

USSR

SADYKOVA, E. M., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya,
No 4, Apr 72, pp 786-790

tion, and a reaction of the complex with the hydroxyl group oxygen in presence
of air; this leads to a reduction of the number of hydroxyl groups in the re-
inforced product and binding of the air oxygen, so that the degradation is
slowed down and the transparency of the product is improved.

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UDC 541.1.546.27*16:547.1'118

USSR

SPITSYN, VIKT. I., ~~KOLLI, I. D.~~, SADYKOVA, E. M., and NESTERENKO, R. G.,
Moscow State University imeni M. V. Lomonosov

"A Study of Certain Adducts of Boron Trifluoride with Trialkyl(aryl)-phosphines"
Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 45-50

Abstract: Published data on the halogenic borophosphanes are still very scant. The few compounds thus far obtained are recommended as antinock additives for engine fuels, hydraulic fluids, dielectrics and catalysts for polymerization. In addition, borophosphanes containing a fluorine atom with the boron have gone almost entirely unstudied.

Using trialkyl(phenyl) phosphines in combination with etherate of biron trifluoride, the authors obtained a number of fluorine-derivative borophosphanes, for which chemical analyses were made for those of type $F_3B \cdot PR_3$, infrared spectra were obtained for those of type $F_3B \cdot PR_3$, and both thermal and chemical analyses for the products of decomposition of those of type $F_3BP(C_6H_5)_3$ heated in nitrogen and air were made. Decomposition was found to occur at 180-200°C in the case of air, and 200-220°C in the case of nitrogen. Complete graphic summary of data obtained accompanies the paper.

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UDC 541.572.5+541.572.8

USSR

ROMM, I. P., SADYKOVA, E. M., GUR'YANOVA, Ye. N., KOLLI, I. D., and KOCHESKOV, K. A., Academician, Physical Chemistry Institute imeni L. Ya. Karpov, Moscow, and Moscow State University imeni M. V. Lomonosov, Moscow

"p π -Conjugation in Triphenylphosphine"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

Abstract: The p π -conjugation (interaction of the undivided electron pair at P with the π -electrons of the aromatic system) of Ph_3P was studied on the basis of the dipole moments (d. m.) of complexes $\text{R}_3\text{P}\cdot\text{MX}_3$ (R = Bu, hexyl, octyl, Ph) of phosphines, which are active n-donors, with a number of acceptors ($\text{MX}_3 = \text{AlBr}_3, \text{GaCl}_3, \text{BCl}_3$) and of the heats of formation of $\text{R}_3\text{P}\cdot\text{MX}_3$ ($\text{MX}_3 = \text{AlBr}_3, \text{GaCl}_3$). The thermal effects involved in the substitution of R_3P with dimethylcyclohexylamine in $\text{R}_3\text{P}\cdot\text{BF}_3$ (R = Bu, hexyl, Ph) and of Ph_3P with Bu_3P in $\text{Ph}_3\text{P}\cdot\text{BCl}_3$ were also considered. The d. m. of complexes $\text{Alkyl}_3\text{P}\cdot\text{AlBr}_3$ were close to each other, but the heat of formation of the second was much lower than that of the first because of energy losses associated with breaking of the p π -conjugation in R_3P during complex-formation. On the basis of this difference and similar differences for complexes with other

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ROMM, I. P., et al, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

acceptors (those for complexes with BF_3 and BCl_3 were calculated from the thermal effects in the substitution reactions), the p π -conjugation energy E_c in Ph_3P was estimated at 11.7 ± 2 kcal/mole as an average of values based on data for complexes with the four acceptors MX_3 . E_c for Ph_3P was lower than that for N-methyldiphenylamine ($E_c = 14.9$ kcal/mole) and much lower than that for Ph_3N .

2/2

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UNCLASSIFIED

PROCESSING DATE--04DEC70

172 021

TITLE--SOLVENT EFFECTS ON THE KINETICS OF BUTYRALDEHYDE OXIDATION BY

MOLECULAR OXYGEN -U-

AUTHOR--(02)--USHKALOVA, V.N., KOLMAKIYA, E.F.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(2), 246-50

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION, ALDEHYDE, ORGANIC SOLVENT, REACTION KINETICS,
PEROXIDE, OXYGEN ---

CONTROL MARKING--NO RESTRICTIONS

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STEP NO--UR/0204/70/010/002/0246/0250

CIRC ACCESSION NO--AP0134679

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 021

CIRC ACCESSION NO--AP0134679

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDN. KINETICS OF BUTYRALDEHYDE IN SOLN. VARIED ACCORDING TO THE SOLVENT USED (C SUB6 H SUB6, C SUB6 H SUB 14, CCL SUB4, CHCL SUB3, S SUB2 H SUB4 SL SUB2, ME SUB2 CO). THE MOST CLEAR EFFECT OF THE SOLVENT APPEARED AT 30DEGREES. CHCL SUB3, C SUB2 H SUB4 CL SUB2, AND C SUB6 H SUB6 HAD A STABILIZING EFFECT ON THE INTERMEDIATE OXIDN. PRODUCT OF WHICH 60-70PERCENT, BASED ON THE ALDEHYDE, WAS ACCUMULATED AND AN INSIGNIFICANT AMT. WAS SPENT FOR ACID FORMATION. THE STABILIZATION OF THE PEROXIDIZED PRODUCT IN THE 3 SOLVENTS WAS DUE TO INTERMOL. REACTION WITH THEM. FACILITY: TYUMEN. IND. INST., TYUMEN, USSR.

UNCLASSIFIED

KOLMAKOV, A. P.

JPRS 59775
10 August 1973

IDC 621.039.51

APPLICATION OF A MODEL OF A POROUS BODY FOR CALCULATION OF THE FIELD OF VELOCITIES AND TEMPERATURES IN A REACTOR CORE

Article by A. P. Kolmakov and Yu. S. Yur'ev, Omsk, Publication No. 249 of the Physics and Energy Institute, Russian, 1971, 11 pages

In this work a system of differential equations of hydraulics and heat transfer for a reactor core is considered, as a porous body with anisotropic properties, which is solved in a linear approximation for a case of small deviation of the geometry of the channels.

In the calculation of the hydraulic and thermal characteristics of heat exchangers and cores of reactors which are a system of rod-shaped TVE (fuel elements) and parallel channels, connected between each other, it is inadequate to consider only one or a few channels. The presence of regular and random deviations in the geometry of the system and in the distribution of heat liberation leads to a redistribution of the flow rate of the coolant throughout the cross-section of the core and to an irregular preheating of the coolant [1], [2].

As a consequence of the large number of connected channels, the problem stated in a general form turns out to be quite cumbersome. The methodology of statistical calculation of the effect of deviations of the geometry on the scattering of the flow rate and temperature of the coolant in a case of connected channels gives characteristics of scattering that are common for the entire system, without local variations, without a consideration of the mixing of jets of the coolant and the spreading of heat from the "hot" point [3].

In this work, a system of differential equations of hydraulics is solved for the system as a whole, which makes it possible to perform the analysis in a common form and to obtain

UDC: 534

USSR

KOLMAKOV, V. A., STAL'TSEV, A. S.

"An Ultrasonic Method of Measuring the Parameters of a Low-Frequency Acoustic Wave"

Tr. Taganrog radiotekhn. in-ta (Works of Taganrog Radio Engineering Institute), 1973, vyp. 34, pp 156-163 (from RZh-Fizika, No 5, May 73, abstract No 5Zh532 by Ye. B. Kudashev)

Translation: The article discusses an instrument for measuring sonic pressure and the oscillatory velocity of a plane, low-frequency acoustic wave. The method is based on using frequency as an informative parameter. It is shown that at a distance of less than the ultrasonic wavelength in the medium the parameters of the acoustic field can be determined from the relative frequency change by using a high-frequency detector. Frequency is measured by an analogous method, using a frequency detector to convert frequency to voltage. In this instance it is necessary to integrate the useful signal. The parameters of the instrument are examined. Estimates are made of the measurement errors due to deviation of the temperature of the medium from the initial value and the high-frequency error of pressure averaging

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USSR

KOLMAKOV, V. A., STAL'TSEV, A. S., Tr. Taganrog. radiotekhn. in-ta, 1973, vyp. 34, pp 156-163

in the acoustic channel. A schematic diagram of the instrument is given. The lower limits of measureable acoustic pressure and oscillatory velocity are $1.5 \cdot 10^4$ N/m² and 0.01 m/sec. The upper limits are determined by the cavitation threshold. The total measurement error does not exceed 1.5%. It is shown that by forming the signals of the sum and difference of the output voltages of the measurement channels of pressure and velocity and squaring these signals with respect to their sum, it is possible to determine the total energy of an acoustic wave. The error in measurement of acoustic energy (potential, kinetic, and total) of an acoustic wave is independent of whether it is a traveling wave or a standing wave, and amounts to 4%.

2/2

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USSR

UDC: 621.396.9:527.629.78

CHEBOTAREV, R. P., SIDORIN, V. N., POLUSHKIN, G. A., BIBARSOV, R. Sh.
ISAMUTDINOV, Sh. O., KOLMAKOV, V. N.

"A Set of Equipment for Radar Studies of Meteors in Dushanbe"

Byul. In-ta-astrofiz. AN Tadzh. SSR (Bulletin of the Institute of Astro-
physics of the Academy of Sciences of Tadzhik SSR), 1970, No 55, pp 24-28
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12694)

Translation: The authors describe a set of equipment for measuring the wind
in the upper atmosphere in the IQSY program at the Institute of Astrophysics
of the Academy of Sciences of the Tadzhik SSR. The equipment is designed
for determining coordinates, altitudes, radiants and velocities of meteors,
and for studying the physics of meteors and of the upper atmosphere. Data
are given in brief for operation of the equipment complex. Resumé.

1/1

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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USSR

UDC: 537.312..62

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.

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Acc. Nr:

AP 0053379

Abstracting Service:
CHEMICAL ABST.

4/70
[Handwritten signature]

Ref. Code:

UR 0072

823866 Use of potentiometric method for titrating microconcentrations of bases for determining the resistance to water leaching of glasses. Bardin, V. V.; ~~Kotlykova, L. A.~~ (Leningrad, Tekhnol. Inst. im. Lensovet, Leningrad, USSR). *Steklo Keram.* 1970, 27(1), 42-3 (Russ). The following procedure is proposed for the detn. of water-sol. bases in glass. Wash the powd. glass (particules 0.5-0.8 mm) with EtOH to remove the finest powder, dry 5-10 min. at 100-110°, take 1-2.5 g sample into an Erlenmayer flask, add 200 ml water and close with a plastic foil. Stir slightly every 20 min. while heating the flask 1 hr at 100°. Filter off the glass and dil. the soln. to 280 ml with water. Aliquots of 100 ml are taken for titrn. with HCl. Visual indicators do not give satisfactory results. A potentiometric titrn. with quinhydrone electrode is found more useful. A correction for the blank is necessary. M. Bartusek

[Handwritten initials]

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REEL/FRAME
19830402

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USSR

UDC: 621.391.81

KOLMAKOVA, S. A., TERPUGOV, A. F.

"Optimum Linear Systems for Determining the Moment of Appearance of Poisson Signals"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physico-technical Institute Associated With Tomsk University), 1970, vyp. 51, pp 179-189 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A69)

Translation: The authors solve the problem of constructing a linear system in which variance is minimized for the estimate of the time of arrival of a useful signal of the type of a Poisson flow of events of variable intensity against a background of a Poisson flow of events of constant intensity. It is assumed that the signal-to-noise ratio is fairly high. Cases of coherent and completely incoherent signals are considered. The effectiveness of optimum and matched signals is compared. Two illustrations, bibliography of one title. N. S.

