydride with (o-bromophenyl)acetic acid. Some 14 dihalo-2-phenyl-1,3-in-
dandiones were prepared. All compounds were brominated to the 2-bromo deriva-
tives by dibromodioxane. The infrared spectra of the latter were recorded in
the 1500-1800 cm^{-1} region.

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USSR

UDC 576.858.75.095.383

ARKHANGEL'SKIY, YE. V., CHEPULIS, G.-K. S., DERKACH, YU. S., KOSYAKOV, P. N.,
and ZHDANOV, V. M., Institute of Virology imeni D. I. Ivanovskiy, Academy of
Medical Sciences USSR, Moscow

"New Evidence that Influenza Virus Can Be Freed of Host Cell Antigens"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 586-591

Abstract: AO/PR8 influenza virus always contains host cell antigens. Species-specific chicken antigen is located on the surface of the virus, while Forssman's heterogenous antigen and group specific A antigen are incorporated into deeper structures. By exposing influenza virus -- prepurified through cellulose ion-exchange column chromatography -- to the enzymatic activity of trypsin, the antigens can be removed from the virus, as evidenced by immunochemical and fractional analysis and by radioisotope methods. Influenza virus treated with trypsin preserves its biological properties. However, it no longer exhibits its activity toward tissue antisera and reacts only with virus-specific antisera.

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Immunology

USSR

UDC 576.858.25.097.2

URYVAYEV, L. V., CHERULIS, G. K., DERKACH, Yu. S., ZHDANOV, V. M., and YERSHOV, F. I., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Protein Components and Antigens of Venezuelan Equine Encephalomyelitis Virus"

Moscow, Voprosy Virusologii, No 5, 1971, pp 586-589

Abstract: The protein composition of highly purified Venezuelan equine encephalomyelitis virus was studied by electrophoresis in polyacrylamide gel and by double diffusion in agar. Both methods revealed the presence in the virus particles of three virus-specific proteins with antigenic properties.

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