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USSR

UDC: 519.2:621.391

KOLMAKOVA, S. A., TERPUGOV, A. F.

"Optimum Linear Systems for Determining the Time of Appearance of Poisson Signals"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 179-189 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V280)

Translation: Against a background of a Poisson stream of events of constant intensity, a pulse signal may appear which generates a Poisson stream of variable intensity $\rho\mu(t)$, where $\mu(t)$ is a given function of time determined by the shape of the signal, and ρ is an unknown constant with known a priori distribution. It is required to estimate the time of arrival of the useful signal. It is assumed that the signal-to-noise ratio is fairly large. The transient response of a filter which minimizes the variance of the estimate is sought for a coherent signal and for a completely incoherent signal in the class of linear transformations.
V. Briker.

USSR

UDC: 519.2:621.391

KOLMAKOVA, S. A., TERPUGOV, A. F.

"Optimum Linear Systems for Determining the Time of Appearance of Poisson Signals"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 179-189 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V280)

Translation: Against a background of a Poisson stream of events of constant intensity, a pulse signal may appear which generates a Poisson stream of variable intensity $\rho\mu(t)$, where $\mu(t)$ is a given function of time determined by the shape of the signal, and ρ is an unknown constant with known a priori distribution. It is required to estimate the time of arrival of the useful signal. It is assumed that the signal-to-noise ratio is fairly large. The transient response of a filter which minimizes the variance of the estimate is sought for a coherent signal and for a completely incoherent signal in the class of linear transformations.
V. Briker.

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USSR

UDC 621.382.3

KOLMOGOROV, G.D., CHULKOV, V.P.

"Analysis Of The Effect Of The Parameters Of Epitaxial Films And The Structural Parameters Of Transistors On The Electrical Properties Of The Devices"

Elektron.tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 11-16 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B259)

Translation: The effect is studied of the parameters of epitaxial films and the structural parameters of transistors on the electrical properties of the devices, the reliability is evaluated, and the physical nature of the effects acknowledged to be significant is analyzed. Regressed equations combining the electrical parameters of the transistors with the parameters of the film and the structural parameters of the devices are presented. Summary.

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USSR

UDO 621.582.3

KOLMOGOROV, G.D., CHULKOV, V.P.

"Study Of The Effect Of The Parameters Of Epitaxial Films On The Structural Parameters Of Transistors"

Elektron. tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 3-10 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B245)

Translation: The paper studies the effect of the parameters of epitaxial films on the successive diffusion of boron and phosphorus in the process of manufacturing epitaxial-planar non-cased transistors of n-p-n type. The analysis is conducted by experimental methods with statistical processing of the data by a program of regression analysis developed for the "Minsk-22" computer using "AKI-400" language. Linear regression equations are obtained which connect the film parameters with the structural parameters of the transistors; a comparative evaluation is made of the extent of influence of the film parameters and an interpretation of the results obtained is given. Summary.

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USSR

UDC 621.382.002-50.001.57:519.2

KOLMOGOROV, G. D., MUSABEKOV, T. YU.

"Some Problems of Mathematical Simulation and Statistics as Applied to the Problem of Controlling the Technological Production Processes of Semiconductor Devices (Survey)"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineering. Scientific and Technical Collection. Semiconductor Devices), 1971, vyp. 4 (61), pp 17-30 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A610)

Translation: A study was made of the basic mathematical methods of statistical processing of data on the states of a large system for a technological process. The general algorithm for finding and implementing the optimal mode for the technological process is written. An heuristic criterion is proposed for calculating the "corrected" values of the initial and control parameters of processes. There are 2 illustrations, 3 tables, and a 23-entry bibliography.

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USSR

UDC: 621.7.011.001.57:539:385

BOGATOV, A. A., and KOLMOGOROV, V. L., Ural Polytechnic Institute

*Condition for the Failure of Metals During Alternating Deformation With an Arbitrary Cycle Form"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 4, 1973, pp 102-105

Abstract: The authors propose a model for using the plasticity resource during cyclic deformation. The model takes into consideration the possibility of correcting a part of the defects, cracks, pores, etc. This model made it possible to determine the condition for the failure of metals during plastic deformation. The condition can be used for studying some complex types of pressure metal processing. The results show that the value for the degree of using the plasticity resource can fall between 0.79 and 1.17 in 95 out of 100 cases. The validity of the proposed model was verified by a series of cyclic torsion experiments with a random cycle form.

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USSR

UDC: 539.214.620.175

R
BOGATOV, A. A., KOZLOV, G. D., KOLMOGOROV, V. L., KROVSIKOV, R. P., and
FLAKHOTIN, V. S.

"Plasticity of Metals with Sign-Changing Deformation"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 83-86

Abstract: Experimental investigations and analytical methods were used to establish the regularity of the growth of plasticity of a number of types of steels and nonferrous alloys under alternating deformation (twisting) with symmetrical and pulsating cycles. The value of the Coffin factor was determined, and the method of determining constant C in Coffin's formula was clarified. Data were obtained on the plasticity of steel and nonferrous alloys with alternating deformation which can be used for the calculation of cracking under cyclical loading. One illustration; six biblio. refs.

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1/2 040 UNCLASSIFIED
TITLE--STRESSES, STRAINS, FRACTURE -U-

PROCESSING DATE--04DEC70

AUTHOR--KOLMOGOROV, V.L.

COUNTRY OF INFO--USSR

SOURCE--STRESSES, STRAINS, FRACTURE (NAPRYAZHENIYA DEFORMATSII
RAZRUSHENIYE) MOSCOW, METALLURGIYA, 1970, 231 PP
DATE PUBLISHED-----70

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

TOPIC TAGS--PLASTICITY, MECHANICAL FRACTURE, MATERIAL FRACTURE, METAL
DRAWING, METAL EXTRUSION, STRESS STRAIN DIAGRAM, METALWORKING, STRESS
ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

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STEP NO--UR/0000/70/000/000/0001/0231

CIRC ACCESSION NO--AM0138507

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 040

CIRC ACCESSION NO--AM0138507

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

ABSTRACT. TABLE OF CONTENTS: PREFACE 7.
CHAPTER 1 CERTAIN PRINCIPLES OF THE THEORY OF STRESS STRAIN CONDITIONS
AND THE THEORY OF FRACTURE 9. 2 FRACTURE THEORY AND PLASTICITY OF
METALS 32. 3 COMMENTS WITH REGARD TO DETERMINATION OF STRESS AND
STRAIN CONDITIONS 74. 4 STRESS STRAIN CONDITIONS AND FRACTURE IN
FORGING AND ROLLING 102. 5 STRESS STRAIN CONDITIONS AND UTILIZATION
OF METAL PLASTICITY IN COLD DRAWING AND ROLLING OF TUBES 158. 6
STRESS STRAIN CONDITIONS AND FRACTURE IN EXTRUSION AND DRAWING 193.
BIBLIOGRAPHY 223. THE BOOK CONTAINS RESULTS OF INVESTIGATIONS
CONDUCTED BY THE AUTHOR AND HIS CO WORKERS, AS WELL AS LITERATURE DATA
ON STRESS STRAIN CONDITIONS OF METALS AND THEIR FRACTURE IN PRESSURE
WORKING. THE BOOK WAS WRITTEN FOR ENGINEERING TECHNICAL PERSONNEL OF
THE METALLURGICAL AND THE MACHINE CONSTRUCTING INDUSTRY, SPECIALISTS IN
METAL WORKING BY PRESSURE, AND COLLEGE STUDENTS.

UNCLASSIFIED

Analysis and Testing

K

UDC: 539.214:600.175

BOGATOV, A. A., KOLMOGOROV, V. L., and MATVEYEV, S. A., Ural Scientific Research Institute of Ferrous Metals

"Experimental Testing of Metal Failure Conditions Under Various Loading Systems"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 76-80

Abstract: The experiment involved specimens of Steel 20 (0.27% C; 0.22% Si; 0.63% Mn; 0.013 P, and 0.01% S) cut from a shell with a yield point of 56 to 64.0 kg/mm², tensile strength of 111.8 to 118.2 kg/mm², and reduction of area of 46.1 to 52.5%. The condition of failure was

$$\Psi = \int_0^1 B \frac{H(\lambda)}{\Lambda_p [K(\lambda)]} d\lambda = 1,$$

where Ψ is the fracturing value, K is the state of stress index, Λ_p is metal plasticity at a given state of stress, and B is the coefficient controlling

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BOGATOV, A. A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 76-80

the vector properties of fracturing accumulation under various loading systems of deformable metals. It was found that the assumed condition of failure is valid for both constant and variable values of K in the process of loading. In the event that (on deformation) the main stress tensor components are rigidly connected with the material fibers, then coefficient B may be taken (with sufficient accuracy) to be equal to unity. In the case that in the process of loading there appears considerable deviation of the main stress tensor components from the initially connected material fibers, then B is less than 1 and its value depends on the loading system.

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USSR

UDC 576.858.5.095.38.095.18:547.751

~~KOLMYKOVA, V. N.~~, and PUTILOVA, G. I., Institute of Pharmacology, Academy of Sciences USSR

"Effect of Indole Derivatives on the Adenovirus - Cell System"

Moscow, Voprosy Virusologii, No 5, 1971, pp 576-579

Abstract: The following four indole derivatives were tested as possible anti-adenovirus agents: (i) β -dimethylaminoethyl ester of 1-(β -dimethylaminoethyl)-2,3-dimethylindolecarboxylic-5 acid (ALA-306) dichloride (ALA-306); (ii) β -dimethylaminoethyl ester of 2,3-dimethylindolecarboxylic-5 acid hydrochloride (ALA-251); (iii) 8-amino-1,2,3,4-tetrahydrothiopyrane [4,3-b]-indole hydrochloride (K-191); (iv) β -dimethylaminoethyl ester of 1-benzyl 2,3-dimethylindolecarboxylic-5 acid hydrochloride (K-281). Adenovirus types 5 and 7 were used in cell cultures of testicular (CaOy) and gastric (CaYe) carcinomas. ALA-306 and K-191 did not inhibit viral reproduction or exert any protective action regardless of the method used. K-281 did not have any direct effect on viral replication but it partly prevented the viral particles from entering the cell. ALA-251 (500 to 1000 μ g/ml) inhibited viral replication, regardless of the method used, and the cells continued

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USSR

KOLMYKOVA, V. N., and PUTILOVA, G. I., Voprosy Virusologii, No 5, 1971, pp 576-579

to live and multiply. However, there was no true cytopathic effect on the cells nor was any complement-fixing antigen found. The complement-fixation reaction was negative. The culture fluid was not infectious.

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USSR

UDC 669.71.053.24(088.8)

KHITRIK, S. I., GASIK, M. I., VUKOLOV, YE. A., KLIMOVICH, N. A.,
PORADA, A. N., LAGUNOV, YU. V., POLONSKIY, S. M., IORDANOVA,
Z. A., MALYSHEV, V. I., YEMLIN, B. I., KASEKUL', V. V., MASHKOV,
V. P. TSEYMAKH, N. L., YEM, A. P., CHERNYSH, F. I., and KOLNOGU-
ZENKO, V. A., Dnepropetrovsk Metallurgical Institute

"Method of Smelting Abrasive Electrolytically Produced Corundum"

USSR Author's Certificate No 263635, filed 15 Oct 65, published
10 Jun 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11
G101 P)

Translation: A method is proposed for smelting abrasive elec-
trolytically produced corundum in a thermal furnace which involves
deep fusion of alumina-containing charge with reducing agents.
To increase the abrasive properties of corundum and to obtain
in it a Ti oxide content of $\leq 1\%$, smelting is carried out on
kaolin presintered with Fe-ore additive or scale in the amount
of 20-30 wt % of the charge.

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USSR

UDC 681.327.66.002.72

ATOVM'YAN, A. E., ANFIMOV, M. A., V'YUGIN, V. A., KOLOBASHKIN, N. I., LITVAN, A. B., MAZAN'KO, B. P., AND SOLOV'YEV, V. A.

"Device for Checking Bunched Conductors"

USSR Author's Certificate No 277858, filed 27 May 69, published 6 Nov 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B153 P)

Translation: A testing device containing a memory, coincidence circuit, and a display circuit is well known. This device does not provide for automation of control of bunched conductors during the manufacturing process. The proposed device for similar purpose is distinguished by the fact that it contains two ferrite cores with an open magnetic conductor, into one of which wires corresponding to the code "1" are introduced, and into the other, wires corresponding to the code "0." These are the primary coils of transformers the secondary windings of which are connected to the first input of each of two coincidence circuits respectively. The second input of each coincidence circuit is connected to the memory output, and their outputs are connected to the interrogation device connected to the conductors of the tested bunched conductors and the interrogation current control circuit. The control of the bunched conductors during the production process is automated in this way. There is 1 illustration.

1/1

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USSR

UDC: 53.07/.08+53.001.5

ZAKHAROV, O. V., KOVALENKO, V. V., KOLCHASHKIN, V. M.

"Calculating the Gamma Radiation Dose Rate of a Gas Jet Propagating in the Ground Layer of the Atmosphere"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding — collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 94-97 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A696)

Translation: The gamma radiation dose rate of a gas jet is calculated using data on distribution of the concentration of activity in the ground layer of the atmosphere. The results of the computation are presented in the form of the reduced dose rate created by the gamma radiation of a jet escaping from a source with a rate of 1 curie/s at a wind speed of 1 m/s for a long-lived isotope with $K_\gamma = 1 \text{ r}\cdot\text{m}^2/\text{hr}\cdot\text{curie}$. The reduced dose rate depends weakly on the gamma radiation energy: in the energy range from 0.1 to 2.5 MeV it changes by $\pm 30\%$ from the value at $E = 1 \text{ MeV}$. Accounting for the radioactive decay of isotopes with $T_{1/2} \geq 20 \text{ min}$ gives a correction to the dose rate calculated for long-lived isotopes of no more than 0%. The position of the maximum for the ground-layer dose rate in the case of

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USSR

ZAKHAROV, O. V. et al., Vopr. dozimetrii i zashchity ot izluch., vyp. 12, Moscow, Atomizdat, 1971, pp 94-97

a source raised above the surface does not coincide with the position of the maximum for the ground-layer concentration of an isotope for all investigated gamma radiation energies and meteorological parameters. The maximum for the ground-level concentration of gases is located much further from the source than the maximum for the ground-level dose rate.

A. A. Smetanin.

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- 86 -

USSR

UDC: 53.07/.08+53.001.5

GUDKOV, A. N., GRESHILOV, A. A., KOLOBASHKIN, V. M., MINAYEV, Ye. M.

"Using 'Xenon-133' Gas to Calibrate Scintillation Gamma Spectrometers"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 163-170 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A688)

Translation: The paper deals with the peculiarities of using a "Xenon-133" gas source to calibrate scintillation spectrometers for determining the content of ^{133}Xe and $^{131\text{m}}\text{Xe}$ isotopes in gas mixtures. Bibliography of 6 titles. M. L.

1/1

USSR

UDC: 53.07/.08+53.001.5

SERBULOV, Yu. A., KOLOBASHKIN, V. M.

"A Method of Radiometric Analysis of Noble Gases Under Conditions of a ^{222}Rn Background"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 72-76 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A681)

Translation: The authors discuss the difficulties of measuring the radioactivity of noble gases in the presence of ^{222}Rn background activity. A method is proposed for reducing the activity of background emitters by constant segregation of the products of decay of ^{222}Rn settling on the walls of the measurement space and extraction of the decay products beyond the shielding. It is shown that one way to do this is to use a chamber with moving walls. The optimum parameters of such a chamber are calculated. It is concluded that the activity of background radiations from emitters in a fairly large sensing space may be reduced by more than two orders. M. L.

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USSR

UDC 621.039

GOLKOV, A. N., KOLOBASHKIN, V. M., NEKRASOV, W. I., and HOZYAINOV, M. S.

"Certain Characteristics of the Development Rate of Nuclear Power Engineering"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems in Dosimetry and Radiation Shielding — Collection of Works), No 11, Moscow, Atomizdat, 1970, pp 194-197 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V515)

Translation: On the basis of an analysis of published data, the author established that in the period 1961-1971 reactor power in the world increased exponentially with a rate of growth $\beta = 0.28 \pm 0.03 \text{ year}^{-1}$, corresponding to doubling of power in approximately 2.5 years. Data is presented on the geographical distribution of the capacities of atomic power stations.

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USSR

UDC 621.373.531.1(088.8)

KOLOBAYEV, L. P., KULIKOV, S. V.

"A Controlled Multivibrator"

USSR Author's Certificate No 258379, Filed 3 Jul 68, Published 24 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G178 P)

Translation: This Author's Certificate introduces a controlled multivibrator which contains two PNP transistors with a collector circuit connected to the base of each, and with additional NPN transistors connected to these collector circuits. The multivibrator also includes semiconductor isolating diodes and additional semiconductor diodes, the anode of each of these diodes being connected to the middle lead of the corresponding resistive divider, which has one lead connected to the supply bus. To raise the upper limit of the frequency range under mild self-excitation conditions, the other lead of each resistive divider is connected through a time-mark capacitor to the base of a multivibrator transistor, and the cathode of each auxiliary semiconductor diode is connected to the collector of the corresponding auxiliary transistor.

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- 94 -

USSR

UDC 576.8.093.1:576.858.8

KOZLOV, L. P., KOLOBAYEV, V. A., and USPENSKAYA, R. S.

"Isolation and Purification of Potato Virus K for Serological Investigations"

Moscow, Biologicheskiye Nauki, No 10(94), 1971, pp 123-125

Abstract: A new method of isolating the pure potato virus K is described. Juice pressed from young leaves of the De Barao strain, which had been infected with virus K, was mixed with ether and centrifuged to separate most of the host proteins. The virus and the remaining plant proteins in the aqueous phase were precipitated with polyethylene glycol. The sediment was dissolved in a phosphate buffer, dialyzed against the same buffer, and filtered through granulated agar columns. The various fractions were collected separately and analyzed by means of ultraviolet spectrophotometry and serological tests. Fractions with an absorption peak at 2,600 angstroms contains virus K but no host proteins. This new method is recommended for industrial production of the pure virus for the purpose of investigating the antigen and manufacturing an antiserum that is specific against potato virus K.

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Acc. Nr:

AP0049790

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0135

K

101538q Compatibility of an ethylene-propylene-diene polymer with general-purpose rubbers. Boguslavskaya, K. V.; Kolobenin, V. N.; Boguslavskii, D. B.; Evstratov, V. F. (Dnepropetrovsk. Filial Nauch.-Issled. Inst. Shin. Prom. Dnepropetrovsk. USSR). *Kauch. Rezina* 1970, 29(1), 3-6 (Russ). The tensile strength of BSK, BSK + SKD, SKI-3 + SKD vulcanizates contg. ethylene-propylene-unconjugated diene copolymers (I) depended on the nature of the vulcanizing system. Vulcanizing agents contg. no S (e.g., alkylphenol-HCHO resins) brought about crosslinking with the double bonds left intact. The vulcanizates obtained were more compatible with I and exhibited good physico-mech. properties. Addn. of 10-30 parts I to the foregoing vulcanizates improved their O₂ resistance and weatherability.

CKJR

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REEL/FRA
19801712

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USSR

UDC: 669.715.018.44(02)

KOLOBNEV, I. F.

"Heat Resistance of Cast Aluminum Alloys (Structure and Properties)"

Zharoprochnost' Liteynykh Alyuminiyevykh Splavov. (Struktura i Svoystva) [English version above], Second Edition, Revised and Supplemented, Moscow, Metallurgiya Press, 1973, 320 pp (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I688K, from the resume).

Translation: A review of literature data on problems of the theory of the heat resistance of metal materials, in particular problems of the thermodynamic state of the structure of alloys, influence of physical and chemical factors (diffusion and self-diffusion), grain size, grain boundaries and technological factors on the heat resistance of alloys. Problems of the kinetics of phase conversions in alloys and the influence of temperature, stress and time of application are studied. An analysis is presented of the dependence of heat resistance of Al alloys on their chemical and phase composition, as well as the type of the state diagram. Reference data on the heat resistance of the basic standard Al foundry alloys are presented. An atlas of microstructures is included. 169 figures, 119 tables, 211 biblio. refs.

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USSR

UDC 629.78.002.3

KOLOBNEV, I. P.

"Ways of Raising the Strength Characteristics of Heat-Resistant and High-Strength Cast Aluminum Alloys"

V sb. Splavy tsvet. met. (Alloys of Nonferrous Metals -- Collection of Works), Moscow, "Nauka", 1972, pp 205-210 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.176)

Translation: Theoretical problems in the development of heat-resistant and high-strength cast aluminum alloys are discussed. A large number of heat-resistant, high-strength and hermetic cast aluminum alloys were produced on the basis of the proposition of A. A. Bochvar. The strength characteristics of domestic and foreign alloys are given. It is shown that high-strength domestic alloys (VAL10, etc.) developed under the direction of the author have σ_B , $\sigma_{0.2}$, σ_{-1} and α_H 10-15% higher than foreign alloys and also alloys such as VAL1 and ATsR1 30-40% more heat-resistant than foreign alloys. Methods are indicated for raising the strength characteristics of heat-resistant and high-strength cast aluminum alloys. 2 ill., 3 tables, 8 ref.

Resume.

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1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--HEATING OF SEMI FINISHED PARTS OF ALUMINIUM ALLOYS IN A PAP3,
RECIRCULATION, FURNACE -U-
AUTHOR--(02)--KOLOBNEV, N.I., KUSHNER, L.B.
COUNTRY OF INFO--USSR
SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (3), 61-62
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ALUMINUM ALLOY, COBALT CONTAINING ALLOY, COPPER CONTAINING
ALLOY, METALLURGIC FURNACE, ALLOY DESIGNATION, METAL
QUENCHING/(U)DURALUMIN ALUMINUM COPPER ALLOY, (U)PAP3 RECIRCULATING
FURNACE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0925 STEP NO--UR/0129/70/000/003/0061/0062
CIRC ACCESSION NO--AP0133014
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133014

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADVANTAGES OF SOME NEW RECIRCULATING FURNACES OF THE PAP3 CLASS IN THE PRE QUENCH HEATING OF SEMI FINISHED AL ALLOY PARTS ARE DISCUSSED IN THE LIGHT OF PRACTICAL EXPERIENCE. THESE FURNACES GIVE A HEATING RATE 1.5-2.5 TIMES GREATER THAN THE CONVENTIONAL AIR FURNACES HITHERTO EMPLOYED FOR THIS PURPOSE. TESTS WITH DURALUMIN AND AN AL-CO ALLOY INDICATED THAT THE PRE QUENCH HOLDING PERIOD COULD BE REDUCED BY A FACTOR OR 1.5 ON USING PAP3 FURNACES.

UNCLASSIFIED

1/2 028
 TITLE--BIOCHEMICAL INDEXES OF SHEEP MEAT DURING EXPERIMENTAL
 FUSARIOTOXICOSIS -U-
 AUTHOR-(02)-KLOBULOTSKIY, G.V., KURMANOV, I.A.
 COUNTRY OF INFO--USSR
 SOURCE--VETERINARIYA, MOSCOW 1970, 46(1), 100-1
 DATE PUBLISHED-----70

PROCESSING DATE--13NOV70

UNCLASSIFIED

K

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--TOXICITY, FOOD CONTAMINATION, FUNGUS DISEASE, ANIMAL DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3002/0377

STEP NO--UK/0346/70/046/001/0100/0101

ACCESSION NO--AP0127958
 UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0127958

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FUSARIOTOXICOSIS WAS PRODUCED IN SHEEP BY INTRAGASTRIC ADMINISTRATION OF CULTURES OF FUSARIUM SPOROTRICHOIDES PREPD. ON STERILIZED BARLEY. BIOCHEM. INDEXES OF MEAT OF SHEEP WITH EXPTL. FUSARIOTOXICOSIS WERE NOT CHANGED. SUCH MEAT DID NOT SHOW TOXIC PROPERTIES.

UNCLASSIFIED

KOLOBOV A.V.

Ref. Code: UR 0216

Acc. Nr: MP0046553

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, 1970, Nr 1, pp 38-42

Rybakov, N. I.; Guberniyev, M. A.; Chimirov, O. B.; Drozhennikov, V. A.; Aniskin, Ye. D.; Kolobov, A. V.; Kozlov, V. A.

INFLUENCE OF SOME RADIOPROTECTORS ON THE PROCESSES CONNECTED WITH LYSOGENIZATION OF THE BACTERIA AND INDUCTION OF INTERCELLULAR λ -EXONUCLEASE

The influence of the radioprotector finam on the processes of lysogenization of the bacteria with the λ phage and induction of λ -exonuclease was studied in the course of experiments with E. coli SF-14 (λ -try-S^r).

It was shown that this preparation tangibly suppresses the frequency of E. coli lysogenization and oppresses synthesis of the induced λ -exonuclease.

The results concerning activity of this enzyme definitely correlate with the data related to the influence of finam on the lysogenization process of the same bacterial strain.

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REEL/FRA
19781816

K Cardiovascular Diseases

USSR

UDC 616.127-005.6-035.2(079.5)

~~KOKURINA~~, YE. V., GLAZUNOV, I. S., and METELITSKA, V. I., Institute of Cardiology imeni A. L. Myasnikov, Academy of Medical Sciences USSR

"Value of Mail Questionnaires in Epidemiological Investigations"
Moscow, Kardiologiya, No 2, 1970, pp 124-128

Abstract: Rose's standard questionnaire for the detection of angina pectoris resulting from exertion was mailed to a representative group of 500 males, 50-59 years of age, living in the central area of Moscow. Angina was diagnosed in 5.4% of the cases according to "strict" criteria and in 12% of the cases according to "loose" criteria. Some 60% of the positive responses according to "strict" criteria corresponded to the findings of a physical examination including EKG, performed by a physician. Among those detected according to "loose" criteria, i.e., individuals with atypical location of the pain, symptoms of angina caused by exertion were found in 27.5% of the cases. EKG signs of ischemic heart disease were observed in 23.5% of the individuals who responded positively to the questionnaire. according to "strict" criteria.
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USSR

UDC 576.8

3

K
RYBAKOV, N. I., GUBERNIYEV, M. A., CHIMIROV, O. B., ~~DROZHENNIKOV, V. A.,~~
KOLOBOV, A. V., ANISKIN, Ye. D., and KOZLOV, V. A., Institute of Experimental
Biology, Academy of Medical Sciences USSR

"The Effect of Some Radioprotectors on Processes Associated With Lysogeniza-
tion of Bacteria and Induction of Intracellular λ -Exonuclease"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1970,
pp 38-42

Abstract: The radioprotector finam (an aminothiols) inhibited the frequency of
lysogenization of E. coli SF-14 (λ -try^{Sr}) by λ -phage and inhibited the
synthesis of induced λ -exonuclease at different times after infection. The
effect was most pronounced in early stages of infection. After thirty minutes
the inhibiting effect of the radioprotector on λ -exonuclease activity de-
creased sharply. Results of determination of the activity of λ -exonuclease
are consistent with data on the effect of finam on lysogenization of the same
bacterial strain. This suggests that enzyme systems play a part in the de-
velopment of lysogenicity in bacterial cells. These enzymes may be DNAses of
the endonuclease type.

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USSR

UDC 621.793:669.8

ANDREYEV, YU. YA., KOLOBOV, G. A., LYSOV, B. S., and RYCHKOVA, N. S., Moscow Institute of Steel and Alloys, Department of High-Temperature Materials

"Process of Producing Electrolytic Coatings by Titanium-Vanadium Alloys"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 6, 1970, pp 82-86

Abstract: An investigation of the process of obtaining Ti-Va alloy coatings was conducted on the basis of the results obtained by the authors in a study of the precipitation of dense titanium and vanadium deposits. A new procedure for obtaining electrolytic titanium-vanadium coatings is suggested. It consists in maintaining in an argon atmosphere at 900° for 10-12 hours a melt based on an equimolecular KCl-NaCl composition containing approximately 5 wt % Ti in the form of chlorides. Electrolysis using ferrous, molybdenum, and titanium-vanadium cathodes, was conducted at 800 and 900° in order to obtain Ti-Va coatings at various current densities. A comparison of results shows the effect of temperature on the rate of coating growth. The results also show that the high rate of coating growth with significant
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USSR

ANDREYEV, YU. YA., et al., Ysvetnaya Metallurgiya, No 6, 1970,
pp 82-86

vanadium content (22 wt %) is obtained by using the Ti + 25%
Va alloy as the anode at 800° C with a 0.2 a/cm² current density.
The vanadium content decreases rapidly with current density,
and the dependence of coating growth rate on current density
represents an extremum characteristic. A 100-micron coating
can be obtained on an Fe cathode at 800° and 0.2 a/cm² current
density in 15 minutes.

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USSR

UDC 669.271

K
KOLOBOV, G. A., MAKSIMENKO, V. M., ZHDRAVLEV, A. I., VAZHENIN, S. P., and DOBRUNOV, Yu. V.

"Use of Titanium Equipment in Magnesium Production"

Moscow, Tsvetnyye Metally, No 6, Jun 70, pp 39-40

Abstract: An account is given of investigations conducted jointly by the Solikamsk Magnesium Plant and the Titanium Institute on the use of titanium alloys in equipment intended for magnesium production. The corrosion resistance of the VT1, VT14, and VT5-1 titanium alloys was investigated. The results of tests conducted at chlorine and electrolysis plants are presented in a table. The VT1 alloy was found to be more corrosion-resistant than the VT14 and VT5-1 alloys. A brief history of the use of equipment made of titanium alloys at the Solikamsk plant is given. An inventory of various equipment, such as valves, pumps, gas-pumps, calorizators, gas scrubbers, etc., is presented, and the planned installation of new titanium alloy equipment is described. It is stated that the use of such equipment in the plant has already resulted in savings of 60,000 rubles.

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USSR

UDC:621.762+620.194.3+661.322

KOLOBOV, YU. M., LYALIN, YE. V. and MEL'NIKOV, V. G., Ivanova Institute of Chemical Technology

"Study of the Wear Resistance of Metal-Glass Materials in Friction in Aqueous Solutions of Caustic Soda"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 81-84

Abstract: The wear resistance of iron-based sintered materials with 1-10 wt.% BBC glass, graphite and molybdenum disulfide was studied in 5-35% aqueous solutions of caustic soda. The possibility is shown of using metal-glass materials as antifriction materials for friction bearings operating in aqueous solutions of caustic soda. The optimal content of glass is determined, corresponding to the minimum wear and coefficient of friction for the test conditions selected.

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AN EXPERIMENT WITH ION EXCHANGERS -U-
AUTHOR--(02)-LVOVA, K.V., KOLOBOV, YU.T. *K*
COUNTRY OF INFO--USSR
SOURCE--KHIM. SHK. 1970, 25(2), 87
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ION EXCHANGE RESIN, SUCROSE, ACID CATALYSTS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/E07 STEP NO--UR/0509/70/025/002/0037/0087

CIRC ACCESSION NO--AP0140314

UNIT ACCEPTED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPT. IN WHICH A CATION EXCHANGE RESIN IS SUBSTITUTED FOR THE ACID CATALYST IN THE INVERSION OF SUCROSE IS DESCRIBED. THIS ELIMINATES THE NEUTRALIZATION STEP AND PERMITS IMMEDIATE DETECTION OF MONOSACCHARIDES FROM THE REACTION MIXT. FACILITY: PEDINST., KUIBYSHEV, USSR.

UNCLASSIFIED

KOLOBOVA, G.A.

SPRS 6-75
590 C8

X-9. SOME CHARACTERISTIC FEATURES OF THE DISTRIBUTION OF UNCONTROLLED CENTERS IN FULL EPITAXIAL LAYERS OF GALLIUM ARSENIDE OBTAINED FROM NONSTOICHIOMETRIC SOLUTIONS.

Article by N. G. Mil'vidskiy, L. D. Shtamova, Ya. V. Solov'yeva, G. A. Kolobova, Moscow; Sovetskoye Radio, Radio i Svyaz Poluprovodnikovskiy Katalizator i Pioner, Kuznetsov, 12-17 June 1972, P. 1371

A study was made of the donor and acceptor distribution with respect to depth of the epitaxial layers of gallium arsenide obtained by the method of liquid epitaxy in a gallium solution.

The investigated distribution profiles were compared with the growth conditions, the material and heat treatment of the substrate. A study was made of the effect of various conditions of etching the substrate on the electrophysical properties of the layers.

Proposals were made regarding the nature of the observed donors and acceptors.

68

USSR

UDC 541.64:547.257.1

VINOGRADOVA, S. V., KORSHAK, V. V., VINOGRADOVA, O. V., POLYAKOVA, A. M.,
ANISHKOV, K. N., and KOLOBOVA, N. YE., Institute of Metal Organic Compounds,
Acad. Sc. USSR

"Synthesis of Manganese Polydibutylphosphinate"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 3, Mar 73, pp 516-520

Abstract: Manganese polydibutylphosphinate has been synthesized by oxidative decarbonylation of manganese carbonyl with dibutylphosphinic acid under UV irradiation, and by polycondensation of dibutylphosphinic acid with manganese and manganic acetates. The effect of the type of solvent used, the temperature and duration of the reaction, as well as the effect of concentration and relationship of starting materials on the polycoordination process of dibutylphosphinic acid and manganese acetate has been investigated. The process of the polycondensation of manganese acetate with dibutylphosphinic acid is an equilibrium process.

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UDC: 542.957+547.241.

USSR

ZLOTINA, I. B., KOLOBOVA, N. Ya., and ANISIMOV, K. N., Institute of Element-Organic Compounds, Academy of Sciences USSR

"Reaction of Trifluoroacetylcyclopentadienylmanganese Tricarbonyl with Triethyl Phosphite"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No. 1, Jan 70, pp 159-160

Abstract: A solution of trifluoroacetylcyclopentadienylmanganese tricarbonyl in $P(OEt)_3$ yielded after 2 days at room temperature 65% yellow crystalline adduct $(C_5H_4COCF_3)_2 \cdot P(OEt)_3$, which decomposes at $100-103^\circ$. The adduct, dissolved in C_6H_6 and refluxed with H_2O for 3hr. under argon, gave 60% grey crystalline product, which decomposes at 172° . A cyclic pentaoxyphosphorane structure (I) was attributed to the product. The I structure was confirmed by the ^{19}F NMR spectrum which indicated equivalence of all F atoms and the presence of only one stereoisomer. The 1H NMR spectrum could not be obtained, because of the existence of I in a bipolar, openring form with a tetravalent P atom. The unprecedented resistance of I to 20hr-long hydrolysis remains unexplained.

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1/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ORIENTING ACTION OF THE SULFO GROUP ON A CYCLOPENTADIENYLMANGANESE TRICARBONYL SYSTEM IN THE PROTOPHILIC ISOTOPIC EXCHANGE OF HYDROGEN -U

AUTHOR--(05)-SETKINA, V.N., KISLYAKOVA, N.V., PETROVSKIY, P.V., KOLOBOVA, N.YE., KURSANOV, D.N.

COUNTRY OF INFO--USSR

K

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 698-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MANGANESE COMPOUND, CARBONYL COMPOUND, CYCLIC GROUP, ISOTOPE EXCHANGE, SODIUM COMPOUND, SULFONIC ACID, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1905

STEP NO--UR/0062/70/000/003/0698/0699

CIRC ACCESSION NO--AP0123689

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 008

CIRC ACCESSION NO--AP0123689

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

ABSTRACT. D-H EXCHANGE WAS RUN WITH ETOD
CONTG. A CATALYTIC AMT. OF ETONA, AND CYCLOPENTADIENYLMANGANESE
TRICARBONYL AS THE NA SULFONATE IN THE ALPHA AND BETA POSITIONS. THE
PROTOPHILIC ISOTOPE EXCHANGE REACTION HAD F VALUES (PARTIAL REACTION
RATES) OF 4.8 AND 1.8, RESP., FOR THE 2 ISOMERS. FACILITY:
INST. ELEMENTOORG. SDEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--REACTION OF TRIFLUOROACETYLCYCLOPENTADIENYL MANGANESE TRICARBONYL
 WITH TRIETHYL PHOSPHITE -U-
 AUTHOR--ZLOTINA, I.B., KOLOBOVA, N.YE., ANISIMOV, K.N. *K*
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 159-60
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ALKYL PHOSPHITE, FLUORINATED ORGANIC COMPOUND, HETEROCYCLIC
 BASE COMPOUND, MANGANESE COMPOUND, COMPLEX COMPOUND, ISOTOPE, FLUORINE,
 NMR SPECTRUM, PHOSPHORUS, ISOMER, STEREOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1984/1611

STEP NO--UR/0052/70/000/001/0152/0160

CIRC ACCESSION NO--AP0100221

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100221

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KEEPING P(OET)SUB3 WITH TRIFLUOROACETYLCYCLOPENTADIENYLMANGANESE TRICARBONYL 2 DAYS GAVE 65PERCENT YELLOW ((CO)SUB3 MNC SUB5 H SUB4 COCF SUB3)SUB2 P(OET)SUB3, DECOMP. 100-5DEGREES, WHICH WITH H SUB2 O IN C SUB6 H SUB6 REFLUXED UNDER ARGON 3 HR GAVE 60PERCENT GREY ((CO)SUB3 MNC SUB5 H SUB4 COCF SUB3)SUB2 PO SUB2 H (I), DECOMP. 172DEGREES. I SHOWED REMARKABLE RESISTANCE TO HYDROLYSIS, AS SHOWN ABOVE, OWING TO ITS STRUCTURE, POSSIBLY AUGMENTED BY CONTRIBUTION OF A BIPOLAR OPEN RING FORM. THE PRIME19 F NMR SPECTRUM INDICATED THE PRESENCE OF BUT ONE STEREOISOMER, BUT THE PRIME31 P SPECTRUM WAS NOT OBTAINED OWING TO LOW SOLY. OF THE SUBSTANCE. THE PRIME19 F SPECTRUM SHOWED EQUIVALENCE OF ALL F ATOMS.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CYCLOPENTADIENYLDICARBONYL, PI-CYCLOPENTADIENE, NIOBIUM -U-
AUTHOR--(04)-NESMEYANOV, A.N., ANISIMOV, K.N., KOLOBOVA, N.YE., PASYNSKIY,
A.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 727
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CYCLIC GROUP, NIOBIUM COMPOUND, COMPLEX COMPOUND, DIENE,
BUTADIENE, ISOPRENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0766 STEP NO--UR/0062/70/000/003/0727/0727
CIRC ACCESSION NO--AP0124436
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124436

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV IRRADN. OF

CYCLOPENTADIENYLNIOBIUM TETRACARBONYL AND CYCLOPENTADIENE MONOMER IN
PENTANE 2 HR AT REFLUX GAVE 77PERCENT

CYCLOPENTADIENYLDICARBONYL, (PI, CYCLOPENTADIENYLNIOBIUM, M. 77-8DEGREES.

SIMILARLY WERE PRED. C SUB5 H SUB5 NB(CO) SUB2, DIENE COMPLEXES FROM
BUTADIENE, ISOPRENE AND CYCLOHEXADIENE, AS WELL AS CYCLOHEPTATRIENE

(WHCIH CORRINATED LIKE THE DIENE).
ELEMENTOORG. SOEDIN., MOSCOW, USSR.

FACILITY: INST.

UNCLASSIFIED

KOLOBRODOV, L.N.

SPRS 59208
6-73

3

VI-2. STUDY OF THE GROWTH PROCESS OF STRONGLY ALLOYED CALLIUM ARSENIDE CRYSTALS

[Article by H. Ya. Danyevskiy, L. N. Kolobrodov, V. A. Sankina, Moscow; Novostibirsk, III Stambolium po Proteziam Bozha I. Sibirsk: Selaprodokhovich Kretsallov 1 Pimok, Nuzevsk, 12-17 June, 1972, p 69]

1. A study was made of the problems of obtaining single crystals strongly alloyed with donor impurities and dendrites of semiconductor compounds of the AlI₃-V type, including the problem of obtaining crystals with maximum electron concentration.

2. Single crystals of gallium arsenide were obtained with an electron concentration of 2.10¹⁹ cm⁻³. The gallium arsenide dendrites alloyed with tellurium with an electron concentration of 1.9-10¹⁹ cm⁻³ (300°K) and 2.4-10¹⁹ cm⁻³ (77°K) and alloyed with selenium with an electron concentration of 3.9-10¹⁹ cm⁻³ (300°K) and 9.6-10¹⁹ cm⁻³ (77°K) were obtained. In the works of other authors (O. G. Mii'vidskiy, O. V. Pelyva, L. Veldand), GaAs crystals were obtained in which the greatest electron concentration was 1.2-10¹⁹ cm⁻³ (300°K).

3. A procedure is presented for obtaining single crystals strongly alloyed with selenium and tellurium and gallium arsenide dendrites from melts of stoichiometric and nonstoichiometric compositions. A model is proposed of the entry of atoms of VI 3 elements into the lattice of AlI₃-V compounds based on an investigation of the phase equilibria in the AlI₃-V-C systems; the degree of deviation of the crystallized phase from the stoichiometric composition and the possible structure of the melt (solvent).

Acc. Nr:

AP0043584

KOLOBYANINA T.N.

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 486-493

INVESTIGATION OF THE CRYSTAL STRUCTURE OF THE ANTIMONY
AND BISMUTH HIGH PRESSURE PHASES

S. S. Kabalkina, T. N. Kolobyanina, L. F. Vereshchagin

On basis of the similarity of the behaviour of $A^{IV}B^{VI}$ compounds and that of elements of the Vth group at high and normal pressures it is suggested that the SbIII and BiIII high pressure states crystallize in a monoclinally distorted SnS structural type. For p equal to 130—160 kbars the SbIII unit cell parameters are $a = 5.56$ Å, $b = 4.04$ Å, $c = 4.22$ Å, $\beta = 86^\circ$, $Z = 4$, $V = 93.8$ Å³. For $p = 35.5$ kbars the parameters of the BiIII monoclin cell are $a = 6.65$ Å, $b = 4.20$ Å, $c = 4.65$ Å, $Z = 4$, $\beta = 85^\circ 20'$, $V = 117.8$ Å³. Two symmetrically independent Sb₁ and Sb₂ atoms are in the m plane of the $C_{2h} - P2_1/m$ space group. The SbIII (BiIII) structure is assumed to be lamellar. The layers consist of two covalent — bound, slightly gofferred, planes. The interatomic distances correspond to a coordinate number of seven.

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REEL/FRA
19762056

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1/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LOW FREQUENCY INSTABILITY OF AN INHOMOGENEOUS PLASMA FORMED BY A
TUBULAR ION BEAM -U-
AUTHOR-(04)-GABOVICH, M.D., PROTSENKO, I.M., FOVMACHENKO, V.M., KOLOCHKO,
V.M.
COUNTRY OF INFO--USSR
SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, APR. 1970, P. 648.
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LOW FREQUENCY, BEAM PLASMA INSTABILITY, INHOMOGENEOUS PLASMA,
MAGNETIC FIELD, NATURAL GAS, LOW FREQUENCY OSCILLATION, ELECTRIC FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0719 STEP NO--UR/0185/70/015/000/0648/0648
CIRC ACCESSION NO--AP0126431
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126431

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL RESULTS FOR THE LOW FREQUENCY INSTABILITY OF A PLASMA FORMED BY A TUBULAR ION BEAM WHICH TRAVELS ALONG A MAGNETIC FIELD THROUGH THE NATURAL GAS. A CHARACTERISTIC FEATURE OF THIS PLASMA IS THAT IT HAS INTERNAL AND EXTERNAL BOUNDARIES WITH MUTUALLY OPPOSED DENSITY GRADIENTS ALONG THE RADIUS AND AN UNCHANGED ORIENTATION OF THE ELECTRIC FIELD ARISING FROM INCOMPLETE COMPENSATION OF THE ION BEAM'S SPACE CHARGE. LOW FREQUENCY OSCILLATIONS ARE DETECTED IN THE PLASMA, WITH THE AMPLITUDE MAXIMA LOCALIZED IN REGIONS OF BOTH THE POSITIVE AND NEGATIVE RADIAL DENSITY GRADIENTS. THE RESULTS OBTAINED ARE IN AGREEMENT WITH THE THEORY FOR THE STABILITY OF AN INHOMOGENEOUS PLASMA IN CROSSED ELECTRIC AND MAGNETIC FIELDS. FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, INSTITUT FIZIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 533.9:538.561

GABOVICH, N. D., SOLOSHENKO, I. A., PROTSENKO, I. , TOVMACHENKO, V. N.,
and KOLOCHKO, V. N.

"Low-Frequency Oscillations in Plasma Formed by an Ion Beam"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma),
"Nauka i Tekhnika," 1971, pp 61-64

Abstract: In a plasma formed by an ion beam, passing through a neutral gas along the magnetic field, the mean energy of the ions is higher than in ordinary gas discharges, comprising approximately 1 eV. The authors examine the case in which the plasma was formed by an ion beam having an energy of approximately 20 keV and a current of about 1 mA. They discuss the investigation carried out on the excitation of ion-cyclotron oscillations in plasma formed by a cylindrical beam; they are also concerned with the investigation of oscillations at lower frequencies in the plasma of a tubular ion beam. On the basis of the data which they obtained, the authors come to the conclusion that the instability generated in the heterogeneous plasma is largely due to the existence of a radial electric field crossed with a longitudinal magnetic field. The article contains 2 illustrations and 6 bibliographic entries. -

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USSR

UDC 535.581.3

KOLODEYEV, I. D., KALININ, V. YA., SUDOVTSOV, A. I., SHEVCHENKO, T. G.

"Setup for Studying Cryogenic Electromechanical Instruments and Devices"

Moscow, Pribery i Tekhnika Eksperimenta, No 5, 1972, pp 247-248

Abstract: An experimental device with a metal laboratory cryostat designed for studying superconducting electromechanical devices in liquid helium is described. The arrangement differs from those already known in the apparatus for operation of the investigated instruments and the cryostat in the neck of which there is a container with liquid N₂ acting as a heat shield over a helium bath. The application of this shield has permitted a significant reduction in the heat flux to the coolant and a 3 to fourfold increase in the possible time of the experiment without increasing the liquid helium flow rate. Prolonged operation of the device demonstrated that the germanium photodiodes and optical fiberglass light guides remain reliable for multiple repetitions of the filling of the cryostat with liquid helium and evaporation of it after completion of the experiment. The liquid helium level is signalled electronically by a light indicator. An audio signal is also used for the emergency level. The cryostat characteristics are as follows: helium tank volume 7 liters, volume of helium

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USSR

KOLODEYEV, I. D., et al., *Pribory i Tekhnika Eksperimenta*, No 5, 1972, pp 247-248

admitted to the cryostat 4.5 liters, inside diameter of the helium tank 130 mm, the reservoir for liquid N₂ holds 1.5 liters, and the evaporation of the He in the static mode is 0.45-0.5 liters/hour. A complete section view of the device is included.

2/2

Instruments and Measurements

USSR

UDC: 537.312.62

KOLODEYEV, I. D., SHEVCHENKO, T. G.

"A Method of Making Electromagnetic Systems of Superconductive Regulated and Controlled Suspensions for Cryogenic Electrical Equipment"

USSR Author's Certificate No 265279, filed 27 Oct 67, published 23 Jun 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D515 P)

Translation: This Author's Certificate introduces a method of making the electromagnetic systems of superconductive regulatable and controllable suspensions for cryogenic electrical instruments by winding wire on a form with subsequent connection of the ends of the winding in a predetermined circuit. As a distinguishing feature of the patent, the method provides for regulation of undamped current, and for rigidity of the suspension and the position of the movable elements. The coils of the electromagnetic system for each support are wound on the same form with two or more superconductors simultaneously and the initial ends of the windings on one support are then connected by some such method as welding using superconducting contacts to the windings of the other support. The windings are connected in two series circuits which are connected in turn by the same kinds of contacts to each other in parallel, and also in parallel with the shunt of a superconducting switch, forming a closed superconductive circuit with several inputs.

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UDC 669.01:539.43

USSR

KUDRYAVTSEV, I. V., ~~KOLODEZNYI, L. A.~~, TOPOROV, G. V., BURMISTROVA, L. N.,
Central Scientific Research Institute of Technology and Machinery Manufacture,
and TMSI (expansion unknown)

"Effectiveness of the Cold Hardening of Steel with Impact-Cyclic Loading Under
Low-Temperature Conditions"

Kiev, Problemy Prochnosti, No 1, Jan 72, pp 84-89

Abstract: Here are presented the results of an investigation of three kinds of steel, with and without hardening by surface plastic deformation, for resistance against impact-fatigue failure at temperatures of +20 and -50° C. The spread of fatigue cracks was studied in order to provide information on the mechanism of fatigue-impact failure. It is shown that the effect imparted by cold hardening becomes more pronounced as the stress level decreases. Decreasing the test temperature increases the resistance to fatigue failure, but the incrementation of longevity is considerably greater for hardened specimens. Tests of the same steels for impact viscosity at various temperatures showed that the presence of hardening had an adverse affect only if the cold-hardened layer is quite deep. Two tables, 3 figures, 22 references.

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UDC 533.697

USSR

BORSHCHEVSKIY, Yu. T., KOLODIN, A. M., and SHNAYDER, V. E.

"Motion of a Circular Film Formed of Drops of Sprayed Liquid"

Tr. Novosib. in-ta inzh. vodn. transp. (Transactions of the Novosibirsk Institute of Water Transport Engineers), Vypusk (Issue) 44, 1970, pp 153-159 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B411, by Yu. F. Dityakin)

Translation: The motion of a liquid film formed on the walls of a circular vertical tube by drops of liquid falling on its surfaces from a sprayer is examined. It is assumed that a steady turbulent gas flow is passing through the tube, that the gravitational force acting on the gas is small, and that the flow in the tube is axisymmetric and one-dimensional. The mass balance equation for this flow is derived. A solution is obtained for the differential equation under the corresponding boundary value conditions. This solution consists of change in the flow of the drop masses due to turbulent diffusion and settling of the drops onto tube walls. Factors affecting drop saturation of the flow along the sides of the tube are determined; here momentum transport equations for two-phase flows are employed. The bulk concentration of liquid drops at the tube surface is shown to be

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USSR

BORSHCHEVSKIY, Yu. T., et al., Tr. Novosib. in-ta inzh. vodn. transp.
(Transactions of the Novosibirsk Institute of Water Transport Engineers),
Vypusk (Issue) 44, 1970, pp 153-159 (from RZh-Mekhanika, No 12, Dec 70,
Abstract No 12B411, by Yu. F. Dityakin)

determined by the field of gas velocities along the tube walls. Formulas
are derived for calculating the velocity field for the case of small drops.

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USSR

UDC 003.14:628.165

KOLODIN, M. V., Institute of Deserts, Academy of Sciences, Turkmen SSR

"Comparison of the Net Cost of Local Salt Water Desalination With the Net Cost of Transporting Fresh Water by Channels and Pipe Lines"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 4-8

Abstract: Currently the cheapest water can be obtained by transportation from neighboring regions rich in free water resources by means of open, free-flowing channels. The net cost of water transportation by mechanized channels is about as expensive or slightly more so than transportation by pipe lines. Transportation of natural water by pipe lines is cheaper than local desalination when a common fuel system is used, but it requires larger initial investment and more metal consumption, when nuclear energy can be used, local water desalination is more convenient than the transportation by pipe lines over a long distance.

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- 70 -

UDC 628.165:542.65

USSR

KOLODIN, M. V., SEYITKURBANOV, S., and MILONOV, V. V.

"Washing of Ice Crystals in a Washing Column During Desalination of Salt Water by Freezing"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 6, 1971, pp 20-22

Abstract: It has been established experimentally that the effectiveness of ice crystal washing in a countercurrent wash column depends principally on the height of the washing zone H_k , the rate of ascension of ice in the column v_l , consumption of fresh water for the washing of ice crystals f and on the dimensions of the crystals being treated d_{cr} . A nomograph has been plotted from which these parameters could be determined for given salinity of the water being treated. Consumption of fresh water for washing the crystals in a countercurrent column is much lower than in a centrifugal apparatus. Furthermore, the treatment of a suspension in a field of centrifugal forces requires a very complicated apparatus, adding to the overall cost of the process.

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1/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CONDITIONS FOR PRODUCTION AND ISOLATION OF VALINOMYCIN, A REGULATOR
OF CELL MEMBRANE PERMEABILITY -U-

AUTHOR--(04)-SMIRNOVA, G.M., BLINOVA, I.N., KOLODITSKAYA, T.A., KHOKHLOV,
A.S.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 387-392

DATE PUBLISHED-----70

R

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC DRUG EFFECT, STREPTOMYCES, CELL MEMBRANE, FLUID
PERMEABILITY, DRUG PRODUCTION, CONTINUOUS CULTURE, CHEMICAL
PURIFICATION/(U)VALINOMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1362

STEP NO--UR/0297/70/015/005/0387/0392

CIRC ACCESSION NO--AP0115332

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/3 024

CIRC ACCESSION NO--AP0115332
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CONDITIONS FOR BIOSYNTHESIS OF VALINOMYCIN BY STREPTOMYCES SPECIES PRL 1642 UNDER PILOT PLANT CONDITIONS WERE DEVELOPED. A METHOD OF SERIAL TITRATION AGAINST CANDIDA ALBICANS WAS PROPOSED FOR DETERMINATION OF VALINOMYCIN CONTENT IN SAMPLES TAKEN DURING THE CULTURE GROWTH AND THE ANTIBIOTIC ISOLATION. SAMPLES OF THE FERMENTATION BROTH WERE ACIDIFIED WITH HYDROCHLORIC ACID TO PH 2.3-2.5, THE PRECIPITATE WAS WASHED AND EXTRACTED TWICE WITH ETHANOL, THE VOLUME OF THE EXTRACT WAS ADJUSTED WITH DISTILLED WATER TO 70 PER CENT. THE COMPOSITION OF THE FERMENTATION MEDIUM WAS THE FOLLOWING (IN PER CENT), CORN STEEP LIQUOR 0.5 (DRY WEIGHT), AMMONIUM SULFATE 0.4, GLUCOSE 1, STARCH 1.5, SODIUM CHLORIDE 0.5, CALCIUM CARBONATE 0.5. THE TIME OF FERMENTATION IN 45-, 100- AND 500-LITER FERMENTORS WAS 4 TO 5 DAYS. THE AVERAGE CONTENT OF THE ANTIBIOTIC IN 1 LITER OF THE MEDIUM WAS ABOUT 40 MG. THE ACTINOMYCETE DEVELOPMENT PROCEEDED IN 2 STAGES. THE ANTIBIOTIC PRODUCTION WAS OBSERVED IN THE 2ND STAGE, WHEN FRAGMENTATION OF THE MYCELIUM TOOK PLACE. VALINOMYCIN WAS ISOLATED BY 3-4 FOLD EXTRACTION OF THE MYCELIUM WITH ETHANOL, FOLLOWED BY PURIFICATION WITH BUTYLACETATE, SATURATED SOLUTION OF SODIUM BICARBONATE AND CARBON TETRACHLORIDE. AFTER THAT THE SUBSTANCE WAS ELUTED IN AN ALUMINA COLUMN BY CARBON TETRACHLORIDE AND THEN BY ITS MIXTURE WITH ABSOLUTE ETHANOL. ACTIVE FRACTIONS WERE EVAPORATED, DISSOLVED IN ETHER AND THE SOLUTION WAS PASSED THROUGH A COLUMN WITH ACTIVATED CHARCOAL AND CELITE 545. VALINOMYCIN WAS CRYSTALLIZED FROM HEXANE.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115332

ABSTRACT/EXTRACT--A COLOURLESS CRYSTALLINE SUBSTANCE WITH A MELTING POINT OF 185-186DEGREES, ACTIVE AGAINST CANDIDA ALBICANS IN A DOSE OF 0.1 MUG-ML WAS OBTAINED.

FACILITY: INSTITUTE FOR CHEMISTRY OF

NATURAL SUBSHTANCES OF ACADEMY OF SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

I/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FREQUENCY DEPENDENCE OF TAN SIGMA (DIELECTRIC LOSS MODULUS) OF
SYNTHETIC MICA -U-
AUTHOR-(02)-KULODIYEV, B.N., ANIKIN, I.N.
COUNTRY OF INFO--USSR *R*
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 402
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MICA, DIELECTRIC MATERIAL, DIELECTRIC LOSS, SYNTHETIC
MATERIAL, MINERAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0212

STEP NO--UR/0363/70/006/002/0402/0402

CIRC ACCESSION NO--AP0115916

UNCLASSIFIED

PROCESSING DATE--09OCT70

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0115916
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SYNTHETIC MICA (OR FLUOROPHLOGOPITE) IS AN IMPORTANT HEAT AND ELEC. INSULATING MATERIAL. THERE ARE NO DATA IN THE LITERATURE ON THE FREQUENCY DEPENDENCE OF DIELEC. LOSSES IN SINGLE CRYSTALS OF THIS MINERAL WITHIN THE SONIC FREQUENCIES REGION. IT WAS POSSIBLE TO TRACE THE DISPERSION OF TAN SIGMA OF SYNTHETIC MICA AT 296DEGREESK BY MEANS OF A 1620-A GENERAL RADIO COMPANY HIGH FREQUENCY PRECISION BRIDGE. THE MEASUREMENTS OF TAN SIGMA IN THE (001) DIRECTION OF THE CRYSTAL WERE PERFORMED, WITHIN THE 60 HZ-10 KHZ FREQUENCY RANGE. THE COMPN. OF THE INVESTIGATED MICA, AS SYNTHESIZED BY CRYSTN. FROM THE MELT IN FE CRUCIBLES, COULD BE EXPRESSED BY THE FORMULA: (K SUB0.96 NA SUB0.04) SUB1.00 NG SUB3 (SI SUB2.96 AL SUB1.03 FE SUB0.01 PRIME 3 POSITIVE) SUB4.00-O SUB10. (F SUB1.07 O SUB0.03) SUB2.00. THE THICKNESS OF THE SAMPLES MEASURED WAS 70 MU, AND THEIR DIAM. WAS 10-30 MM. THE ELECTRODES WERE MOUNTED TO THE SAMPLES IN THE FORM OF SILVER PASTE AT 723DEGREESK. RESULTS SHOW THAT TAN SIGMA OF THE DIELEC. LOSSES FOR SYNTHETIC MICA IS UNUSUALLY SMALL AS COMPARED TO THE TAN SIGMA FOR NATURAL MICA, AND ACCORDING TO THE ORDER OF MAGNITUDE IT AMTS. TO 10 PRIME NEGATIVE6-10 PRIME NEGATIVE5. FREQUENCY MAX. OF TAN SIGMA WERE OBSERVED FOR BOTH THE SYNTHETIC AND THE NATURAL MICA WITHIN THE RANGE INVESTIGATED. IT IS PROPOSED THAT THESE MAX. ON THE SONIC FREQUENCIES ARE CAUSED BY THE POLAR ORIENTATION OF THE MOLS. OF THE ADSORBED WATER. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. MINER. SYR'YA, ALEKSANDROV, USSR.

UNCLASSIFIED

USSR

UDC [537.226 + 537.311.33] : [537 + 535]

KOLODIYEVA, S. V., FOTCHENKOV, A. A., KHADZHI, V. Ye.

"Anomalous Dielectrical Dispersion in Synthetic Quartz Monocrystals"

Khar'kov, V sb. Monokristally i tekhnika (Monocrystals and Engineering -- collection of works) No 4, 1971, pp 149-155 (from RZh-Fizika, No 11, 1971, Abstract No 11E881)

Translation: It is shown experimentally that the relaxation processes in monocrystals of synthetic quartz cannot be considered as purely Debye processes. The observable anomalies of the dielectric dispersion are considered from the position of the interaction of the electrically active impurity defects of the Al/R type of P centers (R-Li, Na, K) with the electrically inactive complexes of the nonstructured phase, the extent of which is determined in the crystal by its growth conditions.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--KINETICS OF ETHYLENE HYDROGENATION ON COBALT X ZEOLITE -U-
AUTHOR--(02)--GRYAZNOVA, Z.V., KOLODIYEVA, YE.V.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1383-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPOUND, ZEOLITE, HYDROGENATION, BENZENE, ETHYLENE,
REACTION KINETICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1088 STEP NO--UR/0020/70/190/006/1383/1386
CIRC ACCESSION NO--AT0124745
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--A0124745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF C SUB6 H SUB6 AS WELL AS C SUB2 H SUB4 WAS SHOWN TO TAKE PLACE ON THE METALLIC ACTIVE CENTERS OF THE TITLE CATALYSTS. ALTHOUGH X TYPE ZEOLITES HAVE RATHER OPEN STRUCTURE, THE ACTIVE CENTERS FOR THESE HYDROCARBONS MAY BE ACCESSIBLE TO DIFFERENT DEGREES, DEPENDING ON THE CRYSTALLOGRAPHIC LOCATION OF THE ION THAT UNDERGOES REDN. HYDROGENATION OF C SUB6 H SUB6 IN ADDN. IS A PROCESS WITH A GREATER CAPACITY FOR ENERGY UPTAKE THAN THE PROCESS OF HYDROGENATION OF C SUB2 H SUB4. KINETIC CURVES WERE SHOWN FOR THE ABOVE REACTIONS AT TEMPS. FROM 30DEGREES TO 320DEGREES USING A FEED OF H AND HYDROCARBON IN PASSAGE OVER A NACOX SUB6 ZEOLITE CATALYST THAT HAD BEEN SUBJECTED TO EXCHANGE OF NA IONS FOR CO TO THE EXTENT OF 61.9PERCENT. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--POWER PLANT USE OF SULFUR CONTAINING PETROLEUM RESIDUES -U-
 AUTHOR--(05)-KOLODIYEVA, YE.V., KUROCHKIN, A.I., ZHAROVA, M.N.,
 KASHURICHEV, A.P., CHOKHANGV, Z.F.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK SSSR, ENERG. TRANSP. 1970, (1), 85-93
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS, EARTH SCIENCES AND
 OCEANOGRAPHY
 TOPIC TAGS--PYROLYSIS, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, CHEMICAL
 COMPOSITION, ECONOMICS, FUEL CONSUMPTION, STEAM BOILER, BENZENE,
 TOLUENE, NAPHTHALENE, ETHYLENE, COKE, SULFUR, POWER PLANT

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1996/1544 STEP NO--UR/0281/70/000/001/0085/0093
 CIRC ACCESSION NO--AP0118527
 UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POWER PLANT PYROLYSIS OF S CONTG. MAZUT (PETROLEUM RESIDUES) FROM ROMANSHKIND AND ARLANSK CRUDE OILS AT RATES OF 1.3-4.7 G-SEC YIELDED ACCORDING TO CALCNS. BASED ON A SINGLE PYROLYSIS CYCLE 57-78 AND 55-78PERCENT GAS AND 31-40 AND 27-38PERCENT LIQ. PRODUCTS, OF WHICH 7-11 AND 9-12PERCENT B. SMALLER THAN OR EQUAL TO 230DEGREES WERE RECOVERED BEFORE RECYCLING. OPTIMAL CONDITIONS FOR MAX. C SUB2 H SUB4 YIELDS (22.8 AND 17.5PERCENT) WERE 0.02 AND 0.08 SEC AT 945 AND 930DEGREES WITH STEAM, MAZUT RATIOS B OF 0.66 AND 0.49 KG-KG, RESP. FOR ARLAN MAZUT-C SUB6 H SUB6, PHME, ME SUB2 C SUB6 H SUB4 PLUS PHET, AND NAPHTHALENE, YIELDS WERE MAX. (6.0, 1.6, 0.2, AND 1.4PERCENT, RESP.) AT AN C SUB2 H SUB4 YIELD OF 13.8PERCENT WHEN THE CONDITIONS WERE 0.24 SEC AT 960DEGREES WITH B EQUALS 0.51, WHEREAS THESE YIELDS WERE 3.5, 2.1, 0.5, AND 0.5PERCENT AT AN CL SUB2 H SUB4 YIELD OF 17.5PERCENT WHEN THE CONDITIONS WERE 0.07-0.09 SEC AT 920-50DEGREES WITH B EQUALS 0.5 AND THE FRACTION OF THE ORIGINAL S LEFT IN THE COKE WAS SIMILAR TO 30PERCENT. THIS FRACTION WAS MIN. (SIMILAR TO 11 ANS 25PERCENT) AND C SUB2 H SUB4 YIELDS WERE HIGH (27.6 AND 17.6PERCENT) WHEN THE RESP. MAZUTS WERE PYROLYZED FOR 0.03 AND 0.06 SEC AT 915 AND 945DEGREES WITH B EQUALS 0.75 AND 1.0, BUT AROMATIC HYDROCARBON YIELDS WERE REDUCED BY SIMILAR TO 33PERCENT AND POWER EFFICIENCY BY SIMILAR TO 3.5-4.0PERCENT. IN COMPARISON WITH SEP. PRODUCTION OF POWER AND PETROLEUM PRODUCTS, POWER PLANT PYROLYSIS UNDER OPTIMAL CONDITIONS REDUCED BOILER FUEL CONSUMPTION BY SIMILAR TO 20PERCENT AND POWER COSTS BY SIMILAR TO 50PERCENT.

UNCLASSIFIED

172 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE BASICITY OF N SUBSTITUTED LACTAMS BY AN IR
SPECTROSCOPIC METHOD -U-
AUTHOR--(05)-GORSHKOVA, G.N., KOLODKIN, F.L., POLISHCHUK, V.V.,
PONOMARENKO, V.A., SIDELKOVSKAYA, F.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 550-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTAM, IR SPECTRUM, PHENOL, DEUTERIUM COMPOUND, HYDROXYL
RADICAL, DETONE, PYRROLES, HETEROCYCLIC NITROGEN COMPOUND,
CYCLOHEXANONE, SOLUTION ALKALINITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0741 STEP NO--UR/0062/T0/000/003/0550/0554
CIRC ACCESSION NO--AP0124411

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124411

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE USED TO ASSESS THE VALUES OF THE ASSOCN. CONSTS. OF THE FOLLOWING COMPODS. WITH PHOH, FROM THE VALUES OF SPECTRAL SHIFTS OF OH AND DD BANDS (VALUES OF K SUBASS IN L.-MOLE SHOWN): PYRROLIDONE 160, N,METHYLPYRROLIDONE 175, N,(2,3,EPOXYPROPYL)PYRROLIDONE 140, N,ALLYLPYRROLIDONE 135, N,VINYLPYRROLIDONE 48, PIPERIDONE 225, N,ALLYLPIPERIDONE 180, N,VINYLPYRROLIDONE 52, CAPROLACTAM 185, N,ALLYLCAPROLACTAM 145, N,VINYLCAPROLACTAM 49, PYRROLIDINE 185, PIPERIDINE 170, CYCLOPENTANONE 11, AND CYCLOHEXANONE 12. THUS, A RELATION OF BASICITY OF THESE COMPODS. TO THE NATURE OF THE N SUBSTITUTENT WAS DEMONSTRATED. THE ASSOCN. OF PHOH WITH THESE RING SYSTEMS AT THE CARBONYL GROUP DOES NOT EXCLUDED THE POSSIBILITY OF ASSOCN. AT THE N ATOM. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF LIGHT ON SOLUTIONS OF OPTICAL WHITENING AGENTS -U-
AUTHOR--(04)-DARVINA, V.V., KOLODNER, D.I., IVANOVA, L.S., MAKAROVA, T.P.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLUKNA 1970, (2), 55-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--PHOTOEFFECT, LUMINESCENCE, UV LIGHT, OPTIC BRIGHTNESS/(U)UFO15
LAMP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2009 STEP NO--UR/0183/70/000/002/0055/0057
CIRC ACCESSION NO--AP0125597
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

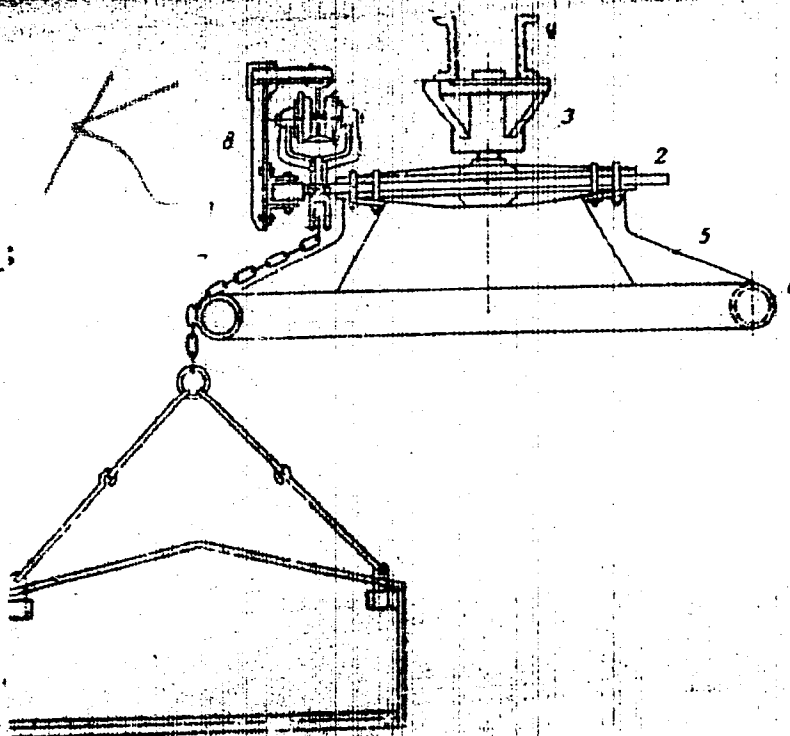
CIRC ACCESSION NO--A0125597

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALK. SOLNS. OF THE FLUORESCENT WHITENING AGENT WHITE S WERE EXPOSED TO DAYLIGHT OR UV IRRADN. (LAMP UFO-15) AND THEIR LUMINESCENCE INTENSITIES WERE DETD. THE DECREASE OF THE LUMINESCENCE INTENSITY WITH TIME DECREASED WITH THE WHITENER CONCN. E.G., SOLNS. CONTG. 0.1 G-L. OF THE WHITENER LOST THEIR LUMINESCENCE AFTER 24 HR WHILE THE LUMINESCENCE OF SOLNS. CONTG. 25.6 G-L. OF THE AGENT WAS UNCHANGED SMALLER THAN OR EQUAL TO 20 DAYS. THE STABILITY OF THE WHITENER WAS HIGHER IN ALK. SOLNS. FACILITY: LENINGRAD. FILIAL, VNIIV, LENINGRAD, USSR.

UNCLASSIFIED

AA0052385

Shub, G. Kh.;
Grinchishin, D. T.;
Kolodnik, V. V.



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19820981

AK052385

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

243499 OVERHEAD CONVEYOR has a horizontal rotating mechanism comprising a rotating sprocket and a roller set, and to the lower plane of the rotating sprocket (2) a rotary ring (6) is attached by means of brackets (3), is arranged concentrically to the axis of the rotating sprocket and has an outer diameter larger than the diameter of the circumference of the rotating sprocket. This construction increases the efficiency of the conveyor by decreasing the pitch of the large suspensions or loads (9) by ensuring their free passage at the rotating sections of the track of the conveyor.

18.3.68. as 1225909/27-11, G. Kh. SHUB, et al.
(22.9.69) Bul. 16/5.5.69. Class 31a, Int. Cl. B65g

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19820980

USSR

ZVEREV, G. M.; KOLODNYI, G. Ya.; ONISHCHENKO, A. M.

"Nonradiative Transitions between Levels of Trivalent Rare Earth Ions in Yttrium-Aluminum Garnet Crystals"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; March, 1971; pp 920-7

ABSTRACT: Nonradiative transitions between levels in Nd^{3+} , Er^{3+} , Ho^{3+} , and Tu^{3+} ions in yttrium-aluminum garnet crystals are studied. The variation with temperature of the probabilities for nonradiative transitions are studied, and it is shown that in the single-frequency model approximation optical phonons with an energy $\sim 700 \text{ cm}^{-1}$ play the predominant role in nonradiative relaxation. The spontaneous nonradiative transition probabilities for various energy gaps between the levels and the dependence of the nonradiative transition probability on the energy gap are determined by measuring the quantum yield, lifetime, and kinetics of luminescence at 77°K . For gaps lying between $1200\text{-}5000 \text{ cm}^{-1}$ the dependence can be satisfactorily approximated by an exponential law. The relaxation times from the major excitation levels to the ${}^4F_{3/2}$ level are mea-

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USSR

ZVEREV, G. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Mar 71, pp 920-927

sured for Nd^{3+} ions excited by radiation from a ruby or rhodamine 6G laser or by the second harmonic from a neodymium laser; the measurements are based on the kinetics of luminescence emitted by Nd^{3+} ions from the ${}^4\text{F}_{7/2}$ level. The relaxation time from levels with an energy $\sim 18800 \text{ cm}^{-1}$ is $5 \cdot 10^{-7}$ sec. For levels lower than 18800 cm^{-1} the time does not exceed $5 \cdot 10^{-8}$ sec. On the basis of the dependence of the nonradiative transition probabilities on the energy gap between the levels, the relaxation time between the ${}^4\text{I}_{1/2}$ and ${}^4\text{I}_{3/2}$ levels of Nd^{3+} ions is evaluated at $\sim 5 \cdot 10^{-7}$ sec.

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1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SYNTHESIS, PHARMACOLOGICAL PROPERTIES, AND EFFECT OF SOME STYRONE
IMINES ON MONAMINE OXIDASE ACTIVITY -U
AUTHOR--(05)-YASHUNSKIY, V.G., MASHKOVSKIY, M.D., GURKIN, V.Z., KOLODOV,
L.L., ALTSHULER, R.A.
COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MUSCOW) 1970, 33(3), 297-302

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CENTRAL NERVOUS SYSTEM STIMULANT, CHEMICAL SYNTHESIS, DRUG
EFFECT, OXIDASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605C01/F10 STEP NO--UR/0390/70/033/003/0297/0302

CIRC ACCESSION NO--AP0139586

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 015

CIRC ACCESSION NO--AP0139586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NO. OF 3-PHENYLALKYL DERIVS. OF
SYDNONE IMINE, WHEN GIVEN TO MICE, STIMULATED THE CENTRAL NERVOUS SYSTEM
AND ACTED AS PERIPHERAL ADRENOMIMETICS. THEY ALSO INHIBITED MONOAMINE
OXIDASE IN VITRO. FACILITY: VSES, NAUCH.-ISSLED. KHIM.-FARM.
INST. IM. ORZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 577.3:612.744:612.015.32

KOLODUB, F. A., and YEVTUSHENKO, G. I., Khar'kov Scientific Research Institute of the Hygiene of Labor and of Occupational Diseases, Khar'kov

"Characteristics of Metabolism in the Skeletal Muscles of Rats Under the Effect of a Pulsed Low-Frequency Electromagnetic Field"

Kiev, Ukrayinsk'kiy Biokhimichnyi Zhurnal, Vol 45, No 3, May/Jun 73, pp 356-361

Abstract: Rats were exposed to a pulsed electromagnetic field with a frequency of 7 kilocycles, pulse duration of 130 microsec, a 10 sec interval between pulses, and an intensity of 72 kA/m for 3 hrs per day during 15 days, or to a field with the same characteristics but an intensity of 24 kA/m for 1.5 hrs per day during 1.5, 3, or 6 mos. The results of the experiments indicated that the action of the electromagnetic field reduced the content of ATP and creatine phosphate in skeletal muscles because of a disturbance in the conjugation between oxidation and phosphorylation. Glycolysis was intensified with the result that the content of glycogen decreased and that of lactate increased. Simultaneously the deamidation of protein was intensified (the content of protein amido N decreased) and the deamination of adenosine, adenylic acid, and glutamic acid increased in the absence, 1/2

USSR

KOLODUB F. A., and YEVTUSHENKO, G. I., Ukrayins'kiy Biokhimichniy Zhurnal, Vol 45, No 3, May/Jun 73, pp 356-361

because of the ATP deficiency, of a corresponding intensification of glutamine synthesis. The adenosine and adenylate deaminases were activated. There was an increase in the content of ammonia in the skeletal muscles, which reached a level of 76.3% above normal. It was shown in earlier work by the authors that electromagnetic fields of low frequency produce spasms and muscular dystrophy.

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USSR

UDC 577.1.612.015.32:538.6

KOLODUB, F. A., YEVTUSHENKO, G. I., Kharkov Scientific Institute of Hygiene of Labor and Occupational Diseases

"Characteristic Features of the Carbohydrate-Energy Metabolism of the Brain of Rats Under the Effect of a Low-Frequency Pulsed Electromagnetic Field"

Kiev, Ukrains'kiy Biokhimichnyi Zhurnal, Vol 44, No 4, 1972, pp 492-496

Abstract: It was established that for multiple (15 sessions) and chronic (1, 5, 3 and 6 months) effects of the low-frequency pulsed electromagnetic field (7 kilohertz) at an intensity of 72 and 24 kiloamps/meter, respectively, the processes of oxidation and phosphorylation separate in the brain of the rats as a result of attenuation of the inorganic phosphate esterification. Simultaneously with this, the glycogen and glucose contents in the brain tissue drop, and lactate accumulates. The disturbance of acid phosphorylation processes and partial switching of carbohydrate decomposition to the glycolytic process lead to a reduction in the amount of macroergic compounds (creatine phosphate and ATP) in the brain tissue and a simultaneous accumulation of the dephosphorylated ATP derivatives -- ADP and AMP.

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Radiobiology

USSR

UDC .577.1:612.015.33:612.8.015

KOLODUB, F. A. and EVTUSHENKO, G. I., Kharkov Institute of Industrial Hygiene and Occupational Diseases

"Nitrogen Metabolism in the Brains of Rats Exposed to a Pulsed Low-Frequency Electromagnetic Field"

Kiev, Ukrainskiy Biokhimicheskiy Zhurnal, No 3, 1972, p 311

Abstract: Some aspects of nitrogen metabolism (formation and removal of ammonia) were investigated in the brains of rats exposed to a pulsed low-frequency (7 kHz) electromagnetic field of different intensities (24 and 72 kA/m) and durations. Repeated (15 sessions) and chronic (6 months) exposures were found to impair nitrogen metabolism in nervous tissue. After exposure to an intensity of 72 kA/m, the amount of ammonia and glutamic acid decreased, the amide nitrogen content of the proteins remained unchanged while the deamination of adenylic acid and synthesis of glutamine were inhibited owing to an insufficiency of ATP. After chronic exposure (24 kA/m), the changes in amount of ammonia were phasic; they occurred in the absence or slight increase in the level of glutamine disproportionate to the increase in amount of ammonia.

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Public Health, Hygiene and Sanitation

USSR

UDC 615.847.6-07:616.15-074

KOLODUB, F. A. and YEVTUSHENKO, G. I., Kharkov Scientific Research Institute of Labor Hygiene and Occupational Diseases

"Value of Some Biochemical Blood Parameters for the Early Diagnosis of Disorders Caused by Low-Frequency Pulsed Electromagnetic Fields"

Kiev, Vrachebnoye Delo, No 6, 1972, pp 131-135

Abstract: Exposure of rats to chronic, low-intensity pulsed electromagnetic fields for 6 months resulted in metabolic disturbances in the liver, kidneys, heart, skeletal muscles, and brain tissue of animals manifested by changes of varying duration in glucose, pyruvic and lactic acids, ammonia, glutamine, urea, total protein and protein fractions, and pseudocholinesterase, catalase, and peroxidase activities. The changes were particularly pronounced in the blood lactic acid and ammonia levels within two weeks. Unlike the other biochemical indices, however, they did not return to normal even as long as 30 to 60 days after the end of the experiment. Thus, a determination of blood lactic acid and ammonia would seem to be a worthwhile clinical method of detecting incipient pathology in humans exposed to low-frequency pulsed electromagnetic fields.

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USSR

UDC 612.014.426.015.3

KOLODUB, F. A., and YEVTUSHENKO, G. I., Institute of Labor Hygiene

"Biochemical Aspects of the Biological Effect of a Low-Frequency Pulsed Electromagnetic Field (LFPEF)"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 6, 1972, pp 13-17

Abstract: Pronounced metabolic disturbances in the brain, heart, liver, and skeletal muscles were produced by LFPEF. ATP, creatinine phosphate, and glycogen became deficient and lactic acid and ammonia compounds accumulated. A study of amidation and deamidation elucidated the nature of the disorders observed in the various organs.

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